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**CHECK & INJECT NY – DEMONSTRATION PROJECT**

Check & Inject NY was developed and is being implemented as a New York State Demonstration Project. As required by 10 NYCRR Part 800.19, this project has approval of the SEMAC and the New York State Department of Health Commissioner, Howard Zucker, MD, JD.

Any EMS agency which currently utilizes epinephrine auto injectors in their treatment protocols is eligible to enroll in the Check & Inject NY Demonstration Project, which will run for a period of 18 months. The project data will then be reviewed by the SEMAC, who will make their recommendation to the Commissioner of Health for continued use.

The syringe epinephrine kits are not currently approved for use to agencies not enrolled in the Check & Inject NY Demonstration Project.

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- OBJECTIVES**
- Provide rationale for Check & Inject NY
  - Review anaphylaxis
  - Demonstrate medication administration
  - Ensure safe injection practices

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### WHY CHECK & INJECT NY?

- Demonstrate that basic life support providers can safely give intramuscular epinephrine
- Why not continue to use auto-injectors?
  - Expense - \$500-1000/vehicle
  - Potential injury to providers
  - Rarely used
- Potential to save the EMS system millions while maintaining ability to treat patients

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### HISTORY OF SYRINGE EPINEPHRINE KITS

- King County, Washington
  - Hundreds of BLS implementations
  - No injuries to providers
  - No failures to treat patients (some appropriate increases to treatment)
- States with syringe epinephrine kits for EMTs:
  - Montana, Alaska, Florida, and West Virginia

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### ANAPHYLAXIS - OVERVIEW

- Serious and systemic allergic reaction
  - Systemic (multi-system) involvement
  - Shock (poor perfusion)
  - Respiratory symptoms
  - Rapid onset

Anaphylaxis WILL lead to DEATH  
if left untreated

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### ANAPHYLAXIS IS NOT . . .

- An insect bite that itches
- A runny nose
- Sneezing
- Watery eyes

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### ANAPHYLAXIS IS . . .

- Rapid Onset
- Multisystem
- Life Threatening

**Anaphylaxis:** a systemic and life-threatening allergic reaction from contact with an allergen

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### COMMON CAUSES OF ANAPHYLAXIS

- Foods – nuts, shellfish, fruits
- Insects – bees, wasps
- Medications – antibiotics



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## ANAPHYLAXIS – TREATMENTS

- Epinephrine
  - Immediate treatment - lifesaving
  - Improves respiratory distress
  - Reduces airway swelling
  - Treats shock
- Supplemental ALS Interventions
  - Antihistamines (Diphenhydramine)
  - Nebulizers (Albuterol)
  - Steroids (Prednisone or Methylprednisolone)

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## PATIENT IN ANAPHYLAXIS

**Anaphylaxis** is likely when either criteria is met:

<p><b>LIKELY ALLERGEN</b></p> <p>With any <b>TWO</b> of the following occurring rapidly after exposure:</p> <ul style="list-style-type: none"> <li>Skin and/or Mucosa</li> <li>Respiratory Compromise</li> <li>Decreased Blood Pressure</li> </ul>	<p><b>KNOWN ALLERGEN</b></p> <p>With any <b>ONE</b> of the following occurring rapidly after exposure:</p> <ul style="list-style-type: none"> <li>Respiratory Compromise</li> <li>Decreased Blood Pressure</li> </ul>	<p><b>Skin/Mucosa</b></p> <ul style="list-style-type: none"> <li>• Itching</li> <li>• Flushing</li> <li>• Hives</li> <li>• Swelling</li> </ul> <p><b>Respiratory Compromise</b></p> <ul style="list-style-type: none"> <li>• Difficulty Breathing</li> <li>• Hypoxia</li> <li>• Wheeze</li> <li>• Stridor</li> </ul> <p><b>Decreased Blood Pressure</b></p>
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## FOLLOW LOCAL PROTOCOLS

