# Measles Post-Exposure Prophylaxis (PEP) for Non-Symptomatic Susceptible Contacts

## To determine appropriate post-exposure prophylaxis:

- Determine patient's risk factor and identify time from first exposure to measles case. Refer to Appendix E of the WA DOH Measles Guideline for algorithm to assess for exposure.
- PEP should only be given to a person without evidence of immunity.
- Contact the Local Health Jurisdiction (LHJ) with questions or if further guidance is needed.

People exposed to measles who do not have presumptive evidence of immunity to measles should be offered post-exposure prophylaxis (PEP). There are two types of PEP for measles: MMR vaccine or immune globulin (IG). The efficacy of either form of PEP (MMR vaccine or IG) for preventing measles disease is greatest when administered as soon as possible after exposure. Any person who is not immune to measles who received IG PEP should also get MMR vaccine at least 6 months after intramuscular IG (IMIG) or 8 months after intravenous IG (IVIG) AND is age 12 months or older.

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

| Risk Factor | Time from First Exposure | |
|---|---|---|
| | Less than 72 hours | 72 hours through day 6 |
| Infant less than 6 months old [1] | Give intramuscular IG (IMIG): 0.5 ml/kg (max dose = 15 mL) | Give IMIG: 0.5 ml/kg IM (max dose = 15 mL) |
| Infants 6 through 11 months old [1, 2] | MMR vaccine preferred over IG | Give IMIG: 0.5 ml/kg IM (max dose = 15 mL) |
| Susceptible pregnant woman [3] | Give intravenous IG (IVIG): 400 mg/kg | Give IVIG: 400 mg/kg |
| Severely immunocompromised [3, 4] | Give IVIG: 400 mg/kg | Give IVIG: 400 mg/kg |
| Susceptible close contact over 1 year old [5] | Give MMR vaccine if no contraindications | Can consider giving IMIG : 0.5 mL/kg to those less than 66 pounds |

1. Patients under age 12 months who receive MMR vaccine should be revaccinated with 2 additional doses after their first birthday. To avoid interference with the immune response between MMR or MMRV and IG, wait 6 months after IMIG administration. Do not administer MMR and IG at the same time.
2. IMIG is recommended for infants younger than 12 months old.
3. IVIG is recommended for severely immunocompromised people and pregnant people. IG is not indicated for people who have received 1 dose of measles-containing vaccine at 12 months or older unless they are severely immunocompromised. Wait 8 months after IVIG before vaccinating with MMR/Varicella (MMR/V).

4. Severely immunocompromised includes measles contacts:
   - with severe primary immunodeficiency (regardless of age, vaccination status, or type of exposure)
   - who are receiving cancer chemotherapy
   - on treatment for acute lymphoblastic leukemia (ALL) until at least 6 months after completion of immunosuppressive chemotherapy
   - within 2 months after solid organ transplantation
   - are 12 months post immunosuppressive treatment who have received a bone marrow transplant, or longer in patients who have developed graft-versus-host disease
   - who are HIV positive with a CD4 T-lymphocyte count <200 cells/mm 3 (age >5 years) and percentage <15 (all ages) (some experts include HIV positive persons who lack recent confirmation of immunologic status or measles immunity)
   - receiving daily corticosteroid therapy with a dose ≥20 mg (or >2 mg/kg/day for patients who weigh <10 kg) of prednisone or equivalent for ≥14 days
   - receiving certain biologic immune modulators, that are a tumor necrosis factor-alpha (TNF-α) blocker or rituximab
5. A susceptible contact is a person over 1 year of age without documentation of at least 1 MMR or other evidence of immunity and has been exposed in settings with prolonged close contact (e.g., household, child care, classroom). The Local Health Jurisdiction (LHJ) will help determine who is a close contact.

