Portland Area IHS

Be Prepared for Measles - Update on Measles and How to Prevent Measles from Spreading in Your Community

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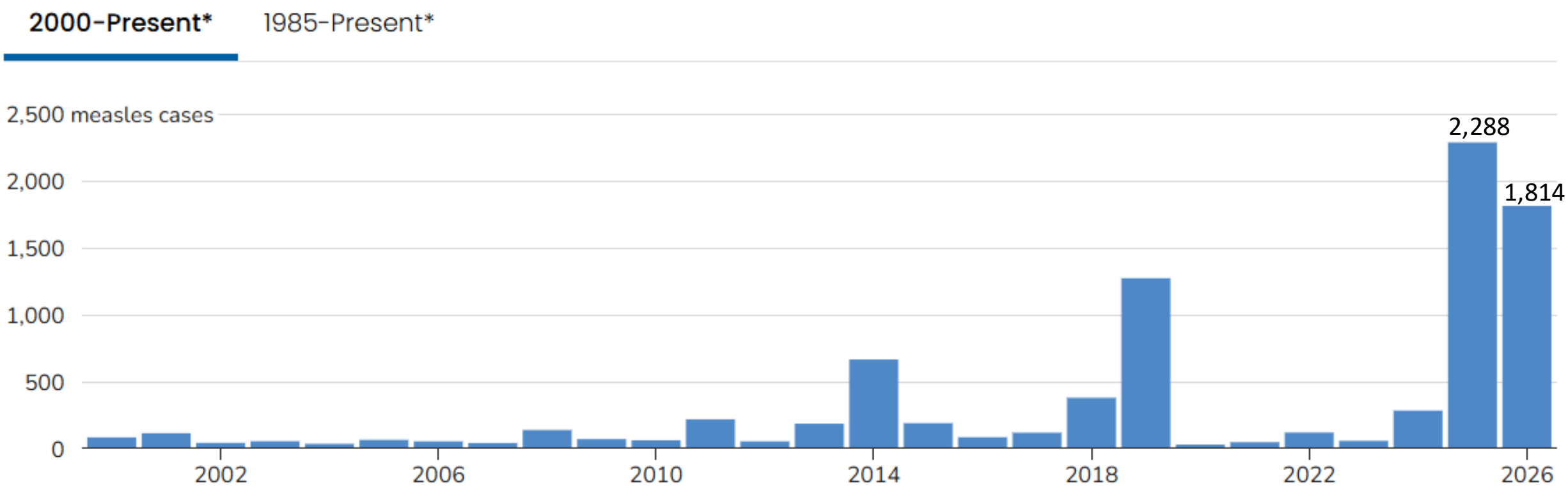
May 7, 2026

Outline

- Update on measles cases
- Infection prevention recommendations
- Clinical evaluation and laboratory testing
- Public health interventions

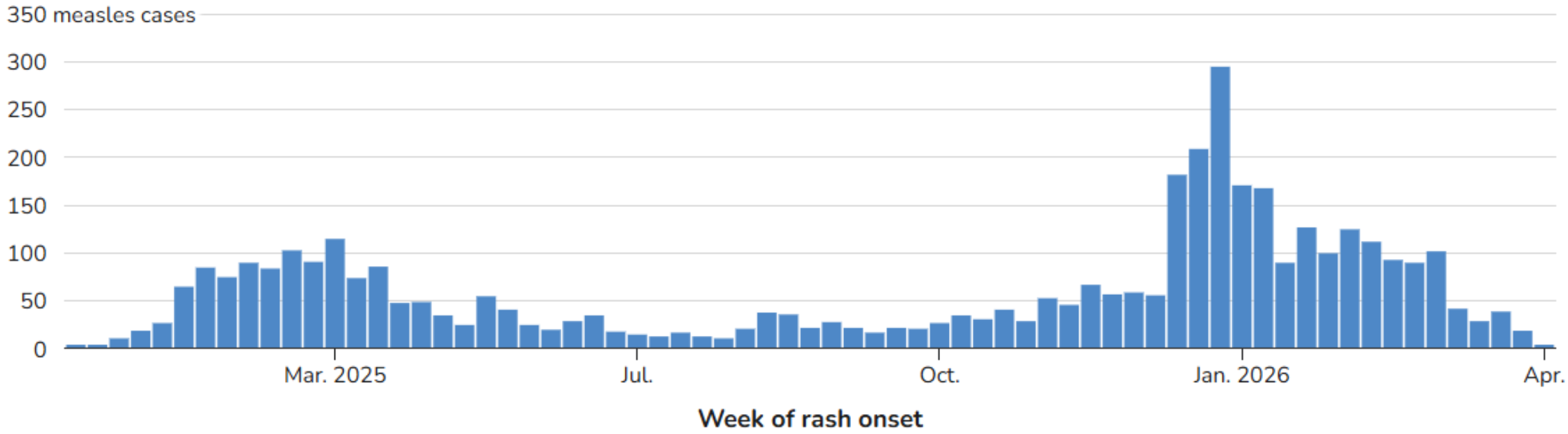
Yearly Measles Cases – United States, 2000-Present

as of April 30, 2026



Centers for Disease Control and Prevention. Measles Cases and Outbreaks. Available at: https://www.cdc.gov/measles/data-research/index.html

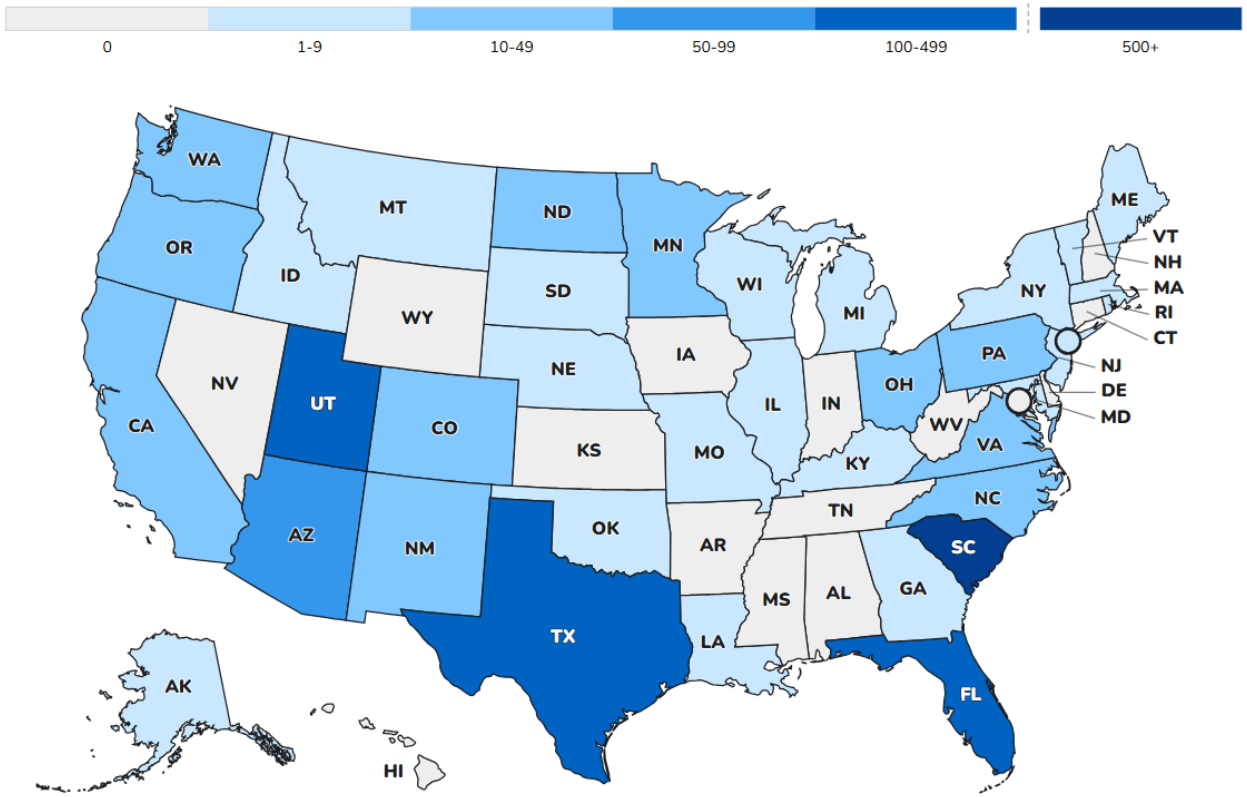
Weekly Measles Cases – United States, 2025-26



Centers for Disease Control and Prevention. Measles Cases and Outbreaks. Available at: https://www.cdc.gov/measles/data-research/index.html

Measles — United States, 2026

- 1,814 confirmed cases among 36 states during 2026 as of 4/30.
- 93% of cases are outbreak-associated (≥3 related cases).
- Age: 21% <5 years-old, 51% 5-19 years-old, 27% ≥ 20 years-old.
- 6% hospitalized overall (during 2025, 11% hospitalized, with 18% of those <5 years-old hospitalized).
- 0 deaths (during 2025, 3 deaths among unvaccinated individuals, including 2 healthy school-aged children).
- 92% unvaccinated or with unknown vaccination status, 4% one MMR dose, 4% two MMR doses.



Measles — Washington, 2026 (N=40)

Recent cases

- **Kittitas County**: Six cases since April (7 cases in total this year); two cases without an identified source.

- **Walla Walla County:** Two recent cases, likely exposed during international travel. Possible public exposure location:
  - 4/20: Le Dang's Mongolian Grill.

➢ Anyone who may have been exposed should monitor for symptoms through 5/11. For more information: https://dch.wwcowa.gov/news_detail_T23_R113.php.

❖ 98% of cases in Washington unvaccinated or with unknown vaccination status.

Washington State Department of Health. Measles Cases in Washington State. Available at: https://doh.wa.gov/you-and-your-family/illness-and-disease-z/measles/measles-cases-washington-state

Measles — Oregon, 2026 (N=22)

- Cases this year have occurred at least in Clackamas, Multnomah, Marion, and Linn Counties.
- There has been an ongoing outbreak involving non-household contacts in Clackamas and Multnomah counties.
- Measles virus detected in wastewater during 6 week period from 3/15/26-4/25/26:
  - Marion, Hood River, Washington, Lane, Deschutes, and Tillamook Counties.
- 95% of cases in Oregon unvaccinated or with unknown vaccination status.

Oregon Health Authority. Measles / Rubeola (vaccine-preventable). Available at: https://www.oregon.gov/oha/ph/diseasesconditions/diseasesaz/pages/measles.aspx
Oregon Health Authority. Oregon Health Authority : Oregon reports measles outbreak; new wastewater dashboard tracks measles virus by county; Respiratory Viral Pathogen Wastewater Monitoring Dashboard. Available at: https://public.tableau.com/app/profile/oregon.public.health.division.acute.and.communicable.disease.pre/viz/OregonsRVPWastewaterMonitoring/Mainpage?publish=yes&utm_medium=email&utm_source=govdelivery;

Measles — Idaho, 2026 (N=10)

- No recent cases reported.
- Measles virus detected in wastewater during 6 week period from 3/15/26-4/25/26:
  - Ada and Kootenai Counties.

- Prior Cases this Year:
  - Madison County (Eastern Idaho Public Health): 3 cases.
  - Canyon County (Southwest District Health): 6 cases.
  - Kootenai County (Panhandle Health District): 1 case.

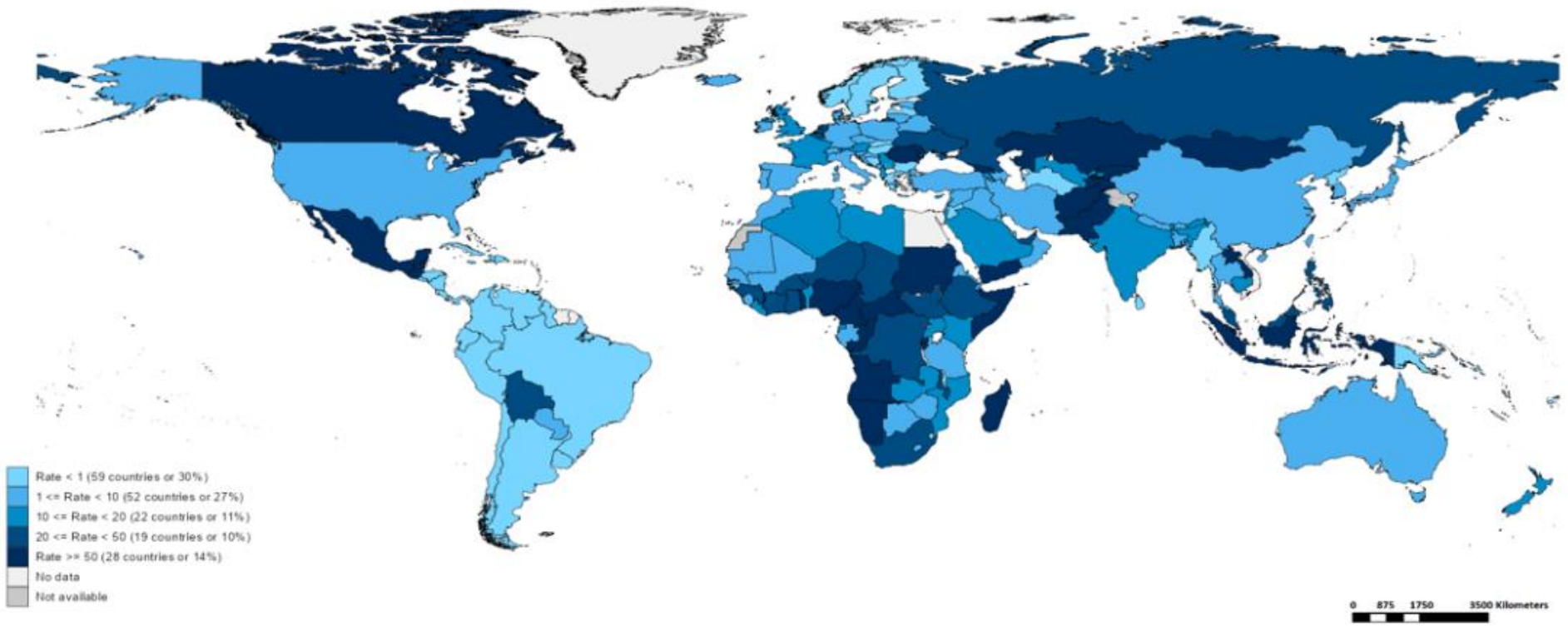
Idaho Department of Health and Welfare. Tracking Measles in Idaho. Available at: https://public.tableau.com/app/profile/idaho.division.of.public.health/viz/TrackingIdahoMeasles/StatewideSummary?publish=yes

Measles — Portland Area, 2025-26

Location (State/County)	Number of Cases		Additional Cases (e.g. Among Travelers)
	2025 (N=26)	2026 (N=72)	
Washington	Total: 12	Total: 40	9 additional cases among travelers to Washington (King and Snohomish Counties) in 2025. 2 travelers in 2026 (King).
Snohomish	2	14	
Clark		8	
Kittitas		7	
Stevens		3	
King	7	3	
Grant		2	
Spokane		1	
Walla Walla		2	
Whatcom	2		
Spokane	1		
Oregon	Total: 1	Total: 22	
Idaho	Total: 13	Total: 10	2 additional cases among travelers to Idaho (Bonneville and Cassia Counties in 2025. 1 case in a traveler in 2026.
Canyon (Southwest District Health		6	
Madison (Eastern Idaho Public Health)		3	
Kootenai (Panhandle Health District)	1	1	
Boundary (Panhandle Health District)	6		
Bonneville (Eastern Idaho Public Health)	5		
Bonner (Panhandle Health District)	1		

Washington State Department of Health. Measles Cases in Washington State. Available at: https://doh.wa.gov/you-and-your-family/illness-and-disease-z/measles/measles-cases-washington-state
Idaho Department of Health and Welfare. Tracking Measles in Idaho. Available at: https://public.tableau.com/app/profile/idaho.division.of.public.health/viz/TrackingIdahoMeasles/StatewideSummary?publish=yes
Oregon Health Authority. Measles / Rubeola (vaccine-preventable). Available at: https://www.oregon.gov/oha/ph/diseasesconditions/diseasesaz/pages/measles.aspx

Measles Incidence (Cases per Million), 3/2025-2/2026



World Health Organization

Map production: World Health Organization, 2026. All rights reserved
Data source: IVB Database