### Medical: Allergic Reaction and Anaphylaxis

#### EMT

- ABC and vital signs
- Airway management and appropriate oxygen therapy
- Determine if patient has utilized their own EpiPen
- Patient **prescribed** EpiPen and severe respiratory distress, edema, hypotension:
  - Administer appropriate EpiPen
- Patient **NOT prescribed** EpiPen and severe respiratory distress, edema, hypotension:
  - Contact Medical Control for orders to administer appropriate EpiPen
  - IF UNABLE to contact Medical Control:
    - Administer appropriate EpiPen

#### EMT STOP

**CC and PARAMEDIC STOP**

**PATIENTER OPTIONS**

- Administer EpiPen and down, via nebulizer
- Epinephrine infusion (1 mg or 100 mcg EpiPen SubQ), at 7 mcg/kg/min

**Key Points/Considerations**

- If a 1:1000 EpiPen is administered as EpiPen, the patient will need three times appropriate amount.
- If a 1:1000 EpiPen is administered as EpiPen, the patient will need three times appropriate amount.

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Version 1 (June 2017) - 20

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### BEE-CAREFUL AT SUMMER CAMP

- 15 year old girl at summer camp when stung/bitten by an unknown insect on her cheek
- 30 minutes later she walked the camp infirmary
- She has an epinephrine auto injector for bee stings
- Pain locally, unable to open her right eye

Vital signs on EMS arrival:

- RR: 24
- HR: 96
- BP: 132/64
- Lungs: increased ventilation rate, clear, and easy



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### NOT SO SPECIAL NIGHT OUT

- 79 year old woman allergic to shellfish
- Taken out to dinner – no known exposure
- She developed hives over her face, chest, and back
- Took Benadryl
- Called EMS after experiencing difficulty breathing

Vital signs at EMS arrival:

- RR: 26
- HR: 106
- BP: 102/52
- Lungs: wheezes, shallow, retractions noted at the neck and intercostal spaces



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### BARELY SURVIVING STRAWBERRIES

- 3 year old girl felt sick to her stomach after eating strawberries at family picnic
- Rash around patient's mouth
- Patient became pale and lethargic over next 15 minutes

Vital signs at EMS arrival:

- RR: 12
- HR: 64
- BP: capillary refill >4 seconds
- Lungs: nearly absent, faint wheezes noted
- Patient is unresponsive



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## CHECK & INJECT NY ADMINISTRATION

**Check & Inject NY: Epinephrine Injection Process**

1.	2.	3.	4.	5.	6.
VERIFY NEED	SELECT/PREP	VERIFY DRUG	VERIFY DOSAGE	INJECT	DOCUMENT
<b>Trigger</b> <ul style="list-style-type: none"> <li>• Food allergy</li> <li>• Insect sting</li> <li>• Drug allergy</li> </ul> <b>Symptoms</b> <ul style="list-style-type: none"> <li>• Respiratory distress</li> <li>• Decreased BP</li> <li>• Skin &amp; Mucosa</li> </ul>	<ul style="list-style-type: none"> <li>• Open, outer thigh</li> <li>• Clean with alcohol</li> </ul> 	<ul style="list-style-type: none"> <li>• 1:1000 Epinephrine</li> <li>• Expiration date</li> <li>• Contents of vial should be clear</li> </ul>	<ul style="list-style-type: none"> <li>• Place needle on syringe</li> <li>• Draw up the appropriate dose of epinephrine</li> </ul> <p style="color: #0056b3;"><b>Adult &gt; 30 kg / 66 lbs</b></p> <ul style="list-style-type: none"> <li>• 0.3 mL</li> <li>• 0.3 cc on syringe</li> </ul> <p style="color: #0056b3;"><b>Child &lt; 30 kg / 66 lbs</b></p> <ul style="list-style-type: none"> <li>• 0.15 mL</li> <li>• 0.15 cc on syringe</li> </ul>	<ul style="list-style-type: none"> <li>• Insert needle at 90 degree angle</li> <li>• Push plunger to administer dose</li> <li>• Remove needle</li> <li>• Engage safety cap</li> <li>• Massage site for 30 seconds</li> <li>• Cover injection site with adhesive bandage</li> </ul>	<b>Monitor patient</b> <ul style="list-style-type: none"> <li>• Reassure patient</li> <li>• Observe response</li> <li>• Observe side effects</li> <li>• Reassure every 5 minutes</li> </ul> <b>Update ALS</b> Document Call Check & Inject NY Physician • 1-844-EPI-CALL

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## 1. VERIFY NEED

1.

