NC Department of Health and Human Services

Measles Update for Clinical Providers

July 9, 2025

Measles

IT ISN'T JUST A LITTLE RASH

Measles can be dangerous, especially for babies and young children.

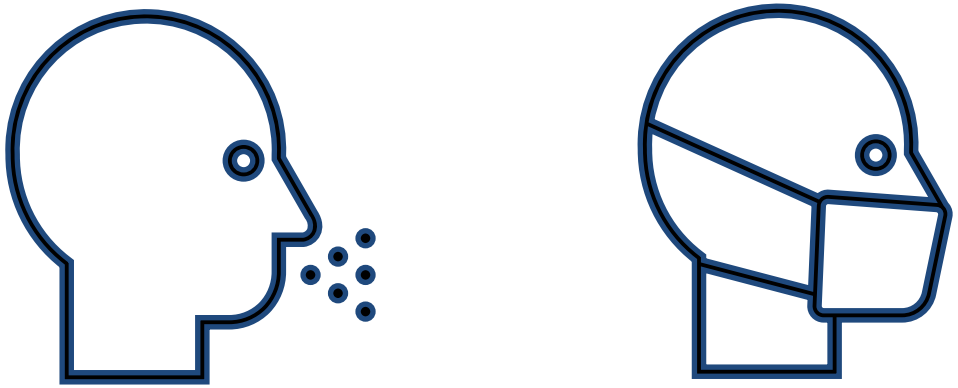
https://www.cdc.gov/measles/resources/measles-isnt-just-a-little-rash-infographic.html?CDC_AAref_Val=https://www.cdc.gov/measles/parent-infographic.html

Measles Update Agenda

- Clinical and Epidemiologic Features
- National and State Outbreaks and Trends
- Preparedness for Healthcare Facilities
- Testing
- Immunizations
- Post-Exposure Prophylaxis
- Q&A

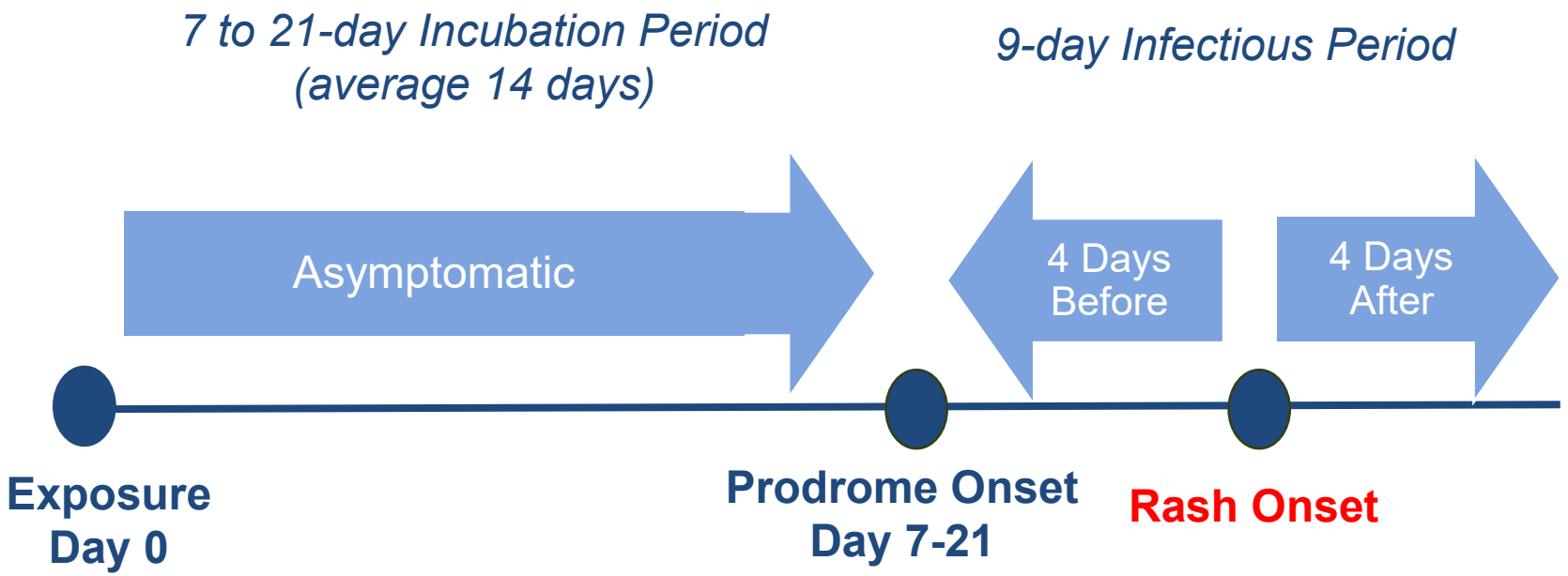
Measles Clinical and Epidemiologic Features

Airborne virus that can remain infectious for up to 2 hours after a case occupied that space



https://www.cdc.gov/measles/hcp/clinical-overview/?CDC_AAref_Val=https://www.cdc.gov/measles/hcp/index.html

Measles Timeline



https://www.cdc.gov/surv-manual/php/table-of-contents/chapter-7-measles.html#cdc_generic_section_10-case-and-contact-investigation

Clinical Presentation

- **Prodrome (typically lasts 2–4 days)**
  - High fever (up to 105°)
  - 3 Cs: cough, coryza (runny nose), conjunctivitis
  - Koplik spots (white spots on inner cheek)

- **Rash (typically lasts 4–7 days)**
  - Begins a few days after prodrome
  - Maculopapular (flat lesions and small, solid raised lesions)
  - Begins on head and face
  - Spreads to trunk and extremities
  - Fades in order of appearance

- **When investigating, be sure to note timing and order of symptoms**
- **Presentation can be modified in vaccinated individuals**

Koplik Spots

Public health image library https://phil.cdc.gov/default.aspx

Consider Other Causes of Fever/Rash

- Fifth Disease (parvovirus)
- Hand, Foot and Mouth Disease (coxsackie virus)
- Roseola (human herpesvirus 6, 7)
- Scarlet fever (strep)
- Rocky Mountain Spotted Fever
- Recent antibiotic use
- Syphilis (in sexually active adolescents/adults)
- Contact dermatitis
- Heat rash
- Kawasaki syndrome
- Recent MMR vaccination

Measles Complications

- **More common**
  - Otitis media (1 in 10)
  - Diarrhea (1 in 10)
  - Pneumonia (up to 1 in 20)

- **Uncommon**
  - Acute encephalitis (1 per 1,000)
  - Subacute sclerosing panencephalitis (SSPE)

- **1–3 per 1,000 children die from respiratory or neurologic complications**
  - >100,000 deaths per year globally, most in unvaccinated children <5 years old

