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MEDICAL RESERVE CORPS

Emergency Treatment of Anaphylaxis Reaction Standing Order

POLICY: It is the policy of the **Medical Reserve Corps** to provide effective emergency treatment for an anaphylaxis reaction during the course of a seasonal flu vaccination clinic. The primary medical professionals that this policy pertains to are as follows: **RN, LVN, NP and MD.**

PURPOSE and DEFINITION: Allergic reactions may occur within moments of an antigen (medication, immunization, bee sting or food) exposure leading to potential life threatening event. These reactions can vary from inconvenient (e.g., soreness, itching) to severe and life threatening anaphylaxis.

PATIENT DIAGNOSIS: Severe hypersensitivity reaction.

Signs and Symptoms of Anaphylactic Reaction

1.) Sudden or gradual onset of generalized itching, erythema (redness) or urticaria (hives); angioedema (swelling of the lips, face, or throat); bronchospasm (wheezing); shortness of breath; shock; abdominal cramping; or cardiovascular collapse. Rash-like symptoms alone may not be anaphylaxis.

PROCEDURE and STANDING ORDER:

STANDING ORDER: Administer EITHER Adrenalin OR use an Epi-Pen

1. If itching and swelling are confined to a recent injection site where a 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. 9-1-1) and notify the on-call physician. This should be done by a second person, while the primary nurse assesses the airway, breathing, circulation and level of consciousness of the patient.
3. **ADULTS:** Administer aqueous epinephrine 1:1000 dilution, IM, 0.01 ml/kg/dose. Adult doses range from 0.3 ml to 0.5 ml, with maximum dose of 0.5 ml. **See Chart Below** - Suggested Dosing of Epinephrine and Diphenhydramine by weight.
4. **ADULTS:** In addition, for systemic anaphylaxis, administer Diphenhydramine either orally or by intramuscular injection; the standard dose is 1-2 mg/kg, up to 100 mg maximum single dose. **See Chart Below** - Suggested Dosing of Epinephrine and Diphenhydramine by weight.

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5. CHILDREN and TEENS: Administer aqueous epinephrine 1:1000 dilution (1mg/1ml) IM; the standard dose is 0.01 mg/kg body weight, up to 0.3 mg maximum single dose in children and 0.5 mg maximum in adolescents. **See Chart Below** - Suggested Dosing of Epinephrine and Diphenhydramine by weight.

6. CHILDREN and TEENS: In addition, for systemic anaphylaxis, administer Diphenhydramine either orally or by intramuscular injection; the standard dose is 1 mg/kg, up to 30 mg maximum single dose in children and 100 mg maximum dose in adolescents. **See Chart Below** - Suggested Dosing of Epinephrine and Diphenhydramine by weight.

7. Monitor the patient closely until EMS arrives:

- Perform cardiopulmonary resuscitation (CPR), if necessary, and maintain airway.
- Keep patient in supine position (flat on back) unless patient 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.

8. If EMS has not arrived and symptoms are still present, repeat dose of epinephrine every 10-20 minutes for up to 3 doses, depending on patient's response.

9. Record 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.

10. Notify the patient's primary care physician.

Epi-Pen Use – Use same Procedure for Treatment of Anaphylaxis.

Epi-Pen (1:1000) 0.3 mg Epinephrine Auto-Injector:

To use the Epi-Pen: Remove auto-injector from plastic container. Form fist around auto-injector (black tip down). With you other hand, pull off gray cap. Hold black tip near outer thigh. Swing and jab firmly into outer thigh so auto-injector is at a 90° angle to thigh. Hold firmly in thigh for several seconds. Note that most of the liquid stays in the auto-injector and cannot be reused. After administration, follow the procedures below for monitoring vitals sign and airway patency. Never inject into areas other than the anterolateral aspect of the thigh. Do not inject intravenously.

EpiPen Auto-Injector delivers a 0.3 mg epinephrine dose (0.2mL, 1:1000) and is intended for patients who weigh 30 kg or more (approximately 66 pounds or more)

EpiPen Jr (1:2000) 0.15 mg epinephrine Auto-Injector for pediatric use.

Administration procedure is the same as EpiPen Adult.

EpiPen Jr. Auto-Injector delivers a 0.15 mg dose (0.3 mL, 1:2000) and is intended for patients who weigh 15-30 kgs (approximately 33-66 lbs).

