

**REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Basic**

SMO: Pediatric Anaphylaxis and Allergic Reactions

Overview: Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. This protocol is intended to help the EMS responder assess and treat the spectrum of allergic reactions.

**ALLERGIC REACTION
INFORMATION NEEDED**

- Exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions
- Respiratory: wheezing, stridor, respiratory distress
- Skin: itching, hives, rash
- Other symptoms: nausea, weakness, anxiety

OBJECTIVE FINDINGS-- MILD

- Hives, rash

TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway
- Administer oxygen 2-6 L/min via nasal cannula
- Routine Medical Care
- Transport to hospital

OBJECTIVE FINDINGS-- MODERATE

- Hives, rash
- Mild bronchospasm
- Normotensive for age, tachycardic, SaO₂ >95%

TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway
- Administer oxygen 10-15 L/min via nonrebreather mask
- BVM and suction prn
- Routine medical care
- Consult Medical Control for administration of **Albuterol** 2.5 mg/3 cc NS in a nebulizer
- Consult with Medical Control for administration of Albuterol if patient fits one of these categories:
 - Less than 5 kg = 1 cc*
 - Pt. 5 - 20 kg = 2 cc*
 - Pt. over 20 kg = 3 cc*Add 1-2 cc NS to a total volume of 3 cc.
- Consult with Medical Control to repeat treatment
- If pt. unable to use nebulizer, give
 - **Epipen JR. 0.15mg IM** for children weighing 33 pounds (15 kg) to 66 pounds (30kg)
 - **Epipen 0.3mg** for children greater than 66 pounds (30kg)
 - May repeat in 15 minutes X 1
 - **CALL MEDICAL CONTROL FOR CHILDREN LESS THAN 33 pounds**
- Immediate transport to the nearest hospital if < 5 minute transport time or ALS intercept
- Contact of medical control whenever transport time or time to intercept exceeds 5 minutes

7/04

Reviewed:

Revised:

EMS/ Region1 SMOs

OBJECTIVE FINDINGS --SEVERE (ANAPHYLAXIS)

- Abnormal appearance (agitation, restlessness, somnolence)
- Signs of diminished perfusion including weak brachial pulse, delayed capillary refill, pale or cool skin
- Respiratory failure (grunting, flaring, severe retractions)
- Stridor
- Bradycardia
- SaO₂ < 95% on RA

TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway
- Administer oxygen 10-15 L/min via nonrebreather mask
- BVM and suction prn
- Routine Medical Care
- Administration of Epinephrine
 - **Epipen JR. 0.15mg IM for children weighing 33 pounds (15 kg) to 66 pounds (30kg)**
 - **Epipen 0.3mg for children greater than 66 pounds (30kg)**
 - May repeat Epinephrine in 15 minutes X 1
- ** CALL MEDICAL CONTROL FOR CHILDREN LESS THAN 33 pounds**
- Consult Medical Control for administration of **Albuterol** 2.5 mg/3 cc NS in a nebulizer
- Consult with Medical Control for administration of Albuterol if patient fits one of these categories:
 - Less than 5 kg = 1 cc*
 - Pt. 5 - 20 kg = 2 cc*
 - Pt. over 20 kg = 3 cc

*Add 1-2 cc NS to a total volume of 3 cc.
- Consult with Medical Control to repeat treatment
- Immediate transport to the nearest hospital if < 5 minute transport time or ILS/ALS intercept
- Contact of medical control whenever transport time or time to intercept exceeds 5 minutes

7/04

Reviewed:

Revised:

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Documentation of adherence to protocol:

- Oxygen given
- Initial level of respiratory distress assessed and noted on chart (mild, moderate or severe)
- Bronchodilator given as indicated
- *Epinephrine administered for severe (anaphylaxis)