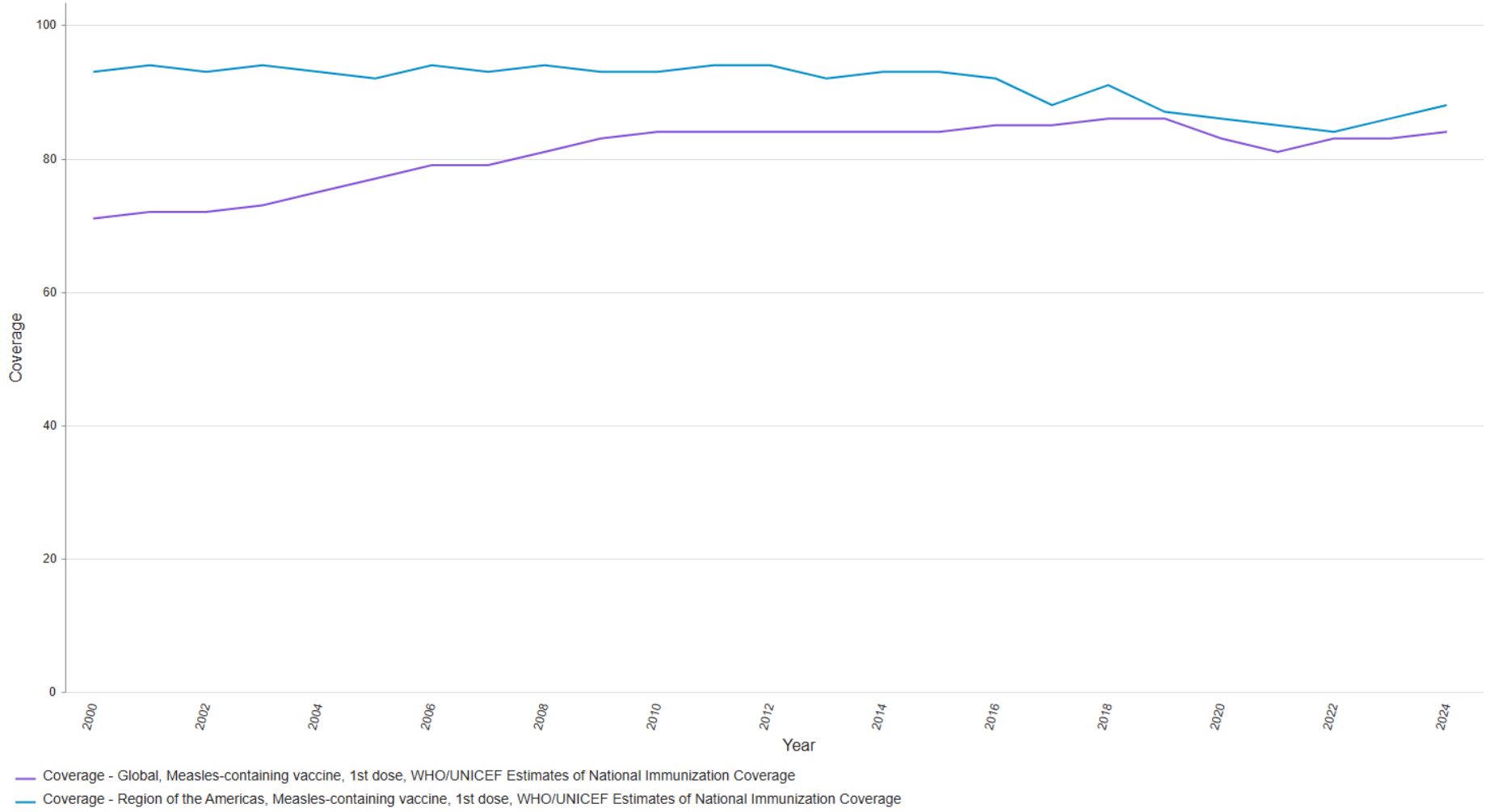
Disclaimer: The boundaries and names shown and the designations used on this map do notimply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation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

Highest incidence rates

Country	Cases	Rate
Mongolia	13363	3,799.44
Yemen	30331	726.08
Kyrgyzstan	5196	712.27
Lao People's Democratic Republic	4914	624.15
Kazakhstan	7771	372.82
Angola	13030	333.76
Cameroon	7184	240.43
Tajikistan	2190	203.03
Central African Republic	1107	200.79
Afghanistan	7392	168.60

World Health Organization. Measles and Rubella Global Update April 2026. Available at: 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

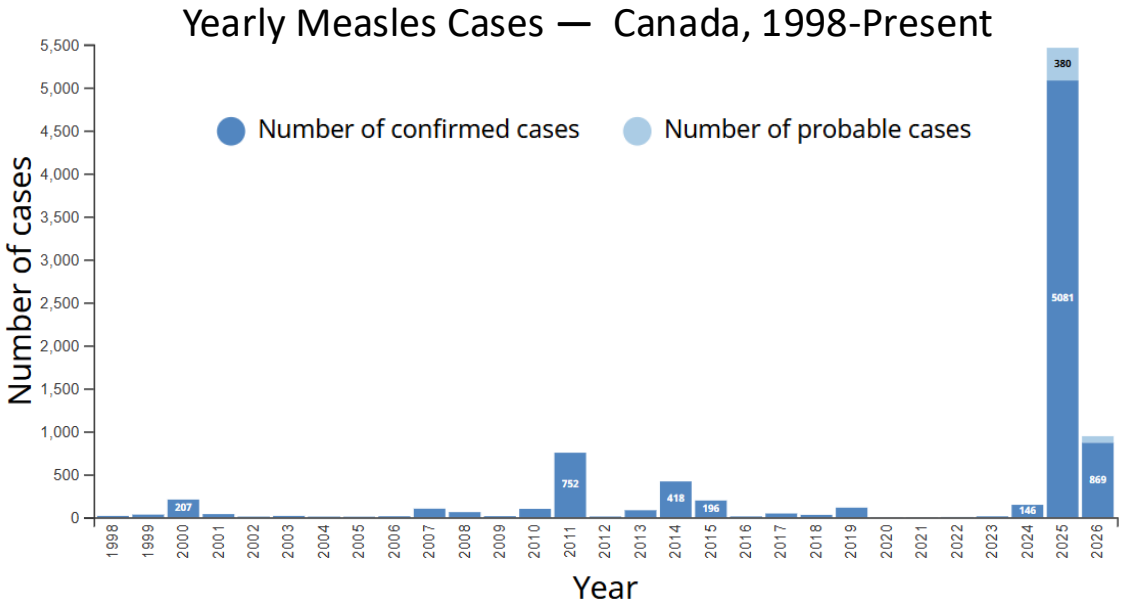
Measles Vaccine Coverage (1st Dose) — Region of the Americas vs. Global, 2000-2024

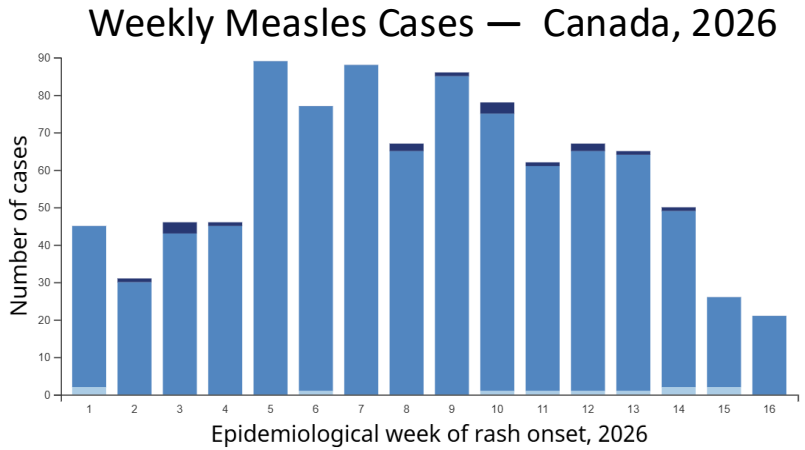


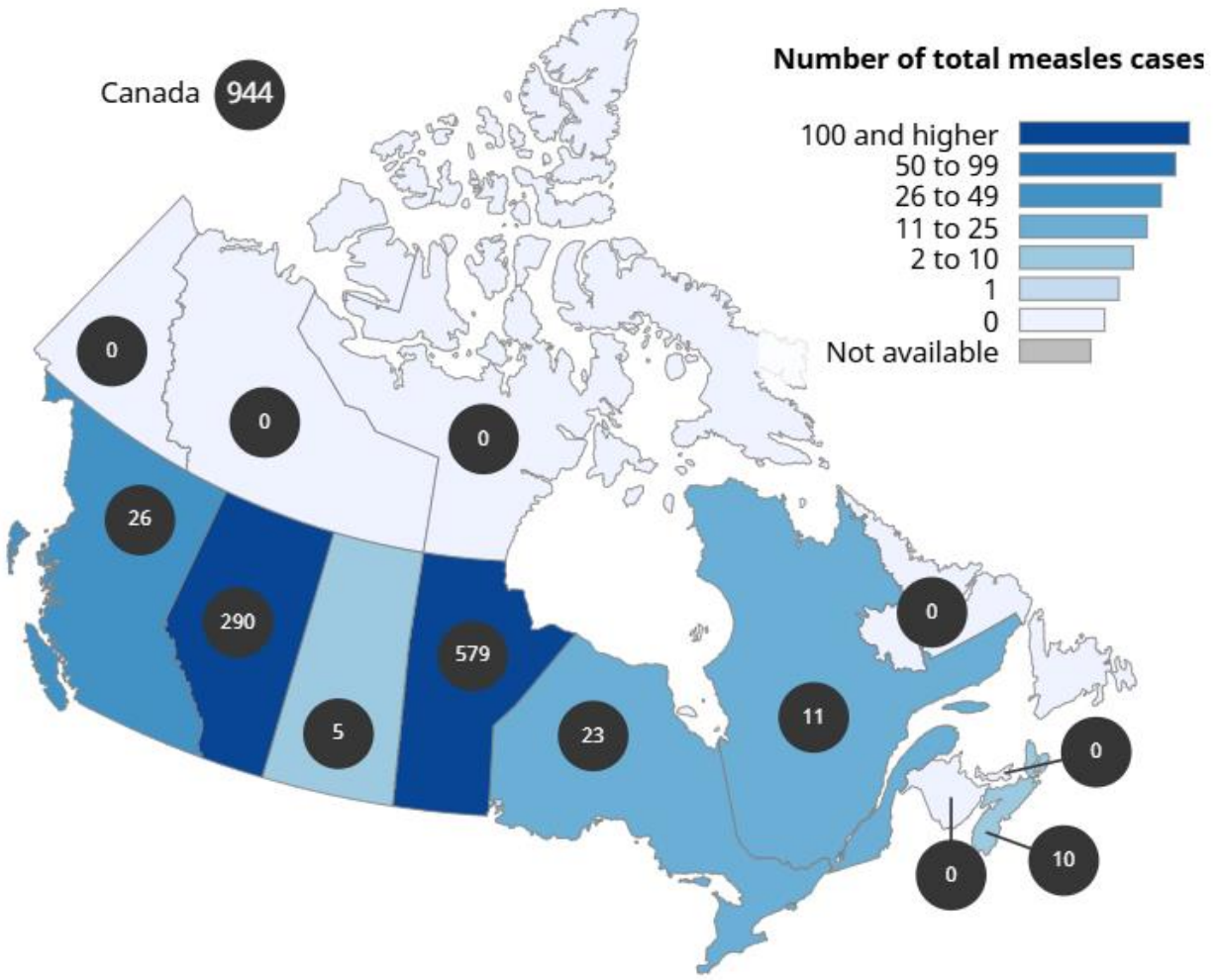
Source: WHO Immunization Data portal

World Health Organization. Measles Vaccination Coverage. Available at: https://immunizationdata.who.int/global/wiise-detail-page/measles-vaccination-coverage?CODE=AMR&ANTIGEN=MCV1&YEAR=

Measles — Canada, 2026 (through 4/25/26)

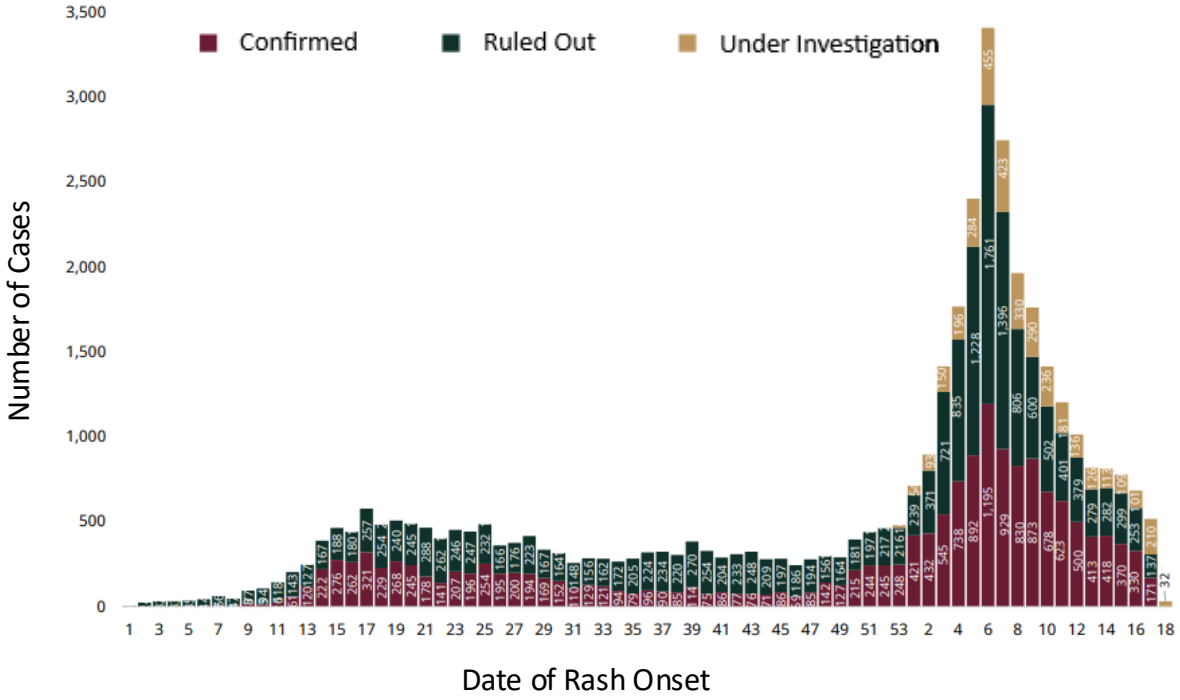




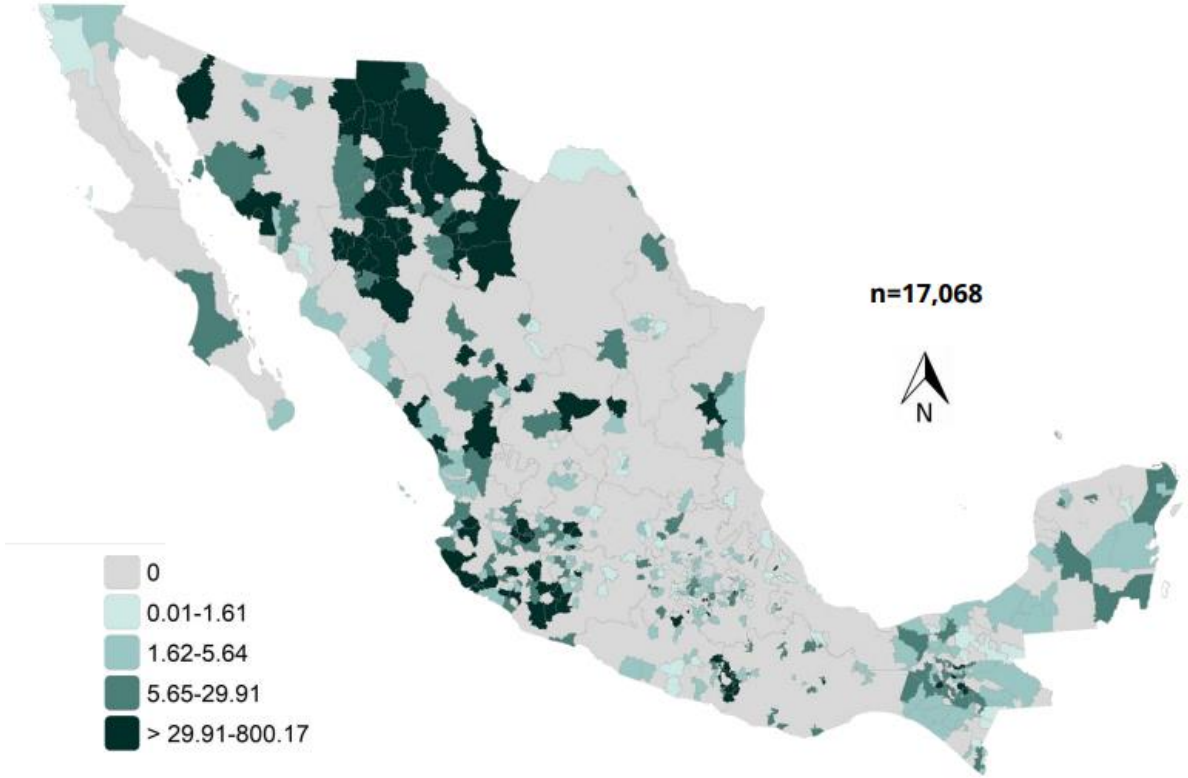


Measles — Mexico, 2025-26 (through 5/5/26)

- 10,460 confirmed cases during 2026 as of as of 5/5/26 (6,608 confirmed cases during 2025).
- Deaths: **13** (**27** deaths during 2025).



