

**Seminole Community College**  
**Paramedic I**  
**Medication Handout #2**  
**(EPINEPHRINE, EPI-Pen, MDI's: PROVENTIL, ATROVENT)**

**Epinephrine- (INCLUDING Adrenalin®, EpiPen®, EpiPen Jr. ®)-** Sympathomimetic

**Description / Action-** A naturally occurring catecholamine that increases heart rate, contractile force, and myocardial electrical activity, it also increases vascular resistance and systolic blood pressure. It decreases airway resistance (bronchodilator) and automaticity. Epinephrine mimics the sympathetic nervous system response (Fight or Flight).

**Indications-** To restore rhythm in cardiac arrest and in severe allergic reactions.

Note- The following must be met prior to an EMT-B can administer an auto-Injector: The patient must exhibit signs and symptoms of a severe allergic reaction (anaphylaxis), including respiratory distress and / or shock. The medication must be prescribed for the patient. The EMT-B must receive an order for administration of the auto-injector online or offline from medical direction.

**Contraindications-** *There is no contraindication to administration of an epinephrine pen (auto-injector) in a life threatening allergic reaction.* Hypersensitivity to sympathomimetic amines, narrow angle glaucoma; hemorrhagic, traumatic, or cardiogenic shock; coronary insufficiency; dysrhythmias; organic brain or heart disease; or during labor.

**Precautions-** Elderly, debilitated patients, hypertension, hyperthyroidism, Parkinson's disease, diabetes, tuberculosis, asthma, emphysema, and in children < 6 years old.

**Medication Form-** In an auto-injector, a spring-loaded syringe encased in plastic, it is in liquid form. Otherwise, it can be found in ampules, vials, and pre-filled syringes.

**Dosage-**

**Allergic Reactions / Anaphylaxis-**

**Adult-** 0.3 to 0.5 mg of a 1:1,000 SC (Subcutaneously) every 5 to 15 minutes as needed or 0.5 to 1.0 mg of 1:10,000 IV (Intravenously) if SC dose is ineffective or severe reaction. (*EPIDEN delivers 0.3 mg*)

**Pediatric-** 0.01mg/kg of a 1:1,000 SC (Subcutaneously) every 10 to 15 minutes as needed or 0.01 mg/kg of 1:10,000 IV (Intravenously) if SC dose is ineffective or severe reaction. (*EPIDEN Jr. delivers 0.15 mg*)

**Cardiac Arrest-**

**Adult -** 1 mg of a 1:10,000 IV every 3 to 5 minutes, (ET 2.0 to 2.5 mg of 1:1,000)

**Pediatric-** 0.01 mg/kg of 1:10,000 IV/IO (ET 0.1 mg/kg of 1:1,000).

All subsequent doses 0.1 mg/kg IV/IO.

**Side Effects-** Increased Heart Rate, Pale skin (Pallor), Dizziness, Chest Pain, Headache, Nausea, Vomiting, Excitability and Anxiousness.

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**(Continued)**

**Metered Dose Inhalers (MDI's)**- Classically MDI's come in a variety of types such as Broncodilators, Mucolytes, and Steroids.

**Broncodilators-** *Albuterol (Proventil®)*, *Ventolin®*, Ipratropium bromide (*Atrovent®*), Isoetharine (Bronkosol®), Metaproterenol (Metaprel®, Allupent®), Salmeterol xinofoate (Serevent®), Montelukast (Singulair®), CombiVent®.

**Mucolytics-** Acetylcysteine (Mucomyst®)

**Steroids-** Beclomethasone (Vanceril®, Beclovent®), Flunisolide (Aerobid®), Tri-amicinolone acetonide (Azmacort®)

**Indications-** Bronchospasm in Asthma, Bronchitis, and COPD. Note- The following must be met prior to an EMT-B can administer an MDI: The patient exhibits signs of breathing difficulty. The patient has a prescribed inhaler. The EMT-B must receive an order for administration of the MDI online or offline from medical direction.

**Contraindications-** Hypersensitivity to the drug. A bronchodilator should not be used if the patient is not responsive enough to use it. The MDI is not prescribed for the patient. No orders (Online or offline) for administration. The patient has already taken the maximum allowed dose prior to your arrival.

**Precautions-** The patient may experience tachycardia, anxiety, nervousness, nausea, cough, wheezing, and / or dizziness. Vitals signs and breath sounds must be monitored; use with caution in elderly, cardiac, hypertensive patients.

**Medication Form-** Aerosolized medication in metered dose inhaler. It is commonly found in a powdered form in a propellant.

**Dosage / Route-** Each time a MDI is initiated the required dose of the medication is expelled from the device. A common inhaler such as:

**Albuterol** - 90 micrograms (mcg) that is two “puffs” from the inhaler.  
- Via nebulizer it is 2.5 mg in 2.5 – 3.0 mL.  
It may be repeated as needed.

**Atrovent** - 36 micrograms (mcg) that is two “puffs” from the inhaler.  
- Via nebulizer it is 500 mcg / 2.5mL.

Some agents may be given together Albuterol / Atrovent in a single nebulized dose (together they are administered under the trade name Combivent).

**Side Effects-** See Precautions. Also multiple inhaler hits will cause tremors similar to Parkinson's disease.