Measles, Mumps and Rubella (MMR) Immunization Protocol

NAME, DOSE AND ROUTE OF VACCINE TO BE USED

Vaccine name	Age group	Dosage	Number of doses	Route of Admin.
Measles, Mumps and Rubella Virus Vaccine Live (M-M-R® II)	7 years and older	0.5 mL	1 or 2*	SC

*A third dose of MMR vaccine can be administered during a mumps outbreak

INTENDED AUDIENCE AND PATIENT POPULATION

(1) Children and adolescents who have not had 2 doses of MMR vaccine (routine immunization is a 2-dose series given at ages 12-15 months and 4-6 years)

(2) Persons born in 1957 or later (especially those born outside the U.S.) should receive at least one dose of MMR if they have no laboratory evidence of immunity to each of the three diseases or documentation of a dose given on or after the first birthday.

(3) Persons in high-risk groups, such as healthcare personnel (paid, unpaid or volunteer), students entering college and other post-high school educational institutions, and those traveling internationally, should receive a total of two doses.

(4) Persons born before 1957 are usually considered immune, but evidence of immunity (serology or documented history of two doses of MMR) should be considered for healthcare personnel.

(5) Women of childbearing age (who are NOT pregnant) who do not have acceptable evidence of rubella immunity or vaccination

(6) Persons previously vaccinated with 2 doses of a mumps-containing vaccine who are at increased risk for acquiring mumps because of an outbreak; contact state or local health department for information regarding vaccination in the setting of a disease outbreak.

SCHEDULE FOR VACCINE ADMINISTRATION

(1) Give one or two doses based on criteria for intended audience above.

(2) If a second dose is recommended, give it no sooner than 4 weeks after first dose.

(3) If a woman of childbearing-age is found to be rubella susceptible, give one dose of MMR. For pregnant women the dose should be given postpartum. This includes women who have received one or two doses of rubella-containing vaccine.

(4) A third dose of a mumps-containing vaccine may be given to persons at increased risk during an outbreak to improve protection against mumps disease and related complications. Contact state or local health department for information regarding vaccination in the setting of a disease outbreak.

(5) If two or more live virus vaccines are to be given, they should be given on the same day. If they are not, space them by at least 28 days.

CONTRAINDICATIONS

(1) History of severe allergic reaction (anaphylaxis) to neomycin, a previous dose of this vaccine, or any of its components, including gelatin.

(2) Pregnancy or possibility of pregnancy within four weeks after receipt of MMR vaccine. (Per manufacturer's product label, pregnancy should be avoided for 3 months following vaccination.)

(3) Individuals who are immunocompromised. This includes those with severe immunodeficiency; hematologic and solid tumors; receiving chemotherapy; congenital immunodeficiency; receiving long-term immunosuppressive therapy; HIV infections with CD4 percentage <15% or with CD4 count <200 cells/mm^3.

PRECAUTIONS

(1) Moderate or severe acute illness with or without fever

(2) Recent (≤11 months) receipt of blood, plasma, and/or immune globulin; specific interval depends on product. See the Advisory Committee on Immunization Practices (ACIP) *General Recommendations on Immunization* regarding time to wait before vaccinating.

(3) History of thrombocytopenia or thrombocytopenic purpura

SIDE EFFECTS AND ADVERSE REACTIONS

(A) Local reactions: burning/stinging at injection site; wheal and flare; erythema, swelling; induration; tenderness; vesiculation at injection site

(B) General reactions: fever, transient rashes, transient lymphadenopathy, or parotitis. Reactions of greater severity such as anaphylaxis, febrile seizures, immune thrombocytopenic purpura, arthralgia and arthritis have been reported.

ADMINISTRATION

(A) Procedures

(1) Prescription is required for patients who are seven years of age or older but not more than 13 years of age. (per Ohio Revised Code 4729.41)

(2) Patient or legal guardian must first sign a consent form before the vaccination is administered.

(3) Provide patient/ legal guardian with a copy of the most current federal Vaccine Information Statement (VIS) for measles, mumps and rubella vaccine.

(4) Vaccine is supplied in lyophilized form and must be stored at -50ºC to +8ºC (-58ºF to +46ºF) and protected from light at all times. The vaccine in lyophilized form can be stored in the freezer. The diluent should be stored separately at room temperature or in the refrigerator.

To reconstitute the vaccine: Use only the diluent supplied. Withdraw the entire volume of the diluent into a syringe. Inject all of the diluent in the syringe into the vial of lyophilized vaccine and gently agitate to mix thoroughly. Vaccine is a clear yellow liquid when reconstituted.