Incidence of Confirmed Measles Cases by State and Reporting Municipality 2025-26



Government of Mexico. Secretary of Health. Epidemiological Situation of Measles in Mexico. Available at: https://www.gob.mx/salud/documentos/informe-diario-del-brote-de-sarampion-en-mexico-2026

Prevention of Measles Outbreaks

1. Ensuring communities are vaccinated (goal ≥95%).

2. Infection prevention in healthcare settings.

3. Robust public health response for each case of measles imported.

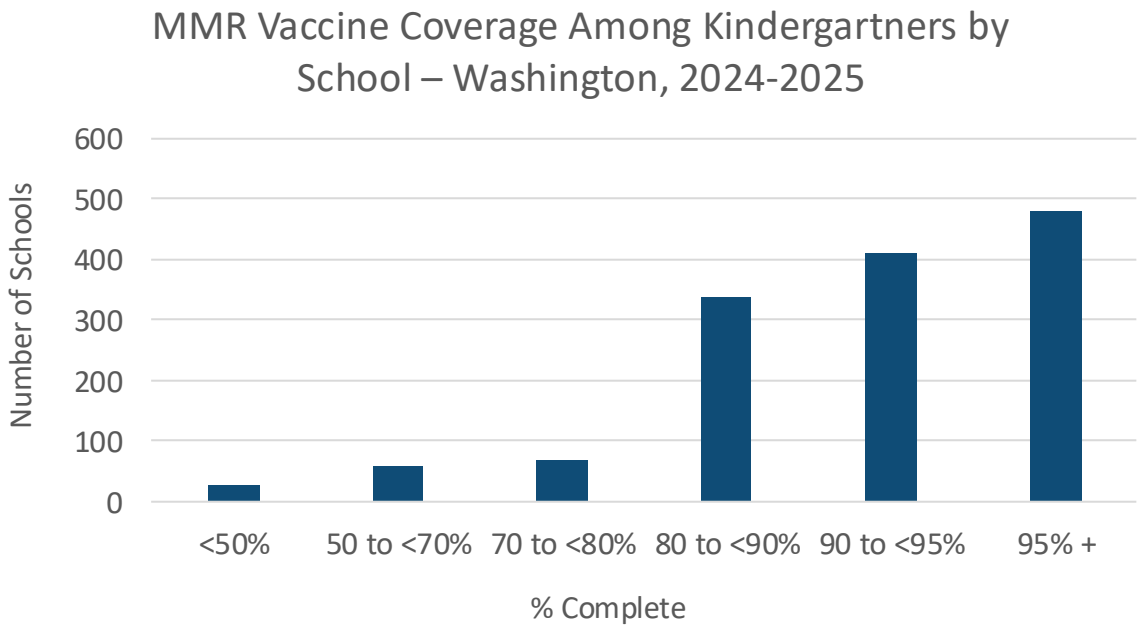
MMR Vaccine Coverage Among Kindergartners – Washington, Oregon, Idaho and the United States, 2024-25

	2 MMR Doses	Exemption from ≥ 1 vaccine
Washington	90.9%	4.8%
Oregon	90.5%	9.8%**
Idaho	78.5%*	15.4%**
National	92.5%	3.6%

Vaccine Effectiveness:
1 dose: 93%
2 doses: 97%

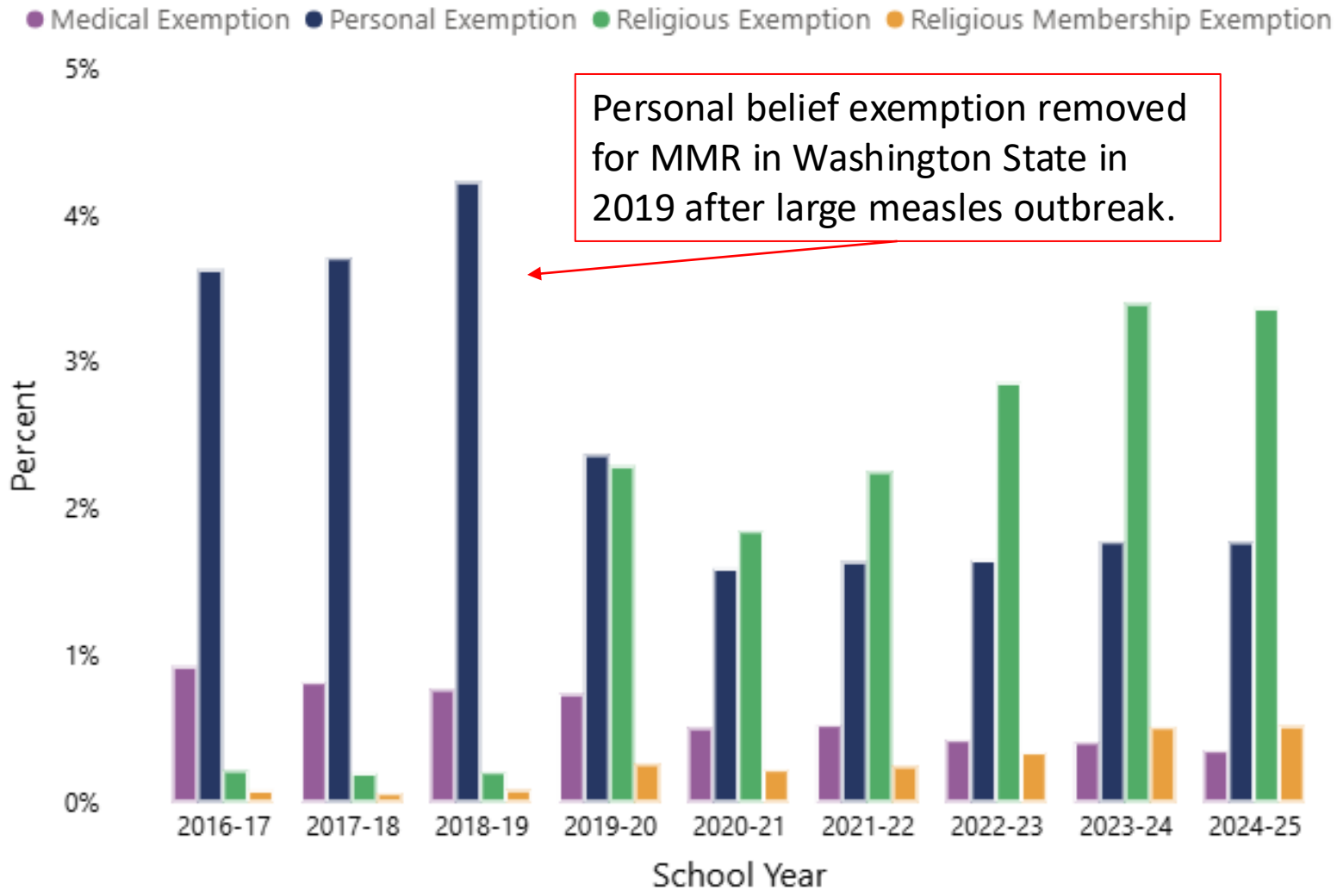
≥95% coverage is needed to prevent outbreaks in communities!

MMR Vaccine Coverage in the Portland Area is below the national median (91.3%).
*This is the lowest rate among all states in the U.S.
** Idaho and Oregon have the highest and 2nd highest exemption rates in the country.



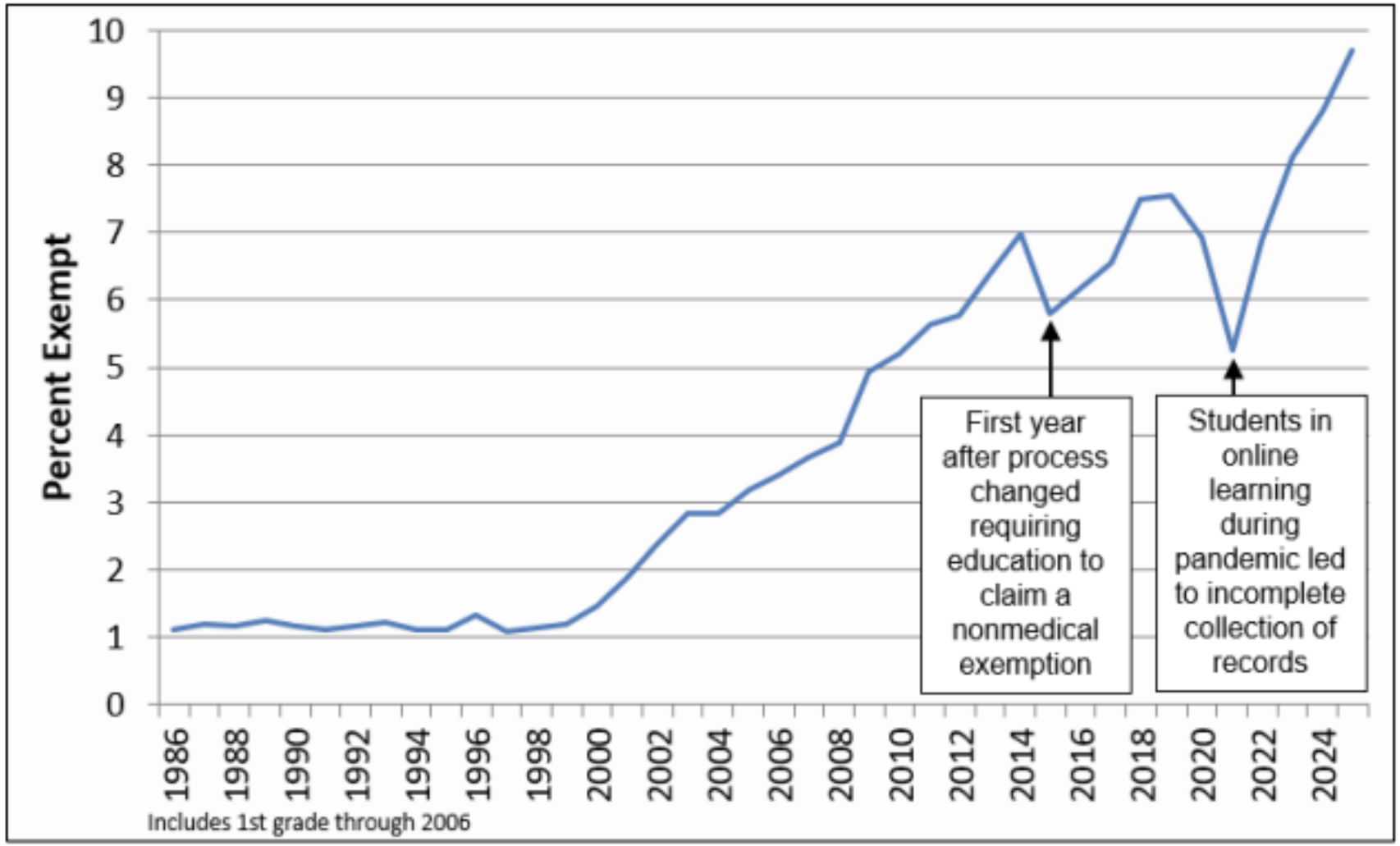
Centers for Disease Control and Prevention. Vaccine Coverage and Exemptions among Kindergartners. Available at: https://www.cdc.gov/schoolvaxview/data/index.html
Washington State Department of Health. School Immunization Data Dashboard. Available at: https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/school-immunization/dashboard

Kindergartners with Exemptions by Exemption Type – Washington, 2016-24



Washington State Department of Health. School Immunization Data Dashboard. Available at: https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/school-immunization/dashboard

Kindergarten Nonmedical Exemption Rates – Oregon, 1986-2025



Oregon Health Authority. Oregon Kindergarten Immunization Summary, School Year 2024-2025 Available at: https://www.oregon.gov/oha/PH/PREVENTIONWELLNESS/VACCINESIMMUNIZATION/GETTINGIMMUNIZED/Documents/SchLawSum.pdf

Prevention: MMR Immunization!

- Children: Dose #1 at 12-15 months; Dose #2 at 4-6 years old, before school entry.

- Anyone traveling internationally (e.g. Mexico and Canada) or to a community with an outbreak (if advised by the local health jurisdiction) without presumptive evidence of measles immunity should be vaccinated at least 2 weeks prior to travel.
  - Infants ≥6 months old: 1 dose (revaccinated with 2 dose series starting at 12 months).
  - ≥ 12 months old: 2 doses at least 28 days apart.

- Adults without presumptive evidence of immunity (i.e. documentation of 1 or 2 doses of MMR vaccine (depending upon risk), laboratory evidence of immunity, laboratory-confirmed disease, or birth before 1957) should also be immunized, with the number of doses depending upon their risk.

  - Those who should receive 2 doses of MMR vaccine (separated by at least 28 days):

    - International travelers (2nd dose at least two weeks prior to travel). This should also be considered for those living or traveling to a community with an outbreak.
    - College students.
    - Household/close contacts of immunosuppressed persons.
    - People with HIV infection with CD4 >200 (live vaccines contraindicated in immunosuppressed persons and pregnant women).
    - Healthcare workers (those born before 1957 and without presumptive immunity should consider 2 doses of MMR vaccine; this is more strongly recommended for communities with outbreaks).
    - Those vaccinated between 1963-1967 and received a killed or unknown type of measles vaccine or a measles vaccine given together with immune globulin should also be immunized (2 doses if above risk factors).

HHS: All individuals are encouraged to consult with their health care providers to understand their options regarding vaccinations.

Centers for Disease Control and Prevention. Routine Measles, Mumps, and Rubella Vaccination. Available at: https://www.cdc.gov/vaccines/vpd/mmr/hcp/recommendations.html#hcp
Centers for Disease Control and Prevention. Questions About Measles. Available at: https://www.cdc.gov/measles/about/questions.html

Strategies to Increase Vaccination Rates

- Clinic processes
  - Reminder/recall: Contacting patients when due/overdue via their preferred communication method.
  - Electronic prompts to remind the provider and patient when vaccines are overdue.
  - Standing orders to allow immunizations by others without direct provider involvement (e.g. nurses or medical assistant).
  - Access: Extended hours, walk-in vaccinations, pharmacy-based immunization, transportation, home visits.
  - Provider audit and feedback with benchmarks (e.g. Healthy People 2030).

- Provider communication
  - Presumptive (assume that the patient is going to receive due vaccines today) recommendations (e.g. Tommy is due for his 12 month shots today). Also recommended for other team members to use this approach.
  - Provide clear, strong recommendations.
  - Motivational interviewing for those with vaccine hesitancy.
    - Explores individuals' reasons for vaccination to help reinforce.
    - Open-ended questions, reflective listening, affirmation of the individual, their strengths, and respect for autonomy.
    - "Elicit-provide-elicit," asking for their understanding or if they have questions, then, after asking permission to share information you have learned, providing relevant information, and then asking what they think about that information, whether it addresses their concerns, and whether you can give them or their child vaccines.
    - CASE Method: C: Corroborate (find some points you can agree on to establish respect), A: About me (tell them about you and how you developed knowledge in the area), S: Science (provide information relevant to the patient), E: Explain (give your recommendation based on science). See Indian Country ECHO/UNM Project ECHO for more info.

Cataldi JR, et al. Evidence-based strategies to increase vaccination uptake: a review. Curr Opin Pediatr. 2020.
O'Leary S. Strategies for Communicating With Parents About Vaccines. JAMA. 2025.
O'Leary ST, et al. Strategies for Improving Vaccine Communication and Uptake. Pediatrics. 2024;153. Available at: https://publications.aap.org/pediatrics/article/153/3/e2023065483/196695/Strategies-for-Improving-Vaccine-Communication-and
Community Preventive Services Task Force. Guide to Community Preventive Services. Vaccination. 2025. Available at: https://www.thecommunityguide.org/topics/vaccination.html.
Kettering C. Indian Country ECHO/UNM Project ECHO Project ECHO "Making a Strong Vaccine Recommendation: Vaccine Communication." Available at: https://projectecho.app.box.com/s/piod28mg2ry66c7zpbf13u9lr3hzhiup

Strategies to Increase Vaccination Rates (cont.)

