WASHINGTON STATE DEPARTMENT OF HEALTH

MMR Vaccine FAQs for Providers and Local Health Jurisdictions (LHJs)

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General MMR vaccine questions

- **What kind of vaccine is the MMR?**
  - The measles, mumps, and rubella (MMR) vaccine contains live, attenuated (or weakened) strains of the measles, mumps, and rubella viruses. The immune system makes protective virus-fighting antibodies against the weakened vaccine virus. Measles vaccine protects against wild-type measles because if you have been vaccinated and then are exposed to someone with measles, your body remembers how to fight off the wild-type virus. That's because the vaccine trained your immune system. The vaccine does not cause disease but works to produce a strong and long-lasting immune response.

- **Why are vaccines so important to prevent measles?**
  - The MMR vaccine is highly effective in preventing measles. High rates of MMR vaccinations in a community prevent costly outbreaks and protect those who are not able to be vaccinated, such as those with weakened immune systems or infants too young to be vaccinated.

- **How effective is the MMR vaccine?**
  - The MMR vaccine is very effective. One dose of the MMR vaccine is 93% effective in preventing measles. A second dose increases effectiveness to 97%.

- **Who should receive the MMR vaccine?**
  - All children should receive 2 doses of the MMR vaccine at 12-15 months of age, and again at 4-6 years of age.

- Adults born after 1957 who have never been vaccinated should get at least 1 dose of the MMR vaccine, unless at high risk.
- High risk persons include healthcare workers, school-age children, international travelers, and students attending post-high school education. If they have never been vaccinated or are not immune, they should get 2 doses of the MMR vaccine, given at least 28 days apart.

- **How long does it take for someone to be protected from measles after vaccination?**
  - For the measles vaccine to work, the body needs time to produce protective antibodies. Detectable antibodies appear within a few days after vaccination, but it takes about 2-3 weeks for people to be fully protected. Patients who travel internationally should plan to be fully vaccinated at least 2 weeks before leaving.

- **Is there anyone who should not receive the MMR vaccine?**
  - Pregnant women should not receive the MMR vaccine.
  - Anyone with a severe allergy to any component of the MMR vaccine.
  - People with active tuberculosis.
  - Anyone with a weakened immune system, either from a medical condition or medications that suppress the immune system.

- **What are the side effects of the MMR vaccine?**

  Common side effects include redness or soreness at the injection site, temporary joint or muscle pain, mild rash, or fever. These symptoms are usually mild and last 24-48 hours.

- **Can people who are fully vaccinated still get measles?**
  - The vaccine is 97% effective after 2 doses, so that leaves 3 out of 100 people who may not have made antibodies to the vaccine who can get measles. Vaccines, like medications, are not 100% effective. Some people's immune system may not have responded well to the vaccine. But, fully vaccinated people who get measles are more likely to have a milder illness and less likely to spread the disease to other people, especially those who can't get vaccinated.

- **A patient has not been vaccinated with MMR, but was exposed to somebody with measles. Should they receive a vaccine?**

- Yes. An MMR vaccine can be effective if given within 72 hours (3 days) of exposure.

- **If a patient is exposed to someone with measles and can't get the MMR vaccine, is it possible to get immune globulin?**
  - Yes, measles immune globulin can be given to pregnant people and people who have a weakened immune system who can't get the MMR vaccine.

- **Who should get titers to check for measles immunity?**
  - The CDC does not recommend measles antibody testing before or after MMR vaccination to assess immune response. 97% of people are protected against measles when they get 2 MMR vaccines, so antibody testing is not needed. Patients who haven't been vaccinated or have no documented immunity should receive 1 or more doses of the MMR vaccine.

- **What if a patient is unsure if they're immune to measles?**
  - Patients should try to find their vaccination records or documentation of measles immunity from a blood test. If there is no written documentation of vaccination or positive titer, give the patient an MMR vaccine. There is no harm in getting another dose of the MMR vaccine.

- **Does the MMR vaccine cause autism?**
  - No. There is no scientific evidence that any vaccine causes autism. The claim of a link between the MMR vaccine and autism has been extensively reviewed and debunked by dozens of studies and decades of research, including the National Academy of Sciences' Institute of Medicine.
  - The MMR vaccine saves lives. It is well-tested, and it remains our best defense against measles, mumps, and rubella.
  - Check out these resources for more information: Vaccines and Autism | Children's Hospital of Philadelphia and Autism and Vaccines | Vaccine Safety | CDC

- **What should I tell parents or patients who are vaccine hesitant?**

  - Measles is highly contagious. Measles can cause children to be very sick and can cause severe health issues such as pneumonia, swelling of the brain, deafness and even death.

  - About 1 in 5 people who are not vaccinated will need to be hospitalized.

