

# Immunization Protocol

| <b>Guidelines for Managing Severe Adverse Events Following Immunization</b> |                 |
|---|-----------------|
| Last Reviewed   | 05 Oct 2023     |
| Last Revised  | 05 Oct 2023     |
| This order expires  | 31 October 2025 |

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## 1. What's new

Updated recommendations for syncope removing ammonia inhalant.

## 2. Oregon Immunization Protocol

### Anaphylaxis

- A. Call 911 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. Oxygen: Give 8 to 10 L/minute via facemask or up to 100% oxygen, as needed.
- H. Do not delay transport; **DO NOT WAIT FOR MILD SYMPTOMS TO SUBSIDE.**
- I. Take and record the patient's vital signs (pulse, respirations) at the initial assessment, every 5 minutes and following the administration of any additional medication. See optional Adverse Event Record Tool.
- J. If at any time the patient suffers cardiac arrest, start CPR immediately. Apply AED if available.
- K. Monitor until Emergency Medical Services arrive.
- L. 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 addressed by EMS personnel.
- M. Give report and list of medications given to EMS personnel upon arrival.
- N. Complete any documentation.

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Health Officer Signature

Date

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Health Officer Signature

Date

## Urticaria (Hives)

- 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 (by mouth; or intramuscularly 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 infants  $\leq 6$  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. Continue to monitor for and treat signs and symptoms. Wheezing, decreased blood pressure, or weak pulse may indicate anaphylaxis. Go to anaphylaxis treatment instructions, above.

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Health Officer Signature

Date

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Health Officer Signature

Date

**Loss of Consciousness / Syncope:**

- A. If the individual “feels faint,” have patient lie flat with feet elevated or sit with their head down for several minutes.
- B. If the patient loses consciousness, place flat on back, with feet elevated.
- C. 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.
- D. 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.

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Health Officer Signature

Date

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Health Officer Signature

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### 3. Medication schedule

| <b>Table 1. ANAPHYLAXIS</b>  |                                  |                                 |   |  |
|--|----------------------------------|---------------------------------|---|--|
| <b>Inject EPINEPHRINE</b> (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><br>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, through the clothing if necessary. <sup>3,4</sup> |                                  |                                 |   |  |
| <b>Suggested dosing of Epinephrine for children and adults: consider needle length</b>   |                                  |                                 |   |  |
| <b>Age Group</b>   | <b>Weight in lbs<sup>#</sup></b> | <b>Weight in kg<sup>#</sup></b> | <b>Epinephrine injectable IM (1 mg/mL<sup>*</sup>). Minimum dose: 0.05 mL</b> | <b>Epinephrine auto-injector 0.1 mg, 0.15 mg or 0.3 mg</b> |
| <b>1–6 months</b>  | 9–19 lbs                         | 4–8.5 kg                        | 0.05 mL (or mg)   | off-label  |
| <b>7–36 months</b>   | 20–32 lbs                        | 9–14.5 kg                       | 0.1 mL (or mg)  | 0.1 mg/dose <sup>◇</sup>                                   |
| <b>37–59 months</b>  | 33–39 lbs                        | 15–17.5 kg                      | 0.15 mL (or mg)   | 0.15 mg/dose   |
| <b>5–7 years</b>   | 40–56 lbs                        | 18–25.5 kg                      | 0.25 mL (or mg)   | 0.15 mg/dose   |
| <b>8–10 years</b>  | 57–76 lbs                        | 26–34.5 kg                      | 0.3 mL <sup>*</sup> (or mg)   | 0.15 mg/dose or 0.3 mg/dose                                |
| <b>11–12 years</b>   | 77–99 lbs                        | 35–45 kg                        | 0.4 mL (or mg)  | 0.3 mg/dose  |
| <b>≥13 years</b>   | 100+ lbs                         | 46+ kg                          | 0.5 mL <sup>†</sup> (or mg)   | 0.3 mg/dose  |

\* 1:1000 concentration labeling no longer used. 1 mg/mL is standard.