- Public Health
  - Mass vaccination events
  - Alterative vaccination sites
  - Reviewing/addressing vaccination status with WIC beneficiaries
  - Communication (e.g. public service announcements disseminated by local tribal radio stations; tribal newspapers; social media; posters)
  - Messaging utilizing trusted messengers
- Schools
  - School-based vaccination programs or referrals for vaccinations
  - Education
- Laws
  - Vaccine requirements for school entry and child care: removal of non-medical exemptions

MMR Vaccine Coverage Among Kindergartners in States without non-Medical Exemptions, 2024-25

State	2 MMR Doses
California	96.1%
New York	97.8%
Connecticut	98.2%
Maine	97.6%
West Virginia	NR (98.3% for 2023-24)

Cataldi JR, et al. Evidence-based strategies to increase vaccination uptake: a review. Curr Opin Pediatr. 2020. Community Preventive Services Task Force. Guide to Community Preventive Services. Vaccination. 2025. Available at: https://www.thecommunityguide.org/topics/vaccination.html.
O'Leary ST, et al. Strategies for Improving Vaccine Communication and Uptake. Pediatrics. 2024;153. Available at: https://publications.aap.org/pediatrics/article/153/3/e2023065483/196695/Strategies-for-Improving-Vaccine-Communication-and
Kettering C. Indian Country ECHO/UNM Project ECHO Project ECHO "Making a Strong Vaccine Recommendation: Vaccine Communication." Available at: https://projectecho.app.box.com/s/piod28mg2rv66c7zpbf13u9lr3hzhiup
Centers for Disease Control and Prevention. Checklist of Best Practices for Vaccination Clinics Held at Satellite, Temporary, or Off-Site Locations. 2020. Available at: https://www.izsummitpartners.org/content/uploads/2019/02/off-site-vaccination-clinic-checklist.pdf.
Centers for Disease Control and Prevention. Vaccine Coverage and Exemptions among Kindergartners. Available at: https://www.cdc.gov/schoolvaxview/data/index.html

Infection Prevention in Healthcare Settings: Preparation

- All health care workers should have presumptive evidence of immunity.
  - Documentation of 2 doses of measles vaccination at least 28 days apart (those who received a killed or unknown type of vaccine or a measles vaccine given together with immune globulin from 1963-1967 should be revaccinated with 2 doses of MMR vaccine).
  - Laboratory evidence of immunity.
  - Prior laboratory-confirmed disease.
  - Those born before 1957: Consider 2 doses of MMR vaccine (this is more strongly recommended for communities with outbreaks).
- All health care workers should be up to date on respirator fit testing.
- Identify which room(s) would be used for patients with possible measles.
  - Use an airborne infection isolation room if possible.
  - Otherwise, place in a private room with the door closed (a room that exhausts air from the room outside or has HEPA filtration of recirculated air is preferred).
  - Facilities can also set-up an area for evaluation outside as needed.
- Educate staff regarding when measles should be suspected (e.g. anyone with a fever and generalized maculopapular rash with recent international travel, travel to an area with a measles outbreak, or exposure to a measles case in the past 21 days) and what to do (e.g. provide a mask, immediately bring back to designated room).
- Develop a protocol to screen patients for possible measles on triage and for pre-visit phone calls.
- Develop signs for entrances indicating symptoms of measles and what to do if you or your child has symptoms or has been around someone with measles.

Centers for Disease Control and Prevention. Immunization of health-care personnel: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2011;60(RR-7):1-45. Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm
Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. Available at: https://www.cdc.gov/infection-control/hcp/measles/index.html
Centers for Disease Control and Prevention. Guidelines for Environmental Infection Control in Health-Care Facilities. Available at: https://www.cdc.gov/infection-control/media/pdfs/guideline-environmental-h.pdf. 2003.

Screening Patients on Check-In

If measles cases have been identified in your county use a protocol to screen patients for possible measles at patient registration to minimize exposure to other patients:

- **Fever and rash?**
- Other possible symptoms: cough, runny nose, or red eyes?

AND

- Any of the following in the past 21 days or unvaccinated for measles (MMR)/unknown vaccination status:
  - **International travel**
  - **Travel to a community with a measles outbreak**
  - **Exposure to someone with measles**

➢ Patients with possible measles should be provided with a surgical mask to wear and immediately isolated in a designated room (airborne infection isolation room if available) to minimize exposure to other patients. They should not be waiting in the waiting room.

➢ If a patient calls with symptoms after an exposure or travel internationally or to a community with a measles outbreak, advise them what to do when they arrive (e.g. wait in car and call provided phone number so that someone can meet them and safely escort them inside; which entrance to use; wear a face mask inside).

Infection Prevention in Healthcare Settings (cont.)

- Limit transport within facility to that which is medically necessary.
- Any health care worker who is not immune should not enter the room of any patient being evaluated for measles or for 2 hours after they leave.
- Anyone entering this room should wear a fit-tested N95 respirator (or PAPR) – regardless of whether they have been vaccinated.
- No one else (e.g. other patients, housekeeping) should enter the room for 2 hours (or based on air changes per hour (ACH), the time for 99.9% of airborne contaminants to be removed).
  - A log of persons entering the room can be helpful.
  - The door should remain closed after the patient has left.
  - The room can be cleaned with standard procedures after 2 hours (consider posting time on door).
- If transport is required to another facility, notify EMS and hospital regarding suspected measles and need for airborne precautions.
- If discharged home, instruct patient to isolate at home away from others for 4 days after rash onset while results are pending. If they go to another healthcare facility, they should notify the facility (ideally prior to arrival) that they may have measles.

Centers for Disease Control and Prevention. Immunization of health-care personnel: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2011;60(RR-7):1-45. Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm
Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. Available at: https://www.cdc.gov/infection-control/hcp/measles/index.html
Centers for Disease Control and Prevention. Guidelines for Environmental Infection Control in Health-Care Facilities. Available at: https://www.cdc.gov/infection-control/media/pdfs/guideline-environmental-h.pdf. 2003.

Project Firstline Measles Infection Control

PROJECT FIRSTLINE | American Academy of Pediatrics

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.
- Standard cleaning and disinfection procedures are adequate for measles virus environmental control.

Maculopapular Rash
Source: CDC PHIL

Resources:
- Measles Red Book Online Outbreaks Page
- CDC Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings

Infection Control Micro-Learns User Guide

PROJECT FIRSTLINE

About the Micro-Learns

The Project Firstline Infection Control Micro-Learns are a series of guided infection control discussions that provide brief, on-the-job educational opportunities. Each micro-learn focuses on a single infection control topic and connects infection control concepts to immediate, practical value. Healthcare workers can easily apply the key points to their daily work and perform the recommended actions to keep germs from spreading.

Using the Micro-Learns

The micro-learns can be incorporated into existing opportunities where groups of healthcare workers gather, such as pre-shift "huddles" or team meetings. The sessions should be led or facilitated by an experienced team member with infection control expertise.

Each micro-learn package includes an adaptable discussion guide for the facilitator and one job aid, which facilitators are encouraged to review prior to presenting.

Discussion Guide. The discussion guide is not a script. Facilitators are encouraged to adapt the guide for their audience by incorporating relevant and practical questions and ideas. For instance, facilitators can connect the content to the audience's job duties, facility-specific cases or issues, resources and points of contact, or other information.

Job Aid. The one-page, visual job aid helps to reinforce the key messages of the micro-learn. Facilitators are encouraged to make the job aid available after the micro-learn session, such as in digital or hard copy form.

Notes for Facilitators

- Before presenting a micro-learn, check the policies and protocols at your facility and adapt the content accordingly.
- Build on your knowledge, experience, and awareness to connect the content to local context or relevant recent events so that your audience can apply the concepts confidently.
- The micro-learns reinforce infection control concepts when risks are observed in patients or in the patient environment, not necessarily in visitors or other staff members.

www.cdc.gov/ProjectFirstline

CDC U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

Reduce the Risk of Spread if You Suspect Measles

PROJECT FIRSTLINE

Identify and Isolate

- Quickly identify and isolate patients with known or suspected measles.
  - Isolate patients in an airborne infection isolation room. If that isn't possible, select a private room with a door that shuts and doesn't vent air out into the facility.
  - If unsure of where to place a patient, consult with your facility's Infection Preventionist.
  - Follow your facility's guidance on how to isolate patients.
- Limit transport or movement of patients outside of the room unless medically necessary.

Inform

- Make sure to notify appropriate personnel in your facility as well as public health departments when a measles case is suspected.

Actions You Can Take to Prevent the Spread

- Be up to date on your MMR vaccine.
- Put on a fit-tested N-95 or higher-level respirator before entering a measles patient's room.
- Recommend that the patient wear a mask until appropriately isolated in an airborne infection isolation room.
- Clean your hands before and after seeing the patient.
- Continue to follow routine practices to clean and disinfect surfaces and handle linens.
- Use additional personal protective equipment (PPE) if needed for a specific task.

American Academy of Pediatrics/ Project Firstline Poster. Available at: https://downloads.aap.org/AAP/PDF/ThinkMeasles-final.pdf

Project Firstline Micro-Learn Discussion Guide: Measles. Available at:https://www.cdc.gov/project-firstline/media/pdfs/PFL-MeaslesMicroLearn.pdf

Clinical Evaluation

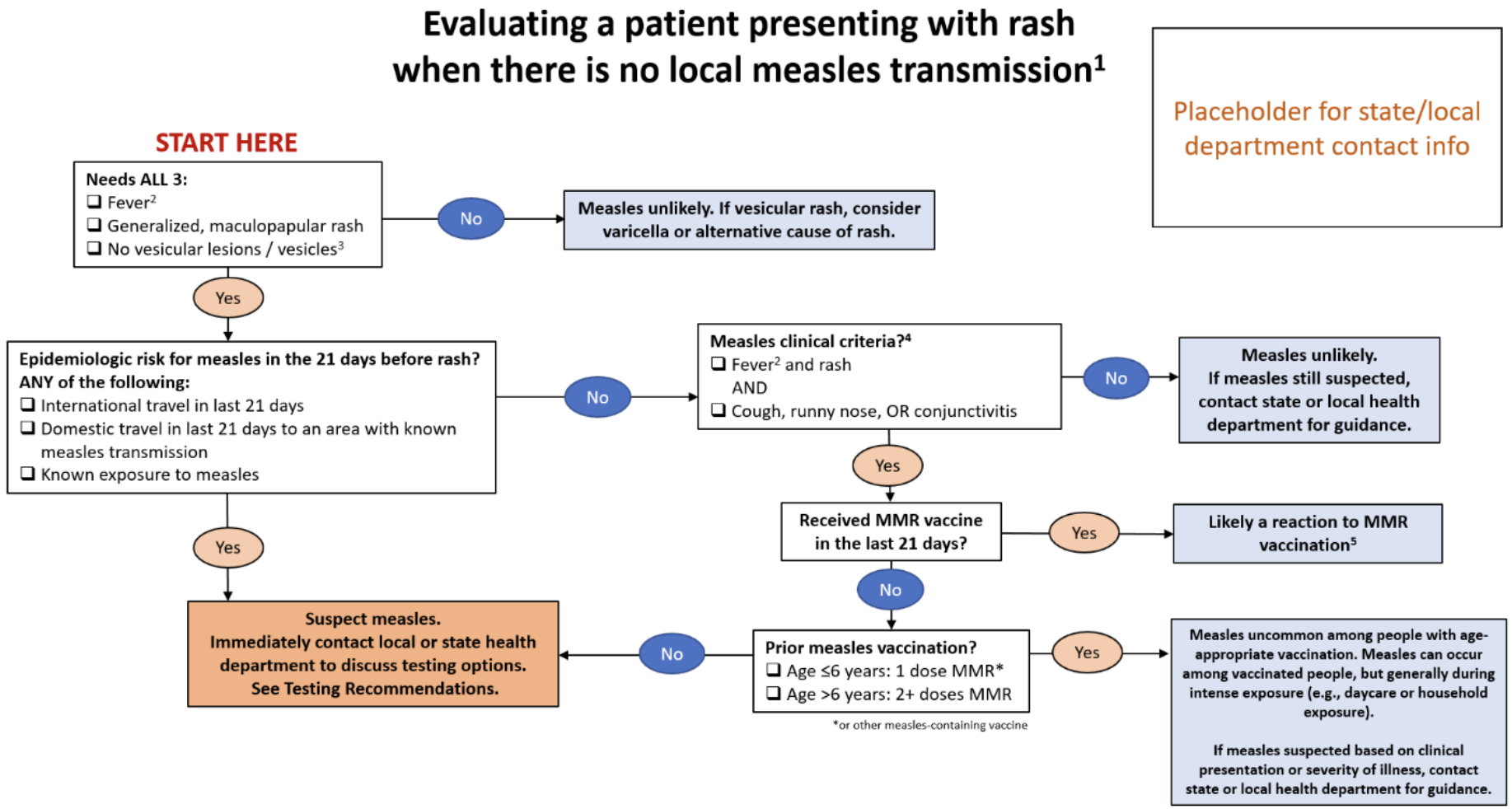
- Symptoms/signs: Fever, descending maculopapular rash, and cough, coryza, or conjunctivitis.
- Epidemiologic risk factors in the past 21 days (international travel, travel to community in the U.S. with an outbreak, contact with a known measles case).
- Vaccination history (prior vaccination does not rule-out; modified measles is milder and less contagious).
- Contact your infection preventionist and the Tribal or Local Health Department immediately if measles is suspected.
- Recommend testing in collaboration with the Tribal or Local Health Department, with specimens sent to the State Public Health Laboratory (PHL) when possible.
- When sending testing to the State PHL, testing needs to be approved first.
- Specimens to be sent:
  - Throat or nasopharyngeal swab for measles PCR in viral transport media
  - Urine for measles PCR (testing according to State Health Department)
  - Blood for measles antibodies (IgM and IgG)

https://phil.cdc.gov

https://www.cdc.gov/measles/signs-symptoms/photos.html

https://phil.cdc.gov

Resources to Assist with Clinical Evaluation



CDC. For Public Health Professionals. Clinical Provider Flowsheet. Available at: https://www.cdc.gov/measles/php/guidance/index.html

Resources to Assist with Clinical Evaluation

Suspect Measles Provider Evaluation Worksheet

*Suspected and confirmed measles cases are **IMMEDIATELY** reportable to your Local Health Jurisdiction*

Patient Information:	Name:		DOB:	MRN #:
Address:	City:	County:	State:	Zip:
Evaluation date:	(If patient is a minor) Parent/Guardian Name:		Phone #: (___) ___-____	
Reporting Facility:	Clinician name:		Clinician phone #: (___) ___-____	

Consider measles in the differential diagnosis of patients with FEVER and RASH:

A) What is the highest temperature recorded?		°F	**Fever onset date:** ___/___/____ N/A (afebrile)
B) Does the patient have a rash?	YES	NO	If no rash, do not collect measles specimens. Consider rule-out testing for other causes of febrile rash illness.
C) Rash characteristics:			**Rash onset date:** ___/___/___
• Was rash preceded by one of the symptoms listed in (D) by 2-4 days?			Measles rash is generally red, maculopapular (no vesicles) and may become confluent. It typically starts at the hairline, then progresses down the face and body. Rash onset typically occurs 2-4 days after symptom onset, which includes fever and at least one of the "3 Cs" (below).
• Did fever overlap rash?			
• Did rash start on head or face?			
D) Has the patient had any of the following symptoms?			
• Cough			**Onset date:** ___/___/____
• Runny nose (coryza)			**Onset date:** ___/___/____
• Red eyes (conjunctivitis)			**Onset date:** ___/___/____
E) Known high-risk exposure in past 21 days? *(ex. Exposure to a confirmed case, international travel, or domestic travel to an area with a current outbreak)*	YES	NO	**Date(s) and place(s) of travel or exposure:**
F) What is the patient's measles immunity status?			Born before Jan 1, 1957 (Presumed immunity)
Unknown			At least one documented measles vaccine. Vaccine date(s):
Unvaccinated (0 doses measles vaccine)			**1st Dose:** ___/___/____ **2nd Dose:** ___/___/____

Fever (A) + a "YES" answer in (B), at least ONE "YES" in (C) and (D), + "YES" in (E) = Measles is HIGHLY SUSPECTED.

IF MEASLES IS SUSPECTED, IMMEDIATELY:

1. **Mask and isolate the patient (in negative air pressure room when possible).**
2. **Call your LOCAL HEALTH JURISDICTION to report the suspected measles case and request permission to test at WA PHL.** (All health care providers must receive approval from local health jurisdiction prior to specimen submission.)

   Local Health Jurisdiction: _____ 24/7 contact number: _____
3. **Collect the following specimens, if testing is approved:**

   (Preferred specimen) **Nasopharyngeal (NP) swab for measles PCR and culture**
   - Most accurate between 0 to 5 days after rash onset.

