I. ORDER:
1. Check the ALERT Immunization Information System to determine whether the patient needs this vaccine and any other vaccines.
2. Screen for contraindications.
3. Provide the current Vaccine Information Statement (VIS), answering any questions.
4. Obtain a signed Vaccine Administration Record (VAR).
5. Give 0.5 ml of any MMR-containing vaccine **subcutaneously**.
   a. May give simultaneously with all routine adult and childhood vaccines according to age and immunization status of recipient.
   b. If not given simultaneously with another live virus vaccine, give at least 28 days apart.
   c. If a PPD tuberculin skin test is not given simultaneously with a MMR-containing vaccine, delay PPD for at least 4 weeks.

Signature  Health Officer or Medical Provider  Date
**II. LICENSED VACCINE**

**A. LICENSED COMBINATION MMR VACCINE**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Vaccine Components</th>
<th>Acceptable Age Range</th>
<th>Thimerosal</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-M-R® II(^1) (Merck)</td>
<td>Measles(^2) Mumps(^3) Rubella(^4)</td>
<td>≥12 months(^8)</td>
<td>No</td>
</tr>
<tr>
<td>ProQuad®(^6,7) (Merck)</td>
<td>Measles(^2) Mumps(^3) Rubella(^4) Varicella(^5)</td>
<td>12 months – 12 years</td>
<td>No</td>
</tr>
</tbody>
</table>

\(^1\) Each dose contains approximately 25 mcg of neomycin. The product contains no preservative. Sorbitol and hydrolyzed gelatin are added as stabilizers.

\(^2\) M-M-R® II contains a sterile, lyophilized preparation of ATTENUVAX®, a more attenuated line of measles virus, derived from Enders’ attenuated Edmonston strain and grown in cell cultures of chick embryo.

\(^3\) MUMPSVAX®, the Jeryl Lynn strain of mumps virus, is grown in cell cultures of chick embryo.

\(^4\) MERUVAX®, the Wistar RA 27/3 strain of live attenuated rubella virus, is grown in human diploid cell culture.

\(^5\) Oka/Merck strain of varicella-zoster virus propagated in MRC-5 cells.

\(^6\) MMRV vaccine must be stored frozen at an average temperature ≤ 5°F (≤ 15°C) and the diluent should be stored separately at room temperature.

\(^7\) MMRV, like Varicella vaccine, must be given within 30 minutes of reconstitution.


Note: Single antigen varicella under separate order
### III. MMR RECOMMENDATIONS FOR USE

**A. All persons ≥ 12 months of age without medical contraindications (e.g., pregnancy or severe immunosuppression), who**
- do not have acceptable evidence of immunity to measles, mumps, and rubella; or
- are required to be vaccinated for college attendance or medical care work, despite having acceptable evidence of immunity to measles

...should be vaccinated with MMR

**B. Acceptable evidence of immunity is as follows:**¹
- Birth before 1957, except for women of childbearing age
- Laboratory evidence of immunity (protective antibody titers); or
- Documentation of adequate vaccination, as follows.
  - Pre-school children: **1 dose**
  - School age children (grades K—12): **2 doses**
  - Women of childbearing age: **1 dose**
  - Healthcare personnel born during or after 1957: **2 doses**
  - Students at post-high-school educational institutions:
    - **2 doses measles & mumps**
    - **1 dose rubella**
  - International travelers –
    - Infants 6–11 months: **1 dose**
    - Persons ≥12 months of age: **2 doses**²
  - All other adults: **1 dose**

**C. During an outbreak, a 2nd dose of vaccine should be considered for all persons in groups affected by the outbreak and whose only evidence of immunity is documentation of a single dose of vaccine.**³

**D. Post-partum women who do not have evidence of immunity to rubella should receive MMR vaccine upon completion or termination of pregnancy.**

**E. Indications for repeating a dose of measles vaccine**
- Vaccination before the first birthday;
- Vaccination with killed measles vaccine,
- Vaccination with killed measles vaccine followed by live vaccine less than 4 months after the last dose of killed measles vaccine.
- Vaccination before 1968 with an unknown type of vaccine.
- Vaccination with IG in addition to a vaccine of unknown type.
  (Revaccination not necessary if IG given with Edmonston B vaccine.)