(5) Inject 0. 5 mL of reconstituted vaccine subcutaneously in the posterolateral fat of upper arm.

(6) Do not inject intravascularly or intramuscularly. Use only sterile syringes free of preservatives, antiseptics, and detergents for each injection and/or reconstitution. Preservatives, antiseptics and detergents may inactivate the vaccine virus.

(7) Vaccine should be administered immediately after reconstitution, to minimize loss of potency.

(8) Reconstituted vaccine can be stored in a dark place at 2ºC to 8º C (36ºF to 46ºF). Discard reconstituted vaccine if not used within 8 hours.

(9) Do not freeze reconstituted vaccine.

(10) Needles should be disposed of properly and should not be recapped.

(11) Record the date of administration, name/manufacturer/strength/dose of the immunization, lot number and expiration date of the immunization, route of administration, location of the injection site, and positive identification of the person administering the vaccine.

(12) Monitor patients in the general vicinity of the administering pharmacist or pharmacy intern for at least **10 minutes** after giving the injection and treat accordingly.

(13) Advise patient to report any adverse reaction to their pharmacist or primary care physician.

(B) Monitoring parameters

(1) Patients who faint should be placed supine. Check their pulse and blood pressure immediately.

(2) Watch for rapidly falling blood pressure, difficulty breathing, and sustained unconsciousness. Observe for adequate airway and pulse; administer CPR if needed. Have another member of the pharmacy staff call 911. Follow procedures in next section for treatment of severe allergic/anaphylactic reactions.

(3) Treat externally for shock. Keep patient warm, head low and feet elevated.

(4) Contact protocol physician as soon as possible to report the condition of the patient.

PROTOCOL FOR MANAGEMENT OF SEVERE ALLERGIC/ANAPHYLACTIC REACTIONS

(A) Pre-Vaccination Procedures
(1) Be prepared to call 911.
(2) Take a thorough history for allergies and prior adverse events before any immunization.
(3) Allow adequate physical space for fainting or collapse without injury and to lay patient flat on a hard surface in the event CPR is needed.
(4) Maintain current competency in vaccine administration and in cardiopulmonary resuscitation; observe all vaccinees for at least 10 minutes after immunization; remind vaccinees to report any adverse events to you.

(B) Supplies to Stock
(1) Epinephrine USP, 1 mg/ml (1:1000). May be in vials of solution, *Ana-Guard* syringes, or in an *Epi-Pen* (0.15 mg & 0.3 mg). At least three adult and children's doses of epinephrine will be available wherever immunizations are given.
(2) Diphenhydramine liquid and injection.
(3) Blood-pressure cuff, adult size, with stethoscope.

(C) Recognition of Anaphylactic Reaction
(1) Sudden onset of itching, redness, with or without hives, within several minutes of administering a medication. The symptoms may be localized or generalized.
(2) Angioedema (swelling of the lips, face, throat)
(3) Bronchospasm

(D) Emergency treatment
(1) If itching and swelling are confined to the extremity where the immunization was given, observe patient closely for a suitable period of time, watching for generalized symptoms. If none occur, go to paragraph D (8).
(2) If symptoms are generalized, activate the emergency medical system (EMS). Call 911 **and** the protocol physician for instruction. This should be done by a second person, while the immunizer treats and observes the patient.
(3) Administer epinephrine IM (refer to dosing chart). Standard dose is 0.01mg/kg up to 0.5 mg maximum in adults. Site of administration can be the anterolateral thigh if using auto-injector, or deltoid muscle above the vaccine injection site.

(4) Administer diphenhydramine by IM injection (refer to dosing chart). DO NOT administer diphenhydramine or any other drug by mouth if the patient is not fully alert or if the patient has respiratory distress.

(5) Monitor the patient closely until EMS arrives. Perform CPR and maintain airway, if necessary. Keep patient in supine position unless they are having breathing difficulty. If breathing is difficult, patient's head may be elevated, provided blood pressure is adequate to prevent loss of consciousness. Monitor vital signs frequently.

(6) If EMS has not arrived and symptoms still persist, repeat dose of epinephrine every 10-20 minutes for up to 3 doses, depending on patient response.

(7) Record all vital signs, medications administered to the patient, including the time, dosage, response, and other relevant clinical information.

(8) Patient must be referred for medical evaluation, even if symptoms resolve completely. Symptoms may recur after epinephrine and diphenhydramine wear off, as much as 24 hours later. After the event is concluded, complete a VAERS form. Report forms may be obtained online at www.vaers.hhs.gov or by calling 1.800.822.7967.