Medical Control Contact Criteria

- | |
|--|
| <input type="checkbox"/> Consult with Medical Control for administration dosage of Albuterol for patient up to 20 kg |
| <input type="checkbox"/> Consult Medical Control before administration of Epi Pen on child < 33 pounds |

PRECAUTIONS AND COMMENTS

- Use length-based tape to double check drug dose.
- Ensure proper concentration and dosage of **epinephrine** for route of administration; utilize with caution and only in severe allergic reactions.
- Intravenous **epinephrine** must be diluted with NS to volume of 10 cc to avoid cardiovascular side effects such as coronary vasoconstriction and life threatening dysrhythmias (i.e. ventricular fibrillation).
- Ensure airway patency, oxygenation and ventilation. If tidal volume is decreased or decreased level of consciousness consider use of BVM early.
- Edema of any of the soft structures of the upper airway can severely compromise the pediatric patient's airway. Observe closely and be prepared for early intubation.
- Note that a patient may change rapidly and frequent reassessment is necessary. Inform medical control of significant changes in patient status.
- Epinephrine may cause: anxiety, tremor, palpitations, tachycardia, and headache. In elderly patients, epinephrine administration may precipitate AMI , hypertensive crisis and/or dysrhythmias.
- Edema of any of the soft structures of the upper airway may be lethal. Observe closely, and be anticipate need for ALS intercept.
- Note that if a patient worsens and advances to a more severe category of allergic reaction, i.e. moves from a moderate allergic reaction to a severe one, repeated doses beyond maximum limits of medication are not to be exceeded without permission from medical control. I.e. if the patient receives two doses of epinephrine under the moderate severity protocol and then advances to a severe reaction, the patient should not receive additional epinephrine unless given permission from medical control.

**REGION I EMERGENCY MEDICAL SERVICES
STANDING MEDICAL ORDERS
EMT – Paramedic**

SMO: Pediatric Anaphylaxis and Allergic Reactions

Overview: Allergic reactions can vary in severity from a mild reaction consisting of hives and rash to a severe generalized allergic reaction termed anaphylaxis resulting in cardiovascular and respiratory collapse. Common causes of allergic reactions include: bee/wasp stings, penicillin or other drug allergies and seafood or nuts. Exposures can occur from ingestion, inhalation, injection or absorption through skin or mucous membranes. This protocol is intended to help the EMS responder assess and treat the spectrum of allergic reactions.

**ALLERGIC REACTION
INFORMATION NEEDED**

- Exposure to common allergens (bee stings, drugs, nuts, seafood, medications), prior allergic reactions
- Respiratory: wheezing, stridor, respiratory distress
- Skin: itching, hives, rash
- Other symptoms: nausea, weakness, anxiety

OBJECTIVE FINDINGS

MILD

- Hives, rash

TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway
- Administer oxygen 2-6 L/min via nasal cannula
- Routine Medical Care
- For extensive hives, Give **Benadryl (Diphenhydramine)** 1 mg/kg IM; max dosage 50 mg
- Immediate Transport to closest hospital

OBJECTIVE FINDINGS

MODERATE

- Hives, rash
- Mild bronchospasm
- Normotensive for age, tachycardic, SaO₂ >95%

TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway
- Administer oxygen 10-15 L/min via nonrebreather mask
- BVM and suction prn
- Routine medical care
- Cardiac Monitor
- Albuterol** 2.5 mg/3 cc NS in a nebulizer
 - Less than 5 kg = 1 cc*
 - Pt. 5 - 20 kg = 2 cc*
 - Pt. over 20 kg = 3 cc
 - *Add 1-2 cc NS to a total volume of 3 cc.
 - Repeat prn
 - May be given continuously
- If pt. unable to use nebulizer,
 - Give **Epinephrine** (1:1000) 0.01 mg/kg SQ,
May repeat in 15 min. X 1; max single dose 0.3 mg (see PRECAUTIONS AND COMMENTS)
- Fluid challenge, 20 cc/kg IV/IO, reassess and repeat prn to 60 cc/kg
- Benadryl (Diphenhydramine)** 1 mg/kg IM/IV/IO; max dosage 50 mg
- Immediate Transport to closest hospital

