

Immunization Pharmacy Protocol

Guidelines for Managing Severe Adverse Events Following Immunization	
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Table of contents

1.	What’s new	1
2.	Oregon Immunization Protocol	2
3.	Medication schedule	5
4.	Licensed Products	7
5.	Recommendations for use	7
6.	Contraindications	7
7.	Other considerations	7
8.	Side effects and adverse reactions	8
9.	Storage and handling	8
10.	Adverse events reporting	8
11.	References	9
12.	Appendix A	10
13.	Appendix B	11

1. What’s new

Updated to include children 3 through 7 years of age.

2. Oregon Immunization Protocol

Anaphylaxis

- A. Have a second person call 9-1-1 immediately.
- B. Evaluate airway, breathing and circulation (ABCs) and level of consciousness.
- C. Lay the patient flat with legs and feet elevated. If the patient has difficulty breathing or is vomiting, assist them into a position that is comfortable.
- D. Administer 1 mg/mL epinephrine intramuscularly (IM) into the anterolateral thigh (all ages), through clothing if necessary, with the correct needle length for the patient's age and size according to the dosage chart in Table 1.
- E. There are no contraindications to epinephrine for treatment of anaphylaxis.
- F. If no improvement in condition, repeat epinephrine dose every 5–15 minutes for up to 3 doses, depending on patient's response.
- G. Do not delay transport; **DO NOT WAIT FOR MILD SYMPTOMS TO SUBSIDE.**
- H. Take and record the patients' vital signs (pulse, respirations) at the initial assessment, and at minimum – every 5 minutes, and following the administration of any additional medication. See optional Adverse Event Record Tool.
- I. If at any time the patient suffers Respiratory or Cardiac Arrest, start CPR immediately. Apply AED if available. Initiate Oxygen if available.
- J. Monitor until Emergency Medical Services arrive.
- K. Any client who develops signs and symptoms of anaphylaxis **MUST** be examined by a physician or transported via a fully equipped emergency vehicle to an emergency department. Any refusal of transport must be dealt with by EMS personnel.
- L. Give report and list of medications given to emergency medical personnel upon arrival.
- M. Complete your documentation.

I have read, understand, and agree to participate by the terms of this protocol.

Pharmacist Signature

Date

Urticaria

- A. Apply ice to the site where the vaccine was administered. If more than one site is involved, apply ice to the sites that appear to be red, warm, or swelling.
- B. Give diphenhydramine intramuscularly (IM) with the correct needle length for the patient's age and size according to the dosage chart in Table 2. Do not give diphenhydramine to babies ≤ 6 months of age.
- C. Record all medications administered including the time, dosage, response, and the name of the medical personnel who administered the medication.
- D. Take and record the patient's vital signs at the initial assessment, and at minimum every 10 minutes, and following the administration of any additional medication.
- E. If the patient is wheezing because of respiratory difficulty, elevate the head and chest slightly; if the patient's blood pressure is decreased and the pulse is weak, lay them flat with feet elevated.
- F. Continue to monitor for and treat signs and symptoms progressing towards anaphylaxis.

I have read, understand, and agree to participate by the terms of this protocol.

Pharmacist Signature

Date

Loss of Consciousness / Syncope:

- A. If the individual “feels faint,” ammonia ampules may be used. Crush and wave near patient’s nose.
- B. Have patient lie flat with feet elevated or sit with their head down for several minutes.
- C. If the patient loses consciousness, place flat on back, with feet elevated.
- D. Unconsciousness from fainting should only last seconds. In a vasovagal response the pulse should be slow. A weak, thready or rapid pulse may indicate anaphylaxis.
- E. Have patient rest in a quiet area for 10 minutes after regaining consciousness. Slowly have patient move to a sitting position and then standing, checking to make sure no symptoms recur.

I have read, understand, and agree to participate by the terms of this protocol.