**VERIFY NEED**

**Trigger**

- Food allergy
- Insect sting
- Drug allergy

**Symptoms**

- Respiratory distress
- Decreased BP
- Skin & Mucosa

**Check & Inject NY: Epinephrine Injection Process**

1.	2.	3.	4.	5.	6.
VERIFY NEED	SELECT/PREP	VERIFY DRUG	VERIFY DOSAGE	INJECT	DOCUMENT
<b>Trigger</b> <ul style="list-style-type: none"> <li>• Food allergy</li> <li>• Insect sting</li> <li>• Drug allergy</li> </ul> <b>Symptoms</b> <ul style="list-style-type: none"> <li>• Respiratory distress</li> <li>• Decreased BP</li> <li>• Skin &amp; Mucosa</li> </ul>	<ul style="list-style-type: none"> <li>• Open, outer thigh</li> <li>• Clean with alcohol</li> </ul>	<ul style="list-style-type: none"> <li>• 1:1000 Epinephrine</li> <li>• Expiration date</li> <li>• Contents of vial should be clear</li> </ul>	<ul style="list-style-type: none"> <li>• Place needle on syringe</li> <li>• Draw up the appropriate dose of epinephrine</li> </ul> <p style="color: #0056b3;"><b>Adult &gt; 30 kg / 66 lbs</b></p> <ul style="list-style-type: none"> <li>• 0.3 mL</li> <li>• 0.3 cc on syringe</li> </ul> <p style="color: #0056b3;"><b>Child &lt; 30 kg / 66 lbs</b></p> <ul style="list-style-type: none"> <li>• 0.15 mL</li> <li>• 0.15 cc on syringe</li> </ul>	<ul style="list-style-type: none"> <li>• Insert needle at 90 degree angle</li> <li>• Push plunger to administer dose</li> <li>• Remove needle</li> <li>• Engage safety cap</li> <li>• Massage site for 30 seconds</li> <li>• Cover injection site with adhesive bandage</li> </ul>	<b>Monitor patient</b> <ul style="list-style-type: none"> <li>• Reassure patient</li> <li>• Observe response</li> <li>• Observe side effects</li> <li>• Reassure every 5 minutes</li> </ul> <b>Update ALS</b> Document Call Check & Inject NY Physician • 1-844-EPI-CALL

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## CHECK & INJECT NY SYRINGE EPI KIT



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## 2. SELECT AND PREP SITE

### 2.

**SELECT/PREP**

- Upper, outer thigh
- Clean with alcohol



**NY: Epinephrine Injection Process**

1. VERIFY VIAL	4. WASH HANDS	5. INJECT	6. DOCUMENT
<ul style="list-style-type: none"> <li>1:1000 Epinephrine</li> <li>Expiration date</li> <li>Contents of vial should be clear</li> </ul>	<ul style="list-style-type: none"> <li>Wash hands with soap and water for 20 seconds</li> <li>Use hand sanitizer if soap and water are not available</li> </ul>	<ul style="list-style-type: none"> <li>Inject into the muscle of the upper, outer thigh</li> <li>Inject slowly</li> <li>Inject 0.1 mL</li> <li>Apply pressure to the site</li> </ul>	<ul style="list-style-type: none"> <li>Document the injection</li> <li>Document the time</li> <li>Document the patient's response</li> <li>Document the patient's vital signs</li> </ul>

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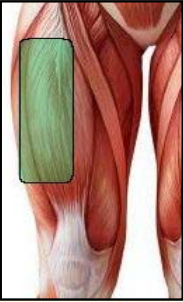
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## UPPER LEG

