

Basic Measles Testing Decision Algorithm

All PCR testing at IDPH laboratories must be pre-authorized by the local health department.					
	Exposure History	Symptom History	Immunity Status	Testing recommendations	Other Control measures
1	Contact to index case/exposure to confirmed or probable case ¹	Meets clinical case definition ²	Susceptible ⁴ OR presumptively immune ⁵	Swab for PCR ⁶ Serology: measles IgM and IgG	*Isolate (home or airborne ⁷) *Notify Local Health Department at time of testing a suspect case¹⁰
2	Contact to index case/exposure to confirmed or probable case ¹	No rash but symptoms consistent with prodrome ³	Susceptible ⁴	Swab for PCR ⁶ Serology: measles IgM and IgG	*Isolate (home or airborne ⁷) *Notify Local Health Department at time of testing a suspect case¹⁰
3	Contact to index case/exposure to confirmed or probable case ¹	No rash but symptoms consistent with prodrome ³	Has evidence of presumptive immunity ⁵	Only if admitting to hospital: then collect PCR ⁶ and serology	*Isolate (home or airborne ⁷) *Notify Local Health Department at time of testing a suspect case¹⁰ *If rash onset, go to #1
4	In outbreak region ⁸	Meets clinical case definition ²	Susceptible ⁴	Swab for PCR ⁶ Serology: measles IgM and IgG	*Isolate (home or airborne ⁷) *Notify Local Health Department at time of testing a suspect case¹⁰
5	In outbreak region ⁸	No rash but symptoms consistent with prodrome ³	Susceptible ⁴ OR presumptively immune ⁵	Only if admitting to hospital: then collect PCR ⁶ and serology	*Isolate (home or airborne ⁷) *Notify Local Health Department at time of testing a suspect case¹⁰ *If rash onset, go to #4
6	No specific risk factor	Meets clinical case definition ²	Susceptible ⁴	Consult with public health.	*Isolate (home or airborne ⁷) *Notify Local Health Department at time of testing a suspect case¹⁰
7	No specific risk factor	Does not meet clinical case definition ¹ , may meet prodrome ³ .	Susceptible ⁴ OR presumptively immune ⁵	None	*Triage as usual. *Advise to stay home and avoid others while febrile if appropriate. *Offer MMR if indicated and no contraindications.

Definitions

1. Contact to index case/exposure to confirmed or probable case: known close contact of a case or was at a known exposure site (location and time) when the confirmed or probable case was infectious. (4 days before or 4 days after rash onset).
2. Clinical case definition: An acute illness characterized by: Generalized, maculopapular rash lasting ≥3 days; **and** Temperature ≥101°F or 38.3°C; **and** Cough, coryza, or conjunctivitis.

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3. Prodrome definition⁹: acute fever, conjunctivitis, coryza, cough, small spots with whitish or bluish centers on an erythematous base on the buccal mucosa (Koplik’s spots). No rash present.
4. Susceptible: lacks presumptive evidence of immunity. See #5.
5. Presumptive evidence of immunity:

Table 1. Presumptive evidence of measles immunity*

Routine	Students at post-high school educational institutions	Health-care personnel†	International travelers
(1) Documentation of age-appropriate vaccination with a live measles virus-containing vaccine§: –preschool-aged children: 1 dose –school-aged children (grades K-12): 2 doses –adults not at high risk¶¶: 1 dose, or (2) Laboratory evidence of immunity,¶ or (3) Laboratory confirmation of disease, or (4) Born before 1957	(1) Documentation of vaccination with 2 doses of live measles virus-containing vaccine,§ or (2) Laboratory evidence of immunity,¶ or (3) Laboratory confirmation of disease, or (4) Born before 1957	(1) Documentation of vaccination with 2 doses of live measles virus-containing vaccine,§ or (2) Laboratory evidence of immunity,¶ or (3) Laboratory confirmation of disease, or (4) Born before 1957††	(1) Documentation of age-appropriate vaccination with a live measles virus-containing vaccine: –infants aged 6–11 months**: 1 dose –persons aged ≥12 months§: 2 doses, or (2) Laboratory evidence of immunity,¶ or (3) Laboratory confirmation of disease, or (4) Born before 1957

* Can vary depending on current state or local requirements.

† Health-care personnel include all paid and unpaid persons working in health-care settings who have the potential for exposure to patients and/or to infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air.

§ The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.

¶ Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.

** Children who receive a dose of MMR vaccine at age <12 months should be revaccinated with 2 doses of MMR vaccine, the first of which should be administered when the child is aged 12 through 15 months and the second at least 28 days later. If the child remains in an area where disease risk is high, the first dose should be administered at age 12 months.

†† For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, rubella, or mumps immunity or laboratory confirmation of disease, health-care facilities should consider vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), respectively.

¶¶ Adults at high risk include students in post-high school educational institutions, health-care personnel, and international travelers.

Source: <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm>

6. Measles PCR Testing at IDPH laboratories: For more information on measles PCR specimen collection, see: <https://dph.partner.illinois.gov/communities/communicabledisease/CDAZ/Documents/Lab%20documents/IDPH%20Division%20of%20Laboratories%20Manual%20of%20Services%20April%202017.pdf>
7. Isolation for suspected, probable, or confirmed measles cases:
 - **At home:** the patient stays home and is out of the public through 4 days after rash onset. Do not attend work, school, daycare, or other settings/activities outside the home.
 - **In Healthcare Facilities:** Airborne precautions, preferably place the patient in an airborne isolation room with negative airflow pressure. If a negative pressure room is not available, the patient should be placed in a neutral pressure room with the door closed. Do not use the room for two hours after the patient leaves that room.
8. Outbreak region: area where a case has been recently present and exposures have occurred. Others to consider are those with recent international travel where measles is endemic and presentation of a rash illness.
9. Control of Communicable Diseases Manual, 20th Edition.
10. Measles is reportable in Illinois within 24 hours; this includes suspect cases. Contact the LHD when triaging a suspect measles case as soon as possible; do not wait for testing results to report the case to public health.

*****NOTE: testing consideration should occur in consultation with your local health department and/or IDPH.**