A child receiving a measles-containing vaccine dose at this age should get a normal 2-dose MMR vaccine series starting at age 12 months. This child would receive a total of 3 MMR doses.

An outbreak is determined and guided by the epidemiology and the setting of the outbreak.

IV. A. VACCINE SCHEDULE FOR MMR

<table>
<thead>
<tr>
<th>DOSE</th>
<th>MINIMUM AGE&lt;sup&gt;1,2&lt;/sup&gt;</th>
<th>MINIMUM SPACING&lt;sup&gt;1,2&lt;/sup&gt;</th>
<th>RECOMMENDED AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12 months&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Not applicable</td>
<td>12–15 months</td>
</tr>
<tr>
<td>2</td>
<td>13 months&lt;sup&gt;4&lt;/sup&gt;</td>
<td>28 days</td>
<td>4–6 years&lt;sup&gt;5,6&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup> For retrospective checking, doses that violate the minimum spacing or age by 4 or fewer days do not need to be repeated. However, live parenteral vaccines that are not administered simultaneously should be separated by at least 28 days.

<sup>2</sup> When an invalid dose needs to be repeated, the repeat dose should be spaced after the invalid dose by at least 28 days.

<sup>3</sup> May give as young as 6 months of age during a measles outbreak or for international travel. Children vaccinated prior to one year of age should be revaccinated at 12–15 months and should receive a third dose at school entry or at least 28 days after the second dose.

<sup>4</sup> Accept MMR #2 at any age as long as MMR #1 was given on or after the first birthday and MMR #2 was given at least 28 days later.

<sup>5</sup> OARs require that a second measles-containing vaccine be administered to Kindergartners unless a valid exemption is in place. See the October, 2008 Immunization Law Handbook for Schools, Preschools, Head Starts and Certified Day Care Providers for specific requirements.

<sup>6</sup> To include persons with HIV infection who do not have evidence of current severe immunosuppression. See Vaccination of Persons with HIV infection, Section V. I. p. 9.
### IV. B. VACCINE SCHEDULE FOR COMBINATION MEASLES, MUMPS, RUBELLA AND VARICELLA VACCINE (MMRV)

**Dose and Route:** 0.5 ml SC

<table>
<thead>
<tr>
<th>Dose</th>
<th>Minimum Age</th>
<th>Minimum Spacing</th>
<th>Recommended Age(^3,4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^1)</td>
<td>12 months</td>
<td></td>
<td>12–15 months(^1)</td>
</tr>
<tr>
<td>2(^2,3,4)</td>
<td>15 months(^5)</td>
<td>3 months from dose #1 to dose #2(^5)</td>
<td>4–6 years</td>
</tr>
</tbody>
</table>

\(^1\) For the 1\(^{st}\) dose of measles, mumps, rubella, and varicella vaccines at age 12–47 months, use MMR and varicella vaccines separately unless the parent or caregiver expresses a preference for MMRV. A personal or family history of seizures of any etiology is a precaution for MMRV vaccination (p.7, Section V-D).

\(^2\) MMRV is NOT recommended for persons with HIV infection regardless of degree of immunosuppression because it has not been studied in this population.

\(^3\) For the second dose of measles, mumps, rubella, and varicella vaccines (15 months–12 years) and for the 1\(^{st}\) dose at age \(\geq 48\) months, use of MMRV generally is preferred over separate injections of its equivalent component vaccines. Considerations should include provider assessment, patient preference, and the potential for adverse events.

\(^4\) For children 12 months–12 years of age, for whom additional protection from varicella disease is desired in response to an outbreak, a second dose of MMRV may be administered if at least 28 days have elapsed since receiving the first dose of a varicella-containing vaccine.

\(^5\) MMRV may be used in children 12 months–12 years of age if a second dose of measles, mumps and rubella vaccine is to be administered and if no MMR is available at the time the second dose of MMR is indicated.