Outside of the thigh



Outside of the thigh



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## 3. VERIFY DRUG

### 3.

**VERIFY DRUG**

- 1:1000 Epinephrine
- Expiration date
- Contents of vial should be clear

**NY: Epinephrine Injection Process**

1. VERIFY VIAL	4. WASH HANDS	5. INJECT	6. DOCUMENT
<ul style="list-style-type: none"> <li>1:1000 Epinephrine</li> <li>Expiration date</li> <li>Contents of vial should be clear</li> </ul>	<ul style="list-style-type: none"> <li>Wash hands with soap and water for 20 seconds</li> <li>Use hand sanitizer if soap and water are not available</li> </ul>	<ul style="list-style-type: none"> <li>Inject into the muscle of the upper, outer thigh</li> <li>Inject slowly</li> <li>Inject 0.1 mL</li> <li>Apply pressure to the site</li> </ul>	<ul style="list-style-type: none"> <li>Document the injection</li> <li>Document the time</li> <li>Document the patient's response</li> <li>Document the patient's vital signs</li> </ul>

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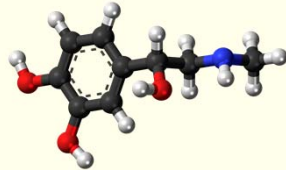
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## EPINEPHRINE

- Epinephrine
  - A synthetic reproduction of the endogenous hormone/neurotransmitter “Adrenaline”
  - Functions in “fight or flight” response of the sympathetic branch of the autonomic nervous system



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## EPINEPHRINE

- Onset (how long does it take to start working)
  - IM Injection
    - Typically 90 seconds in a healthy patient
    - **IM epinephrine in anaphylaxis: may take 3-5 min**
    - If no change at 5 min consider 2<sup>nd</sup> dose!
- Duration (how long does it last)
  - IM Injection
    - Typically 1-4 hours

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## EPINEPHRINE

- There are **no contraindications** to the administration of IM epinephrine in anaphylaxis
- Side effects may include:
  - Palpitations
  - Tremors
  - Hypertension
  - Headache
  - Anxiousness
- Benefits of epinephrine outweigh risks

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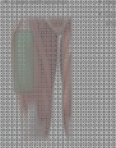
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### 4. VERIFY DOSAGE

1. Check & Inject NY Kit	4. VERIFY DOSAGE	5. on Process
<p>1. Check &amp; Inject NY Kit</p> 	<p><b>4. VERIFY DOSAGE</b></p> <ul style="list-style-type: none"> <li>Place needle on syringe</li> <li>Draw up the appropriate dose of epinephrine</li> </ul> <p><b>Adult ≥ 30 kg / 66 lbs.</b></p> <ul style="list-style-type: none"> <li>0.3 mL</li> <li>Fill to 'A' on syringe</li> </ul> <p><b>Child &lt; 30 kg / 66 lbs.</b></p> <ul style="list-style-type: none"> <li>0.15 mL</li> <li>Fill to 'P' on syringe</li> </ul>	<p>5. on Process</p> <p>6. on Process</p>

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### RIGHT DOSE - ADULT & PEDIATRICS

- Check & Inject NY Kit Dosage:
  - Adults (≥ 30 kg/66 lbs) - **0.3 mL**
  - Pediatrics (< 30 kg/66 lbs) - **0.15 mL**

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### DRAWING EPINEPHRINE





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## DRAWING EPINEPHRINE



ADULT DOSE



PEDIATRIC DOSE

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## DRAWING EPINEPHRINE



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## 5. INJECT

**Check & Inject NY: Epinephrine**

1. VERIFY NEEDLE	2. ASSESS SITE	3. WASH HANDS	4. PREPARE SITE	5. INJECT	6. DISPOSE
<ul style="list-style-type: none"><li>Check expiration date</li><li>Check for damage</li><li>Check for correct dose</li><li>Check for correct concentration</li><li>Check for correct volume</li><li>Check for correct needle gauge</li><li>Check for correct needle length</li><li>Check for correct needle type</li><li>Check for correct needle brand</li><li>Check for correct needle lot</li><li>Check for correct needle storage</li><li>Check for correct needle handling</li><li>Check for correct needle disposal</li></ul>		<ul style="list-style-type: none"><li>Wash hands with soap and water for at least 20 seconds.</li><li>Use an antiseptic wipe to clean the injection site.</li><li>Allow the site to dry.</li></ul>	<ul style="list-style-type: none"><li>Remove the needle cap.</li><li>Insert the needle at a 90-degree angle.</li><li>Push the plunger to administer the dose.</li><li>Remove the needle.</li><li>Engage the safety cap.</li><li>Massage the site for 30 seconds.</li><li>Cover the injection site with an adhesive bandage.</li></ul>	<ul style="list-style-type: none"><li>Recap the needle.</li><li>Dispose of the needle in a sharps container.</li><li>Dispose of the syringe in a sharps container.</li><li>Dispose of the bandage in a sharps container.</li></ul>	

