

## Post-exposure prophylaxis (PEP) for measles exposures who are NOT pregnant or immunocompromised

Age range	Measles immune status <sup>a</sup>	PEP type depending on time after initial exposure		
		≤3 days (≤72 hours)	4-6 days	>6 days
All ages	Immune (IgG positive, 2 MMR vaccine doses, or born before 1957 <sup>b</sup> )	<ul style="list-style-type: none"> <li>PEP not indicated. Exposed person has documented immunity</li> </ul>		
<6 months	Non-immune (due to age)	<ul style="list-style-type: none"> <li>Give intramuscular immunoglobulin (IMIG)<sup>cd</sup></li> <li>Home quarantine<sup>e</sup> for 28 days after last exposure</li> </ul>		<ul style="list-style-type: none"> <li>PEP not indicated (too late)<sup>f</sup></li> <li>Home quarantine<sup>e</sup> for 21 days after last exposure</li> </ul>
6-11 months	Non-immune (due to age)	<ul style="list-style-type: none"> <li>Give MMR vaccine (MMR vaccine preferred over IG)</li> <li>No quarantine needed</li> </ul>	<ul style="list-style-type: none"> <li>Give intramuscular immunoglobulin (IMIG)<sup>cd</sup></li> <li>Home quarantine<sup>e</sup> for 28 days after last exposure</li> </ul>	<ul style="list-style-type: none"> <li>PEP not indicated (too late)<sup>f</sup></li> <li>Home quarantine<sup>e</sup> for 21 days last after exposure</li> </ul>
≥12 months	Non-immune (0 doses MMR vaccine or IgG negative)	<ul style="list-style-type: none"> <li>Give MMR vaccine.</li> <li>No quarantine needed<sup>b</sup></li> </ul>	<ul style="list-style-type: none"> <li>PEP not indicated (too late)<sup>f</sup></li> <li>Home quarantine<sup>e</sup> for 21 days after last exposure, then give MMR vaccine to protect from future exposures</li> </ul>	
≥12 months	1 dose of MMR vaccine <sup>b</sup>	<ul style="list-style-type: none"> <li>Give 2<sup>nd</sup> MMR vaccine dose if ≥28 days from last dose of live vaccine</li> <li>No quarantine needed</li> </ul>	<u>Household member of a confirmed/suspected case</u> <ul style="list-style-type: none"> <li>Obtain IgG titers to determine immunity. Home quarantine<sup>e</sup> while awaiting results; if IgG negative, quarantine for 21 days after last exposure (too late for PEP)<sup>f</sup></li> </ul>	
			<u>Not a household member of a confirmed/suspected case</u> <ul style="list-style-type: none"> <li>Age 1-3 years: Less likely to get sick because has 1 dose of MMR</li> <li>Age ≥4 years: Less likely to get sick because has 1 dose of MMR, and give 2<sup>nd</sup> MMR to protect from future exposures</li> </ul>	
Adults	Unknown measles immune status	<ul style="list-style-type: none"> <li>Give MMR vaccine.</li> <li>No quarantine needed<sup>b</sup></li> </ul>	<u>Household member of a confirmed/suspected case</u> <ul style="list-style-type: none"> <li>Obtain IgG titers to determine immunity. Home quarantine<sup>e</sup> while awaiting results; if IgG negative, quarantine for 21 days after last exposure (too late for PEP)<sup>f</sup></li> </ul>	
			<u>Not a household member of a confirmed/suspected case</u> Does contact work in setting with children (daycare/school) or healthcare facility <ul style="list-style-type: none"> <li><u>Yes</u>: Obtain titers to determine immunity. Home quarantine<sup>e</sup> while awaiting results; if IgG negative, quarantine for 21 days after last exposure (too late for PEP)<sup>f</sup></li> <li><u>No</u>: Contact can reach out to their own provider to obtain measles IgG titers<sup>f</sup></li> </ul>	

<sup>a</sup> All persons exposed to measles must be notified of their exposure, regardless of their evidence of immunity to measles.

<sup>b</sup> Birth before 1957 or 1 dose of MMR should not be considered sufficient for household members of confirmed measles cases or healthcare workers exposed to measles; without documented positive measles IgG titers or 2 MMR doses, consider them to have unknown immunity. Furlough non-immune healthcare workers for 21 days even if they get MMR PEP.

<sup>c</sup> For patients who receive IG, provide these instructions: [www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-non-cases.pdf](http://www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-non-cases.pdf)

<sup>d</sup> Dosing of intramuscular IG for infants aged <12 months is 0.5 mL/kg of body weight (max dose 15mL). Administration of MMR or varicella vaccines must be delayed by 6 months after administration of intramuscular IG and by 8 months after intravenous IG.

<sup>e</sup> When instructing home quarantine, ensure that all household members of the exposed individual are immune to measles. IG prolongs the incubation period to 28 days.