\(^6\) Although 15 months is the recommended minimum age for the 2\(^{nd}\) dose (allowing for a 3-month interval between doses one and two), if the second dose is administered at least 28 days following the first dose, the second dose is considered valid and does not need to be repeated.
V. CONTRAINDICATIONS and PRECAUTIONS

A. Allergies to vaccine components:
   Do not give a MMR or MMRV to any person with a history of anaphylactic reaction (hives, swelling of the mouth or throat, difficulty breathing, hypotension, or shock) to the vaccine or a component of the vaccine, e.g., gelatin or neomycin. (Contact dermatitis reaction to neomycin is not a contraindication).
   - A history of penicillin allergy is not a contraindication to a MMR-containing vaccine.
   - MMR-containing vaccine may be given to egg-allergic children and adults without prior routine skin testing or use of special protocols.

B. Pregnant Women
   - Do not vaccinate pregnant women with a MMR-containing vaccine.
   - Non-pregnant women being vaccinated should avoid becoming pregnant for 4 weeks following each dose of MMR-containing vaccine.
   - Breastfeeding is not a contraindication to MMR-containing vaccine for the woman or the breast-feeding child.
   - Close contact with a pregnant woman is not a contraindication to MMR-containing vaccination of the contact.

C. Defer MMR-containing vaccination during moderate or severe acute illness.

D. Precaution for MMRV vaccine
   - A personal or family (i.e., sibling or parent) history of seizures of any etiology. Studies suggest that children who have a personal or family history of febrile seizures or epilepsy are at increased risk for febrile seizures compared with children without such histories. Postlicensure studies indicated that, compared to giving MMR and varicella vaccine separately, MMRV vaccine was associated with 1 additional febrile seizure 5–12 days following vaccination for every 2,400 kids 12–23 months of age vaccinated with MMRV.

E. MMR-containing vaccine is not recommended for persons who have untreated active tuberculosis.
   - A TB skin test may be given before or on the same day as an MMR-containing vaccine.
   - If TB skin test is needed after live virus vaccine is given, wait ≥ 4 weeks to place a PPD skin test. MMR or MMRV may temporarily suppress reactivity to TB test, resulting in false negative results.
V. CONTRAINDICATIONS AND PRECAUTIONS – cont.

F. Persons with a history of thrombocytopenia or low platelet counts at time of injection may be at increased risk for clinically significant thrombocytopenia following a MMR-containing vaccine. If a patient experiences an episode of thrombocytopenia within 6 weeks after receiving an MMR-containing vaccine, consult with client’s physician before giving subsequent doses. Serologic testing for measles and varicella immunity may be prudent prior to administration of either vaccine.

G. Immune globulin (IG) and MMR-containing vaccines should not be administered simultaneously.
- If IG is given before MMR or MMRV, consult the table in Sect. VI p.10 for the appropriate interval.
- If MMR is given first, wait at least 2 weeks before giving IG.
- If a varicella-containing vaccine is given first, wait at least 3 weeks before giving IG.
- Should MMR need to be administered post-partum to a woman who is also receiving a post-partum dose of Rho (D) immune globulin, the woman should be tested 3 months later to ensure seroconversion for measles and rubella.

H. Do not give a MMR and MMRV-containing vaccine to individuals with severe immunosuppression due to:
- Leukemia
- Lymphoma or generalized malignancy
- Severe HIV infection or AIDS
- Immunosuppressive therapy (e.g., large daily doses of steroids)
- Congenital immunodeficiency
I. Vaccination of Persons with HIV infection

a. Who do not have evidence of current severe immunosuppression

- Age 12 months: CD4 % $\geq 15\%$ for $\geq 6$ months
- Age $> 5$ years: CD4% $\geq 15$ for $\geq 6$ months AND $\geq 200$ / $\text{mm}^3$ for $\geq 6$ months

b. And do not have other evidence of measles, rubella, and mumps immunity.

- Two doses of MMR vaccine for all persons aged $\geq 12$ months
- The first dose should be administered at age 12 – 15 months and the second dose at age 4 – 6 years, or as early as 28 days after the first dose.
- Persons with perinatal HIV infection who were vaccinated prior to establishment of effective Anti Retroviral Therapy (ART) should receive two appropriately spaced doses of MMR vaccine once effective ART has been established.
- MMRV is NOT recommended for persons with HIV infection regardless of degree of immunosuppression because it has not been studied in this population.

1 MMR-containing vaccine may be considered for persons with leukemia in remission if at least 3 months have passed since termination of chemotherapy (Consult with patient’s oncologist).