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Suggested Dosing of Epinephrine 1:1000 dilution (not EpiPen) and Diphenhydramine (1)

Age Group Dose	Weight* in kg	Weight (lbs)* in lbs	Epinephrine Dose 1mg/ml injectable (1:1000 dilution) intramuscular	Diphenhydramine (Benadryl) 12.5 mg/5 mL liquid 25 and 50 mg caps or tabs 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
10-36 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 (0.15ml)	20 mg
49-59 mos	17-19 kg	37-42 lbs	0.2 mg (0.2 ml)	20 mg
5-7 yrs	10-23 kg	42-52 lbs	0.2 mg (0.2 ml)	30 mg
8-10 yrs	23-35 kg	51-77 lbs	0.3 mg (0.3 ml)	30 mg
11-12 yrs	35-45 kg	77-99 lbs	0.4 mg (0.4 ml)	40 mg
13 yrs and older	45+ kg	99+ lbs	0.5 mg (0.5 ml)	50-100 mg

Suggested Dosage for EpiPen (2)

Weight in kg	Weight in lbs	EpiPen Used	Diphenhydramine
15-30 kg	33-66 lbs	EpiPen Jr 0.15 mg dose (0.3 mL, 1:2000)	See chart with suggested dosing per weight and age
30 kg or more	66 lbs or more	EpiPen Adult 0.3 mg epinephrine dose (0.2mL, 1:1000)	See chart with suggested dosing per weight and age

**Signs & Symptoms and Basic Medical Management of Vaccine Reactions in
Children, Teens and Adults (1)**

Reaction (mild to severe)	Symptoms	Management
Localized	Soreness, redness, itching, or swelling at the injection sit	Apply a cold compress to the injection site. Consider giving an analgesic or anti- pruritic if ordered
Slight bleeding		Apply an adhesive compress over the injection site

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Continuous bleeding		Place thick gauze pads over site and maintain direct and firm pressure; raise the bleeding injection site (arm) above the level of the patient's heart
Psychological fright and syncope	Fright before injection is given	Have patient sit or lie down for the vaccination
Extreme paleness, sweating, coldness of the hands and feet, nausea, light-headedness, dizziness, weakness, or visual disturbances		Have patient lie flat or sit with head between knees for several minutes. Loosen any tight clothing and maintain an open airway. Apply cool, damp cloths to patient's face and neck.
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 the patient 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	Sudden or gradual onset of generalized itching, erythema (redness), or urticaria (hives); angioedema (swelling of the lips, face, or throat); severe bronchospasm (wheezing); shortness of breath; shock; abdominal cramping; or cardiovascular collapse	See Standing Order Procedure: Treatment of Anaphylaxis Reaction

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SPECIFIC GUIDELINES:

1. There must be an emergency box containing adrenalin or an Epi-Pen and Diphenhydramine on site or available anytime medications or immunizations are administered.
2. Epinephrine is incompatible with light, heat and air and must be transported and stored safely.
3. Check expiration date of Epinephrine or EpiPen monthly

REQUIRED EQUIPMENT:

- Sphygmomanometer (child, adult and extra-large cuffs) and stethoscope
- Syringes: 1 and 3 cc, 22 and 25 g, 1", 1 ½", and 2 " needles for epinephrine and diphenhydramine (Benadryl)
- Alcohol wipes
- Airway Maintenance: Adult airways (small, medium, large); Adult size pocket mask with one-way valve, Oxygen (if available)
- Flashlight (for possible examination of mouth and throat)

DOCUMENTATION:

- Record 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.

- Report subjective and objective symptoms and condition of patient
 - Note anaphylaxis reaction
 - Record all medications administered to the patient including the time, dosage, site, response and other clinical information in medical record, family folder or PHN Database.
 - Route the chart to the appropriate Health Care Provider for review and signature of Order.

EDUCATION AND FOLLOW-UP

- Inform patient (or patient's legal guardian) of allergic reaction to specific medication or immunization (if known)
 - Instruct to inform all other health care providers involved with his/her care
 - Carry anaphylaxis identification on person to alert emergency personnel of severe allergic tendencies.

REFERENCES:

- 1.) Immunization Action Coalition. www.immunize.org ; www.vaccineinformation.org Item #P3082 and #P3082a (8/06)
- 2.) Package Insert for EpiPen and EpiPen, Jr

Sources:

American Academy of Pediatrics. Passive Immunization. In: Pickering LK, ed. *Red Book: 2006 Report of the Committee on Infectious Diseases*. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006: 64–66.

American Pharmacists Association, Grabenstein, JD, *Pharmacy-Based Immunization Delivery*, 2002.