   Urine for measles PCR and culture:
   - Most accurate between 3 to 10 days after rash onset; may not be positive until >4 days after symptom onset.

   (Acceptable) **Serum for measles IgM and IgG testing:**
   - IgM is most accurate greater than 3 days after rash onset
   - **NOTE:** *neither IgM nor IgG antibody responses can distinguish measles disease from the response to vaccination in a patient with suspected measles that has been vaccinated 6–45 days prior to blood collection.*

For more information on measles specimen collection, testing, reporting, and other details, please visit:
WA DOH PHL Measles Specimen Collection and Submission Instructions
WA Department of Health Measles Provider Resource webpage.

DOH 348-490 **UPDATED: June 2025**
To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email doh.information@doh.wa.gov.

IDAHO MEASLES WORKSHEET

Report all SUSPECTED measles cases to your local public health district within one working day.

✓ **Consider measles in the differential diagnosis of patients with fever (documented in clinic or history of, according to patient or parent/guardian) and rash.**

What is the highest temperature recorded?		°F	**Fever onset date:** ___/___/___

	Yes	No	Unk	Comments
A) Does the rash have any of the following characteristics?				Rash onset date: ___/___/____
Was the rash preceded by one of the symptoms listed in (B) by 2-4 days?				Measles rashes are red, maculopapular rashes that may become confluent – they typically start at hairline, then face, and spreads rapidly down body.
Did fever overlap rash?				
Did rash start on head or face?				
B) Does the patient have any of the following?				Rash onset typically occurs 2-4 days after fever (≥101°F) and cough, conjunctivitis, or coryza.
Cough				
Runny nose (coryza)				
Red eyes (conjunctivitis)				
C) Unimmunized with MMR or unknown measles immune status?				Dates of measles vaccine: #1 ___/___/____ #2 ___/___/____
D) Exposure to a known measles case?				Date and place of exposure:
E) Travel, visit to health care facility, or other known high-risk exposure in past 21 days?				See www.epi.idaho.gov for links to websites with potential exposure sites or contact your local public health district.

✓ **Measles should be highly suspected if the patient has a fever and you answered YES to at least one item in A and B, PLUS a YES in C or D or E. IMMEDIATELY:**

- ❑ Mask and isolate the patient (in negative air pressure room when possible); don N-95 respirator, gown, gloves (airborne plus standard precautions)
- ❑ Call your local public health district
  - *Call 208-327-8625* during normal business hours, or
  - After normal business hours, call Idaho State Communications at 1-800-632-8000
- ❑ **Collect the following specimens**
  - **Serum for rubeola (measles) IgM and IgG antibody testing at a commercial laboratory**
    Draw at least 4-5 ml blood (yields about 1.5 ml serum) in a red or tiger top (serum separator) tube. Store specimen in refrigerator and transport on ice.
  - **Throat or nasopharyngeal (NP) swab for rubeola (measles) PCR test at the Idaho Bureau of Laboratories (IBL), 208-334-0589. Throat swab is the preferred specimen.**
    *Use Dacron™ or rayon swab (not cotton) and **place the swab in 2–3 ml of viral transport medium**. Do not send a dry swab. Store specimen in refrigerator and transport with cold packs. Contact your local public health district if you need appropriate specimen collection material.*
  - **Urine for rubeola (measles) PCR (sent out through IBL) can increase the chance of detecting virus.**
    Do not collect for "rule-out" purposes. Do not catheterize a patient to obtain this specimen. Specimens collected outside of 3–10 days after rash onset are not acceptable. Collect at least 50 ml of clean voided urine in a sterile container and store in refrigerator. Obtain and complete separate CA reference lab submission form from IBL.

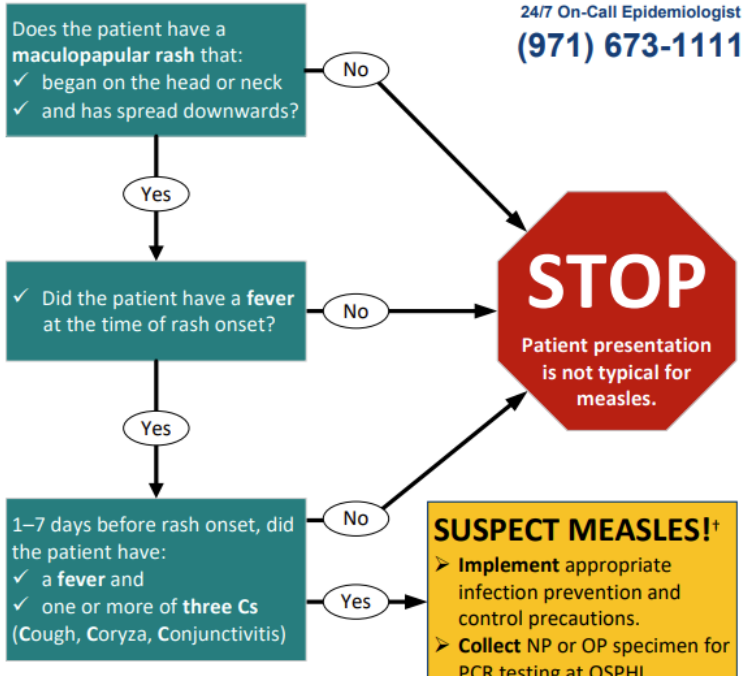
If you have questions about this assessment, call *208-327-8625*. If you have questions about collection and transport of specimens, see http://healthandwelfare.idaho.gov/Portals/0/Health/Labs/SSG/Clinical_Measles_RT-PCR.pdf or call Virology/Serology, Idaho Bureau of Laboratories, at 208-334-0589

2/7/2019 DIVISION OF PUBLIC HEALTH, IDAHO DEPARTMENT OF HEALTH AND WELFARE

Clinical algorithm for suspect measles cases without known exposure to measles*

OREGON HEALTH AUTHORITY
24/7 On-Call Epidemiologist
(971) 673-1111

START HERE



* For patients with a known exposure to a measles case within the last 21 days, clinicians should have a high level of suspicion for measles and should call public health to report any combination of the above symptoms.

† Patients who are unvaccinated or have recent travel to an area where measles is circulating are at highest risk of developing measles.

Washington State Department of Health. Suspect Measles Provider Evaluation Worksheet. Available at: https://doh.wa.gov/sites/default/files/2025-06/348-490-MeaslesAssessmentQuicksheetProviders.pdf
Idaho Department of Health and Welfare. Idaho Measles Worksheet. Available at: https://cdh.idaho.gov/wp-content/uploads/2023/10/MeaslesAssessmentQuicksheetProviders_ID_20190208.pdf
Oregon Health Authority. Clinical Algorithm for Suspect Measles Cases Without Known Exposure to Measles. Available at: https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/DISEASESAZ/Documents/ClinicalAlgorithmforMeasles.pdf

Testing Available at Public Health Laboratories in the Portland Area

Washington Public Health Laboratories

- Approval required by LHJ and WA DOH CDEpi (contacted by LHJ)
- Testing available:
- Measles RT-PCR (specimens: NP/OP/Urine)
  - < 72 hrs of rash onset: NP or OP swab
  - ≥ 72 hrs: Also send a urine specimen
- **Measles IgM is currently being submitted to CDC due to longstanding reagent shortage; IgG available.**
- Shipping Guide:

https://www.medialab.com/dv/dl.aspx?d=1932777&dh=3b5fa&u=69790&uh=0e2a1

- Washington State Local Health Jurisdictions:

https://doh.wa.gov/about-us/washingtons-public-health-system/washington-state-local-health-jurisdictions

Oregon State Public Health Laboratory

- Approval required by LHJ and OHA Acute and Communicable Disease Prevention Program (contacted by LHJ)
- Testing available:
- Measles RT-PCR (specimens: NP/OP/Urine)
  - ≥ 5 days or previously vaccinated: Also send a urine specimen.
- **Measles serology is not available – this needs to be sent to a commercial lab.**
- Specimen Collection/Shipping:

https://www.oregon.gov/oha/PH/LABORATORYSERVICES/Pages/zMeaslesPCR.aspx

- Request Form: https://sharedsystems.dhsoha.state.or.us/DHSForms/Served//le0042.pdf
- Local Public Health Authority Directory:

https://www.oregon.gov/oha/PH/ProviderPartnerResources/LocalHealthDepartmentResources/Pages/lhd.aspx

Idaho Bureau of Laboratories

- Contact local public health district prior to submission
- Testing available:
- Measles RT-PCR: NP/OP swabs
- Urine is submitted to a reference laboratory (contact IBL prior to submission)
- **Measles serology is not available – this needs to be sent to a commercial lab.**
- 2025 Idaho Measles Testing Resources:

https://publicdocuments.dhw.idaho.gov/WebLink/DocView.aspx?id=32882&dbid=0&repo=PUBLIC-DOCUMENTS

- Clinical Specimen Submission Guide:

https://publicdocuments.dhw.idaho.gov/WebLink/DocView.aspx?id=31429&dbid=0&repo=PUBLIC-DOCUMENTS

- Idaho Public Health Districts:

https://healthandwelfare.idaho.gov/health-wellness/community-health/public-health-districts

Identifying Potential Source of Infection

During Exposure Period (7-21 days prior to rash onset):

- International travel?
- Travel to an area of the U.S. with a measles outbreak?
- Contact with a known measles case?
- Contact with international visitors or visitors from an area of the U.S. with a measles outbreak?
- Visits to venues frequented by international visitors?
- Contact with someone with a febrile rash?
- Visits to healthcare facilities?
- Visits to other congregate settings?
- Indoor group activities?

Contact Investigation

Infectious Period: **4 days before rash onset to 4 days after rash onset** (for severely immunocompromised persons, the infectious period is through the illness duration).

- Case interviewed to identify contacts who may have been exposed to measles during the case's infectious period. This includes all persons who shared air space with a person with measles or were in a room up to two hours after the person left without the use of appropriate personal protective equipment (N95 mask or PAPR).
- Case interviewed to identify locations they were at during their infectious period. Where feasible, a list of contacts is obtained from exposure locations (e.g. schools, daycares, healthcare facilities). Locations and times of public exposure in the community are provided to the media to notify the public.
- Contacts at healthcare facilities are identified and evaluated with the assistance of the Infection Preventionists for the facility.
- Determine presumptive immunity:
  - Documentation of measles containing vaccines (i.e. MMR or MMRV).
  - Laboratory evidence of immunity.
  - History of laboratory-confirmed disease.
  - Birth before 1957.
- Collect blood for measles IgG for those without presumptive evidence of immunity.

Measles: Post-Exposure Prophylaxis (PEP)

For known close contacts without presumptive evidence of immunity:

- **MMR vaccine:** Given to those **≥ 6 months old (if no contraindications)** with 0-1 doses (don't wait for Measles IgG results to administer).
  - If given <72 hours after first exposure, quarantine is not needed [except need to be excluded from high-risk settings (e.g. healthcare facilities) and monitored for symptoms during incubation period (day 5-21 for healthcare personnel)].
  - The vaccine is still recommended after this period to protect against *future* exposures.

-OR- (Do not administer both)

- **Immune globulin (if MMR vaccine cannot be given):**
  - Given intramuscularly to **infants < 6 months old and 6-11 months (4-6 days after exposure).**
  - **Given** intravenously to **severely immunosuppressed** individuals and **non-immune pregnant women ≤ 6 days** after *last* exposure. Would need to contact local hospitals to locate available doses.
  - If given ≤ 6 days after *first* exposure, quarantine is not needed (unless < 6 months old) but need to be excluded from high-risk settings for 21-28 days from last exposure, with monitoring for 28 days.

➢ Recommend planning for how you will obtain immune globulin for PEP before you need it, working with local department if unable to obtain when needed (e.g. for Oregon, can contact ACDP on-call Epidemiologist at 971-673-1111) when doses needed: state-supplied-prophy.pdf).

  - I/T/U Facilities can order directly via McKesson [Prime Vendor Account needs to be configured for ordering through McKesson Plasma and Biologics (MBP). You must contact MBP before your first order is placed (1-877-625-2566). NSSC online ordering: https://www.ihs.gov/NSSC/electronic-ordering/].
  - State/local/Tribal health departments can purchase IGIM (GamaSTAN) at a contracted rate through MMCAP Infuse (an account must already be established to fill orders quickly).

American Academy of Pediatrics. Measles. In Kimberlin DW, Banerjee R, Barnett ED, Lynfield R, Sawyer MH, Long SS, eds. Red Book: 2024–2027 Report of the Committee on Infectious Diseases. 33rd Edition. Itasca, IL: American Academy of Pediatrics; 2024: 570-585.
Centers for Disease Control and Prevention. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm

Contact Investigation and Tools

- Measles Investigation Form

- Create line lists for cases and for contacts
  - Name, demographics, work in high-risk setting, contact information
  - Date of exposure, location
  - Basis of presumptive immunity
  - Vaccination history, with dates of prior MMR/MMRV doses (must have documentation).
  - Measles IgG results
  - Dates of post-exposure prophylaxis and type (vaccine or immune globulin)
  - Daily log for active symptom monitoring
  - Notes
  - Example: Linelist.xlsx

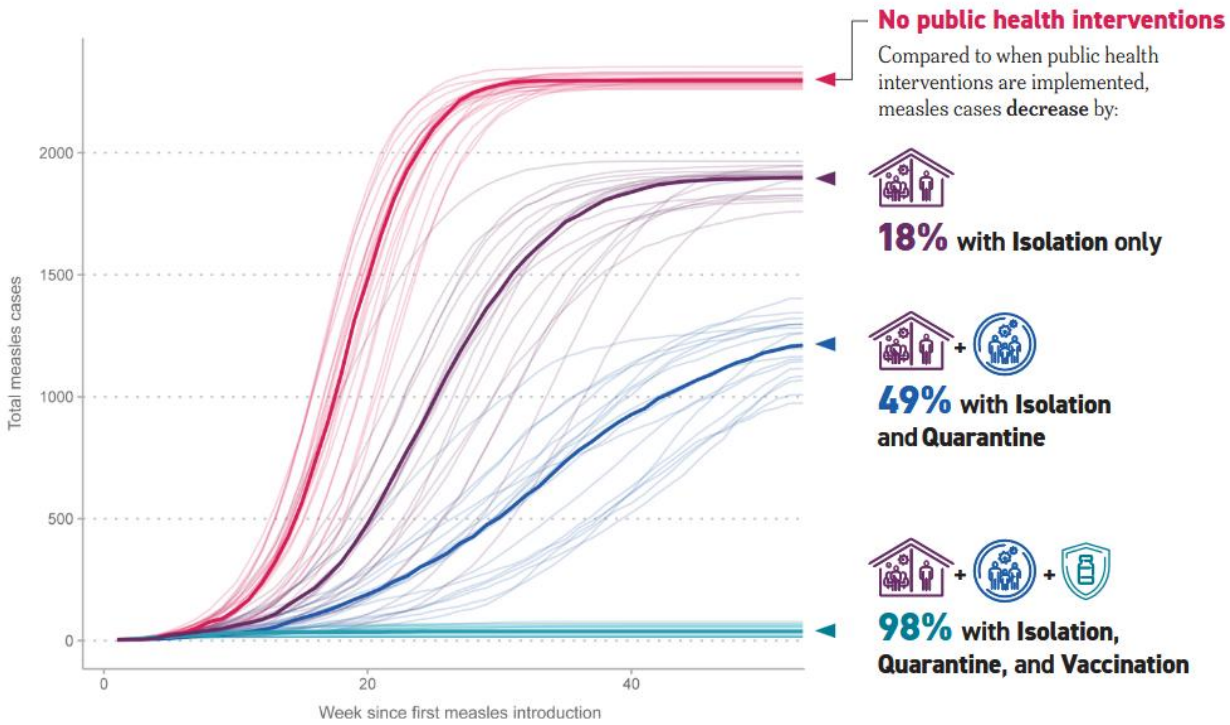
CDC. For Public Health Professionals. Available at: https://www.cdc.gov/measles/php/guidance/index.html

Isolation, Quarantine, and Exclusion from High-risk Settings

- **Isolation**: Separates people with suspected or confirmed communicable disease from those who are not sick with the disease.
  - Suspected and confirmed measles cases need to be isolated at home, away from others within the household, during their infectious period: 4 days before rash onset through 4 days after rash onset (for severely immunocompromised persons, the infectious period is through the illness duration).

- **Quarantine**: Separates susceptible people who were exposed to a communicable disease from others during the incubation period (7-21 days) (in case they become sick).
  - Susceptible persons exposed to measles who did not receive post-exposure prophylaxis in time, are quarantined at home from day 7 after first exposure through day 21 after last exposure.
  - Active symptom monitoring is performed during this time.
  - Any contact developing symptoms needs to be tested for measles.