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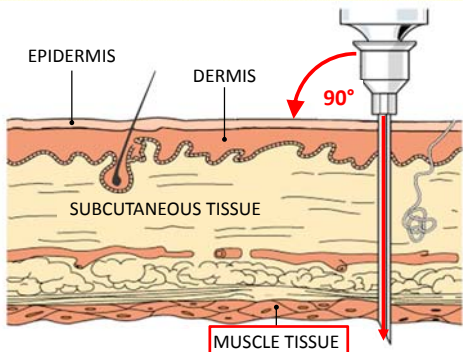
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## INTRAMUSCULAR (IM) INJECTION



Adapted from: Smith, S., Duell, D., & Martin, B. (2000). Clinical nursing skills: Basic to advanced skills. (5th ed.), p394. Upper Saddle River, NJ: Prentice-Hall Health.

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## IM INJECTION PROCEDURE



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## IM INJECTION PROCEDURE



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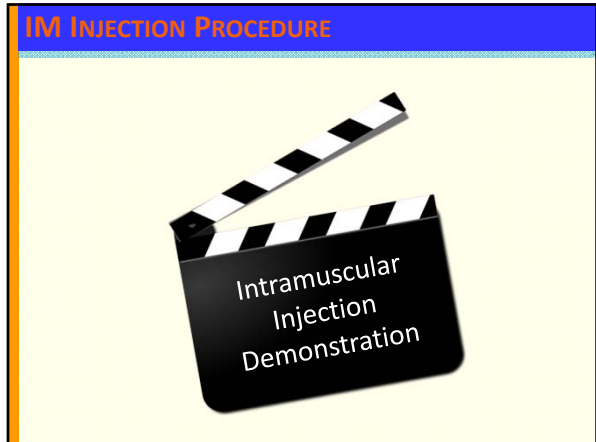
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**6. DOCUMENT**

**Check & Inject NY: Epinephrine Injection Procedure**

1. VERIFY SIGNS	2. SELECT SITE	3. VERIFY DRUG	4. VERIFY DOSE	5. ASSESS

**6. DOCUMENT**

**Monitor patient**

- Reassure patient
- Observe response
- Observe side effects
- Reassess every 5 minutes

**Update ALS**

**Document**

**Call Check & Inject NY Physician**

- 1-844-EPI-CALL

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**DOCUMENT**

- Document your initial findings:
  - Vital signs
  - Appearance
  - Work of breathing
  - Lung sounds
  - Ability to speak
- Report responses and side effects to treatment
- Report findings of on-going assessments every 5 minutes

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**REVIEW AND QUALITY ASSURANCE**

Call the Check & Inject NY physician following the appropriate transfer of patient care

**Check & Inject NY  
On-Call Physician  
(844) EPI – CALL**

A physician is available 24 hours a day

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**REVIEW ENTIRE PROCESS**



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**REVIEW ENTIRE PROCESS**

- Explained the rationale for Check & Inject NY
- Reviewed the identification of Anaphylaxis
- Provided education to allow BLS providers to administer IM injections

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## SPECIAL THANKS



Department of Health



UNIVERSITY of ROCHESTER  
DIVISION OF PREHOSPITAL MEDICINE

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## THE CHECK & INJECT NY PROJECT TEAM

### Physician Leads

Dr. Jeremy Cushman  
Dr. Michael Dailey

### Project Management

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Heather Lenhardt  
Michael Meyer  
Benjamin Sensenbach

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Richard Rusho, Rochester/Monroe County Emergency Communications Department

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Dr. Aaron Farney  
Dr. Adam Frisch  
Dr. Christian Knutsen  
Dr. Ben Ostrovsky  
Dr. Nick Rathert

### Corporate Partners

Bound Tree  
Codan Medical

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