Pharmacist Signature

Date

3. Medication schedule

Table 1. ANAPHYLAXIS				
<p>Inject EPINEPHRINE (1 mg/mL): 0.01 mg/kg of body weight up to 0.5 mg maximum dose. <u>May be repeated every 5–15 minutes for a total of 3 doses.</u> Give intramuscularly (IM) in the vastus lateralis muscle of the thigh, <u>regardless of age</u>, either by auto injector or by syringe and needle, <u>through the clothing if necessary.</u>¹</p>				
Suggested dosing of Epinephrine² for children and adults: consider needle length				
Age Group	Weight in lbs[#]	Weight in kg[#]	Epinephrine injectable (1:1000 dilution); IM =(1 mg/mL). Minimum dose: 0.05 mL *	Epinephrine auto-injector 0.1 mg, 0.15 mg or 0.3 mg
≥36 months (Use only for dosing by weight)	9–19 lbs	4–8.5 kg	0.05 mL (or mg)	off-label
	20–32 lbs	9–14.5 kg	0.1 mL (or mg)	0.1 mg/dose [◇] or 0.15 mg/dose [¶]
37–59 months	33–39 lbs	15–17.5 kg	0.15 mL (or mg)	0.15 mg/dose
5–7 years	40–56 lbs	18–25.5 kg	0.25 mL (or mg)	0.15 mg/dose
8–10 years	57–76 lbs	26–34.5 kg	0.3 mL [†] (or mg)	0.15 mg/dose or 0.3 mg/dose
11–12 years	77–99 lbs	35–45 kg	0.4 mL (or mg)	0.3 mg/dose
≥13 years	100+ lbs	46+ kg	0.5 mL [‡] (or mg)	0.3 mg/dose

Dose by weight is preferred. If weight is not known, dosing by age is appropriate.⁵

◇ 0.1 mg autoinjector is licensed for use in 7.5- to 14-kg infants and children

¶ Per Oregon Immunization Program Health Officer

†Maximum dose for children

‡Maximum dose for adults

Table 2. URTICARIA¹**First-Line Treatment for Urticaria:**

- Give Diphenhydramine IM as follows:

Suggested dosing of Diphenhydramine² (Benadryl[®]) for children and adults

Age Group Dose	Weight in lbs [#]	Weight in kg [#]	Injectable: 50 mg/mL IM
≥36 months (Use only for dosing by weight)	20–32 lbs	9–14.5 kg	10–15 mg
37–59 months	33–39 lbs	15–17.5 kg	15–20 mg
5–7 years	40–56 lbs	18–25.5 kg	20–25 mg
8–12 years	57–99 lbs	26–45 kg	25–50 mg
≥13 years*	100+ lbs	46+ kg	50–100 mg

Dose by weight is preferred. If weight is not known, dosing by age is appropriate.

* Children age ≥13 years, maximum single dose is 100 mg.

Table 3. Optional Treatment: Hydroxyzine Hydrochloride²**Hydroxyzine Hydrochloride (Atarax[®] or Vistaril[®]) for severe urticaria (hives) when diphenhydramine is unavailable:**

- Give **PO** as follows:

Suggested dosing of Hydroxyzine Hydrochloride (Atarax[®], Vistaril[®]) for children and adults

Age Group Dose	Weight in lbs [#]	Weight in Kg [#]	Liquid: 10mg/5mL or 25mg/5mL
≥36 months (Use only for dosing by weight)	20–32 lbs	9–14.5 kg	5–7.5mg/dose
37–59 months	33–39 lbs	15–17.5 kg	7.5–10mg/dose
5–7 years	40–56 lbs	18–25.5 kg	10–12.5 mg/dose
8–10 years	57–76 lbs	26–34.5 kg	12.5–15 mg/dose
11–12 years	77–99 lbs	35–45 kg	15–25 mg/dose
≥13 years	≥100 lbs	≥46 kg	25 mg/dose (50–100 mg, maximum per day)

Dose by weight is preferred. If weight is not known, dosing by age is appropriate.

4. Licensed Products

Not applicable.

5. Recommendations for use

Not applicable.

6. Contraindications

There are no contraindications for the use of epinephrine to treat anaphylaxis.

7. Other considerations

A. Required documentation available onsite:

Current Healthcare Provider CPR Card:

An active CPR certification issued by the American Heart Association or the American Red Cross or any other equivalent program intended for a healthcare provider that contains a hands-on training component, is valid for not more than three years and is specific to the age and population being treated.

B. Required Equipment and Medications Maintained in a Separate Container:

Medications (generic formulations acceptable):

Epinephrine solutions:

- 1 multi-dose vial (MDV) of 1 mg/mL Epinephrine and syringe

EXP: _____

OR

- Epinephrine auto-injectors; 3 doses each of adult and pediatric size units

EXP: _____

AND

Diphenhydramine (Benadryl®) 50 mg/mL injectable IM:

- 1 multi-dose vial (MDV) **EXP:** _____

OR

- 2 single-dose vials (SDV) vials **EXP:** _____

Syringes:

For Epinephrine injection **only:**

- 1-cc U-100 syringes, 22–25g, 1”, 1½” needles for IM epinephrine administration

For diphenhydramine injection **only**:

- 3-cc syringes with 1–1½” needles for IM diphenhydramine (Benadryl®) administration

C. Optional Medications and Equipment

Medications (generic formulations acceptable):

Hydroxyzine for use when diphenhydramine is unavailable

- Liquid: 10 mg/5 mL or 25 mg/5 mL **EXP:** _____
- Tablets: 10-mg or 25-mg **EXP:** _____
- Capsules: 25-mg **EXP:** _____
- Bottle of water for swallowing oral antihistamines **EXP:** _____

Sphygmomanometer and **Stethoscope**:

- electronic devices must show current calibration and batteries as needed.