3 A large dose of corticosteroids is considered equivalent to prednisone $\geq 2$ mg/kg/day or $\geq 20$ mg/day either given daily or every other day for $\geq 14$ days. Treatment with $< 2$ mg/kg/day, alternate-day, topical, replacement, or aerosolized steroid preparations is not a contraindication to an MMR-containing vaccine. (p.187 2012 12th Edition “Pink Book”)

4 MMR-containing vaccines should be avoided for at least 1 month after cessation of high-dose steroid treatment.
## VI. Suggested intervals between administration of immune globulin preparations and measles- or varicella-containing vaccine*

<table>
<thead>
<tr>
<th>Product/Indications</th>
<th>Dose (mg IgG/kg body weight)</th>
<th>Interval (months) before measles or varicella-containing vaccine administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSV monoclonal antibody (Synagis™)²</td>
<td>15 mg/kg intramuscularly (IM)</td>
<td>None</td>
</tr>
<tr>
<td>Tetanus IG (TIG)</td>
<td>250 units (10 mg IgG/kg) IM</td>
<td>3</td>
</tr>
<tr>
<td><strong>Hepatitis A IG</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact prophylaxis</td>
<td>0.02 ml/kg (3.3 mg IgG/kg) IM</td>
<td>3</td>
</tr>
<tr>
<td>International travel</td>
<td>0.06 ml/kg (10 mg IgG/kg) IM</td>
<td>3</td>
</tr>
<tr>
<td><strong>Hepatitis B prophylaxis (HBIG)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.06 ml/kg (10 mg IgG/kg) IM</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Rabies IG (RIG)</td>
<td>20 IU/kg (22 mg IgG/kg) IM</td>
<td>4</td>
</tr>
<tr>
<td><strong>Varicella IG</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125 units/10 kg (60-200 mg IgG/kg), IM – maximum 625 units</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Measles prophylaxis (IG):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard (i.e., non-immunocompromised) contact</td>
<td>0.50 ml/kg (40 mg IgG/kg) IM</td>
<td>5</td>
</tr>
<tr>
<td>Severely Immunocompromised contact</td>
<td>400 mg/kg of IV (Intravenously) IVIG</td>
<td>8</td>
</tr>
<tr>
<td><strong>Blood transfusion:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red blood cells (RBCs), washed</td>
<td>10 ml/kg (negligible IgG/kg) IV</td>
<td>None</td>
</tr>
<tr>
<td>RBCs, adenine-saline added</td>
<td>10 ml/kg (10 mg IgG/kg) IV</td>
<td>3</td>
</tr>
<tr>
<td>Packed RBCs (Hct 65%)³</td>
<td>10 ml/kg (60 mg IgG/kg) IV</td>
<td>6</td>
</tr>
<tr>
<td>Whole blood (Hct 35%-50%)³</td>
<td>10 ml/kg (80-100 mg IgG/kg) IV</td>
<td>6</td>
</tr>
<tr>
<td>Plasma/platelet products</td>
<td>10 ml/kg (160 mg IgG/kg) IV</td>
<td>7</td>
</tr>
<tr>
<td>Cytomegalovirus intravenous immune globulin (IGIV)</td>
<td>150 mg/kg maximum</td>
<td>6</td>
</tr>
<tr>
<td>Replacement therapy for immune deficiencies⁴</td>
<td>300-400 mg/kg IV (as IGIV)</td>
<td>8</td>
</tr>
<tr>
<td>Immune thrombocytopenic purpura (ITP)</td>
<td>400 mg/kg IV (as IGIV) 1000 mg/kg IV (as IGIV)</td>
<td>8 10</td>
</tr>
<tr>
<td>Postexposure varicella prophylaxis⁵</td>
<td>400 mg/kg IV</td>
<td>8</td>
</tr>
<tr>
<td>Kawasaki disease</td>
<td>2 g/kg IV (as IGIV)</td>
<td>11</td>
</tr>
</tbody>
</table>
This table is not intended for determining the correct indications and dosages for using antibody-containing products. Unvaccinated persons might not be fully protected against measles during the entire recommended interval, and additional doses of immune globulin or measles vaccine might be indicated after measles exposure. Concentrations of measles antibody in an immune globulin preparation can vary by manufacturer’s lot. The rate of antibody clearance after receipt of an immune globulin preparation also might vary. Recommended intervals are extrapolated from an estimated half-life of 30 days for passively acquired antibody and an observed interference with the immune response to measles vaccine for 5 months after a dose of 80 mg IgG/kg.