**For additional PEP information for people exposed to measles, please see *Red Book* Measles chapter Table 3.32 and Table 3.33.**

## IMIG Dosing: For Persons Weighing Less than 30kg (66 lbs)

- Administer 0.5 ml/kg of IMIG in the anterolateral aspect of the upper thigh(s).
- Do not administer more than 3 mL of IMIG per injection site; for infants and children weighing greater than 6 kg, multiple injections are required.
- The maximum total dose per IMIG administration is 15 mL.
- Persons weighing greater than 30 kg (66 lbs) should receive IVIG since they are unlikely to receive an adequate dose via IMIG.

## Contraindications

- Do not give IG to people with immunoglobulin A (IgA) deficiency. Persons with IgA deficiencies have the potential for developing antibodies to IgA and therefore could experience an anaphylactic reaction when IG is administered.
- Do not give IMIG to persons with severe thrombocytopenia or any coagulating disorder that would contraindicate intramuscular injections.
- Do not give IG to persons with a history of anaphylactic reaction to a previous dose of IG.

## Precautions

- Pregnancy: It is unknown whether IG can cause fetal harm when administered to a pregnant woman or if it could affect reproduction.
- Careful administration in persons reporting a history of systemic allergic reaction following the administration of IG.
- Concerns/side effects from IG: thrombosis, risks with human blood products, infusion reactions.

# Planning Access to IG

Preparing for measles outbreaks includes planning for PEP. Measles PEP provides protection and/or modifies the clinical course of measles among susceptible people. Prior planning is critical to ensure rapid availability of IG within six days of verified measles exposure. Public health officials and health care providers should review and update their plan to obtain IG doses when needed for measles PEP.

## Before Cases are Identified

1. Establish a plan for obtaining IG, especially if there are areas with low MMR vaccine coverage. IG is not available through the Childhood Vaccine Program and the Adult Vaccine Program.
2. Work with local hospitals, health care systems, and health care coalitions, in coordination with LHJs, to identify avenues for accessing IG and any available sources for IG doses locally.
3. Explore options for purchasing IG and process to procure or obtain when needed. Dependent upon available funding, state and local governments can become members of MMCAP Infuse (a national cooperative group purchasing organization for government facilities that provide health care services). IG can be purchased at a contracted rate.

## After Cases are Identified

1. Coordinate with local hospitals, health care systems/coalitions, and/or LHJs to identify IG doses that are immediately available. IG does not require an infusion center or administration at a hospital, but local hospitals may have doses that could be immediately accessible.
2. If local hospitals and other sources do not have sufficient supply of IG doses, consider these options for product ordering:
   a. Contact the Senior Healthcare Consultant (SHCs) for MMCAP Infuse distributors for the Northwestern Region. To fill orders rapidly, you must establish an MMCAP account.
   b. Contact the IG manufacturer representative via ordering information webpage GamaSTAN.

## Intramuscular Immune Globulin

GamaSTAN is the only intramuscular (IM) immune globulin (IG) available in the U.S. GamaSTAN is supplied in 2mL and 10mL single dose vials. It is stored at 2-8ºC (36-46ºF) and has a shelf life of 3 years. Do not follow GamaSTAN package insert that indicates a 0.25 mL/kg dose as this lower dose does not reflect current ACIP recommendations.

# Additional Resources

- Chapter 7: Measles | Manual for the Surveillance of Vaccine-Preventable Diseases | CDC (CDC)
- Measles Reporting and Investigation Guideline (WA DOH)
- Measles | Washington State Department of Health (WA DOH)
- Measles | Red Book: 2024–2027 Report of the Committee on Infectious Diseases | Red Book Online | American Academy of Pediatrics (AAP)
- Measles Vaccine Recommendations | Measles (Rubeola) | CDC (CDC)
- Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013 (CDC)

# Program Contacts


- **Immunization:** oi@doh.wa.gov
- **Medical Countermeasures:** mcm@doh.wa.gov
- **Vaccine Preventable Diseases:** vpd-cde@doh.wa.gov



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