Health Advisory

Date: January 30, 2015
From: Spokane Regional Health District Epidemiology
To: Spokane County Health Care Providers
Subject: Measles Vaccine in Adults

Please ensure that this information is shared with the appropriate personnel in your facility. Thank you.

In light of ongoing measles transmission in the United States, and questions received from medical providers, SRHD is providing this Center for Disease Control and Prevention (CDC) guidance on measles vaccine in adults.

Measles Vaccination for Adults

Certain groups of adults may be at increased risk for exposure to measles and should receive special consideration for vaccination. These include persons attending colleges and other post-high school educational institutions, persons working in medical facilities, and international travelers.

Students who have no documentation of live measles, mumps, or rubella vaccination or other acceptable evidence of measles, mumps, and rubella immunity at the time of enrollment should be admitted to classes only after receiving the first dose of MMR. A second dose of MMR should be administered a minimum of 28 days later. Students with evidence of prior receipt of only one dose of MMR or other measles-containing vaccine on or after their first birthday should receive a second dose of MMR, provided at least 4 weeks have elapsed since their previous dose.

Persons who travel outside the United States are at increased risk of exposure to measles. Measles is endemic or epidemic in many countries throughout the world. Although proof of immunization is not required for entry into the United States or any other country, persons traveling or living abroad should have evidence of measles immunity. Adequate vaccination of persons who travel outside the United States is two doses of MMR.

Adults born in 1957 or later who do not have a medical contraindication should receive at least one dose of MMR vaccine unless they have documentation of vaccination with at least one dose of measles-, mumps- and rubella-containing vaccine or other acceptable evidence of immunity to these three diseases. With the exception of women who might become pregnant and persons who work in medical facilities, birth before 1957 generally can be considered acceptable evidence of immunity to measles, mumps, and rubella.

Measles Immunity in Healthcare Personnel

All persons who work within medical facilities should have evidence of immunity to measles.

Persons who work in health care facilities (HCFs) are at higher risk for exposure to measles than the general population. Because anyone working in a HCF (medical or nonmedical, paid or volunteer, full time or part time, student or non-student, with or without patient-care responsibilities) who is susceptible to measles or rubella can contract and transmit these diseases, all HCFs (inpatient and outpatient, private and public) should ensure measles
and rubella immunity among those who work within their facilities. [A possible exception is a facility that treats only elderly patients considered at low risk for measles and its complications].

Adequate vaccination for measles, mumps, and rubella for healthcare personnel born during or after 1957 consists of two doses of a live measles- and mumps-containing vaccine and at least one dose of a live rubella-containing vaccine. Healthcare personnel needing a second dose of measles-containing vaccine should be revaccinated at least 4 weeks after their first dose.

For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, mumps and/or rubella immunity or laboratory confirmation of disease, HCFs should consider vaccinating personnel with two doses of MMR vaccine.

Serologic screening need not be done before vaccinating for measles and rubella unless the medical facility considers it cost-effective. Serologic testing for immunity to measles and rubella is not necessary for persons documented to be appropriately vaccinated or who have other acceptable evidence of immunity.

Note: HCFs should assure that they have a system to maintain readily and rapidly available documentation of immunity. In the event of a measles exposure at a HCF, lack of documentation can lead to unnecessary serologic testing and vaccination of HCP who were immune to measles– and HCFs often absorb the majority of these costs.

Revaccination is recommended for persons who were:

- Vaccinated before the first birthday
- Vaccinated with killed measles vaccine
- Vaccinated prior to 1968 with an unknown type of vaccine
- Vaccinated with IG in addition to a further attenuated strain or vaccine of unknown type

Postexposure Prophylaxis

Live measles vaccine provides permanent protection and may prevent disease if given within 72 hours of exposure. Immune globulin (IG) may prevent or modify disease and provide temporary protection if given within 6 days of exposure. The dose is 0.25 mL/kg body weight, with a maximum of 15 mL intramuscularly. The recommended dose of IG for immunocompromised persons is 0.5mL/kg of body weight (maximum 15 mL) intramuscularly. IG may be especially indicated for susceptible household contacts of measles patients, particularly contacts younger than 1 year of age (for whom the risk of complications is highest).