1 Varicella-containing vaccine, as used here, does not include zoster vaccine. Zoster vaccine may be given with antibody-containing blood products.
2 Contains antibody only to respiratory syncytial virus.
3 Assumes a serum IgG concentration of 16 mg/mL.
4 Measles and varicella vaccinations are recommended for children with asymptomatic or mildly symptomatic human immunodeficiency virus (HIV) infection but are contraindicated for persons with severe immunosuppression from HIV or any other immunosuppressive disorder.
5 The investigational product VariZIG, similar to licensed VZIG is a purified human immune globulin preparation made from plasma containing high levels of anti-varicella antibodies (immunoglobulin class G (IgG). When indicated, health-care providers make every effort to obtain and administer VariZIG. In situations in which administration of VariZIG does not appear possible within 96 hours of exposure, administration of immune globulin intravenous (IGIV) should be considered as an alternative. IGIV also should be administered within 96 hours of exposure. The recommended IGIV dose for postexposure prophylaxis of varicella is 400 mg/kg, administered once. For a pregnant woman who cannot receive VariZIG within 96 hours of exposure, clinicians can choose either to administer IGIV or closely monitor the woman for signs and symptoms of varicella and institute treatment with acyclovir if illness occurs (CDC. A new product for postexposure prophylaxis available under an investigational new drug application expanded access protocol. MMWR 2006;55:209-10.

VI. Continued (footnotes)


(04-2013)NOTE: ACIP updates for VariZIG and Measles IG are coming soon.
VII. SIDE EFFECTS AND ADVERSE EVENTS

This table represents vaccine-related injection-site and systemic adverse events reported 0–42 days post-vaccination in 12–23 month old children who received 1 dose of ProQuad® or MMRII and Varivax® vaccine.

<table>
<thead>
<tr>
<th></th>
<th>MMRII® and VARIVAX®</th>
<th>ProQuad®</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=2038</td>
<td>N= 4497</td>
</tr>
<tr>
<td>Adverse Events</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td><strong>Injection Site</strong>¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain/tenderness</td>
<td>26.7</td>
<td>22.0</td>
</tr>
<tr>
<td>Erythema²</td>
<td>15.8</td>
<td>14.4</td>
</tr>
<tr>
<td>Swelling²</td>
<td>9.8</td>
<td>8.4</td>
</tr>
<tr>
<td>Ecchymosis</td>
<td>2.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Rash</td>
<td>1.5</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Systemic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever ≥ 102°F (≥ 38.9°C)</td>
<td>14.9</td>
<td>21.5</td>
</tr>
<tr>
<td>Irritability</td>
<td>6.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Measles-like rash</td>
<td>2.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Varicella-like rash</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Rash (not otherwise specified)</td>
<td>1.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Upper respiratory infection</td>
<td>1.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>1.3</td>
<td>1.2</td>
</tr>
</tbody>
</table>

¹ Injection-site adverse reactions for MMRII® and VARIVAX® are based on occurrence with either of the vaccines administered.

² Injection-site adverse events solicited only from days 0–4 post-vaccination.

Source: ProQuad® Package insert 10/09; p6
VIII. OTHER CONSIDERATIONS

A. For unvaccinated persons who work within medical facilities, serologic screening need not be done before vaccinating for measles, mumps and rubella unless the medical facility considers it cost-effective.

B. Healthcare workers who are susceptible and working in public agencies that use state-supplied vaccine may receive MMR vaccine on-site (2 doses at least 28 days apart). Healthcare workers from private agencies will need to purchase vaccine at their own expense.

C. Healthcare students born after January 1, 1957 with no history of disease, no history of immunization, or a negative serology for measles should receive a two-dose series of MMR vaccine.

D. Individuals with laboratory documentation of immunity to all three MMR viruses need not be vaccinated.

E. Vaccination of internationally adopted children: The simplest approach to resolving concerns regarding MMR immunization is to revaccinate with one or two doses of MMR depending on the child’s age. Alternatively, serologic testing for IgG antibody to vaccine viruses indicated on the vaccine record can be considered. Consult CDC. General Recommendations on Immunization, MMWR 2006; 55 (RR-15) p.34 for further clarification regarding serologic follow-up.