- The MMR vaccine has been licensed since the 1970s. It's been monitored for safety for many years with minor side effects.
- Many large studies show no connection between the MMR vaccine and autism. The causes of autism spectrum disorder are not known, but genetics plays a strong role. Autism develops before birth or early in life.
- The MMR vaccine remains our best defense against measles, mumps, and rubella. One dose is 93% effective, and 2 doses are 97% effective to prevent measles infection.
- Vaccination is the best defense to maintain your immune system's strength and protect against these serious health risks.
- Helpful resource: check out our Plain Talk About Immunizations booklet.

MMR for children

- **When should children get the MMR vaccine?**
  - Children should get 2 doses to develop life-long immunity. The first dose should be given at 12-15 months of age and the second dose at 4-6 years of age.

- **Can a baby get the MMR vaccine before 12 months?**
  - Yes, in special situations – infants 6-11 months old may receive 1 dose during a measles outbreak, prior to internation travel, or travel to an area of the United States that is experiencing an outbreak. This early dose **does not** count toward the routine 2 dose series.

- **If there is a measles outbreak in my community, can we vaccinate children younger than 12 months?**
  - Children as young as 6 months can safely receive the MMR vaccine. Your local public health authority will make this decision and notify providers if this is the recommendation. These children will still need to receive 2 additional MMR vaccines starting at the age of 12 months to be considered immune to measles.

- **How soon after a child gets the first MMR vaccine can they receive the second vaccine?**
  - The second dose of the MMR vaccine is usually given at age 4-6 years old. However, it is safe to administer the second dose at least 28 days after the

first dose.

- **Is it better for a child to get the disease rather than the vaccine?**
    - The MMR vaccine is our best defense against measles, mumps and rubella. It is well-tested, and the benefits outweigh any potential risks. Hundreds of millions of doses of the MMR vaccine have been given in the U.S. since it was developed, with an excellent record of safety.
    - Measles can be a serious disease, with 30% of reported cases experiencing 1 or more complications. Death from measles occurs in 1 to 3 per 1,000 reported cases in the United States. Complications from measles are more common among very young children (younger than 5 years), people over age 20, pregnant people, or those with weakened immune systems.
    - The most common complication of measles include ear infections (1 in 10 children) and diarrhea (fewer than 1 in 10 people). Pneumonia (1 in 20 children) is the most common cause of measles-related death. About 1 out of 1,000 cases will develop acute encephalitis, an inflammation of the brain that can lead to permanent brain damage.

- **If a child has an egg allergy, is it safe to give them the MMR vaccine?**
    - Yes, it is safe to give the MMR vaccine to children with egg allergies. Several studies have demonstrated the safety of receiving the MMR vaccine in children who are severely allergic to eggs. Both the American Academy of Pediatrics and the Advisory Committee on Immunization Practices (ACIP) recommend giving the MMR vaccine to children, regardless of egg allergy.

- **A child received the MMR vaccine and developed a rash. Did the vaccine give the child measles?**
    - About 5 percent of people who receive the MMR vaccine develop a mild rash. When it occurs, the rash usually appears 7 to 12 days after vaccination. This rash is *not* an infection and cannot be spread to others. The vaccine viruses are not spread from a vaccinated person, even if they develop a rash. No special precautions, such as exclusion from school, are needed.

MMR for adults

- **Do adults who already received the MMR vaccine need a booster?**
    - Most vaccinated adults are immune to measles and do not need a booster. Make sure that there is documentation of MMR vaccination. Those born before 1957 likely had measles disease and developed life-long immunity and do not need MMR vaccines. If someone isn't sure of their immunity or

vaccination status, it is safe to get an MMR vaccine.

- **Who is considered a "high risk" adult who needs 2 MMR vaccines?**
    - People attending college or other post-high school educational institutions, healthcare workers, and international travelers

- **We often see college students who lack vaccination records, but whose titer results show they are not immune to some combination of measles, rubella, and/or mumps. What type of vaccine should these students receive?**
    - Single antigen vaccine is no longer available in the U.S. so the student should get the MMR vaccine. If a college student or other person at increased risk cannot produce written documentation of either immunization or disease, and titers are negative for 1 of more viruses, they should receive 2 doses of the MMR vaccine.

- **We have adult patients at high risk for measles, including patients going back to college or preparing for international travel, who don't remember ever receiving the MMR vaccine or having had measles disease. How should we manage these patients?**
    - You have 2 options. You can test for immunity or you can just give 2 doses of MMR at least 4 weeks apart. There is no harm in giving the MMR vaccine to a person who may already be immune. If serologic testing is done and the tests indicate the patient is not immune to 1 or more of the vaccine components, give your patient 2 doses of MMR at least 4 weeks apart. If any test results are indeterminate or equivocal, consider your patient nonimmune. The Advisory Committee on Immunization Practices (ACIP) does not recommend serologic testing after vaccination because commercial tests may not be sensitive enough to detect vaccine-induced immunity.

- **My patient was born before 1957; do they still need an MMR vaccine?**
    - No. People born before 1957 are considered immune to measles. This is because they lived through many years of epidemic measles before the first vaccines were developed and are very likely to have had the disease.