MMR/MMRV Vaccine Contraindication and Precautions

- Severe allergic reaction to vaccine component or following prior dose
- Pregnancy
- Immunosuppression
- Moderate or severe acute illness
- Recent blood product
- Personal or family (sibling or parent) history of seizures of any etiology (MMRV only)

Allergies - Persons who have experienced a severe allergic reaction (anaphylaxis) to a vaccine component or following a prior dose of measles vaccine should generally not be vaccinated with MMR.

- MMR may be administered to egg-allergic persons without prior routine skin testing or the use of special protocols.
- MMR vaccine does not contain penicillin. A history of penicillin allergy is not a contraindication to vaccination with MMR or any other U.S. vaccine.

**Pregnancy/Breastfeeding** - Women known to be pregnant should not receive measles vaccine. Pregnancy should be avoided for 4 weeks following MMR vaccine. Close contact with a pregnant woman is NOT a contraindication to MMR vaccination of the contact. Breastfeeding is NOT a contraindication to vaccination of either the woman or the breastfeeding child.

**Immune suppression** - Replication of vaccine viruses can be prolonged in persons who are immunosuppressed or immunodeficient. For this reason, patients who are severely immunocompromised for any reason should not be given MMR vaccine. Healthy susceptible close contacts of severely immunocompromised persons should be vaccinated.

In general, persons receiving large daily doses of corticosteroids (2 mg/kg or more per day, or 20 mg or more per day of prednisone) for 14 days or more should not receive MMR vaccine because of concern about vaccine safety. MMR and its component vaccines should be avoided for at least 1 month after cessation of high-dose therapy. Persons receiving low-dose or short-course (less than 14 days) therapy, alternate-day treatment, maintenance physiologic doses, or topical, aerosol, intra-articular, bursal, or tendon injections may be vaccinated. Although persons receiving high doses of systemic corticosteroids daily or on alternate days during an interval of less than 14 days generally can receive MMR or its component vaccines immediately after cessation of treatment, some experts prefer waiting until 2 weeks after completion of therapy.

Patients with leukemia in remission who have not received chemotherapy for at least 3 months may receive MMR or its component vaccines.

Measles disease may be severe in persons with HIV infection. MMR vaccine is recommended for all asymptomatic HIV-infected persons and should be considered for symptomatic persons who are not severely immunosuppressed. MMR and other measles-containing vaccines are not recommended for HIV-infected persons with evidence of severe immunosuppression (see table), but MMRV is not approved for and should not be administered to a person known to be infected with HIV.

**Age-specific CD4+ T-lymphocyte count and percent of total lymphocytes as criteria for severe immunosuppression in HIV-infected persons.**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>age &lt;12 months</th>
<th>age 1-5 years</th>
<th>age 6-12 years</th>
<th>age &gt; or = 13 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CD4+ T-lymphocytes</td>
<td>&lt;750 per µL OR</td>
<td>&lt;500 per µL OR</td>
<td>&lt;200 per µL OR</td>
<td>&lt;200 per µL OR</td>
</tr>
<tr>
<td>CD4+ T-lymphocytes (as % of total lymphocytes)</td>
<td>&lt;15%</td>
<td>&lt;15%</td>
<td>&lt;15%</td>
<td>&lt;14%</td>
</tr>
</tbody>
</table>

**Blood product receipt** - Receipt of antibody-containing blood products (e.g., immune globulin, whole blood or packed red blood cells, intravenous immune globulin) may interfere with seroconversion after measles vaccine. The length of time that such passively acquired antibody persists depends on the concentration and quantity of blood product received. For more information, see [http://www.cdc.gov/vaccines/pubs/pinkbook/index.html](http://www.cdc.gov/vaccines/pubs/pinkbook/index.html).

**Note:** Persons who have a history of thrombocytopenic purpura or thrombocytopenia may be at increased risk for developing clinically significant thrombocytopenia after MMR vaccination. The benefits of immunization are usually greater than the potential risks, and administration of MMR vaccine is justified because of the even
greater risk for thrombocytopenia after measles or rubella disease. However, deferring a subsequent dose of MMR vaccine may be prudent if the previous episode of thrombocytopenia occurred within 6 weeks after the previous dose of the vaccine. Serologic evidence of immunity in such persons may be sought in lieu of MMR vaccination.