- **Exclusion from high-risk settings (when not otherwise quarantined):**
  - CDC: Exposed non-immune healthcare workers should be excluded from workplace starting on day 5 after first exposure through day 21 after last exposure (through day 28 if received IG PEP). During an outbreak, non-immune persons should be excluded from high-risk settings (e.g. schools/daycares) until 21 days after rash onset in the last case.
  - OHA recommends exclusion of exposed, non-immune individuals from high-risk settings (schools, day cares) from day 5 after first exposure through day 21 after last exposure.
  - WA: Local health officers can exclude susceptible persons from schools and childcare centers in the setting of an outbreak.



https://www.cdc.gov/measles/downloads/measles-interventions-outbreaks.pdf

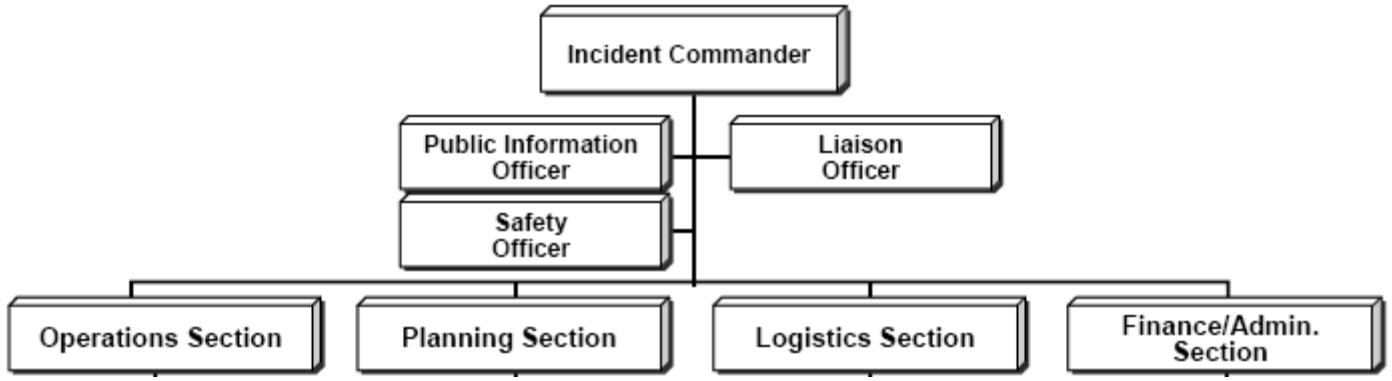
Filardo TD, Mathis A, Raines K, et al. Measles. In: Roush SW, Baldy LM, Mulroy J, eds. Manual for the Surveillance of Vaccine Preventable Diseases. Atlanta, GA: Centers for Disease Control and Prevention. Paged last reviewed:05/13/2019. Available at: https://www.cdc.gov/surv-manual/php/table-of-contents/chapter-7-measles.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.html; Washington State Legislature. WAC 246-110-020. Available at: https://app.leg.wa.gov/wac/default.aspx?cite=246-110-020; Oregon Secretary of State. Oregon Health Authority. Public Health Division – Chapter 333. Division 19. 333-019-0010. Available at: https://secure.sos.state.or.us/oard/viewSingleRule.action?ruleVrsnRsn=306682; Idaho Department of Health and Welfare. Idaho Administrative Code. Available at: https://proddfmmainsa.blob.core.windows.net/dfm-admin-website/rules/current/16/160210.pdf. Senate Bill 1023 "Idaho Medical Freedom Act." Available at: https://legislature.idaho.gov/wp-content/uploads/sessioninfo/2025/legislation/S1023E2.pdf

Communication: Press Releases and Health Alerts

- For public locations where it is not possible to identify persons exposed, exposure notifications should be issued via press release/media briefing.
  - Symptoms of measles.
  - Monitoring period (incubation period).
  - How to best protect themselves (e.g. check immunization records; if they or their child is unvaccinated or has a weakened immune system to contact their provider).
  - What to do if symptoms develop (e.g. call the clinic or hospital ahead to notify them of the need for evaluation for measles).
- Health alert should be sent regarding measles cases to providers, infection preventionists, and leadership at local health care facilities.
  - Situational awareness.
  - Recommendations for facility preparation (e.g. signage, triage, isolation).
  - Ensuring immunization of patients and staff.
  - Increasing recognition of measles cases (educating about symptoms and to ask about travel/exposure history in past 21 days).
  - Promoting immediate public health reporting and testing through public health laboratories.

Measles: Public Health Response

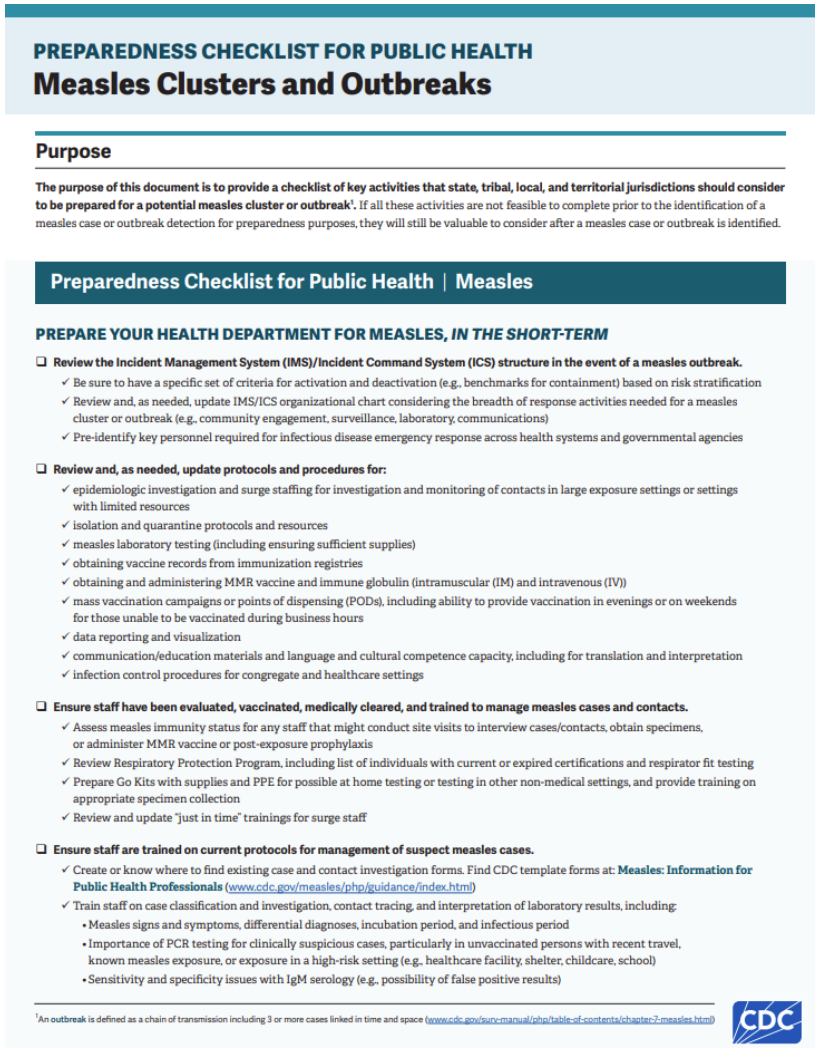
- To help organize the public health response, an incident command system is often utilized at the local health jurisdiction.



- Close collaboration is essential, with contact persons identified for each partner (Tribe, local health jurisdiction, health care facilities, schools, etc.).

ICS Organizational Structure and Elements. https://training.fema.gov/emiweb/is/icsresource/assets/ics%20organizational%20structure%20and%20elements.pdf

Public Health Preparedness



PREPAREDNESS CHECKLIST FOR PUBLIC HEALTH

Measles Clusters and Outbreaks

Purpose

The purpose of this document is to provide a checklist of key activities that state, tribal, local, and territorial jurisdictions should consider to be prepared for a potential measles cluster or outbreak[1]. If all these activities are not feasible to complete prior to the identification of a measles case or outbreak detection for preparedness purposes, they will still be valuable to consider after a measles case or outbreak is identified.

Preparedness Checklist for Public Health | Measles

PREPARE YOUR HEALTH DEPARTMENT FOR MEASLES, *IN THE SHORT-TERM*

❑ **Review the Incident Management System (IMS)/Incident Command System (ICS) structure in the event of a measles outbreak.**
- ✓ Be sure to have a specific set of criteria for activation and deactivation (e.g., benchmarks for containment) based on risk stratification
- ✓ Review and, as needed, update IMS/ICS organizational chart considering the breadth of response activities needed for a measles cluster or outbreak (e.g., community engagement, surveillance, laboratory, communications)
- ✓ Pre-identify key personnel required for infectious disease emergency response across health systems and governmental agencies

❑ **Review and, as needed, update protocols and procedures for:**
- ✓ epidemiologic investigation and surge staffing for investigation and monitoring of contacts in large exposure settings or settings with limited resources
- ✓ isolation and quarantine protocols and resources
- ✓ measles laboratory testing (including ensuring sufficient supplies)
- ✓ obtaining vaccine records from immunization registries
- ✓ obtaining and administering MMR vaccine and immune globulin (intramuscular (IM) and intravenous (IV))
- ✓ mass vaccination campaigns or points of dispensing (PODs), including ability to provide vaccination in evenings or on weekends for those unable to be vaccinated during business hours
- ✓ data reporting and visualization
- ✓ communication/education materials and language and cultural competence capacity, including for translation and interpretation
- ✓ infection control procedures for congregate and healthcare settings

❑ **Ensure staff have been evaluated, vaccinated, medically cleared, and trained to manage measles cases and contacts.**
- ✓ Assess measles immunity status for any staff that might conduct site visits to interview cases/contacts, obtain specimens, or administer MMR vaccine or post-exposure prophylaxis
- ✓ Review Respiratory Protection Program, including list of individuals with current or expired certifications and respirator fit testing
- ✓ Prepare Go Kits with supplies and PPE for possible at home testing or testing in other non-medical settings, and provide training on appropriate specimen collection
- ✓ Review and update "just in time" trainings for surge staff

❑ **Ensure staff are trained on current protocols for management of suspect measles cases.**
- ✓ Create or know where to find existing case and contact investigation forms. Find CDC template forms at: **Measles: Information for Public Health Professionals** (www.cdc.gov/measles/php/guidance/index.html)
- ✓ Train staff on case classification and investigation, contact tracing, and interpretation of laboratory results, including:
  - Measles signs and symptoms, differential diagnoses, incubation period, and infectious period
  - Importance of PCR testing for clinically suspicious cases, particularly in unvaccinated persons with recent travel, known measles exposure, or exposure in a high-risk setting (e.g., healthcare facility, shelter, childcare, school)
  - Sensitivity and specificity issues with IgM serology (e.g., possibility of false positive results)

[1]An outbreak is defined as a chain of transmission including 3 or more cases linked in time and space (www.cdc.gov/surv-manual/php/table-of-contents/chapter-7-measles.html)

CDC

Recommendations for health departments, healthcare systems, schools/daycares

Public Health

- Review ICS structure, activation/deactivation criteria, key personnel
- Review/update protocols
- Review surge staffing plans
- Train staff
- Ensure staff who may be involved in response have presumptive immunity and respiratory fit testing is current
- Ensure adequate supplies: Laboratory testing, N-95 respirators
- Plan how to obtain/administer MMR vaccine and immune globulin (IM and IV)
- Develop educational materials
- Plan for isolation/quarantine of persons who cannot stay in their current location

Health Care

- Ensure healthcare workers have presumptive evidence of immunity and are up to date on respirator fit testing
- Train staff, including front desk, to recognize, isolate, and evaluate patients with possible measles and in infection prevention
- Develop signage
- Ensure adequate supplies (as above)

CDC. Preparedness Checklist for Public Health: Measles Clusters and Outbreaks. Available at: https://www.cdc.gov/measles/downloads/measles-public-health-checklist.pdf

Resources for Public Health Departments

CDC:

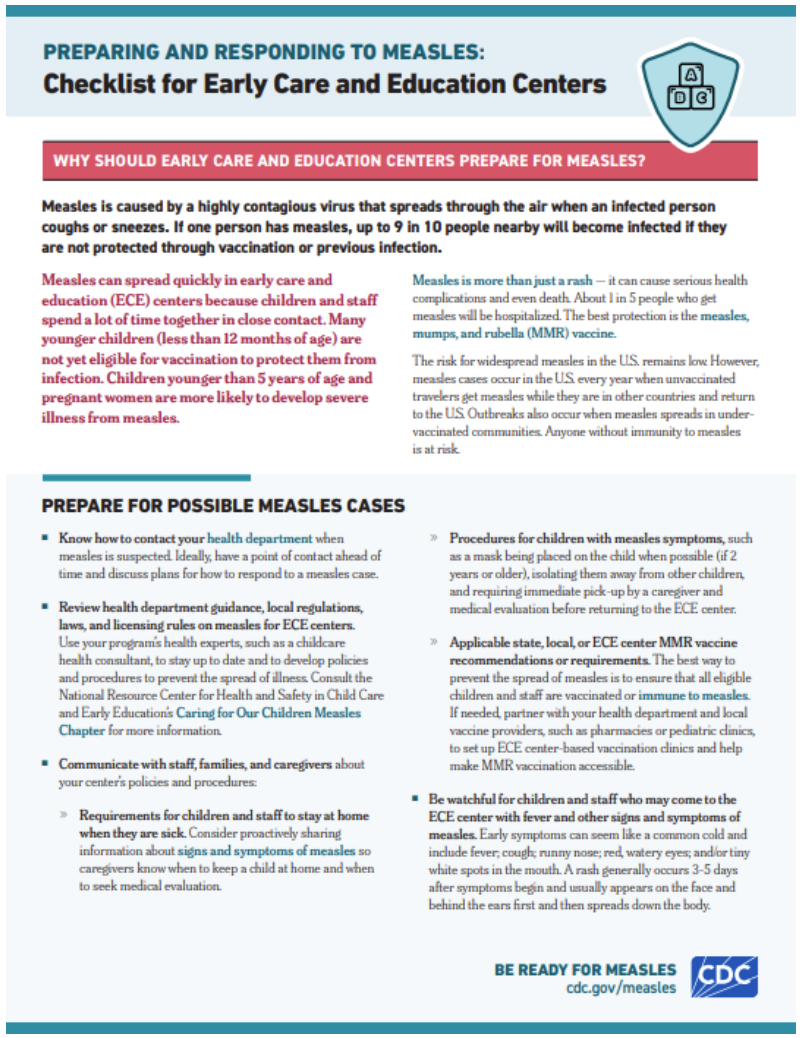
- Be Ready for Measles Toolkit
  - Measles Case and Susceptible Contacts Line List Template
  - Measles Investigation Form with Script
  - Public Health Preparedness Checklist: Measles Clusters and Outbreaks
  - Immune globulin for PEP fact sheet
  - Information for the public: Letters, fact sheets, social media graphics, videos
  - Checklists available for congregate settings: Correctional Facilities, Early Care and Education Centers, Institutions of Higher Education, K-12 Schools, Shelters, Summer Camps
  - Measles Notification Templates
  - Information for Providers
- Manual for the Surveillance of Vaccine-Preventable Diseases

Johns Hopkins Bloomberg School of Public Health: Center for Outbreak Response and Innovation

- Templates:
  - Isolation, quarantine, symptom monitoring letters
  - School exposure notification, clinician alerts, press releases
  - REDCap templates for case investigation and contact monitoring
  - Resources compiled from health departments

CDC. For Public Health Professionals. Available at: https://www.cdc.gov/measles/php/guidance/index.html
CDC. Be Ready for Measles Toolkit. Available at: https://www.cdc.gov/measles/php/toolkit/index.html
Johns Hopkins Bloomberg School of Public Health: Center for Outbreak Response and Innovation. Measles Resources Available at: https://cori.centerforhealthsecurity.org/outbreak/measles-resources-publications-media/

Checklists for Early Care and Education Centers and K-12 Schools



PREPARING AND RESPONDING TO MEASLES:

Checklist for Early Care and Education Centers

WHY SHOULD EARLY CARE AND EDUCATION CENTERS PREPARE FOR MEASLES?

Measles is caused by a highly contagious virus that spreads through the air when an infected person coughs or sneezes. If one person has measles, up to 9 in 10 people nearby will become infected if they are not protected through vaccination or previous infection.

Measles can spread quickly in early care and education (ECE) centers because children and staff spend a lot of time together in close contact. Many younger children (less than 12 months of age) are not yet eligible for vaccination to protect them from infection. Children younger than 5 years of age and pregnant women are more likely to develop severe illness from measles.