- **My patient was born before 1957 and their titers were negative. Should they get the MMR vaccine now?**
    - People born before 1957 are considered immune to measles. However, if their titers are negative, they can receive at least 1 dose of the MMR vaccine.

- **I'm a healthcare worker and I was born before 1957. How many MMR vaccines do I need?**
    - Although people born before 1957 are considered to have measles immunity, healthcare workers are in a high-risk category. In the absence of a measles outbreak, these individuals may consider MMR vaccination with 2 doses without other evidence of immunity. During an outbreak, it is recommended that all healthcare workers - including those born before 1957 - receive 2 doses of the MMR vaccine, administered 4 weeks apart.

- **An adult patient was told that they had measles in their childhood. Are they immune or do they need to get vaccinated?**
    - Everyone without documentation of childhood MMR vaccination or lab evidence of prior measles infection should receive the MMR vaccine. A verbal history of measles without lab confirmation is not considered proof of immunity.

- **My adult patient does not have their immunization record, but thinks they received the MMR vaccine in the past. How many MMR vaccines do they need?**
    - If they don't have documentation of previous MMR vaccination or lab-confirmed immunity, the recommendations are:
        - 1 dose of the MMR vaccine:
            - Adults born in 1957 or later who are at low risk (not international travelers, healthcare workers, or college/post-high school students).
        - 2 doses of the MMR vaccine:
            - High-risk adults: healthcare personnel, international travelers, and people attending college or other post-high school educational institutions.

- **My patient received their measles vaccine between 1963-1967, but does not know which type of vaccine they received. Do I need to check their vaccine titers?**
    - No, titers do not need to be checked. Two types of measles vaccines were used in the 1960s: live virus, and inactivated (killed) virus. The inactivated version was later found to be ineffective. If you do not know which type they received, or the patient has no records, they should receive at least 1 dose of the MMR vaccine. If they are at higher risk, 2 doses are recommended.

- **A patient had their MMR titer checked and it was negative. What should they do?**
    - Titers are not routinely recommended after MMR vaccination. If the patient has 2 documented MMR doses, they are considered immune even with a negative titer and do not need an additional vaccination.

- **Are there any adults who should not receive an MMR vaccine booster?**
    - Boosters are not recommended for people considered immune, including:
        - Preschool-aged children with at least 1 MMR dose given on or after the first birthday.
        - Low-risk adults with at least 1 MMR vaccine.
        - School-aged children, adolescents, and high-risk adults, with 2 MMR doses.
        - People born before 1957.

- **My patient has HIV, can they get the MMR vaccine?**
    - Yes. The MMR vaccine can be safely given to people with HIV who are not severely immunocompromised, as demonstrated by their labs.

- **My patient received 2 doses of the MMR vaccine as a child. During pregnancy, their labs showed they weren't immune to rubella. Should they get another vaccine?**
    - If their labs show they're not immune to rubella despite receiving 2 MMR vaccines, they should get another dose after pregnancy. The MMR vaccine isn't recommended during pregnancy since it is a live vaccine. Standalone rubella vaccines are not available in the U.S., but it is safe and effective to receive a third MMR dose in this case. Rubella is very dangerous during pregnancy and puts the patient at risk for miscarriage or stillbirth. The developing baby is at risk for severe birth defects with devastating, lifelong consequences.

- **Is the MMR vaccine safe to give to someone who is breastfeeding?**
    - Yes. Breastfeeding does not interfere with the MMR vaccine's effectiveness. It is safe to continue breastfeeding after receiving the vaccine.

MMR and travel

- **A patient born before 1957 who is not a healthcare worker wants to get the MMR vaccine before international travel. Does he need a dose of the MMR vaccine?**

- It is not necessary, as individuals born before 1957 are generally considered immune. However, the MMR vaccine *may* be given to anyone born before 1957 if desired. Serologic testing is not required before MMR vaccination.

- **My patient is planning to travel abroad and has already received 2 MMR vaccines after the age of 12 months. Do they need a booster?**
  - No. If they have received 2 MMR doses starting at or after age 12 months, they are considered immune and do not need another dose before traveling.

- **My patient is planning to travel within the U.S. What are the recommendations for MMR vaccination?**
  - Everyone eligible should follow the CDC's recommended MMR vaccination schedule. If unvaccinated and traveling to an area with a measles outbreak, get the MMR vaccine at least 2 weeks before travel. Check the state health department's website for specific recommendations if there is a community-wide outbreak.

- **A family is going to travel abroad with an infant under 12 months old. Should the baby receive the MMR vaccine early?**
  - Yes. Children 6-11 months old should receive 1 dose of the MMR vaccine before traveling internationally. This dose **does not** count towards the 2 routine doses given after age 12 months.

- **A patient is traveling abroad, and their trip is less than 2 weeks away. Should they get the MMR vaccine?**
  - Yes. MMR vaccination is recommended at least 2 weeks before international travel. However, even if their trip is sooner, getting vaccinated before travel is still advised.