Oxygen Supplies for Rural Areas or where 911 response may be delayed:

- O₂ Container **Level checked:** _____
- Nasal cannula: the regulator should not be set to exceed 6 liters of O₂/minute
- An oxygen face mask/shield with one-way valve: the regulator should be set at 10–12 liters of O₂/minute with a minimum of 5 liters of O₂/minute
- Breathing bag with mask with O₂ regulator should be set between 12–15 liters/minute
- Oral airways: small, medium, and large

8. Side effects and adverse reactions

Not applicable

9. Storage and handling

Store medications in a dark place at room temperature.

10. Adverse events reporting

Anaphylaxis and vasovagal syncope must be reported to the Vaccine Adverse Events Reporting System (VAERS) online at <https://vaers.hhs.gov/reportevent.html>.

[VAERS Table of Reportable Events Following Vaccination.](#)

11. References

1. CDC. Management of Anaphylaxis at a COVID-19 Vaccination Location. Last reviewed 11 Feb 2022. Available at: www.cdc.gov/vaccines/covid-19/clinical-considerations/managing-anaphylaxis.html. Accessed 14 Sep 2022.
2. Immunization Action Coalition Website: Medical Management of Vaccine Reactions in Children and Teens in a Community Setting. July 2019. Available at: www.immunize.org/catg.d/p3082a.pdf. Accessed 14 Sep 2022.
3. Immunization Action Coalition Website: Medical Management of Vaccine Reactions in Adults in a Community Setting. July 2019. Available at: www.immunize.org/catg.d/p3082.pdf. Accessed 14 Sep 2022.
4. State of Oregon Trauma and EMS Systems. Treatment of severe allergic reaction; A Protocol for Training (2018). Available at: www.oregon.gov/oha/PH/PROVIDERPARTNERRESOURCES/EMSTRAUMASYSTEMS/Documents/Training%20Material/Epinephrine-Training-Protocol.pdf. Accessed 14 Sep 2022.

To request this material in an alternative format (e.g., Braille) or to clarify any part of the above order, contact the Oregon Health Authority Immunization Program at 971-673-0300 and 711 for TTY. For other questions, consult with the vaccine recipient's primary health care provider or a consulting physician.

Electronic copy of this standing protocol is available at: [standing protocols](#)

Recognizing and Responding to Anaphylaxis

How to recognize anaphylaxis

Healthcare personnel should consider anaphylaxis when patients present with generalized signs or symptoms such as **hives, serious or life-threatening symptoms** (e.g., hypotension, respiratory distress, or significant swelling of the tongue or lips), or **symptoms that involve more than one body system**.

**Respiratory:**

- sensation of throat closing
- stridor (high-pitched sound while breathing)
- shortness of breath
- wheeze, cough

**Gastrointestinal:**

- nausea
- vomiting
- diarrhea
- abdominal pain

**Cardiovascular:**

- dizziness
- fainting
- tachycardia (abnormally fast heart rate)
- hypotension (abnormally low blood pressure)

**Skin/mucosal:**

- generalized hives
- itching
- swelling of lips, face, or throat

**Neurological:**

- agitation
- convulsions
- acute change in mental status
- sense of impending doom (a feeling that something bad is about to happen)

What to do if you suspect anaphylaxis



Assess airway, breathing, and circulation



Administer epinephrine



Call Emergency Medical Services (EMS)



Place in supine position

Detailed information can be found in the Interim Considerations:
[Preparing for the Potential Management of Anaphylaxis After COVID-19 Vaccination](#)



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www.cdc.gov/COVID19

13. Appendix B

INFORMATION

Patient Name: _____

Allergies: _____

Date of Birth: _____

Vaccine Given: _____

Date: _____

Site: _____

Signature: _____

Route: _____

Anaphylaxis – Urticaria – Syncope (circle one)

VITALS

Time	Pulse	Respirations	Blood Pressure	Medication	Dose	Site-Route	Initials

Notes:

05/2019