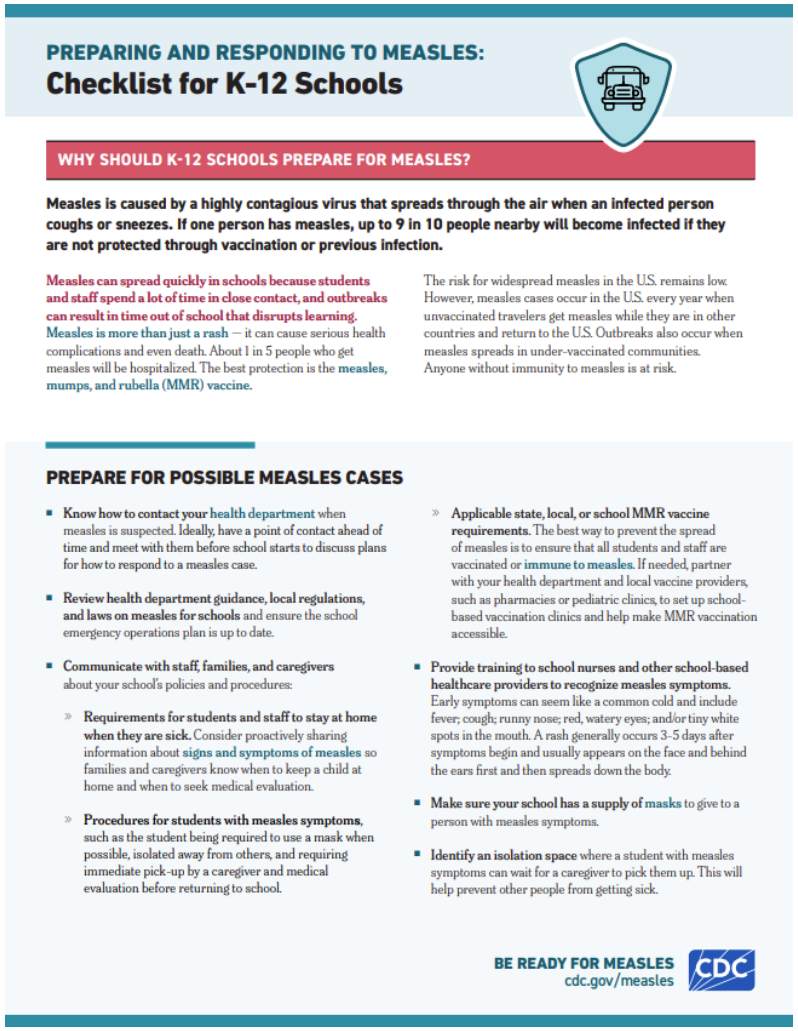
Measles is more than just a rash — it can cause serious health complications and even death. About 1 in 5 people who get measles will be hospitalized. The best protection is the **measles, mumps, and rubella (MMR) vaccine.**

The risk for widespread measles in the U.S. remains low. However, measles cases occur in the U.S. every year when unvaccinated travelers get measles while they are in other countries and return to the U.S. Outbreaks also occur when measles spreads in under-vaccinated communities. Anyone without immunity to measles is at risk.

PREPARE FOR POSSIBLE MEASLES CASES

- **Know how to contact your health department** when measles is suspected. Ideally, have a point of contact ahead of time and discuss plans for how to respond to a measles case.
- **Review health department guidance, local regulations, laws, and licensing rules on measles for ECE centers.** Use your program's health experts, such as a childcare health consultant, to stay up to date and to develop policies and procedures to prevent the spread of illness. Consult the National Resource Center for Health and Safety in Child Care and Early Education's **Caring for Our Children Measles Chapter** for more information.
- **Communicate with staff, families, and caregivers** about your center's policies and procedures:
  - **Requirements for children and staff to stay at home when they are sick.** Consider proactively sharing information about **signs and symptoms of measles** so caregivers know when to keep a child at home and when to seek medical evaluation.
  - **Procedures for children with measles symptoms,** such as a mask being placed on the child when possible (if 2 years or older), isolating them away from other children, and requiring immediate pick-up by a caregiver and medical evaluation before returning to the ECE center.
  - **Applicable state, local, or ECE center MMR vaccine recommendations or requirements.** The best way to prevent the spread of measles is to ensure that all eligible children and staff are vaccinated or **immune to measles.** If needed, partner with your health department and local vaccine providers, such as pharmacies or pediatric clinics, to set up ECE center-based vaccination clinics and help make MMR vaccination accessible.
- **Be watchful for children and staff who may come to the ECE center with fever and other signs and symptoms of measles.** Early symptoms can seem like a common cold and include fever; cough; runny nose; red, watery eyes; and/or tiny white spots in the mouth. A rash generally occurs 3-5 days after symptoms begin and usually appears on the face and behind the ears first and then spreads down the body.

BE READY FOR MEASLES
cdc.gov/measles



PREPARING AND RESPONDING TO MEASLES:

Checklist for K-12 Schools

WHY SHOULD K-12 SCHOOLS PREPARE FOR MEASLES?

Measles is caused by a highly contagious virus that spreads through the air when an infected person coughs or sneezes. If one person has measles, up to 9 in 10 people nearby will become infected if they are not protected through vaccination or previous infection.

Measles can spread quickly in schools because students and staff spend a lot of time in close contact, and outbreaks can result in time out of school that disrupts learning.
Measles is more than just a rash — it can cause serious health complications and even death. About 1 in 5 people who get measles will be hospitalized. The best protection is the **measles, mumps, and rubella (MMR) vaccine.**

The risk for widespread measles in the U.S. remains low. However, measles cases occur in the U.S. every year when unvaccinated travelers get measles while they are in other countries and return to the U.S. Outbreaks also occur when measles spreads in under-vaccinated communities. Anyone without immunity to measles is at risk.

PREPARE FOR POSSIBLE MEASLES CASES

- **Know how to contact your health department** when measles is suspected. Ideally, have a point of contact ahead of time and meet with them before school starts to discuss plans for how to respond to a measles case.
- **Review health department guidance, local regulations, and laws on measles for schools** and ensure the school emergency operations plan is up to date.
- **Communicate with staff, families, and caregivers** about your school's policies and procedures:
  - **Requirements for students and staff to stay at home when they are sick.** Consider proactively sharing information about **signs and symptoms of measles** so families and caregivers know when to keep a child at home and when to seek medical evaluation.
  - **Procedures for students with measles symptoms,** such as the student being required to use a mask when possible, isolated away from others, and requiring immediate pick-up by a caregiver and medical evaluation before returning to school.
  - **Applicable state, local, or school MMR vaccine requirements.** The best way to prevent the spread of measles is to ensure that all students and staff are vaccinated or **immune to measles.** If needed, partner with your health department and local vaccine providers, such as pharmacies or pediatric clinics, to set up school-based vaccination clinics and help make MMR vaccination accessible.
- **Provide training to school nurses and other school-based healthcare providers to recognize measles symptoms.** Early symptoms can seem like a common cold and include fever; cough; runny nose; red, watery eyes; and/or tiny white spots in the mouth. A rash generally occurs 3-5 days after symptoms begin and usually appears on the face and behind the ears first and then spreads down the body.
- **Make sure your school has a supply of masks** to give to a person with measles symptoms.
- **Identify an isolation space** where a student with measles symptoms can wait for a caregiver to pick them up. This will help prevent other people from getting sick.

BE READY FOR MEASLES
cdc.gov/measles

CDC. Be Ready for Measles Toolkit. Available at: https://www.cdc.gov/measles/php/toolkit/index.html

Summary

- 1,814 confirmed cases among 36 states during 2026 as of 4/30, nearly 80% of the number of cases during 2025. 92% of cases unvaccinated or with unknown vaccination status.
- Portland Area: Washington: 40 cases; Oregon: 22 cases, Idaho: 10 cases.
- ≥ 95% vaccine coverage is needed to prevent measles outbreaks in communities.
- In 2024-25, MMR coverage among kindergartners continued to decline. Washington: 90.9%, Oregon: 90.5%, and Idaho: 78.5%.
- MMR vaccination rates are much lower in some communities and schools (e.g. in Washington, 26 (2%) schools: <50% of kindergartners up to date on MMR immunization).
- Idaho and Oregon have the highest and 2nd highest exemption rates in the country.

Recommendations

- Ensure your patients, families, and community are up to date on their measles immunizations (goal ≥95% up to date).
- Ensure all health care workers have presumptive evidence of measles immunity and that Respirator Fit Testing has been done in the past year.
- Consider measles in anyone with a fever and generalized maculopapular rash with recent international travel or travel to an area with a measles outbreak, exposure to a measles case, or who meets clinical criteria and is unvaccinated. Recommend testing performed in collaboration with local health jurisdiction.
- Train staff (e.g.Project Firstline: Measles Infection Control Microlearn with discussion guide), including front-desk to recognize possible measles, immediately mask and bring back to a designated room (e.g. airborne infection isolation room if available).
- If a measles case is identified in your community, recommend signage and a protocol to screen patients for possible measles (e.g. fever and rash, with international travel, travel to a community with a measles outbreak, or known exposure to measles in the past 21 days).
- Immediately report suspected cases to local or Tribal public health and recommend testing performed in collaboration (nasopharygneal or throat swab for measles PCR, urine for PCR particularly if ≥ 72 hrs after rash onset, sent to state PHL if possible; blood for measles IgM and IgG sent to a commercial laboratory).
- Advise patients with suspected measles to isolate at home, away from others through 4 days after rash onset (for severely immunocompromised persons, the infectious period is through the illness duration) or measles has been ruled out.
- Use of quarantine for susceptible persons exposed to measles (who did not receive post-exposure prophylaxis in time) from day 7 after first exposure through day 21 after last exposure decreases cases by 49% vs. 18% for isolation alone (model assumes public health guidance is only followed by 50%).
- Exclusion: Exposed non-immune healthcare workers should be excluded from the workplace from day 5 after first exposure through day 21 after last exposure (through day 28 if received IG PEP). During an outbreak, non-immune persons should be excluded from high-risk settings (e.g. schools/daycares) until 21 days after rash onset in the last case.

Patient Education Resources

IHS Division of Epidemiology and Disease Prevention Educational Resources;

National IHS Public Health Council Public Health Messaging

Northwest Portland Area Indian Health Board (NPAIHB): VacciNative; Native Boost

Johns Hopkins Center for Indigenous Health. Knowledge Center: Resource Library

Washington State Department of Health: Measles Communications Toolkit for Washington State Partners; Measles | Washington State Department of Health; Immunizations and Vaccines | Washington State Department of Health

Oregon Health Authority: Oregon Health Authority : Measles / Rubeola (vaccine-preventable) : Diseases A to Z : State of Oregon; Immunization Resources

Idaho Department of Health & Welfare: Measles | Idaho Department of Health and Welfare; Child and Adolescent Immunization; Adult Immunization

Centers for Disease Control and Prevention: About Measles | Measles (Rubeola) | CDC; Measles Resources | Measles (Rubeola) | CDC; Measles Videos | Measles (Rubeola) | CDC

Children's Hospital of Philadelphia Vaccine Education Center: Vaccines and Infectious Diseases in the News | Children's Hospital of Philadelphia; Vaccine and Vaccine Safety-Related Q&A Sheets

Immunize.org: Clinical Resources A-Z

Boost Oregon: Videos and Resources

Indian Country ECHO/UNM Project ECHO: Making a Strong Vaccine Recommendation: Vaccine Communication, MMR Vaccine Outreach Strategies, Current Measles Response and Clinical and Prevention Best Practices

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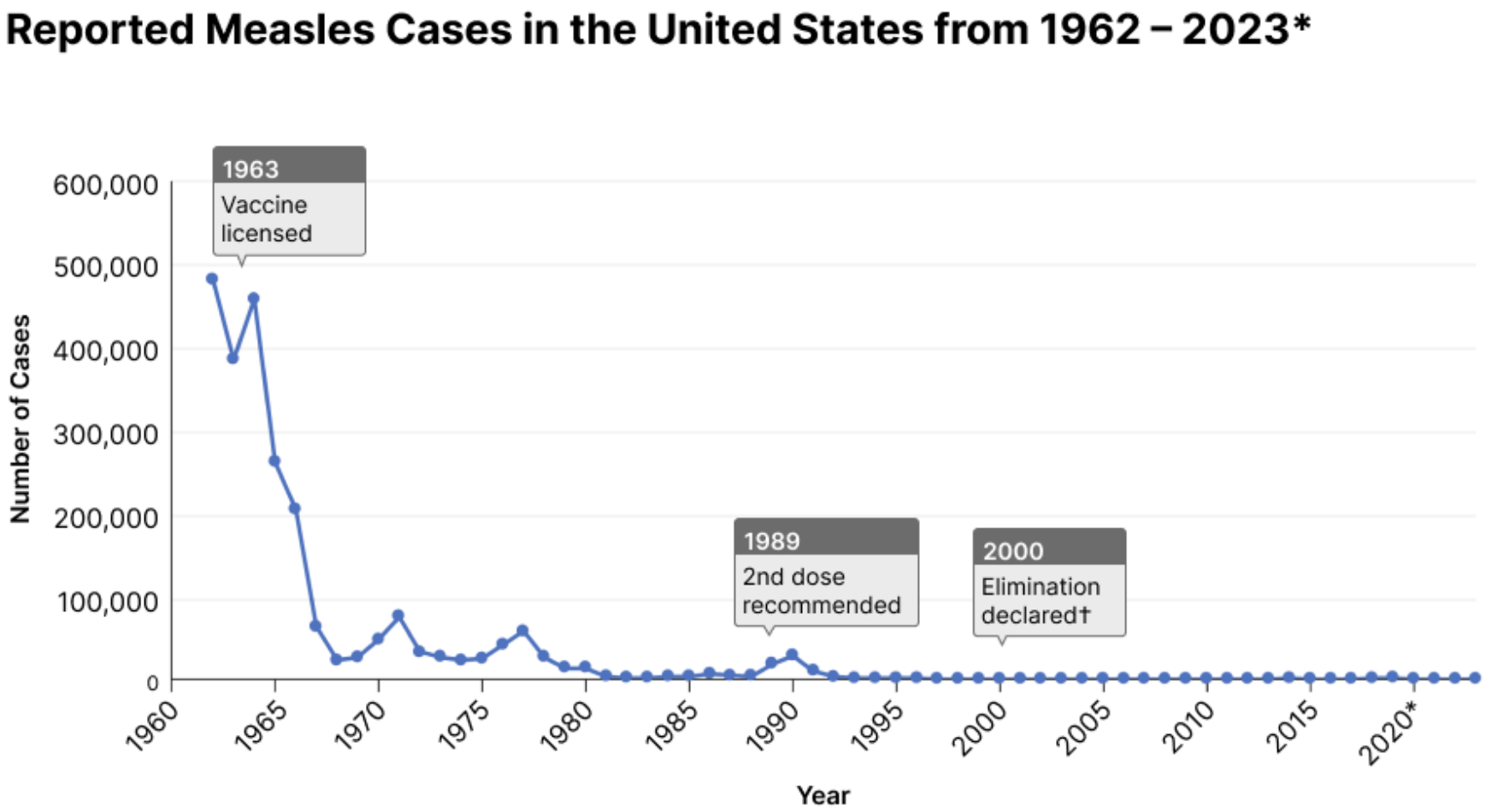
Thank you!

Any questions?


INDIAN HEALTH SERVICE
PHS · 1955 ·

Measles Elimination in the U.S. After Introduction of the Vaccine



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Measles: Symptoms and Signs

- Caused by the Measles virus.
- Symptoms and Signs:
  - Starts with a mild fever, and can have a cough, coryza (runny nose), or conjunctivitis (red, watery eyes).
  - In 2-3 days, the fever spikes, often >104°F, and a red maculopapular rash develops, starting on the face, first along the hairline and behind the ears, and spreads down to the trunk and extremities. The rash starts off with discrete lesions that then coalesce.
  - Patients may have “Koplik spots”: white lesions inside the cheeks that occur 1-2 days before the rash.

https://phil.cdc.gov

https://www.cdc.gov/measles/signs-symptoms/photos.html

https://phil.cdc.gov

https://phil.cdc.gov

Measles: Complications

- Hospitalization: 1/5 people with measles.
- Ear infection: 1/10 children with measles.
- Diarrhea: 1/10 people with measles.
- Pneumonia: 1/20 children with measles.
- Acute encephalitis: 1/1000 children with measles; can cause seizures, can result in deafness or intellectual disability.
- Death: 1-3/1,000 children with measles (from respiratory or neurologic complications).
- Groups at highest risk for complications: children < 5 years-old, pregnant women, immunocompromised persons, those with severe malnutrition, including those with Vitamin A deficiency, adults > 20 years-old.