- **Prolonged damage to immune system**

Treatment

No specific antiviral therapy

Medical care is supportive

Vitamin A

Should be administered only under the supervision of a healthcare provider as part of supportive management especially in children with severe measles

Not a substitute for vaccination

Vitamin A Guidance
AAP RedBook: *https://publications.aap.org/redbook/book/755/chapter/14079321/Measles?autologincheck=redirected*
NFID: *https://www.nfid.org/wp-content/uploads/2023/04/Call-to-Action-Vitamin-A-for-the-Management-of-Measles-in-the-US-FINAL.pdf*
CDC: *https://www.cdc.gov/measles/hcp/clinical-overview/index.html#cdc_clinical_overview_treat_pat-patient-management*

Control Measures

Isolation: separates sick people from people who are not sick

Confirmed cases should be isolated during their infectious period (4 days after rash onset)

Suspect cases should be isolated until measles has been ruled out, or until their presumed infectious period is over

Quarantine: restricts people who were exposed but are not sick

An exposed person without evidence of immunity does not receive PEP within the recommended timeframe must be quarantined until 21 days after the last exposure

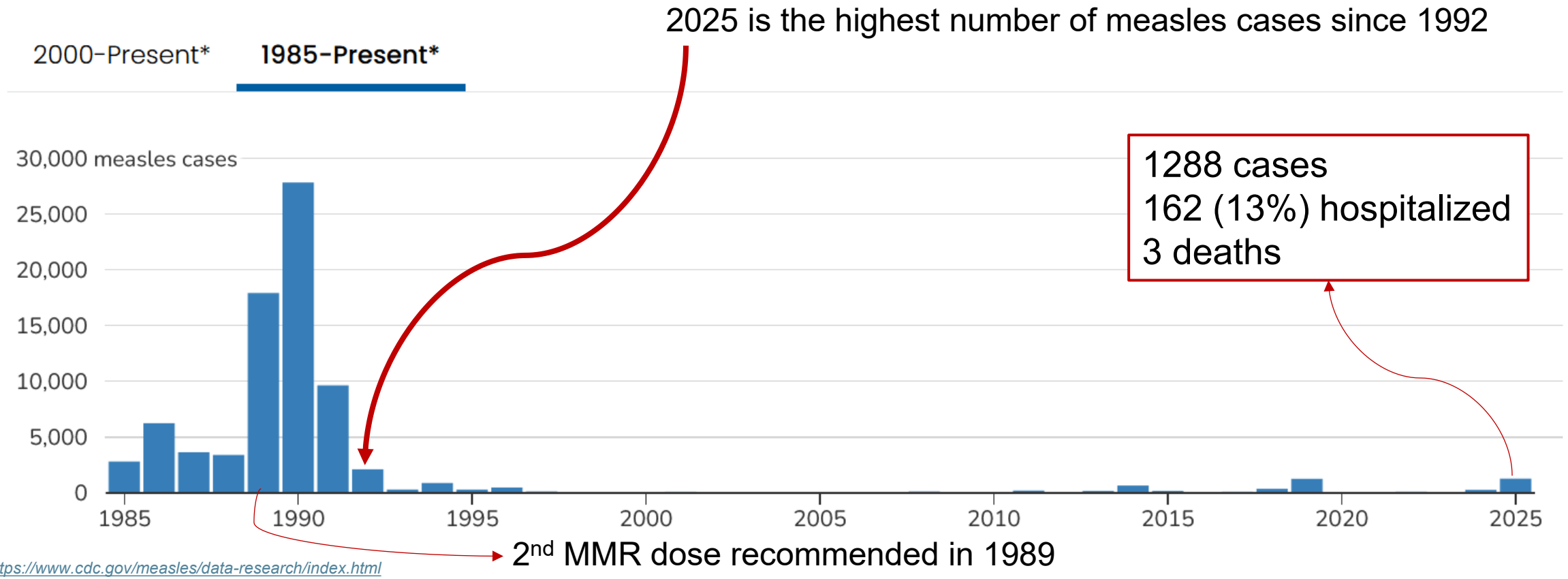
https://www.cdc.gov/surv-manual/php/table-of-contents/chapter-7-measles.html#cdc_generic_section_10-case-and-contact-investigation

National and State Outbreaks and Trends

Measles Trends: National, 2000-2025

Yearly measles cases

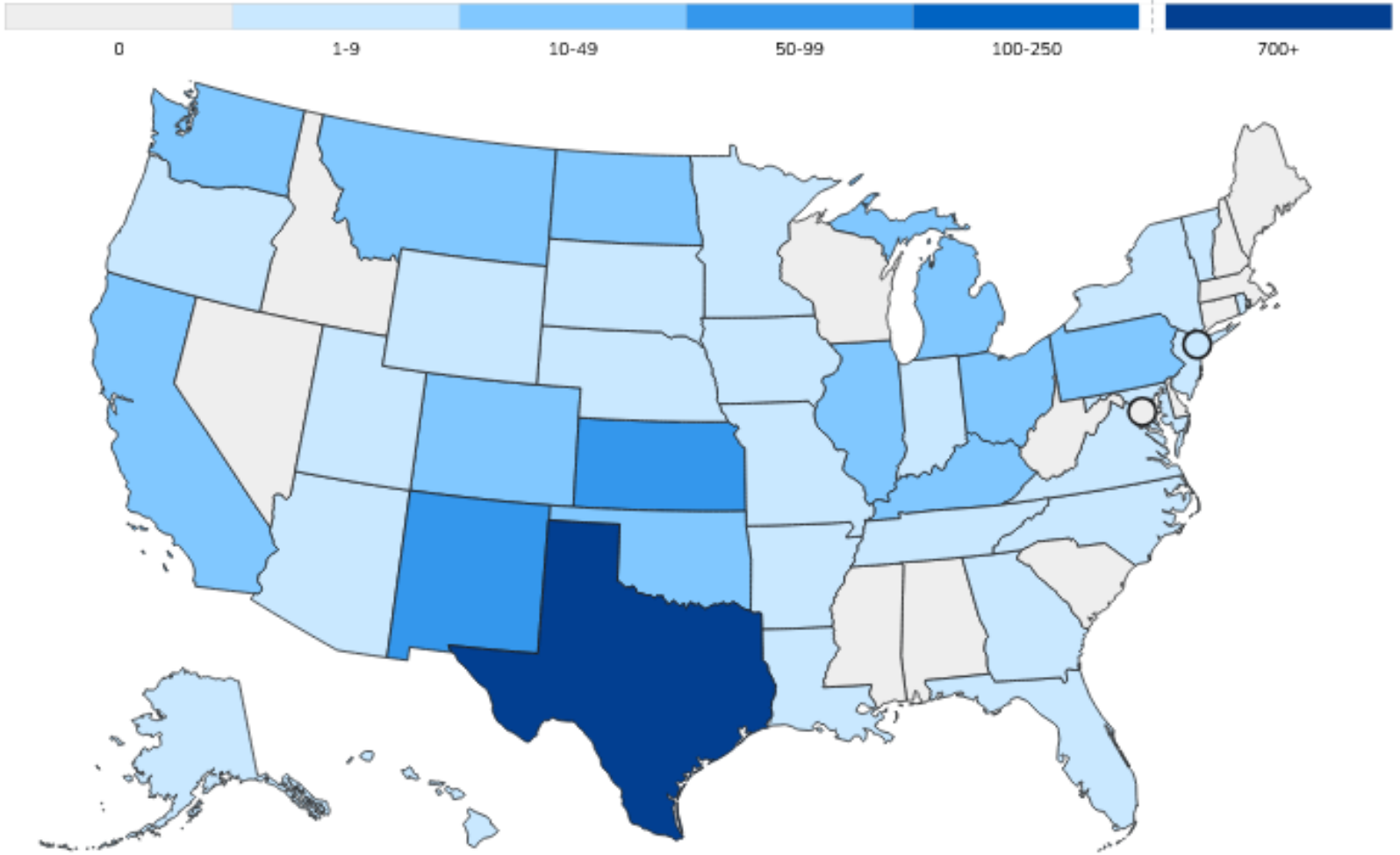
as of July 8, 2025



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

Map of Measles Cases in 2025

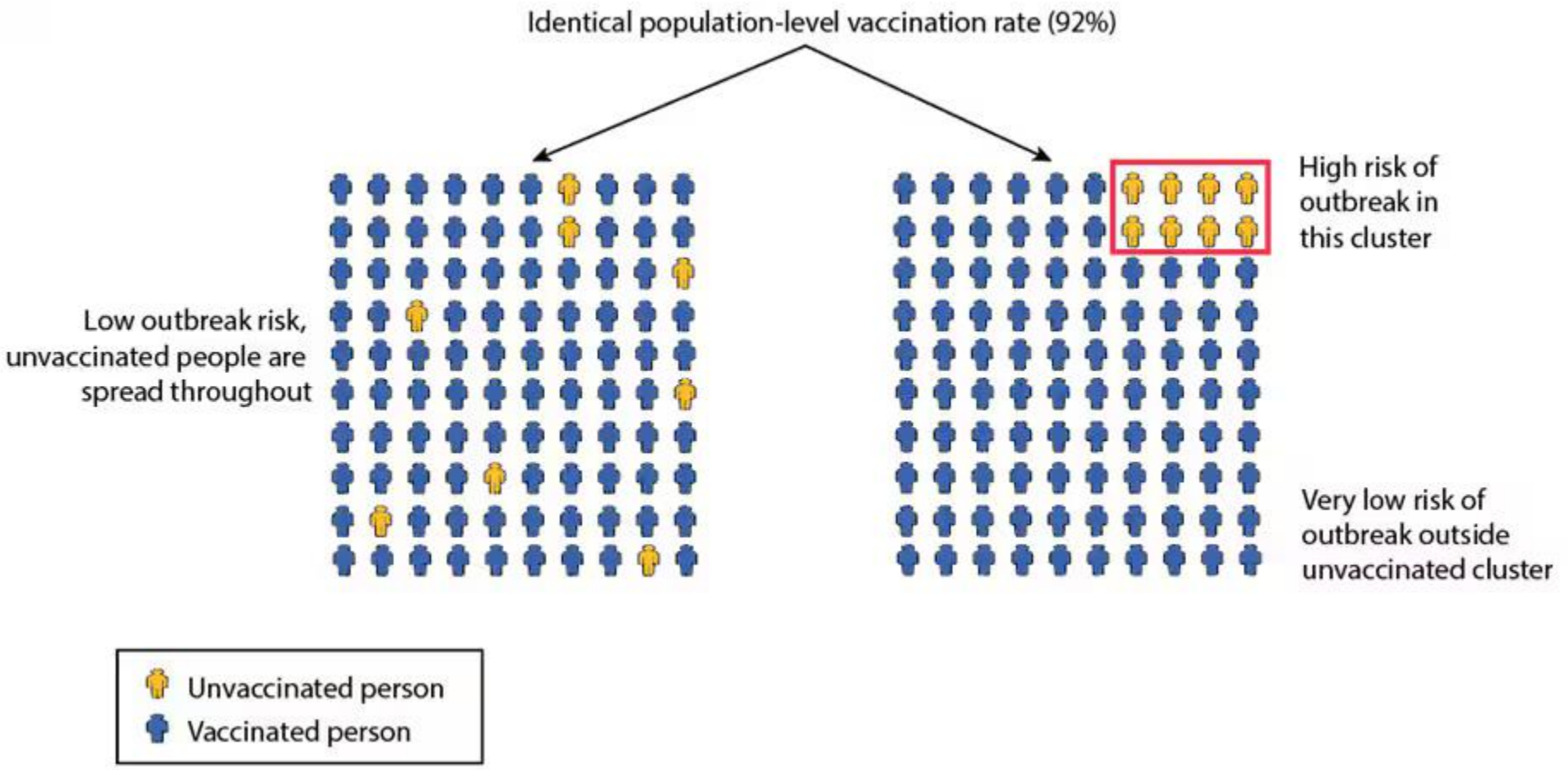
As of July 8, 2025



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

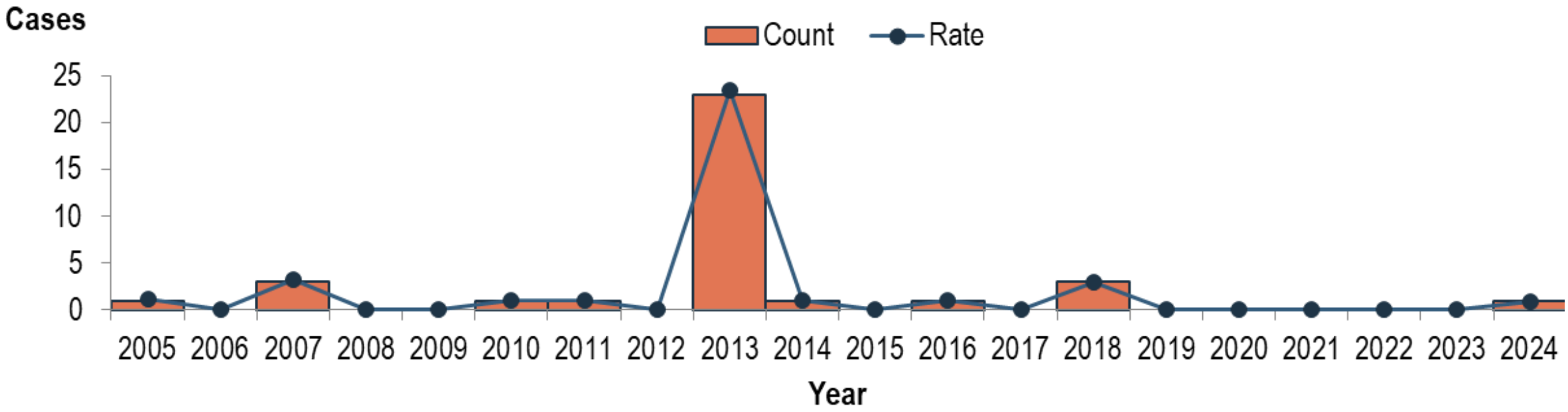
Why is Measles Coming Back?

Outbreak Risk



https://www.cdc.gov/ncird/whats-new/measles-outbreak-risk-in-us.html

Low numbers of measles cases in NC, but we are at risk for outbreaks as seen in 2013



NC 2024 Annual Vaccine Preventable Disease Report: https://epi.dph.ncdhhs.gov/cd/figures/Final_VPD_Report.pdf?ver=1.2

NCDHHS

Assistance Divisions Providers News

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TUESDAY, JUNE 24, 2025

First Case of Measles Identified in North Carolina

Primer caso de sarampión identificado en Carolina del Norte

MEDIA ADVISORY — The North Carolina Department of Health and Human Services has confirmed a case of measles in a child who was visiting Forsyth and Guilford counties. The child became ill while traveling to NC from another country where measles outbreaks have recently been reported. To protect the individual and their family's privacy, no additional information about this individual will be released. This is the first confirmed case of measles in the state in 2025. NCDHHS is recommending all unvaccinated individuals ages one year and older receive measles vaccination to protect themselves and those around them.

NCDHHS Measles Landing Page

NCDHHS Division of Public Health

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Key Points

- Measles is very contagious and can lead to serious complications.
- Measles can be dangerous, especially for babies and children.
- The vaccine is the best way to protect yourself and others.
- Currently, **North Carolina has one confirmed case**. Review past data.

Get answers to common questions about measles.

- Measles symptoms, how it spreads and more
- Resources for health care providers
- Resources for child care, schools and colleges

Measles Vaccine: What to Know

- The MMR vaccine is the best way to protect you and your loved ones from measles. Two doses are 97% effective at preventing measles.
- Once vaccinated, most people are protected from measles for life. How to know if you're immune to measles.
- Most health insurance plans pay for MMR vaccines. Need help paying?

Get more information: The MMR Vaccine

https://www.dph.ncdhhs.gov/programs/epidemiology/communicable-disease/measles
https://www.ncdhhs.gov/news/press-releases/2025/03/28/north-carolina-prepares-measles-prevention-amid-national-increase-cases

Wastewater Monitoring at 29 Sites Statewide

Measles Preparedness for Healthcare Facilities

919-733-3419

Measles is immediately reportable

Includes any suspicion of measles, not just laboratory confirmed cases

Basic Response Steps for Healthcare Setting

Screen

Immune status

Clinical information

Epidemiology (travel, exposure history, activities)

Isolate

Standard and airborne precautions for measles

2-hour timeframe even after patient leaves

Report

Arrange for appropriate testing

Assure control measures are initiated

Begin contact investigation

Is Your Healthcare Setting Ready?

Infection prevention office plan

Should include:

- Appropriate precautions and isolation for possible measles cases
- Safe specimen collection
- Contact tracing plan

Is Your Healthcare Setting Ready?

Infection prevention office plan

Staff immunization policy and records

Presumptive Evidence of Immunity for Health Care Personnel

- Written documentation of 2 doses of measles vaccine
- Laboratory evidence of immunity
- Laboratory confirmation of disease
- Birth before 1957*

*For unvaccinated health care personnel born before 1957 that lack laboratory evidence of measles immunity or laboratory confirmation of disease, health care facilities should consider vaccinating personnel with two doses of MMR vaccine at the appropriate interval.

Is Your Healthcare Setting Ready?

Infection prevention office plan

Staff immunization policy and records

Testing Supplies

Should include:

- Nasopharyngeal swab and VTM to test at SLPH
- Appropriate supplies for testing at a commercial lab

Is Your Healthcare Setting Ready?

Infection prevention office plan

Staff immunization policy and records

Testing Supplies

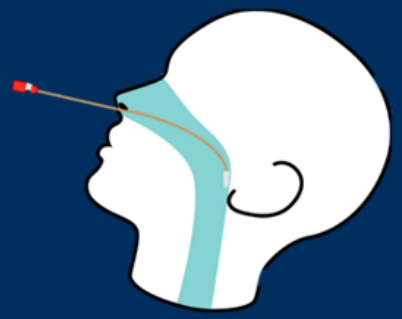
Know your LHD and State partners

NC DPH Communicable Disease On Call

919-733-3419

Testing

Do you have the materials to collect specimen for measles testing?



Important to ensure materials are on hand for the collection of specimens for measles testing

Measles specimen collection kits for testing at the State Lab have been distributed to LHDs

Please reach out to your LHD if a situation arises where you do not have materials for measles testing at the State Lab

Remember to reach out to your commercial laboratory for specimen collection and handling questions/requirements as they may differ

Measles Testing Approval

Please call the CD-on-call (919-733-3419) or your local health department **as soon as measles is suspected** regardless of where testing is performed

Approval for testing at State Lab is based on risk assessment

- **Immunization status**
- **Clinical presentation**
- **Epidemiologic risk (exposures, travel)**

Testing for measles at the State Lab must be **pre-approved** by the Communicable Disease Branch

Commercial lab testing is also available if testing is not approved at the State Lab and the health care provider still wishes to test

Determination of Where to Test for Suspected Measles

State Lab of Public Health

- Preapproval required, decision based on epidemiologic risk level
- Determined to be high risk
- Specimen collected in viral transport media (VTM)
- Faster results (<24hr)
- Additional reference testing needed (MeVA testing for vaccine strain, genotyping)

Commercial Lab

- Must still notify CDB on suspicion of measles
- Should be used for lower risk individuals
- Specimen collected in transport media besides VTM

Measles Testing Through State Lab & Send-Out Testing

Real-Time PCR Detection of Measles
*Nasopharyngeal (NP) swab in VTM

Real-Time PCR Detection of Measles
Throat/OP Swab in VTM/UTM
NP swab in UTM
Urine in sterile cup

Measles Serology
IgM ELISA & IgG ELISA
Serum

NC State Laboratory of Public Health

NCSLPH
Results within 24 hour after receipt

VPD Reference Center
Wisconsin State Lab
Results within 2-3 days after receipt

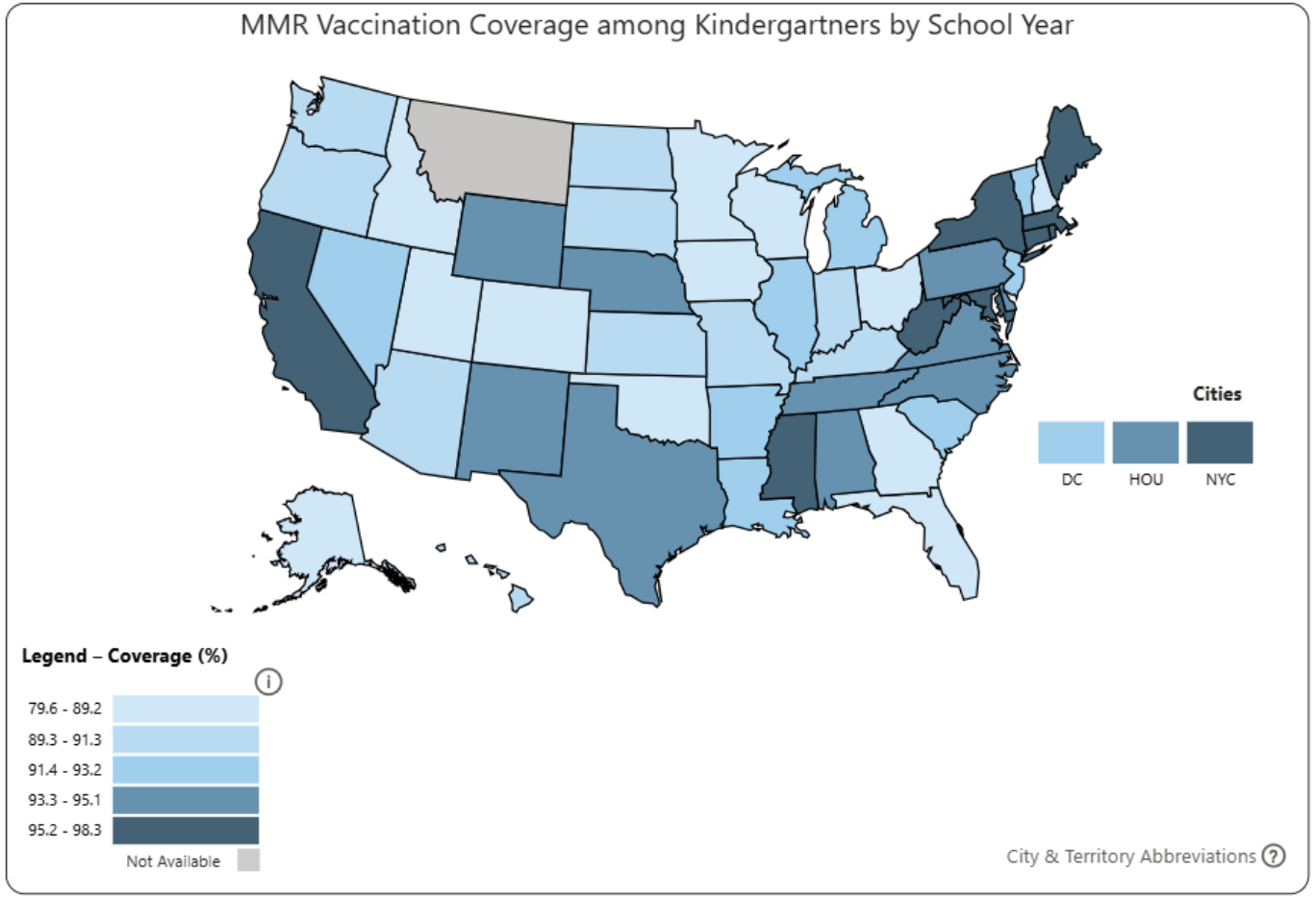
CDC
Results within 7 days after receipt

https://slph.dph.ncdhhs.gov/

North Carolina State Laboratory of Public Health (NCSLPH) Specimen Collection and Shipment Guidance

Measles Immunizations

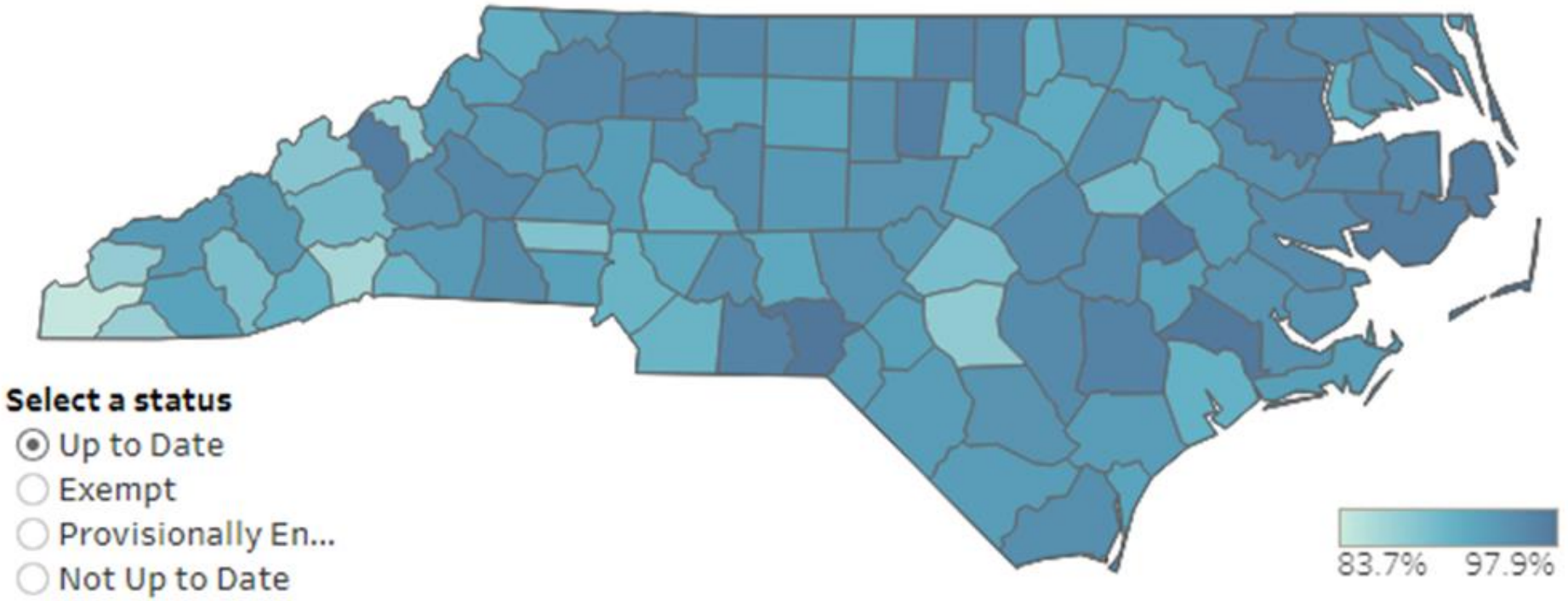
94%* of kindergarteners in NC were up to date on MMR in fall 2023



***This rate is consistent with MMR coverage among NC Kindergarteners in the 2024-25 school year (94.3%).**

CDC SchoolVax: https://www.cdc.gov/vaccines/imz-managers/coverage/schoolvaxview/data-reports/index.html

2023-24 Statewide Kindergartener compliance for all required vaccines is only 92.5% and county compliance ranges from 83.7% to 97.9%

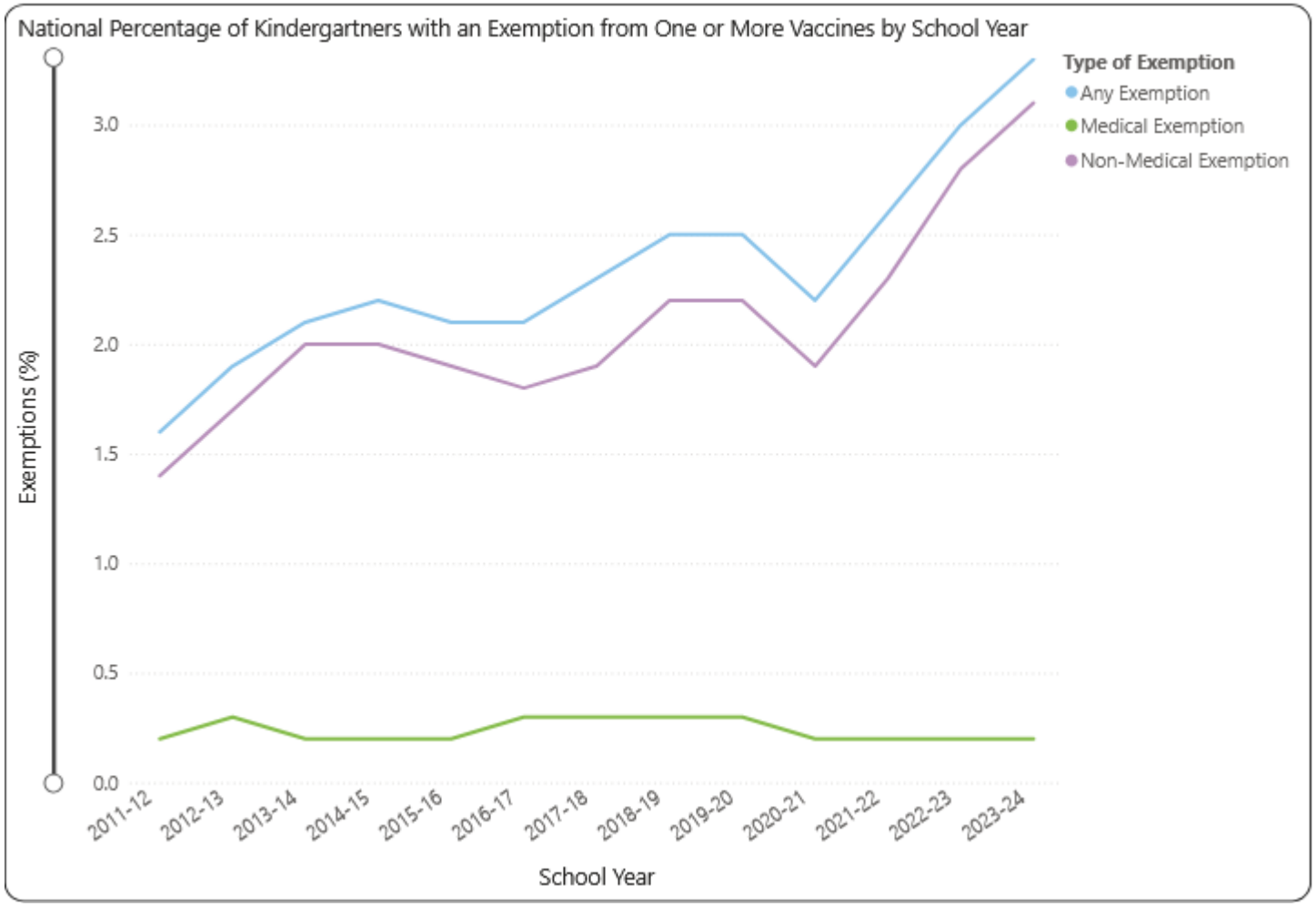


2024-25 statewide immunization data indicates a similar compliance rate (92.8%)

Updates to the public-facing dashboard are forthcoming.

NC Kindergarten Immunization Dashboard: https://immunization.dph.ncdhhs.gov/schools/kindergartendashboard.htm

NC kindergarten exemptions have been increasing over the last 4 years



CDC SchoolVax: https://www.cdc.gov/schoolvaxview/data/?CDC_AAref_Val=https://www.cdc.gov/vaccines/imz-managers/coverage/schoolvaxview/data-reports/index.html

MMR Vaccine- Routine Administration- Children

2 doses of measles-containing vaccine as part of routine childhood immunization schedule

- First dose at 12-15 months of age
- Second dose at 4-6 years of age

Children can receive the second MMR dose earlier than 4-6 years (at least 28 days after the first dose).
If using MMRV, doses must be separated by at least 3 months up to 12 years of age.

If choosing to vaccinate earlier than 4-6 years for the second dose, consider risks versus benefits, including earlier waning of mumps immunity.

https://www.cdc.gov/measles/vaccines/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fvaccines%2Fvpd%2Fmmr%2Fpublic%2Findex.html

MMR Vaccine- Routine Administration- Adults

One Dose

Adults born on or after 1957

Two Doses

Students at post-high school educational institutions

Healthcare personnel

Household and close contacts of immunocompromised persons

People with HIV without evidence of severe immunosuppression

Groups at increased risk due to an outbreak (defined by local and state public health)

Presumptive Evidence of Immunity

Written documentation of adequate vaccination

Laboratory confirmation of disease

Laboratory evidence of immunity

Birth before 1957*

*For unvaccinated health care personnel born before 1957 that lack laboratory evidence of measles immunity or laboratory confirmation of disease, health care facilities should consider vaccinating personnel with two doses of MMR vaccine at the appropriate interval.

https://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.html

General MMR Vaccine Recommendations by Year

Year vaccinated	Recommendation
Before 1957	No vaccine needed.
1963-1967	Second MMR dose may be needed if you got the inactivated one (which is the minority of people.)
Before 1989	MMR was recommended as a single dose for most people (which is still 93% effective.) You don't need a second dose unless you are higher risk (e.g., healthcare, college student, international travelers, close contacts of immunocompromised people.)
After 1989	Two doses of MMR or MMRV

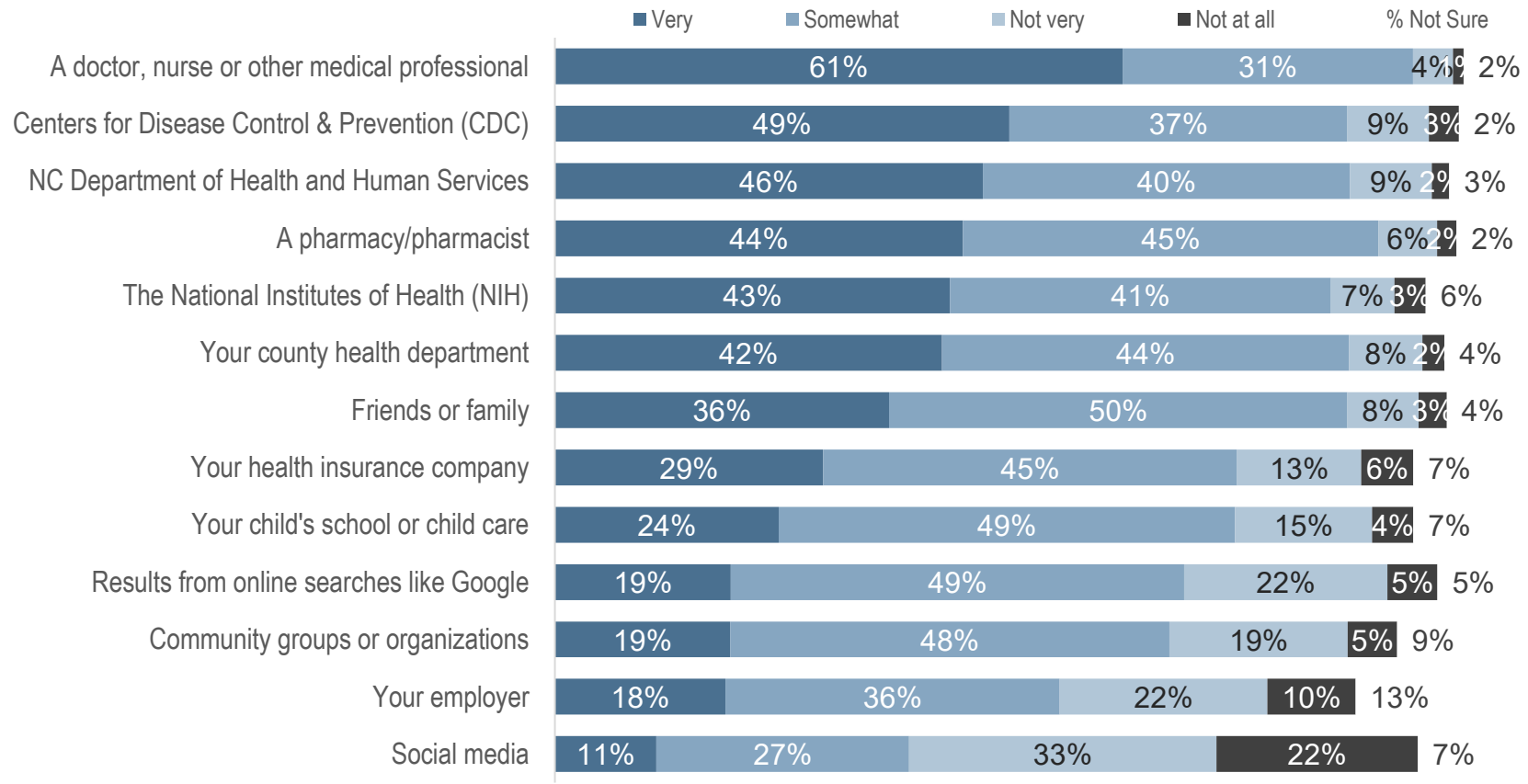
Always talk to your physician if you have questions or doubts!

https://yourlocalepidemiologist.substack.com/p/10-faqs-on-mmr-and-measles-protection?utm_source=publication-search

Medical Professionals Are the Most Trusted Source – Social Media the Least

Six in 10 consider medical professionals a very trustworthy source for vaccine information and recommendations and nearly half say the CDC and NCDHHS are very trustworthy sources.

Trustworthiness of Source for Info/Recommendation for Child Vaccines



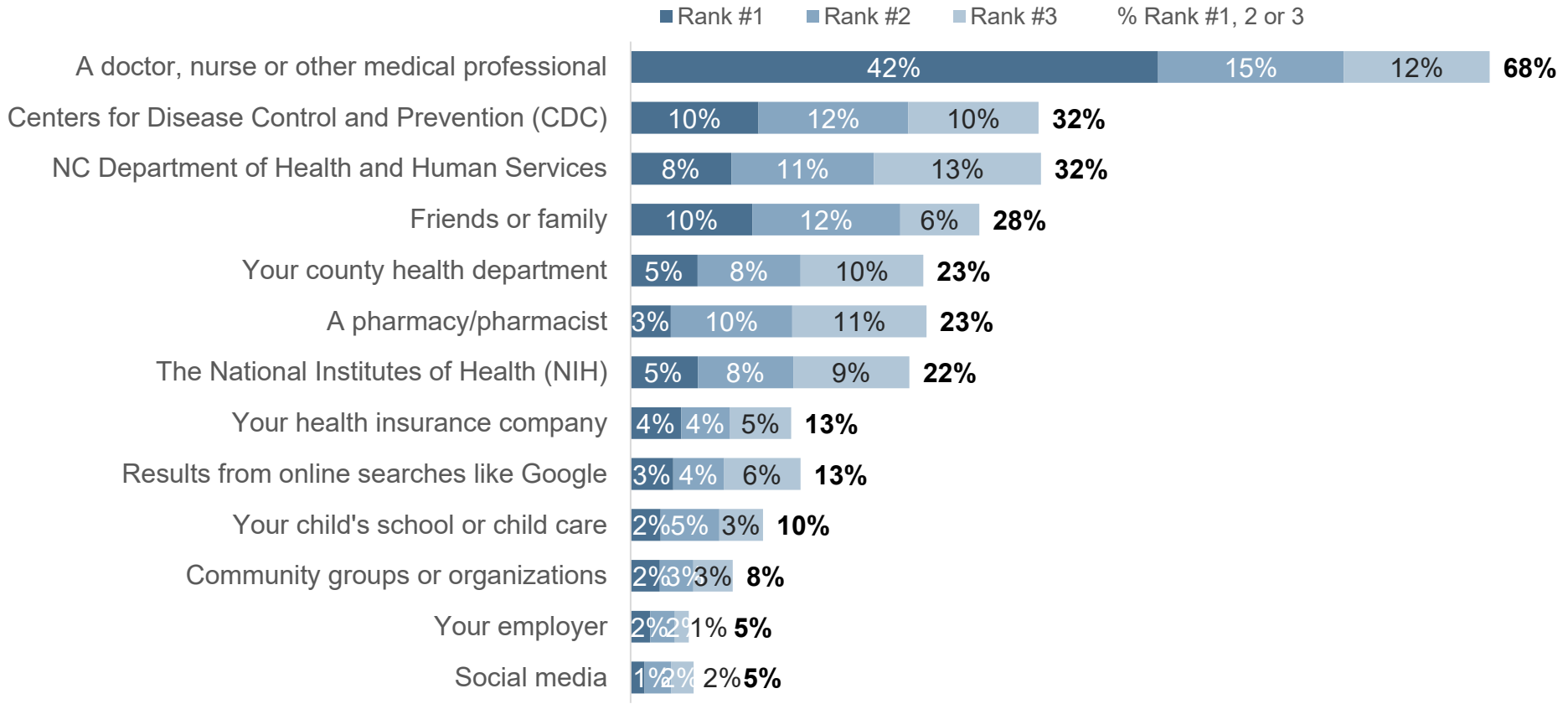
Base: Total Respondents n=753; Committed Vaccinator N=291, More Persuadable N=212, Less Persuadable N=175, Vaccine Rejector N=75
Q4. How trustworthy do you consider the following sources for information and recommendations about childhood vaccines?

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

Medical Professionals are Most Relied on for Information to Make Child Vaccination Decisions

The most relied on source is medical professionals with nearly seven in 10 ranking it in their top three and more than four in 10 ranking it number one.

Top 3 Most Relied Upon Sources of Information for Making Decisions for Vaccines for Child



Base: Total Respondents n=753; Committed Vaccinator N=291, More Persuadable N=212, Less Persuadable N=175, Vaccine Rejector N=75
Q5. Which of these sources do you rely on most for information to make decisions about vaccinations for your child(ren)? Rank up to 3 in order.

New Resources on Childhood Vaccines-Vaccine Toolkit Launch

- NCDHHS has launched a new, bilingual Childhood Vaccines Toolkit designed to help health care providers and families start a conversation about childhood vaccines.

- The **Childhood Vaccines toolkit** includes clear, accurate information you can share with families to support vaccine conversations. The toolkit includes:

  - **Talking Points** for providers with research-based best practices to connect with parents
  - **Fact sheets, rack cards, posters, and social media graphics** with important information on vaccines and vaccine-preventable diseases for providers to share with families
  - **Customizable email template** for partners to help share information with communities on vaccines and vaccine-preventable diseases

- Visit **VaccinesForKids.nc.gov** to access downloadable toolkit materials in **English and Spanish** and **updated webpages** with easy-to-understand information on childhood vaccines.

- If you are interested in **free, printed versions** of the parent-facing toolkit materials to use at your office or clinic, please fill out **our form** by **July 15**.

Post-Exposure Prophylaxis

Post Exposure Prophylaxis (PEP)

MMR Vaccine

Can be given within 72 hours after an exposure

If MMR is received within the recommended timeframe, contacts can return to normal activities immediately

Immune globulin (IG)

Can be given within 6 days of an exposure

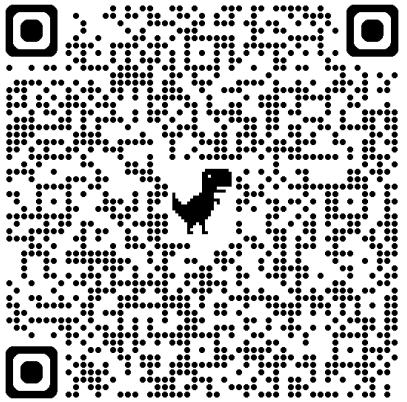
IG may not prevent measles, but rather prolong symptom onset and lessen symptom severity

Measles PEP for Non-Symptomatic Susceptible Contacts

Recommended Dose and Timing of Measles PEP (see footnotes 1-5)

Risk Factor	Time from First Exposure If no PEP given, home quarantine for 21 days	
	Less than 72 hours	**72 hours through day six**
Infant less than 6 months old [1]	Give intramuscular IG (IMIG): 0.5 ml/kg (max dose = 15 mL) Home quarantine for 28 days	Give IMIG: 0.5 ml/kg IM (max dose = 15 mL) Home quarantine for 28 days
Infant 6 through 11 months old [1, 2]	Give MMR vaccine if no contraindications No quarantine needed	Give IMIG: 0.5 ml/kg IM (max dose = 15 mL) Home quarantine for 28 days
Susceptible pregnant woman [3]	Give intravenous IG (IVIG): 400 mg/kg Home quarantine for 28 days	Give IVIG: 400 mg/kg Home quarantine for 28 days
Severely immunocompromised [3, 4] (Regardless of immune status)	Give IVIG: 400 mg/kg Home quarantine for 28 days	Give IVIG: 400 mg/kg Home quarantine for 28 days
Susceptible close contact[5] over 1 year old	Give MMR vaccine if no contraindications No quarantine needed	Not generally recommended for healthy individuals over 1 year old

Measles PEP Guidance



Key Planning Considerations for Measles PEP Access

- **Pre-planning at the local jurisdiction level is key to ensure timely access to PEP**
  - Providers should consider procuring MMR or IG now, before cases occur
  - Participate in discussions with Local Health Departments around access to MMR and IG

- **No known IG product shortages at this time**
  - GamaSTAN® (IMIG) available in 2mL and 10mL single dose vials
  - Multiple IVIG products on the market can be used as measles PEP

GamaSTAN® Distributors List

- **NC DHHS maintains a LIMITED emergency cache of IMIG**
  - Currently 91 vials (13 x 2mL & 78 x 10mL)
  - Available for request when local supplies are not available in sufficient time or quantity
  - Contact CDB Epi On-Call: 919-733-3419

Additional Resources

- **NC Measles Landing Page: https://www.dph.ncdhhs.gov/programs/epidemiology/communicable-disease/measles**
- **North Carolina Kindergarten Immunization Dashboard: https://immunization.dph.ncdhhs.gov/schools/kindergartendashboard.htm**
- **NCDHHS Childhood Immunization Toolkit: https://www.dph.ncdhhs.gov/programs/epidemiology/immunization/providers/education-and-resources/for-patients**
- **State Epidemiologist on call (24/7/365 number) 919 733-3419 (disease guidance, investigation, data)**
- **Local Health Department list: https://www.dph.ncdhhs.gov/contact/LHD**

Questions?