Suggested Dosing of Epinephrine and Diphenhydramine

Age Group Dose	**Weight * in kg**	**Weight * in lbs**	**Epinephrine Dose**** 1 mg/mL injectable (1:1000 dilution) intramuscular	**Diphenhydramine (Benadryl)** 12.5 mg/5 mL liquid 25 and 50 mg capsules or tablets 50 mg/mL injectable
1-6 mos	4-7 kg	9-15 lbs	0.05 mg (0.05 ml)	5 mg
7- 18 mos	7-11 kg	15-24 lbs	0.1 mg (0.1 ml)	10 mg
19-36 mos	11-14 kg	24-31 lbs	0.15 mg (0.15 ml)	15 mg
37-48 mos	14-17 kg	31-37 lbs	0.15 mg (0.15 ml)	20 mg
49-59 mos	17-19 kg	37-42 lbs	0.2 mg (0.2 ml)	
5-7 yrs	19-23 kg	42-51 lbs	0.2 mg (0.2 ml)	30 mg
8-10 yrs	23-35 kg	51-77 lbs	0.3 mg (0.3 ml)	
11-12 yrs	35-45 kg	77-99 lbs	0.4 mg (0.4 ml)	40 mg
13 yrs & older	45+ kg	99+ lbs	0.5 mg (0.5 ml)	50-100 mg

*Dosing by body weight is preferred

**Epinephrine can also be administered using an autoinjector available in 0.15 mg and 0.3 mg doses. Children weighing 15 to 30 kg should receive 0.15 mg if given by autoinjector.

ACCIDENTAL NEEDLE STICK

(A) Procedures

(1) Wash needle stick site with soap and water.

(2) Report the exposure to the physician on the protocol. Prompt reporting is essential because, in some cases, post-exposure treatment may be recommended and it should be started as soon as possible. **The National Clinicians' Post Exposure Prophylaxis Hotline (PEPline) has current recommendations (888.448.4911).**

(3) Discuss risks of acquiring HBV, HCV, HIV and the need for post-exposure treatment with the provider managing your exposure.

(4) Person giving the vaccination should already have received the Hepatitis B vaccine (extremely safe and effective).

(5) Follow-up testing should be available to all workers concerned about possible infection through occupational exposure.

(B) Treatment of Exposure

HCV – no treatment available.

HBV – Post-exposure treatment of HBV is highly effective in preventing infection. Treat exposure as soon as possible after exposure, preferably within 24 hours and no later than 7 days after exposure. Hepatitis B vaccine and hepatitis B immune globulin (HBIG) are both approved for treatment use. If any symptoms suggesting HBV infection develop, patient should contact a physician.

HIV - Start as soon as possible, ideally within 72 hours of exposure. Benefit of treatment delayed beyond 72 hours is not defined. No medications are FDA-approved for prevention. Pharmacist will follow current HIV prevention guidelines recommended by CDC. Truvada® (emtricitabine and tenofovir disoproxil fumarate) plus Isentress® (raltegravir) OR Truvada® plus Tivicay® (dolutegravir) are recommended for 28 days with repeated testing to confirm HIV negative status.

(C) Precautions During Follow-Up

HBV – no precaution recommended.

HCV – low risk, so no precautions are recommended.

HIV - 6-12 weeks is when most of the signs and symptoms of infection show. Do not donate blood, semen, or organs during this time. Do not have sexual intercourse during this time, or else use a condom consistently and correctly. Women should not breast feed. HIV is transmitted through breast milk.

(See page 7 for Physician Authorization)

Administration of the MMR vaccine, under the direction of the physician who signed below, may be performed by the following individuals:

_____ _____ _____

_____ _____ _____

Administration of the MMR vaccine, under the direction of the physician who signed below, may be performed at the following location(s) including street address(es):

_____

_____

As the authorizing physician, I will review, on a biennial basis, the activities of the health care providers administering the vaccine under this protocol.

Date: _____
*MUST BE RENEWED WITH PHYSICIAN ON A BIENNIAL BASIS

Physician Signature: _____

Physician Name: _____

Address: _____

City: _____ State: _____ Zip:_____

Medical License #: _____

Pharmacist in Charge Name_____

Pharmacist in Charge Signature_____

Date_____ Pharmacist in Charge License #_____

Pharmacy Name_____

Pharmacy Address_____

City_____State_____ Zip_____

PHYSICIAN/BOARD OF HEALTH NOTIFICATION
Notify the individual's primary care physician, or if the individual has no family physician, the County Board of Health of the district in which the individual lives, within 30 days after administering the immunization; document accordingly.