

# Anaphylaxis (Technician-Paramedic) Protocol

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## **Preamble**

Anaphylaxis is a life-threatening condition where rapid diagnosis and treatment can prevent death. When the patient is identified as having an anaphylactic reaction, treatment using a preloaded device such as an “epi-pen” or “epi-pen junior” can be accomplished by a Technician. The Technician-Paramedic can use the preloaded device or deliver the epinephrine by an alternative method.

## **Requirements**

1. Fully licensed Technician-Paramedic.
2. Certification in anaphylaxis (Technician-Paramedic) protocol by the Medical Director.
3. Certification in intravenous cannulation protocol by the Medical Director (only if intravenous fluid and drug administration is an option).
4. Certification in administration of intramuscular (IM) medication by the Medical Director.

## **Indications**

1. Patient exhibits clinical features consistent with anaphylaxis (see appendix 1).

## **Contraindications**

1. Patient age less than 1 year.
2. No palpable pulse or spontaneous respirations.

## **Drug Doses and Frequencies**

### 1) epinephrine

age 1-5: 0.15 mg IM, using Epi-Pen Junior\*\*

age 6 or greater: 0.3 mg IM, using Epi-Pen\*\*

dose may be repeated once, in 10-15 minutes, for persistent or recurrent symptoms

\*\*or equivalent delivery device

### 2) salbutamol (Ventolin™)

2.5mg (2.5ml premixed solution) respiratory solution

### 3) diphenhydramine (Benadryl™)

1 mg/kg IV (max. 50 mg)

Or

2.5 mg/kg IM (max 100 mg)

## **Procedure**

1. Perform patient assessment, and record vital signs and level of consciousness.
2. Assess that patient meets criteria for this protocol.
3. Ensure there are no contraindications to use of this protocol.
4. Initiate basic life support treatment measures, including supplemental oxygen.
  - these take precedence over management using this protocol
5. Administer epinephrine.
6. Establish intravenous line using normal saline (if Technician-Paramedic is certified and intravenous line is an option).
  - if blood pressure is age-appropriate and stable, and there are no signs of shock, run fluids TKVO
  - if patient is hypotensive with signs of shock, run fluids wide open; maximum 40 ml / kg or 2 liters (whichever is less)
    - patient should be reassessed after each 20 ml / kg or 500 ml (whichever is less)
    - change infusion rate to TKVO if signs of hypovolemia resolve or fluid overload occurs
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7. Administer salbutamol if severe bronchospasm present.

8. Administer diphenhydramine IV or IM
9. Initiate transport, unless other emergency condition required immediate treatment.
10. Monitor and reassess patient, as indicated.
11. Repeat epinephrine if indicated.
12. Notify receiving facility of patient's condition and medication used.

### **Documentation Requirements**

The following information must be documented on the patient care report form:

1. Patient's presenting signs and symptoms, including vital signs and level of consciousness.
2. Indications for protocol use.
3. Verbal parental consent, in case of a minor patient.
4. Dose(s), time(s), and effect(s) of epinephrine used.
5. Repeat assessment and vital signs, as indicated.
6. Changes from baseline, if any, that occur during treatment or transport.
7. Signature and license number of EMS personnel performing any transfer of function skills.

### **Certification Requirements**

1. Attend in-depth classes and lectures on anatomy and physiology of the immune system.
2. Attend in-depth classes and lectures on the pathophysiology, clinical features, and management of anaphylaxis.
3. Demonstrate an understanding of the pharmacology and mechanism of action of epinephrine.
4. Demonstrate the use of commercially available anaphylaxis kits.
5. Pass both written and oral examinations.

6. Certification is by the Medical Director.

### **Recertification Requirements**

1. Review class and recertification is done every 12 months.
2. A record will be kept to document all cases where this protocol is used.

### **Decertification**

1. Decertification is at the discretion of the Medical Director or the Provincial EMS Medical Director.

### **Quality Assurance Requirements**

1. Appropriate quality assurance policies must be in place. The Medical Director or designate must review all instances where this protocol is used. As a minimum, the following must be assessed:
  - i) appropriateness of implementation
  - ii) adherence to protocol
  - iii) any deviation from the protocol
  - iv) corrective measures taken, if indicated
2. Yearly statistics for protocol use compiled and forwarded to Emergency Medical Services Branch, Manitoba Health & Healthy Living.

## **Appendix 1**

Clinical features of anaphylaxis

Must include one of the following:

- swelling of the face, mouth, or throat
- shortness of breath or respiratory distress
- complete or partial upper airway obstruction
- hypotension of shock (anaphylactic)

Ancillary symptoms may include:

- hives or itching
- coughing or wheezing
- abdominal pain, nausea, vomiting
- anxiety
- stupor or coma