Other long-term risks:

- Decreased immune response to other infections for a few years afterwards.

  Rare:

  - Subacute sclerosing panencephalitis (fatal degenerative neurologic disease manifesting 7-10 years after the infection): 7-11/100,000 people with measles; risk greatest among children < 2 years-old.
  - Measles inclusion body encephalitis (subacute, with progressive neurologic dysfunction among immunocompromised individuals within 1 year of measles infection).

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Case Definitions

Clinical Description: "An acute illness characterized by: Generalized, maculopapular rash lasting ≥3 days; **and** Temperature ≥101°F or 38.3°C; **and** Cough, coryza, or conjunctivitis"

Confirmed Case:

"An acute febrile rash illness† with:

- Isolation of measles virus‡ from a clinical specimen; or
- Detection of measles-virus specific nucleic acid‡ from a clinical specimen using polymerase chain reaction; or
- IgG seroconversion‡ or a significant rise in measles immunoglobulin G antibody‡ using any evaluated and validated method; or
- A positive serologic test for measles immunoglobulin M antibody‡§; or
- Direct epidemiologic linkage to a case confirmed by one of the methods above.

† Temperature does not need to reach ≥101°F/38.3°C and rash does not need to last ≥3 days.
‡ Not explained by MMR vaccination during the previous 6-45 days.
§ Not otherwise ruled out by other confirmatory testing or more specific measles testing in a public health laboratory."

Probable Case:

"In the absence of a more likely diagnosis, an illness that meets the clinical description with:

- No epidemiologic linkage to a laboratory-confirmed measles case; **and**
- Noncontributory or no measles laboratory testing."

https://ndc.services.cdc.gov/case-definitions/measles-2013/

Measles: How is it Transmitted?

- Transmission: Airborne and contact with infectious droplets.

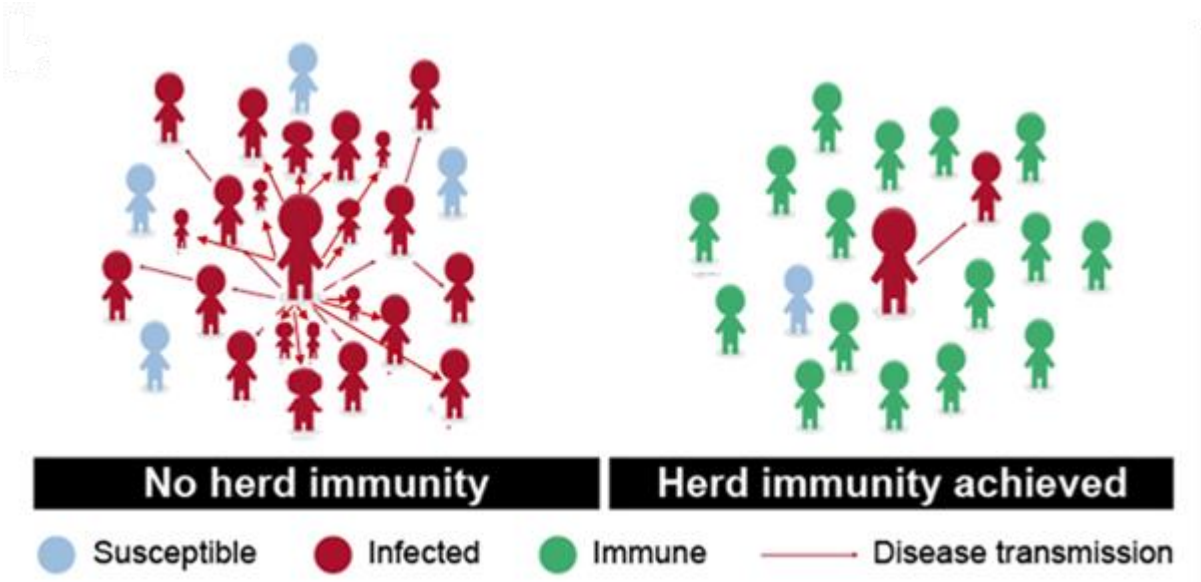
- A person can be infected from being in a room up to 2 hours (usually within 1 hour) after the person with measles has left that room.

CDC Public Health Image Library

https://www.cdc.gov/measles/causes/index.html

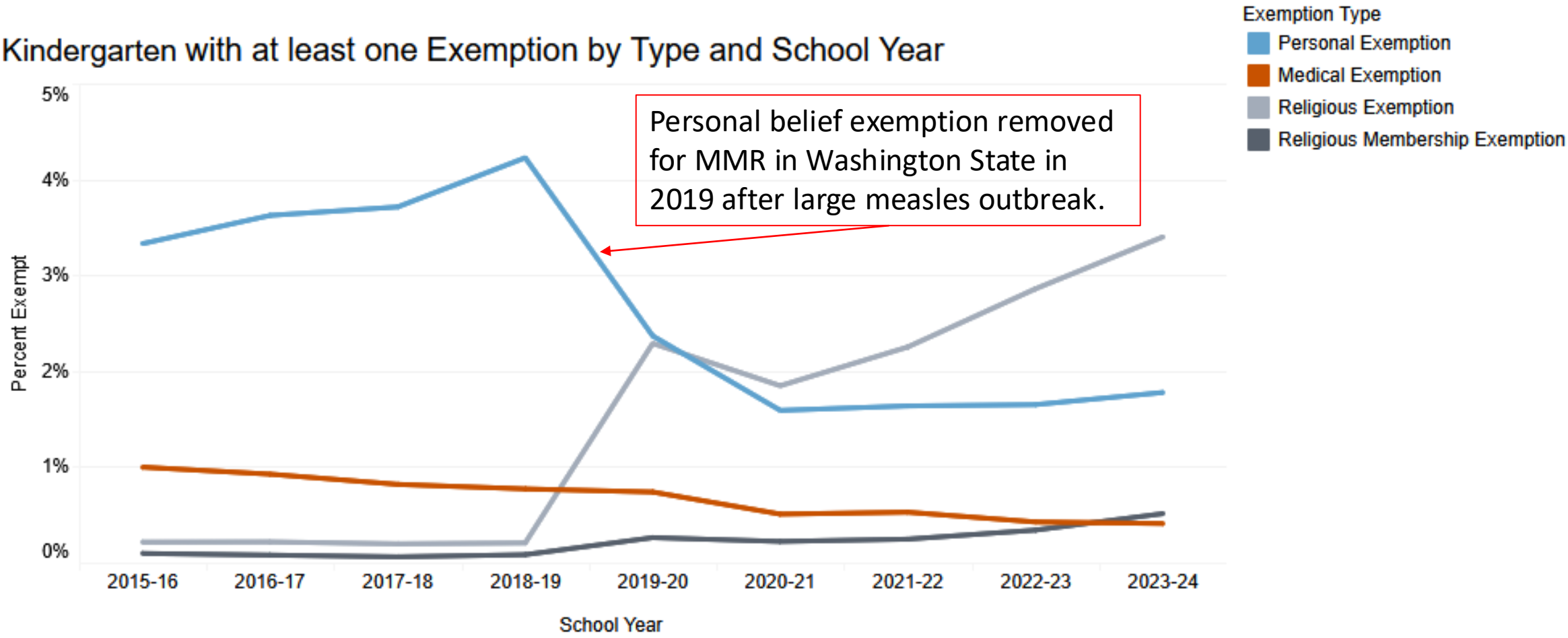
Measles: How Infectious Is It?

- One of the most infectious diseases.
- Exposure of 10 non-immune people can lead to infection in 9 (90%).
- The basic reproduction number (R_0) is the number of secondary cases that develop from one infectious case in a completely susceptible population (diagram on left)
- When there is sufficient herd immunity in a population, the virus will not spread. This is called the herd immunity threshold (diagram on right). Herd immunity also protects those who cannot be immunized (e.g. young infants, immunosuppressed).
- The higher the R_0, the higher the herd immunity threshold, and greater % of vaccine coverage needed to prevent ongoing transmission in a community.
- R_0 for measles has been estimated at 12-18 (though is dependent not just on the pathogen, but also on the number of contacts, which can vary in different settings).
- ≥95% coverage is needed to prevent outbreaks in communities.



Adapted from NIH graphic available at: https://www.gao.gov/products/gao-20-646sp

Kindergartners with Exemptions by Exemption Type – Washington, 2015-2024



Washington State Department of Health. School Immunization Data Dashboard. Available at: https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/school-immunization/dashboard

National Conference of State Legislatures. **State Non-Medical Exemptions from School Immunization Requirements. Available at: https://www.ncsl.org/health/state-non-medical-exemptions-from-school-immunization-requirements**

MMR Vaccination Rates by IHS Area, December 31, 2025 vs. Prior 2 Quarters

	19-35 months % Vaccinated with 1 dose of MMR			13-17 years % Vaccinated with 2 doses of MMR		
	June 30	September 30	December 31	June 30	September 30	December 31
National	**83.4**	**83.6**	**82.0**	**92.9**	**92.9**	**93.0**
Alaska	87.9	86.3	86.1	96.8	96.6	96.7
Albuquerque	85.6	84.9	84.9	95.8	93.5	91.1
Bemidji	76.9	76.1	77.0	94.1	70.6	93.6
Billings	75.5	80.0	74.1	92.2	91.9	90.5
California	66.6	69.3	63.9	79.9	78.2	79.6
Great Plains	87.1	88.2	87.1	97.4	97.8	96.9
Nashville	82.3	83.1	87.1	94.2	97.6	88.5
Navajo	95.3	95.7	91.5	91.5	97.8	96.8
Oklahoma	74.2	76.5	76.5	84.7	92.6	92.1
Phoenix	79.0	76.8	72.2	96.7	95.6	91.2
Portland	**68.9**	**80.9**	**81.8***	**95.7**	**96.9**	**97.0***
Tuscon	92.4	88.1	87.5	99.0	98.8	97.9

*Based on 10 reporting I/T/U facilities

IHS National Immunization Reporting System Reports. Available at: https://www.ihs.gov/nonmedicalprograms/ihpes/Immunizations/index.cfm?module=immunizations&option=reports

MMR Vaccination Rates by IHS Area, March 31, 2026

	19-35 months % Vaccinated with 1 dose of MMR		13-17 years % Vaccinated with 2 doses of MMR	
	September 30	March 31	September 30	March 31
National	**83.6**	**80.1**	**92.9**	89.2
Alaska	86.3	85.1	96.6	87.5
Albuquerque	84.9	81.9	93.5	95.1
Bemidji	76.1	64.5	70.6	93.1
Billings	80.0	75.2	91.9	72.0
California	69.3	63.1	78.2	59.5
Great Plains	88.2	83.2	97.8	98.2
Nashville	83.1	58.4	97.6	86.2
Navajo	95.7	94.6	97.8	95.1
Oklahoma	76.5	73.8	92.6	91.9
Phoenix	76.8	75.7	95.6	96.7
Portland*	**80.9**	**80.1**	**96.9**	91.6
Tuscon	88.1	85.6	98.8	98.0

*Based on 9 (20%) of 45 reporting facilities

IHS National Immunization Reporting System Reports. Available at: https://www.ihs.gov/nonmedicalprograms/ihpes/Immunizations/index.cfm?module=immunizations&option=reports

Cost of Measles Cases

Median cost per case (2018 dollars):

- Healthcare: $14,270
- Public health: $18,661 (41-99 public health personnel involved for outbreaks with 22-88 cases)
- Total: $32,805*

* Only one study included additional indirect costs from losses of paid employment, with an average total cost of $1,032 (adjusted to equivalent 2018 dollars) reported by families per quarantined child.

935 measles cases X $32,805 per case = $30,672,675!

(larger outbreaks associated with lower per case costs, however)

Pike J, Leidner AJ, Gastañaduy PA. A Review of Measles Outbreak Cost Estimates From the United States in the Postelimination Era (2004–2017): Estimates by Perspective and Cost Type. Clinical Infectious Diseases, 71:2020, Pages 1568–1576.

Infection Prevention: Preparation for First Responders

- All first responders, including volunteers, should have presumptive evidence of immunity:
  - Documentation of 2 doses of measles vaccination at least 28 days apart (those who received a killed or unknown type of vaccine or a measles vaccine given together with immune globulin from 1963-1967 should be revaccinated with 2 doses of MMR vaccine)
    - This is also recommended for those born before 1957
  - Laboratory evidence of immunity
  - Prior laboratory-confirmed disease
- All health care workers should be up to date on N95 respirator fit testing.
- Consider contacting ambulance manufacturer to determine air changes per hour (ACH) in the patient compartment of the ambulance if not known.
- Educate staff regarding when measles should be suspected (e.g. anyone with a fever and generalized maculopapular rash with recent international travel, travel to an area with a measles outbreak, or exposure to a measles case in the past 21 days).

Centers for Disease Control and Prevention. Immunization of health-care personnel: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2011;60(RR-7):1-45. Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm
Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. Available at: https://www.cdc.gov/infection-control/hcp/measles/index.html
Centers for Disease Control and Prevention. Guidelines for Environmental Infection Control in Health-Care Facilities. Available at: https://www.cdc.gov/infection-control/media/pdfs/guideline-environmental-h.pdf. 2003.
Pediatric Pandemic Network. Measles Guide for Emergency Medical Services. Available at: https://pedspandemicnetwork.org/our-work/measles-guide-for-emergency-medical-services/.

Infection Prevention for First Responders

- Transport:
  - Isolate patient and driver compartments if possible.
    - Patient compartment exhaust should be on high (if the air is exhausted outside and does not recirculate).
    - Driver compartment ventilation fan should be on high without recirculation.
  - If can't isolate compartments, windows should be rolled down in driver's compartment, vents should be open, and N95 respirators should be worn.
  - Patients should be transported to facilities with an airborne infection isolation room. The receiving facility should be informed of the concern for measles prior to arrival.
- Any first responder who is not immune should not care for/ share the airspace of any patient being evaluated for measles or for 2 hours after they leave.
- Anyone sharing the airspace with the patient with possible measles should be wearing a fit-tested N95 respirator (or PAPR) – regardless of whether they have been vaccinated.
- If first responders may encounter body fluids (e.g. aerosol generating procedures such as non-invasive ventilation, suctioning, nebulizer administration, intubation) they should wear gloves, a gown, and eye protection additionally.
- For intubated patients, it is recommended to use a bag-valve device or ventilator equipped with an in-line HEPA filter or a HEPA filter on the exhalation port.

Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. Available at: https://www.cdc.gov/infection-control/hcp/measles/index.html
Centers for Disease Control and Prevention. Guidelines for Environmental Infection Control in Health-Care Facilities. Available at: https://www.cdc.gov/infection-control/media/pdfs/guideline-environmental-h.pdf. 2003.
Pediatric Pandemic Network. Measles Guide for Emergency Medical Services. Available at: https://pedspandemicnetwork.org/our-work/measles-guide-for-emergency-medical-services/.

Infection Prevention for First Responders (cont.)

- The patient compartment should remain empty for 2 hours after the patient leaves.
  - Or, based on air changes per hour (ACH), the time for 99.9% of airborne contaminants to be removed
  - ACH can be obtained from the ambulance manufacturer; there are tables in CDC's Guidelines for Environmental Infection Control in Health-Care Facilities to look-up the time for 99.9% of airborne contaminants to be removed.
- The patient compartment can be cleaned with standard procedures after 2 hours. All potentially contaminated/high touch surfaces, including the stretcher, should be disinfected.
- Equipment (e.g. stethoscope, BP cuff) in contact with the patient should be either disposable or disinfected before use on another patient.

Exposures to Measles Among First Responders

- Post-exposure prophylaxis for those without presumptive evidence of immunity:
  - **MMR vaccine:** If given <72 hours after exposure, these individuals do not need to be quarantined during incubation period, except healthcare workers/first responders are still excluded from work during this time. The vaccine is still recommended to give after this period to protect against future exposures.

  -OR- (Do not administer both)

  - **Immune globulin (if MMR vaccine cannot be given):** Given intravenously to those who are **severely immunosuppressed** and **non-immune pregnant women ≤ 6 days** after exposure. If given ≤ 6 days after exposure, healthcare workers/first responders do not need to be quarantined but are still excluded from work for 21-28 days from exposure, with monitoring for 28 days.
- Healthcare workers/first responders without presumptive evidence of immunity need to be quarantined from day 5 after exposure (from day 7 for others) to day 21 after exposure with active symptom monitoring. [Average time from exposure to rash: 14 days (range, 7-21 days)]. Anyone developing symptoms needs to be tested.
- Healthcare workers/first responders with presumptive evidence of immunity should still be monitored for symptoms/signs of measles from day 5 after exposure to day 21 after exposure.

Centers for Disease Control and Prevention. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013: Summary Recommendations of the Advisory Committee on Immunization Practices (ACIP). Available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm