



Preventing, Reporting, Responding, & Managing Measles in Schools, Childcare Centers and WIC Clinics

March 21, 2024





Agenda

- Background
- About Measles (Symptoms and How Measles is Spread)
- Exposure & Reporting Guidance
- What Does a Contact Investigation Include?
- Prevention
- If You Are Vaccinated





Speakers

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*Section Chief Communicable Diseases
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Background

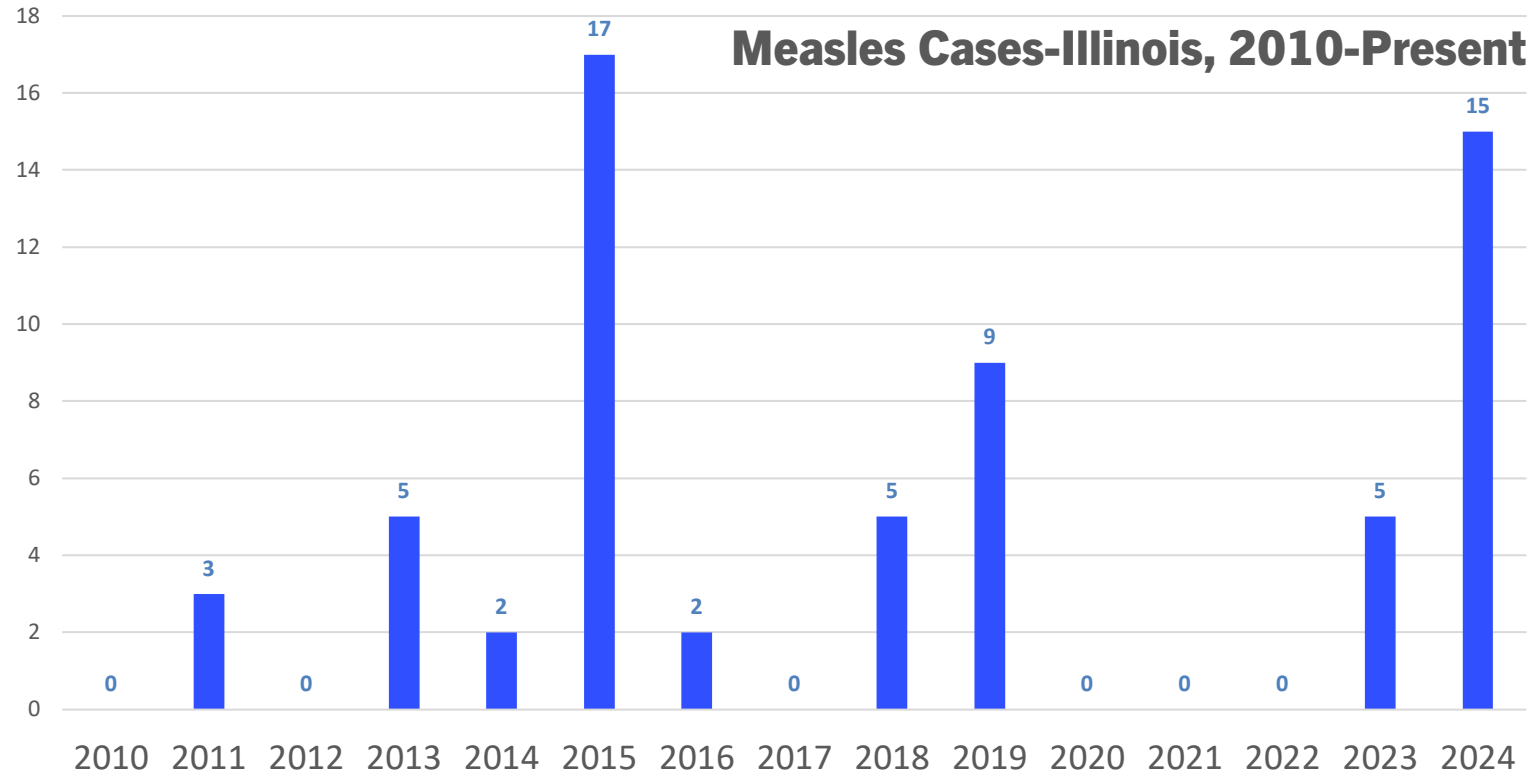


Why We Are Here

- Confirmed measles in Chicago.
- Measles is a **HIGHLY** contagious virus.
- Some schools have already been impacted.
- We can expect to see more cases.
- There are things you can do to protect yourself and your community.
- We have tools! We want to make sure we are using them.

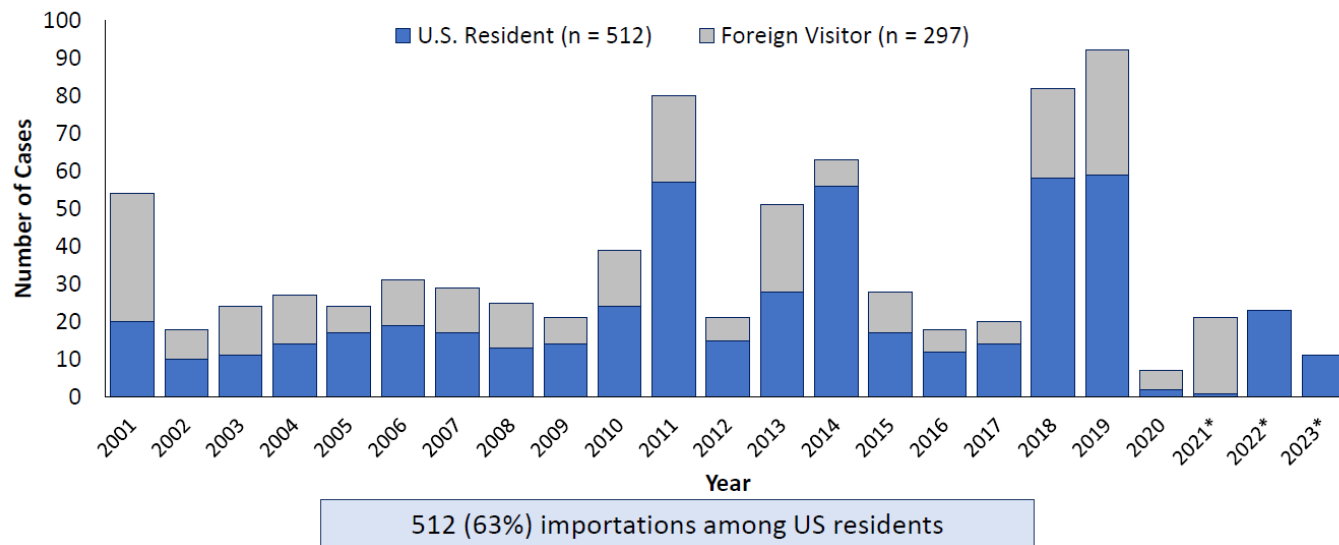


Measles Cases-Illinois, 2010-Present



Measles cases are imported primarily by unvaccinated U.S. residents traveling abroad

- Median 26 importations per year (range: 7–92)



*2023 data as of August 3, 2023. Data are preliminary and subject to change. CDC, COCA call, Aug. 2023

Measles in Chicago: Timeline

- March 2024 – [Adult tests positive for measles with no clear source of exposure](#)
 - Adult had multiple community exposures (eg using CTA buses) during their infectious period
- March 7 – [Confirmed case of measles in a young child at a new arrival shelter in Pilsen](#)
 - Child was exposed to measles in Chicago
- March 8 – CDPH launches [mass vaccination efforts in shelters across the city](#)
- March 11 – CPS [announces](#) a child who attended a CPS school tested positive
- March 20 – A least 15 confirmed cases
 - **We expect more...**

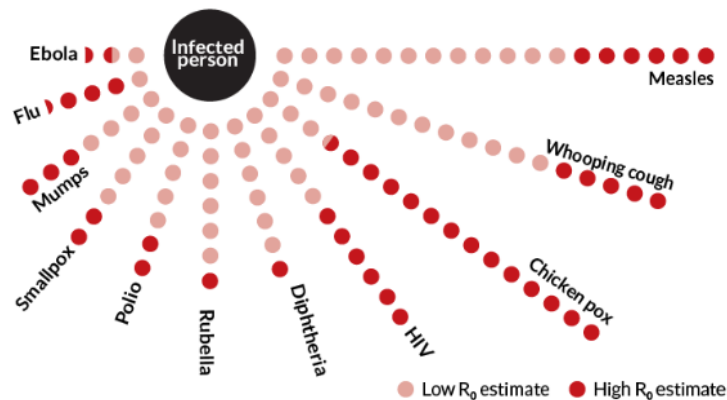


About Measles



Transmission

- Spread through the air when someone coughs or sneezes.
- This virus can linger in the air for up to 2 hours after someone with measles has left the room.
- Can spread through contact with mucus or saliva from an infected person.
- **9 out of 10 non-immune people who have contact with someone with measles will develop the infection.**



CREDIT: T. TIBBITS; SOURCES: P. FINE/EPIDEMIOL. REV. 1993; S. HAY ET AL./PHILOS. T. R. SOC. B 2013; G. CHOWELL AND H. NISHIURA/BMC MED. 2014

Symptoms of Measles

- High fever and malaise (generally not feeling well) for 2 to 4 days followed by the “Three Cs”:
 1. **Cough**
 2. **Conjunctivitis** (pink eye)
 3. **Coryza** (runny nose)
- Tiny white spots (Koplik spots) may appear inside the mouth two to three days after symptoms begin
- Maculopapular rash (usually begins at hairline and moves downward)
 - Typically develops 2 – 4 days *after* symptoms appear, it may take up to 8 days for the rash to appear or some people will not get a rash

[CDC Signs and Symptoms of Measles](#)

Rash Appearance

- Small raised or red flat bumps.
- For light skin tones, the rash appears red.
- For dark skin tones, the rash may be harder to see or appear purple or darker than the surrounding skin.
- Usually not itchy.



“Case” Definition

- Fever

AND

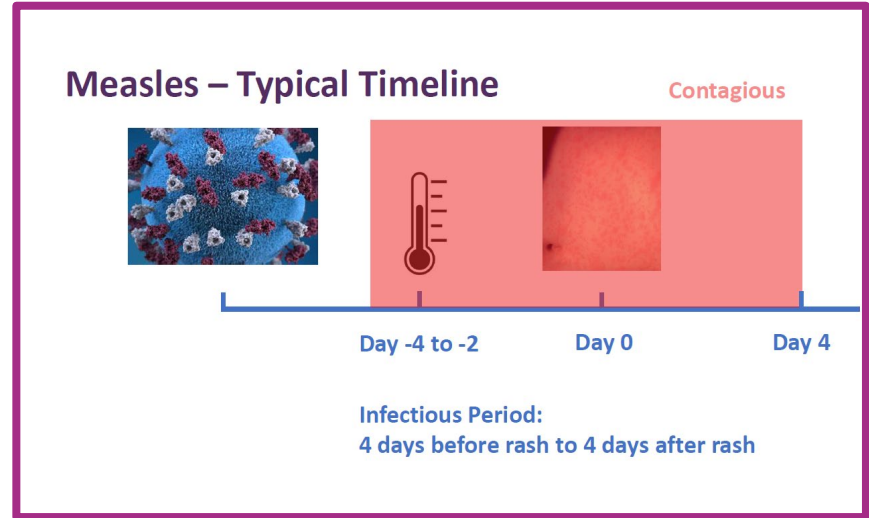
- Rash

AND

- At least 1 of the “3 Cs”
 - Cough
 - Coryza (runny nose)
 - Conjunctivitis

Contagious Period

- Measles is **highly infectious!**
- Patients are contagious starting 4 days before through 4 days after the rash appears.
 - **Rash onset is “day 0”**





High-Risk Populations

- Infants and children aged <5 years
- Adults aged >20 years
- Pregnant women
- People with compromised immune systems, such as from leukemia and HIV infection - immunocompromised patients can have an atypical presentation and may not develop a rash

Complications from Measles

Common Complications

- Ear infections (7-9%)
- Diarrhea (8%)

Severe Complications

- Hospitalization (25%)
- Pneumonia (1-6%)
- Encephalitis (1 per 1000)
- Death (1-3 per 1000)



Exposure & Reporting Guidance



What Do I Do with a Lab-Confirmed Case?

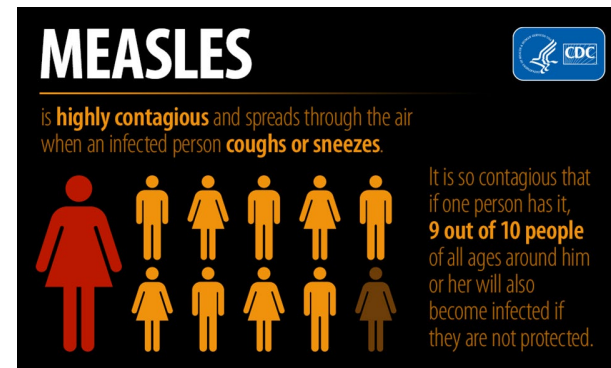
- Exclude for **at least 4 days** after the start of the rash.

Notifications

- Do **NOT** send any notifications to families until you have been directed to do so by CDPH/your LHD
- CDPH/LHD will need to verify the case before notifications are sent out.
- CDPH/LHD will share the notification letter to be sent with the school.

Reporting

- **A single measles case is required to be reported as soon as possible and within 3 hours.**
- CDPH will work with school officials to respond.



Close Contacts- Post-exposure Prophylaxis (PEP) – Timing Matters!

- People without immunity to measles, including infants six months or older, may be given the measles **vaccine within 72 hours of first contact** to the measles virus to provide protection against it.
- **Immunoglobulin** can be given within 6 days of first exposure to people who meet specific criteria: under 12 months of age, susceptible people less than 66 lbs, severely immunocompromised people, and susceptible pregnant people.



Student Close Contacts-Exclusion Criteria

Susceptible Contacts

- Any exposed students that cannot prove immunity are **excluded from school for 21 days** after exposure.



Proof of Immunity to Return to School

- Documentation of **1 or more doses*** of measles-containing vaccine on or before their exposure
- Lab evidence of immunity (titer with positive IgG)
- Lab confirmation of previous infection

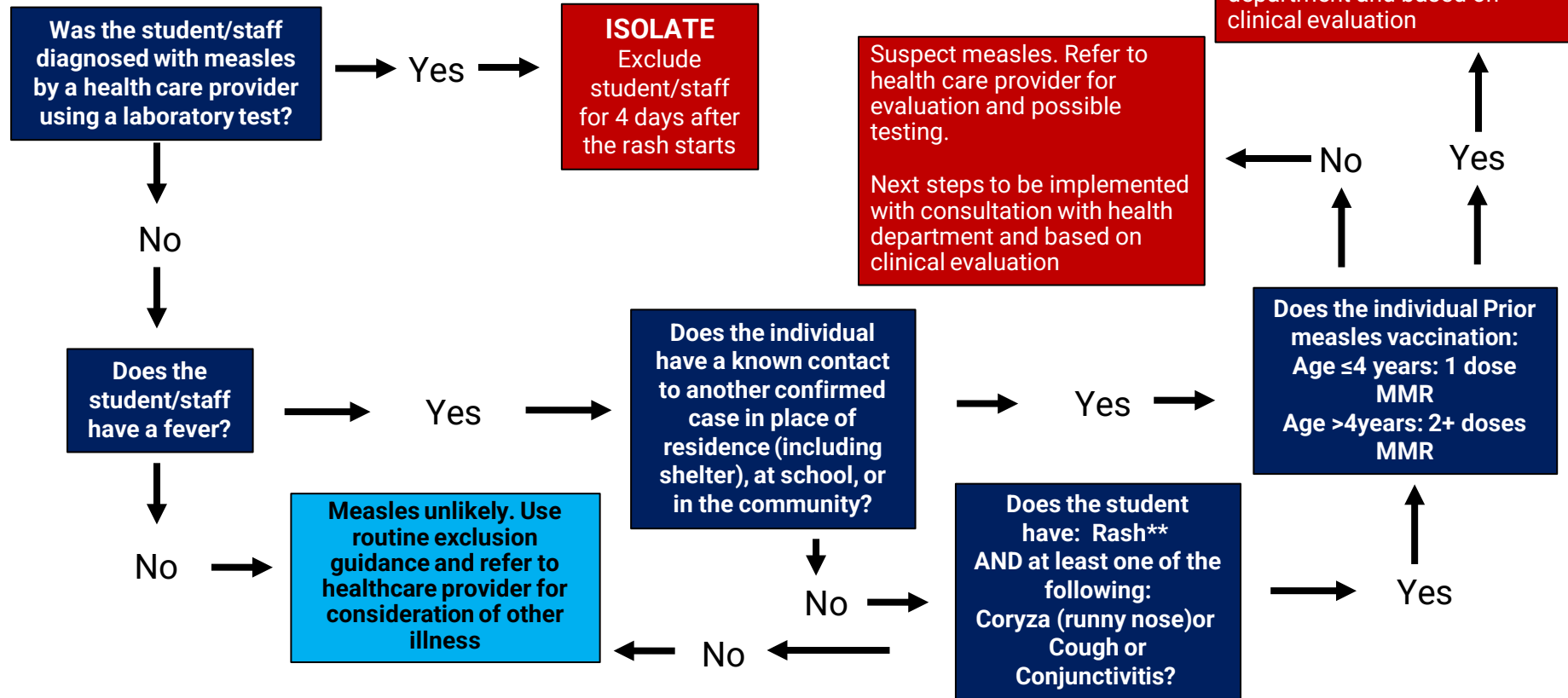
*Receipt of a second dose is highly encouraged and can be given 28 days after the first dose

EXCEPTION: Previously unvaccinated individuals can return to school if they can receive the vaccine **within 72 hours** of their first exposure.

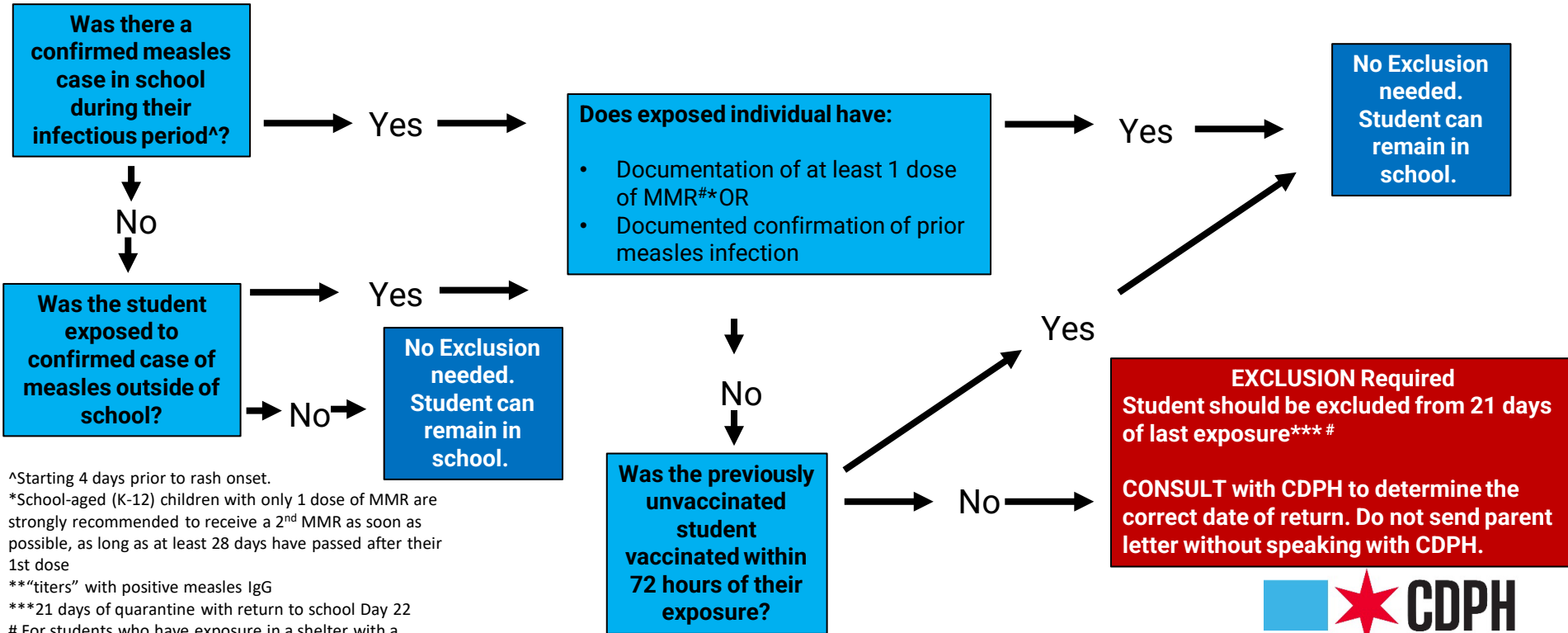
What If I Suspect that a Student in School Has Measles?

- If measles is suspected while at school, confirm:
 - Does the individual have **fever AND rash** at the same time?
 - Has the individual had a connection to a known case of measles?
 - Does the individual have documentation of 2 doses of MMR (and what were the dates)?
- Immediately place the student in a private room with the door closed, and if possible, the windows open, while waiting for pickup.
- Mask the student, call parent for immediate pick up to follow up phone call to seek their healthcare provider.
- Ensure that student supervision is performed by someone who has documented immunity against measles.
- When the student leaves the building, they should be escorted to a side door as far away from the rest of the student population as possible, and especially as far away as possible from any high-risk students (such as hallways used by pre-K students or immunocompromised students).
- Close the isolation room to the rest of the student population for a minimum of 2 hours after the ill student left. Perform routine disinfection protocols using an EPA-approved product.

For students/staff with symptoms of measles



Exclusion requirements for students with a known exposure to measles



[^]Starting 4 days prior to rash onset.

^{*}School-aged (K-12) children with only 1 dose of MMR are strongly recommended to receive a 2nd MMR as soon as possible, as long as at least 28 days have passed after their 1st dose

^{**}"titers" with positive measles IgG

^{***}21 days of quarantine with return to school Day 22

[#] For students who have exposure in a shelter with a confirmed case, additional guidelines are followed

Phone Triage (if possible)

- Assess risk of exposure:
- Did the student or staff get a laboratory diagnosis with a healthcare provider?
- What kind of symptoms are being exhibited?
 - Does the individual have a fever?
 - If fever, does the individual have a rash, and cough, or conjunctivitis?
- Has the student/staff received the MMR vaccine?
- Does the student know if they have been exposed to measles (at a shelter, at home, or at a known community setting)?
- If symptoms or diagnosis refer to chart 1, if exposure, refer to chart 2.

Suspected Measles case comes to school

- Apply a facemask immediately to the individual exhibiting symptoms
- If suspect case is a staff member, they should be asked to return home and seek counsel from their health care provider.
- Student should be moved to a private room and close door/ open windows while waiting for parent pick up
- Only necessary individuals with verified immunity should accompany student to the private isolation space.

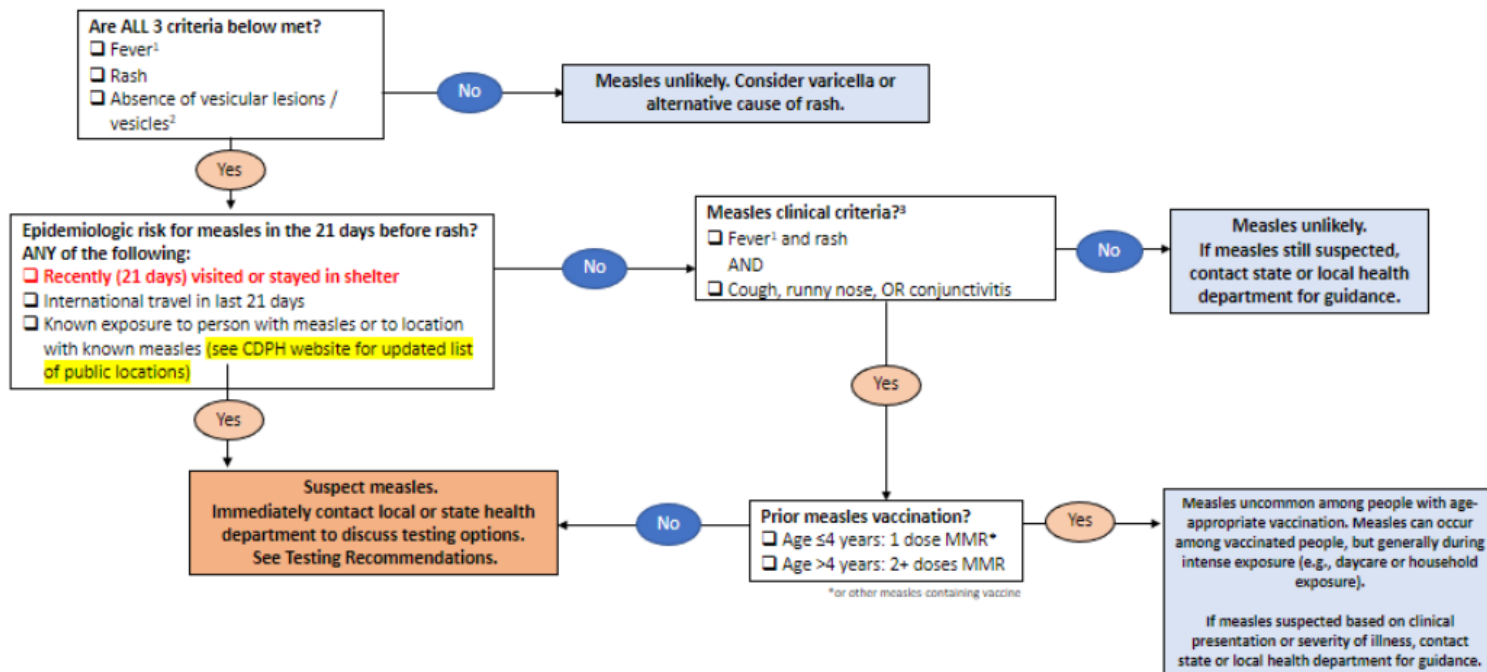
Infection Prevention Considerations

- When leaving the building, the suspect case should, if possible, exit via a separate hallway away from the rest of the student population, and especially away from high-risk populations (preK and K, immunocompromised classrooms)
- Keep windows open in area where suspect case was present and keep door closed for a minimum of 2 hours after the student goes home.
- Routine cleaning and disinfection of private room with an EPA-approved disinfectant is recommended after the 2-hour waiting period. Disinfection should be performed by individuals with verified immunity.

School Considerations for Suspected Measles

Measles Screening Guide

START HERE



Reporting – IDPH CD Rules

- Reportable in Illinois: Class 1a, as soon as possible, but within 3 hours (note: Measles rule was just amended to 3 hrs from 24).
- First call your LHD, but if unable to reach, call IDPH! 217-782-2016; After hours: 217-782-7860
- [Section 690.520 Measles](#)
- Suspect measles cases require an IMMEDIATE, URGENT (within 3 hours by phone) LHD to IDPH and IDPH to CDC
- **Provider should call LHD immediately upon clinical suspicion (don't wait for lab results):**
 - If they suspect measles and/or
 - If measles testing is being ordered (IgM) or requested (PCR)

Enter case as soon as possible into INEDSS but the initial investigation of the case is the most critical piece early on.

Provide Education to Impacted Students and Families

- Stay home and avoid childcare facilities, workplaces, school, crowded settings, public places or social activities.
- Avoid exposing at-risk individuals, like children, pregnant women, and people with compromised immune systems
- Avoid exposing others at healthcare facilities by calling ahead to make special arrangements

REMEMBER: measles can stay in the air for up to two hours after someone with measles has left the area.




What Does a Contact Investigation Include?






Main Steps

- Identify those exposed in all settings
 - Determine immune status of contacts
 - Make recommendations for PEP as needed
 - Determine need for exclusion from work/school/childcare
 - Determine need for symptom monitoring and set up in REDCap
 - If these are identified flight contacts, follow up and guidance is the same but the local health department should return completed CDC form asap
- 



Identifying Contacts

- Identify and record all the person's activities while infectious (using a measles investigation form)
 - Infectious period: 4 days before to 4 days after onset of rash (rash onset is day zero)
 - Prepare a contact list for each setting
 - Identify and record potential contacts in each setting
- 

Determine Measles Immunity Status

- Assess the level of risk of measles illness for contacts identified.
- Assess susceptibility (immune status) for each contact identified.
- Verbal history of measles illness or vaccination is NOT adequate proof.
- School-aged children should have 2 doses of MMR.
- Preschool aged children and adults not at high risk should have at least 1 dose of MMR.
- Healthcare workers should have 2 doses of MMR.

Evidence of Immunity

- Documentation of adequate vaccination
 - 1 dose of MMR vaccine for preschool-aged children and for adults not at high risk of exposure
 - 2 doses for school-aged children (i.e., grades K-12) and for adults at high risk of exposure
- Serologic evidence of immunity
- Lab confirmation of disease
- Birth before 1957





Prevention



Vaccination

The Measles, Mumps, Rubella (MMR) vaccine works incredibly well!

- Someone is [35 times](#) less likely to get measles than someone with no immunity.

This vaccine is **HIGHLY** effective in preventing measles.

- 1 dose 93%
- 2 doses 97%



Vaccination


- The MMR vaccine:
 - On dose at 12 to 15 months of age
 - Second dose between 4 and 6 years of age.

These doses are required for entry into childcare facilities, preschool, early childhood, pre-kindergarten programs, and grades K – 12.

- For individuals who are behind on the schedule and need to catch up, allow at least 4 weeks between doses.
- For individuals who are traveling internationally:
 - Infants 6 through 11 months of age should be given 1 dose of MMR vaccine. These children will still need their regularly scheduled MMR doses.




Vaccination

- The measles vaccine is used to prevent having measles at any age.
 - Vaccines that prevent measles are safe and effective.
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Vaccination FAQs

- Where can children be vaccinated?
 - Doctor's office (VFC program available for those who are uninsured, underinsured, have Medicaid, or are American Indian/Alaska Native)
 - Pharmacies (children 7 and older)
 - [CDPH immunization clinics](#) provide MMR vaccine for no out-of-pocket cost to any child 0–18 years and uninsured adults 19 and older
 - CPS [school-based health clinics and mobile clinics](#)
- 



How Can Schools and Daycares Help Prevent and Control Measles?

- Encourage vaccination (for everyone - students and staff).
 - Review the immunization status for everyone.
 - Keep children and staff out of school when they have a fever.
 - Encourage frequent hand washing.
 - Contact your local health department with any concerns and always with suspect measles.
- 




If You Are Vaccinated





Be Assured

- **Very few people**—about three out of 100—who get two doses of measles vaccine will still get measles if exposed to the virus.
 - Fully vaccinated people who get measles seem more **likely to have a milder illness**.
 - Fully vaccinated people seem also **less likely to spread** the disease to other people, including people who can't get vaccinated because they are too young or have weakened immune systems.
- 

IDPH's New Vaccine Coverage Dashboard

Immunization

I-CARE

Thimerosal and Vaccines Q&A

Vaccines For Children Program

Talking to Parents About
Immunizations – Resource ...

Religious Exemption

VaxToSchool

Coverage Dashboards

Illinois Vaccination Coverage Dashboards

The purpose of the Illinois Immunization Coverage Dashboards is to provide accurate and timely immunization coverage data across the life course to the public and to public health stakeholders.

Illinois Vaccination Coverage Dashboards

School Vaccination Coverage

All schools in Illinois, including public, private, and charter schools, send data on their vaccination rates to the Illinois State Board of Education (ISBE).


**THIS DATA IS PUBLICLY AVAILABLE ON ISBE'S WEBSITE AND CAN BE
DOWNLOADED HERE >**


[Illinois Vaccination Coverage Dashboards](#)


School Vaccination Coverage Dashboard




 Data Table
(Accessibility Friendly)

 Data Overview

 Exemptions

 Download

 Feedback

 Filters

Illinois School Vaccination Coverage Dashboard

How protected are school-aged children?

Data through: **October 2023**

Source: [Illinois School Board of Education \(ISBE\)](#)

During the '22-'23 school year **4,761 (95.7%)** out of 4,976 schools reported on **Measles**

To change school year and Vaccine go to the 'Filters' button

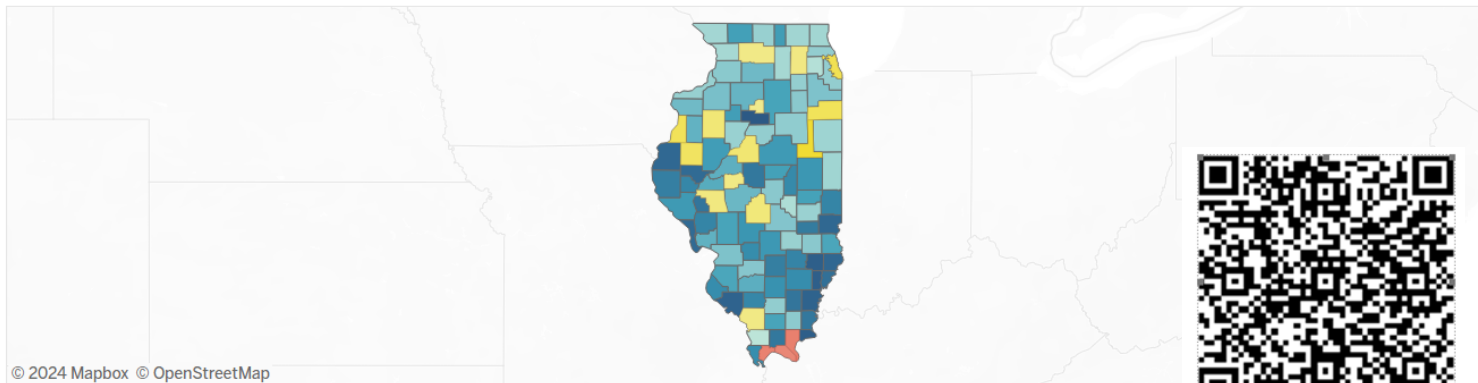
Illinois map of school vaccination coverage protection

The below map of Illinois shows how protected (i.e., vaccinated against Polio) school children are within the county.

The blue, yellow, red coloring is based off of Community Immunity Thresholds (CIT). Please click on the icon below to learn more.

Select a county to reveal a secondary map that zooms into the county and shows individual schools as well as supporting data such as Social Vulnerability Index (SVI).

De-select county to return to state view.



© 2024 Mapbox © OpenStreetMap



Click here for more on
Community Immunity
Thresholds



School code details

Resources & Support

- Illinois Chapter, American Academy of Pediatrics (ICAAP) [Emerging Issues Webpage](#)
- ICAAP handouts: What You Should Know About Measles During an Outbreak - [English](#) and [Spanish](#)
- CDPH handout: [FAQs in English/Spanish](#)
- CDC: [Educational Resources for Parents and Childcare Providers](#)
- Top 4 Things Parents Need to Know about Measles: [English](#), [Spanish](#)
- Measles and the Vaccine (Shot) to Prevent It: [English](#), [Spanish](#)
- HealthyChildren.org: [How to Protect Your Children During a Measles Outbreak](#) and [Protecting Your Baby From a Measles Outbreak FAQ](#)

Resources & Support

- Register and submit your questions:
<https://bit.ly/CDC-AMA-MeaslesUpdate1>

WE ARE **PROJECT FIRSTLINE**



As we enter the spring and summer travel season, clinicians should be on alert for cases of measles. Join CDC and the American Medical Association (AMA) **Thursday, March 28, 1 p.m. EDT**, for a special fireside chat to discuss the current trends in measles epidemiology, recognition of measles, travel-associated risks, core healthcare infection prevention measures, and the importance of vaccination.

Be on Alert for Travel-Related Measles



Admiral Rachel L. Levine, MD



Demetre Daskalakis, MD, MPH



David Sugerman, MD, MPH



Thomas (Dan) Filardo, MD



Michael Bell, MD



PROJECT
FIRSTLINE



AMA's Dr. Kaufman West will moderate a discussion with HHS Speaker Admiral Levine and CDC Speakers, Demetre Daskalakis, MD, MPH, David Sugerman, MD MPH FACEP, Thomas (Dan) Filardo, MD, and Michael Bell, MD, as they provide core measles infection prevention strategies in all healthcare settings.