

# Medical Management of Vaccine Reactions in Adults in a Community Setting

*The table below describes steps to take if an adverse reaction occurs following vaccination.*

Administering any medication, including vaccines, has the potential to cause an adverse reaction. To minimize the likelihood of an adverse event, screen patients for vaccine contraindications and precautions prior to vaccination (see “Screening Checklist for Contraindications to Vaccines for Adults” at [www.immunize.org/catg.d/p4065.pdf](http://www.immunize.org/catg.d/p4065.pdf)). When adverse reactions do occur,

they can vary from minor (e.g., soreness, itching) to the rare and serious (e.g., anaphylaxis). Be prepared.

Vaccine providers should know how to recognize allergic reactions, including anaphylaxis. Have a plan in place and supplies available to provide appropriate medical care should such an event occur.

REACTION	SIGNS AND SYMPTOMS	MANAGEMENT
Localized	Soreness, redness, itching, or swelling at the injection site	Apply a cold compress to the injection site. Consider giving an analgesic (pain reliever) or antipruritic (anti-itch) medication.
	Slight bleeding	Apply pressure and an adhesive compress over the injection site.
	Continuous bleeding	Place thick layer of gauze pads over site and maintain direct and firm pressure; raise the bleeding injection site (e.g., arm) above the level of the patient’s heart.
Psychological fright, presyncope, and syncope (fainting)	Fright before injection is given	Have patient sit or lie down for the vaccination.
	Patient feels “faint” (e.g., light-headed, dizzy, weak, nauseated, or has visual disturbance)	Have patient lie flat. Loosen any tight clothing and maintain open airway. Apply cool, damp cloth to patient’s face and neck. Keep them under close observation until full recovery.
	Fall, without loss of consciousness	Examine the patient to determine if injury is present before attempting to move the patient. Place patient flat on back with feet elevated.
	Loss of consciousness	Check to determine if injury is present before attempting to move the patient. Place patient flat on back with feet elevated. Call 911 if patient does not recover immediately.
Anaphylaxis	<b>Skin and mucosal symptoms</b> such as generalized hives, itching, or flushing; swelling of lips, face, throat, or eyes. <b>Respiratory symptoms</b> such as nasal congestion, change in voice, sensation of throat closing, stridor, shortness of breath, wheeze, or cough. <b>Gastrointestinal symptoms</b> such as nausea, vomiting, diarrhea, cramping abdominal pain. <b>Cardiovascular symptoms</b> such as collapse, dizziness, tachycardia, hypotension.	See the emergency medical protocol on the next page for detailed steps to follow in treating anaphylaxis.

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**Suggested Medications for Managing Anaphylaxis in a Community Immunization Clinic Setting**

**FIRST-LINE medication**

**Epinephrine** 1.0 mg/mL aqueous solution (1:1000 dilution) in prefilled autoinjector or prefilled syringe (0.3 mg), prepackaged syringes, vials, or ampules. At least three epinephrine doses should be available onsite.

**OPTIONAL medications: H<sub>1</sub> antihistamines**

These relieve itching and hives only; they DO NOT relieve upper or lower airway obstruction, hypotension, or shock.

**Diphenhydramine** (e.g., Benadryl) oral, 12.5 mg/5 mL liquid, 25 or 50 mg tablets

**Additional emergency supplies you may need**

- Syringes (1 and 3 cc) and needles (22 and 25 g, 1", 1½", and 2") if needed for epinephrine
- Alcohol wipes
- Tourniquet  
Applied on the extremity above the injection site to slow systemic absorption of antigen and anaphylactic mediators
- Stethoscope
- Blood pressure measuring device with adult-sized and extra-large cuffs
- Tongue depressors
- Light with extra batteries (for examination of the mouth and throat)
- A timing device, such as wristwatch, for checking pulse
- Cell phone or access to onsite phone

**For remote areas without EMS support**

- Adult airways (various sizes)
- Adult-sized pocket mask with one-way valve
- Oxygen (if available)

**REFERENCES**

\* American Academy of Pediatrics. *Red Book: 2018–2021*, 31st ed (p. 66).

Campbell RL, Kelso JM. Anaphylaxis: Emergency treatment. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. November 2018.

Kroger AT, Duchin J, Vazquez M. General Best Practice Guidelines for Immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) at [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html).

**Emergency medical protocol for management of anaphylactic reactions in adults in a community setting**

- 1 If itching and swelling are confined to the injection site where the vaccination was given, observe patient closely for the development of generalized symptoms.
- 2 If symptoms are generalized, activate the emergency medical system (EMS; e.g., call 911) and notify the patient’s physician. This should be done by a second person, while the primary healthcare professional assesses the airway, breathing, circulation, and level of consciousness of the patient. Vital signs should be monitored continuously.
- 3 **DRUG DOSING INFORMATION: The first-line and most important therapy in anaphylaxis is epinephrine. There are NO absolute contraindications to epinephrine in the setting of anaphylaxis.**
  - a **First-line treatment: EPINEPHRINE is the first-line treatment for anaphylaxis, and there is no known equivalent substitute.** Use epinephrine in a 1.0 mg/mL aqueous solution (1:1000 dilution). Administer a 0.3 mg dose IM using a premeasured or prefilled syringe or an autoinjector in the mid-outer thigh. If using another epinephrine formulation, the recommended dose is 0.01 mg/kg, ranging for adults from 0.3 mg to maximum dose of 0.5 mg. Administer IM, preferably in the mid-outer thigh. Epinephrine dose may be repeated 2 additional times every 5–15 minutes (or sooner as needed) while waiting for EMS to arrive.
  - b **Optional treatment: H<sub>1</sub> ANTIHISTAMINES** relieve itching and urticaria (hives). These medications DO NOT relieve upper or lower airway obstruction, hypotension, or shock. Consider giving diphenhydramine (e.g., Benadryl) for relief of itching and hives. Administer orally 1–2 mg/kg every 4–6 hours, up to a maximum single dose of 100 mg.\*
- 4 Monitor the patient closely until EMS arrives. Perform cardiopulmonary resuscitation (CPR), if necessary, and maintain airway. Keep patient in recumbent position (flat on back) unless he or she is having breathing difficulty. If breathing is difficult, patient’s head may be elevated, provided blood pressure is adequate to prevent loss of consciousness. If blood pressure is low, elevate legs. Monitor blood pressure and pulse every 5 minutes.
- 5 Record the patient’s reaction (e.g., hives, anaphylaxis) to the vaccine, all vital signs, medications administered to the patient, including the time, dosage, response, and the name of the medical personnel who administered the medication, and other relevant clinical information.
- 6 Notify the patient’s primary care physician.
- 7 Report the incident to the Vaccine Adverse Event Reporting System (VAERS) at [www.vaers.hhs.gov](http://www.vaers.hhs.gov).

These standing orders for the medical management of vaccine reactions in adult patients shall remain in effect for patients of the

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NAME OF CLINIC DATE

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MEDICAL DIRECTOR’S SIGNATURE DATE OF SIGNING