# Dose by weight is preferred. If weight is not known, dosing by age is appropriate.<sup>4</sup>

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

## Table 2. URTICARIA

### First-Line Treatment for Urticaria:

- Give diphenhydramine (e.g., Benadryl®) p.o. or IM as follows:

### Suggested dosing of diphenhydramine<sup>2</sup> for children and adults

| Age Group Dose | Weight in lbs <sup>#</sup> | Weight in kg <sup>#</sup> | Dose (p.o. or IM) |
|----------------|----------------------------|---------------------------|-------------------|
| 7–36 months    | 20–32 lbs                  | 9–14.5 kg                 | 10 mg–15 mg       |
| 37–59 months   | 33–39 lbs                  | 15–17.5 kg                | 15 mg–20 mg       |
| 5–7 years      | 40–56 lbs                  | 18–25.5 kg                | 20 mg–25 mg       |
| 8–12 years     | 57–99 lbs                  | 26–45 kg                  | 25–50 mg          |
| ≥13 years*     | 100+ lbs                   | 46+ kg                    | 50 mg –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 Hydrochloride<sup>1</sup>

Hydroxyzine HCL (e.g., Atarax or Vistaril) for severe urticaria (hives) when diphenhydramine is unavailable:

Give P.O. as follows:

### Suggested dosing of Hydroxyzine HCL (Atarax, Vistaril) for children and adults

| Age Group Dose | Weight in lbs <sup>#</sup> | Weight in Kg <sup>#</sup> | Liquid: 10mg/5mL or 25mg/5mL           |
|----------------|----------------------------|---------------------------|--|
| 7–36 months    | 20–32 lbs                  | 9–14.5 kg                 | 5–7.5 mg/dose                          |
| 37–59 months   | 33–39 lbs                  | 15–17.5 kg                | 7.5–10 mg/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 (50–100mg, 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 1mg/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 epinephrine administration

For diphenhydramine injection only:

- 3-cc syringes with 1–1½” needles for 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 are acceptable.

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

- O<sub>2</sub> Container   **Level checked:** \_\_\_\_\_
- Nasal cannula: the regulator should not be set to exceed 6 liters of O<sub>2</sub>/minute
- An oxygen face mask/shield with one-way valve: the regulator should be set at 10–12 liters of O<sub>2</sub>/minute with a minimum of 5 liters of O<sub>2</sub>/minute
- Non-rebreather mask with O<sub>2</sub> 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. Immunize.org (formerly IAC): Medical Management of Vaccine Reactions in Children and Teens in a Community Setting. Apr 2022. Available at: [www.immunize.org/catg.d/p3082a.pdf](http://www.immunize.org/catg.d/p3082a.pdf). Accessed 16 Sept 2023.
2. Immunize.org (formerly IAC): Medical Management of Vaccine Reactions in Adults in a Community Setting. July 2019. Available at: [www.immunize.org/catg.d/p3082.pdf](http://www.immunize.org/catg.d/p3082.pdf). Accessed 16 Sept 2023.
3. 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](http://www.oregon.gov/oha/ph/providerpartnerresources/emstraumasystems/Documents/Training%20Material/Epinephrine-Training-Protocol.pdf). Accessed 16 Sept 2023.
4. CDC. Preventing and managing adverse reactions. Available at [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/adverse-reactions.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/adverse-reactions.html). Last reviewed 18 October 2022. Accessed 16 Sept 2023.
5. Campbell RL, Kelso JM. UpToDate: Anaphylaxis: Emergency treatment. Available at [www.uptodate.com/contents/anaphylaxis-emergency-treatment/print](http://www.uptodate.com/contents/anaphylaxis-emergency-treatment/print). Last reviewed 24 June 2023. Accessed 16 Sept 2023.

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](http://www.cdc.gov/COVID19)

# 13. Appendix B

## INFORMATION

|                            |       |                       |       |
|----------------------------|-------|-----------------------|-------|
| <b>Patient Name:</b>       | _____ | <b>Allergies:</b>     | _____ |
| <b>Date of Birth:</b>      | _____ | <b>Vaccine Given:</b> | _____ |
| <b>Date:</b>               | _____ | <b>Site:</b>          | _____ |
| <b>Provider Signature:</b> | _____ | <b>Route:</b>         | _____ |

**Anaphylaxis – Urticaria – Syncope (circle one)**

## VITALS

| Time | Pulse | Respirations | Blood Pressure | Medication | Dose | Site-Route | Initials |
|------|-------|--------------|----------------|------------|------|------------|----------|
|      |       |              |                |            |      |            |          |
|      |       |              |                |            |      |            |          |
|      |       |              |                |            |      |            |          |
|      |       |              |                |            |      |            |          |
|      |       |              |                |            |      |            |          |

Notes:

05/2019