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OBJECTIVE FINDINGS

SEVERE (ANAPHYLAXIS)

- Abnormal appearance (agitation, restlessness, somnolence)
- Signs of diminished perfusion including weak brachial pulse, delayed capillary refill, pale or cool skin
- Respiratory failure (grunting, flaring, severe retractions)
- Stridor
- Bradycardia
- SaO₂ < 95% on RA

TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway
- Administer oxygen 10-15 L/min via nonrebreather mask
- BVM and suction prn
- Advanced airway management as indicated
- Routine Medical Care
- Cardiac Monitor
- IV NS access
- Epinephrine** (see PRECAUTIONS AND COMMENTS):
 - INTRAVENOUS: Epinephrine** (1: 10,000) 0.01 mg/kg IV, IO max single dose 0.1mg-- dilute with NS to volume of 10 cc, may repeat x1 in 5 min. as level of distress indicates.
 - ENDOTRACHEAL:** If pt. intubated and no IV access, **Epinephrine** (1: 1000) 0.1 mg/kg ET may repeat x 1 in 5 min.
 - SUBCUTANEOUS:** If no ET or IV access **Epinephrine** (1:1000) 0.01 mg/kg SQ, repeat in 15 min. x 1 prn, max single dose 0.3 mg
- Benadryl (Diphenhydramine)** 1 mg/kg IM/IV/IO; max dosage 50 mg
- Albuterol** 2.5 mg/3 cc NS in a nebulizer
 - Less than 5 kg = 1 cc*
 - Pt. 5 - 20 kg = 2 cc*
 - Pt. over 20 kg = 3 cc
 - *Add 1-2 cc NS to a total volume of 3 cc.
 - Repeat prn
 - May be given continuously
- Fluid challenge (500cc NS, reassess and repeat if indicated)
- Advanced airway management as indicated
- Immediate Transport to closest hospital

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Reviewed:

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Documentation of adherence to protocols :

- ___ Respiratory status (effort, lung sounds)
- ___ Oxygen given
- ___ If respiratory distress present, **albuterol**, **epinephrine** or **benadryl** given as indicated

PRECAUTIONS AND COMMENTS

- Use length-based tape to double check drug dose.
- Ensure proper concentration and dosage of **epinephrine** for route of administration; utilize with caution and only in severe allergic reactions.
- Intravenous **epinephrine** must be diluted with NS to volume of 10 cc to avoid cardiovascular side effects such as coronary vasoconstriction and life threatening dysrhythmias (i.e. ventricular fibrillation).
- Ensure airway patency, oxygenation and ventilation. If tidal volume is decreased or decreased level of consciousness consider use of BVM early.
- Edema of any of the soft structures of the upper airway can severely compromise the pediatric patient's airway. Observe closely and be prepared for early intubation.
- Note that a patient may change rapidly and frequent reassessment is necessary. Inform medical control of significant changes in patient status.
- *Epinephrine may cause: anxiety, tremor, palpitations, tachycardia, and headache. These may be particularly severe if given IV.
- Note: Intravenous administration of epinephrine is to only be used for **severe** allergic reactions
- *Be sure you are giving the proper dilution of Epinephrine to your patient, and give slowly.
- Edema of any of the soft structures of the upper airway may be lethal. Observe closely, and be prepared for early intubation before swelling precludes this intervention (See Airway Management Protocol).
- Note that if a patient worsens and advances to a more severe category of allergic reaction, i.e. moves from a moderate allergic reaction to a severe one, repeated doses beyond maximum limits of medication are not to be exceeded without permission from medical control. I.e. if the patient receives two doses of epinephrine under the moderate severity protocol and then advances to a severe reaction, the patient should not receive additional epinephrine unless given permission from medical control.

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