<sup>f</sup> For patients who do not receive PEP, provide these instructions: [www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-cases.pdf](http://www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-cases.pdf)

## Post-exposure prophylaxis (PEP) for measles exposures who ARE pregnant or immunocompromised

BOI Script Category	Age range	Measles immune status <sup>a</sup>	PEP type depending on time after initial exposure		
			≤3 days (≤72 hours)	4-6 days	>6 days
Severely Immuno-compromised <sup>b</sup>	<12 months	Will need IG regardless of measles immune status	<ul style="list-style-type: none"> <li>Give intramuscular immunoglobulin (IMIG)<sup>cd</sup></li> <li>Home quarantine<sup>e</sup> for 28 days after last exposure</li> </ul>		<ul style="list-style-type: none"> <li>PEP not indicated (too late)<sup>f</sup></li> <li>Home quarantine<sup>e</sup> for 21 days after last exposure</li> </ul>
	≥12 months		<ul style="list-style-type: none"> <li>Give intravenous immunoglobulin (IVIG)<sup>cd</sup></li> <li>Home quarantine<sup>e</sup> for 28 days after last exposure</li> </ul>		
Pregnant	n/a	Immune (IgG positive or 2 MMR vaccine doses)	<ul style="list-style-type: none"> <li>PEP not indicated<sup>f</sup></li> </ul>		
		Non-immune (IgG negative)	<ul style="list-style-type: none"> <li>Give intravenous immunoglobulin (IVIG)<sup>cd</sup></li> <li>Home quarantine<sup>e</sup> for 28 days after last exposure</li> </ul>		<ul style="list-style-type: none"> <li>PEP not indicated (too late)<sup>f</sup></li> <li>Home quarantine<sup>e</sup> for 21 days after last exposure</li> </ul>
		Unknown immunity	<ul style="list-style-type: none"> <li>Draw titers (measles IgG) STAT to determine immunity; proceed as above based on titer results</li> </ul>		<ul style="list-style-type: none"> <li>PEP not indicated (too late)<sup>f</sup></li> <li>Home quarantine<sup>e</sup> for 21 days after last exposure</li> </ul>

<sup>a</sup> All persons exposed to measles must be notified of their exposure, regardless of their evidence of immunity to measles.

<sup>b</sup> Management of immunocompromised persons can be challenging and may require individualized decisions with provider based on immunocompromising condition or medications.

### Severely immunocompromising conditions (per ACIP and IDSA)\* include:

- Severe primary immunodeficiency;
- Bone marrow transplant until ≥12 months after finishing all immunosuppressive treatment, and maybe longer in patients who have developed graft-versus-host disease;
- On treatment for acute lymphoblastic leukemia (ALL) within and until ≥6 months after completion of immunosuppressive chemotherapy;
- On cancer chemotherapy\*\*
- Post solid organ transplantation\*\*
- Receiving daily corticosteroid therapy with a dose ≥20mg (or >2 mg/kg/day for patients who weigh <10kg) of prednisone or equivalent for ≥14 days
- Receiving certain biologic immune modulators, such as tumor necrosis factor-alpha (TNF-α) blockers or rituximab\*\*
- After hematopoietic stem cell transplant, duration of high-level immunosuppression is highly variable and depends on type of transplant (longer for allogenic than autologous), type of donor and stem cell source, and post-transplant complications such as graft vs. host disease and their treatments\*\*
- AIDS or HIV with severe immunosuppression defined as CD4 <15% (all ages) or CD4 count <200 lymphocytes/mm<sup>3</sup> (aged >5 years).

**Low-level immunosuppression:** In the absence of published guidance on exposed persons with low-level immunosuppression, consider assessing presumptive immunity to measles (measles IgG positive or 2 MMR vaccine doses) to determine if PEP is indicated. If not immune to measles, give PEP as MMR (if not contraindicated<sup>^</sup> and within 72 hours of initial exposure). Consider intravenous IG<sup>e</sup> if MMR is contraindicated<sup>^</sup> or if it is too late for MMR (day 4-6 after initial exposure) with home quarantine for 28 days after last exposure. If no PEP is given because it is too late, home quarantine for 21 days after last exposure<sup>e</sup>.

<sup>c</sup> For patients who receive IG, provide these instructions: [www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-non-cases.pdf](http://www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-non-cases.pdf)

<sup>d</sup> Dosing of intramuscular IG for infants aged <12 months: 0.5 mL/kg of body weight (max dose 15mL). Dosing of intravenous IG for pregnant women not immune to measles and immunocompromised persons: 400 mg/kg. MMR or varicella vaccine administration must be delayed by 6 months and 8 months after intramuscular and intravenous IG, respectively.

<sup>e</sup> When implementing home quarantine, ensure that all household members of the exposed individual are immune to measles. IG prolongs the incubation period to 28 days.

<sup>f</sup> For patients who do not receive PEP, provide these instructions: [www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-cases.pdf](http://www1.nyc.gov/assets/doh/downloads/pdf/imm/stay-home-cases.pdf)

\* References: CDC. Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013. MMWR. 2013;62(4);

Rubin et. al. 2013 IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host. CID. 2014:58.

\*\* Check guidance/discuss with treating provider as duration of immunosuppression during or following chemotherapy, transplants, or biologic immune modulators may vary.