F. Tuberculin (TB) skin testing
   1. TB skin test should be given before or on the same day as MMR administration.
   2. If a TB skin test is needed after MMR has been given, wait at least 4 weeks to place a TB skin test. Measles vaccination may temporarily suppress tuberculin reactivity, thereby giving false-negative skin test results.

   Continued on next page
VIII. OTHER CONSIDERATIONS, cont

G. Chemotherapy patients who have not received chemotherapy for at least three months may receive live virus vaccine. Provider approval required.

H. Persons who lack evidence of immunity to any of the three viruses in MMR are eligible for MMR. Give 2 doses at least 28 days apart.

I. For someone with a history of fainting with injections, a 15-minute observational period is recommended post immunization.

J. After reconstitution, MMR vaccine must be stored at refrigerator temperature and protected from light. If reconstituted vaccine is not used within 8 hours, it must be discarded.

K. MMRV, like varicella, must be protected from light and administered within 30 minutes of reconstitution.

L. Hematopoietic Stem Cell Transplant (HSCT) Revaccination: Per ACIP MMR vaccine should be administered 24 months after transplantation if the HSCT recipient is presumed to be immunocompetent. If a decision is made by transplant’s provider to vaccinate with varicella vaccine, the vaccine should be administered a minimum of 24 months after transplantation. Reference: General Recommendations on Immunization. MMWR 2011;60(RR-2). Available at http://www.cdc.gov/mmwr/pdf/rr/rr6002.pdf p. 22.
### IX. EVIDENCE OF IMMUNITY

For Routine Purposes, persons who meet the criteria below are considered immune to Measles, Mumps, or Rubella, respectively.

<table>
<thead>
<tr>
<th></th>
<th>Routine Vaccination</th>
<th>Students at post-high school educational institutions</th>
<th>International Travelers, Healthcare Personnel, High-risk adults</th>
</tr>
</thead>
</table>
| **Measles**       | 1. Documentation of age-appropriate vaccination with a live measles virus-containing vaccine\(^1\):  
                  | - preschool-aged children: 1 dose  
                  | - school-aged children, K-12: 2 doses  
                  | - adults not at high risk\(^5\): 1 dose, or  
                  | 2. Laboratory evidence of immunity\(^2\), or  
                  | 3. Laboratory confirmation of disease, or  
                  | 4. Born before 1957 | 1. Documentation of vaccination with 2 doses of live measles virus-containing vaccine\(^1\), or  
                  | 2. Laboratory evidence of immunity\(^2\), or  
                  | 3. Laboratory confirmation of disease, or  
                  | 4. Born before 1957 |
| **Rubella**       | 1. Documentation of vaccination with 1 dose of live rubella virus-containing vaccine\(^1\), or  
                  | 2. Laboratory evidence of immunity\(^2\), or  
                  | 3. Laboratory confirmation of disease, or  
                  | 4. Born before 1957 (except women of childbearing age who could become pregnant\(^4\)) | 1. Documentation of vaccination with 1 dose of live rubella virus-containing vaccine\(^1\), or  
                  | 2. Laboratory evidence of immunity\(^2\), or  
                  | 3. Laboratory confirmation of disease, or  
                  | 4. Born before 1957 (except women of childbearing age who could become pregnant\(^4\)) |
| **Mumps**         | 1. Documentation of age-appropriate vaccination with a live mumps virus-containing vaccine\(^1\):  
                  | - preschool-aged children: 1 dose  
                  | - school-aged children, K-12: 2 doses  
                  | - adults not at high risk\(^5\): 1 dose, or  
                  | 2. Laboratory evidence of immunity\(^2\), or  
                  | 3. Laboratory confirmation of disease, or  
                  | 4. Born before 1957 | 1. Documentation of vaccination with 2 doses of live mumps virus-containing vaccine\(^1\), or  
                  | 2. Laboratory evidence of immunity\(^2\), or  
                  | 3. Laboratory confirmation of disease, or  
                  | 4. Born before 1957 |

\(^1\) Documentation of vaccination with 2 doses of live measles virus-containing vaccine:
- infants 6–11 months\(^3\): 1 dose
- persons age ≥12 months\(^2\): 2 doses, or

\(^2\) Laboratory evidence of immunity:
- 1. Documentation of vaccination with 2 doses of live measles virus-containing vaccine\(^1\), or
- 2. Laboratory evidence of immunity\(^2\), or
- 3. Laboratory confirmation of disease, or
- 4. Born before 1957

\(^3\) Documentation of vaccination with 1 dose of live rubella virus-containing vaccine:
- infants 6–11 months\(^3\): 1 dose
- persons age ≥12 months\(^2\): 2 doses, or

\(^4\) Documentation of vaccination with 1 dose of live mumps virus-containing vaccine:
- infants 6–11 months\(^3\): 1 dose
- persons age ≥12 months\(^2\): 2 doses, or

\(^5\) High-risk adults refer to individuals at increased risk of complications from measles, mumps, or rubella, such as those with underlying medical conditions or immunocompromise.
4. Born before 1957

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

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

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

3. Children who receive a dose of MMR vaccine before age 12 months should be revaccinated with 2 doses of the first of which should be administered when the child is aged 12-15 months (12 months if the child remains in a high-risk area) and the second at least 28 days later.

4. Women of childbearing age are adolescent girls and premenopausal adult women. Because rubella can occur in some persons born before 1957 and because congenital rubella and congenital rubella syndrome can occur in the offspring of women infected with rubella virus during pregnancy, birth before 1957 is not acceptable evidence of rubella immunity for women who could become pregnant.

5. CDC. Immunization of health-care personnel—Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2011. MMWR 60 (RR07); 1–45. Available at: [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm?s_cid=rr6007a1_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm?s_cid=rr6007a1_e)


X. SPECIAL CONSIDERATIONS
XI. ADVERSE EVENTS REPORTING

Adverse events following immunization should be reported. [http://1.usa.gov/OregonStandingOrders](http://1.usa.gov/OregonStandingOrders) for Public provider forms. Send to Oregon Health Authority Immunization Program via confidential email, mail, or FAX (971-673-0278) according to state guidelines. Private providers report adverse events directly to VAERS at [www.vaers.hhs.gov](http://www.vaers.hhs.gov).

**Table 2. Events reportable to VAERS:**
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Illness, disability, injury or condition covered</th>
<th>Time period until first symptom</th>
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</table>
| Vaccines containing measles, mumps, or rubella (e.g., MMR, MMRV, MR, M, R) | 1. Anaphylaxis or anaphylactic shock  
2. Encephalopathy (or encephalitis)  
3. Any acute complication sequela (including death) | 0–4 hours  
5–15 days (not less than 5 and not more than 15 days)  
Not applicable |
| Vaccines containing rubella virus (e.g., MMR, MMRV, MR, R) | 1. Chronic arthritis  
2. Any acute complication sequela (including death) | 7–42 days  
Not applicable |
| Vaccines containing measles virus (e.g., MMR, MMRV, MR, M) | 1. Thrombocytopenic purpura  
2. Vaccine-strain measles viral infection in an immunodeficient recipient  
3. Any acute complication sequela (including death) | 7–30 days  
0–6 months  
Not applicable |


XII. REFERENCES


2. CDC. Measles imported by returning U.S. travelers aged 6–23 months, 2001–2011. MMWR 2011;60:397–400. Available at [www.cdc.gov/mmwr/preview/mmwrhtml/mm6013a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6013a1.htm)

3. CDC. Use of combination measles, mumps, rubella, and varicella vaccine: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2010;59(RR-3): 1–12. Available at [www.cdc.gov/mmwr/preview/mmwrhtml/rr5903a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5903a1.htm)


6. CDC. Measles — United States, January 1–April 25, 2008. MMWR 2008;57(early release) at www.cdc.gov/mmwr/preview/mmwrhtml/mm5718a5.htm


To clarify any part of the above order, consult with your health officer or Oregon Health Authority Immunization Program at (971) 673-0300 or 711 for TTY.

To download this order visit our website at http://1.usa.gov/OregonStandingOrders
To request this material in an alternative format (e.g., braille), please call 971-673-0300.