



# EMERGENCY PROTOCOLS

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## SYMPTOMS and PROTOCOLS

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**Anaphylaxis**

**Bradycardia**

**Cardiac Chest Pain**

**High Spinal Block**

**Opiate Respiratory Depression**

**Seizure**

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# Anaphylaxis Symptoms

*Symptoms include (by organ system):*

## **Skin**

- Hives, itching, flushing, swelling of lips, throat or tongue, cyanosis

## **Respiratory**

- Shortness of breath, wheezing, stridor, hoarseness, change in phonation, difficulty swallowing, cough

## **Cardiac**

- Coronary artery spasm leading to MI, dysrhythmia, and arrest lowering of BP associated with fast HR
- Shock and loss of consciousness

## **Other**

- GI-abd pain, cramping, n/v/d
- GU-loss of bladder control
- Neuro-headaches
- General anxiety and feeling of impending doom

# Anaphylaxis Protocol

## Call for help:

- Call code in facility
- Call 911 if needed - use clinical judgment
- AED and crash cart brought to room

## Remove any triggering agent

## Establish airway:

- Position patient supine
- Open airway with head-tilt, chin lift
- Insert airway device (oral or nasal) as needed

## Start 100% O<sub>2</sub> via mask (non rebreather)

## Give epinephrine 0.3-0.5ml of 1:1000 IM

- **Note** -this comes in a pre-filled syringe ready for administration called an EpiPen.
  - This is useful because it does not have to be drawn up.
  - Can be administered ASAP through clothing.

## Check breathing:

- Watch for chest rise, feel for breath, listen for breath sounds
- Assist ventilation with ambu bag if needed

## If needed, based on clinical judgment, establish artificial airway via intubation with ETT or LMA based on skill level

- Verify tube position
- Chest movement vs. abd distension
- Breath sounds vs. gastric gurgle
- CO<sub>2</sub> monitor in line with tube

## **Anaphylaxis Protocol cont.**

**If patient has a pulse, place in Trendelenburg if hypotensive**

**Start large bore IV-bolus 1 liter NS as needed**

**Titrate to stable blood pressure**

**Repeat eqi q 5 minutes as needed titrated to effects**

**Check vital signs q 2 minutes:**

- Blood pressure
- Heart rate
- Respiratory rate
- O<sub>2</sub> saturation

**If deteriorating or neardeath:**

- Give 10ml or Epi 1:10,000 IV slowly over 10 minutes
- Titrate to effects
- Repeat as necessary

**Administer Benadryl 50mg IV or IM**

**Start second large bore IV and give another fluid bolus of 1000cc of NS**

**Ranitidine 50mg IV or 150mg po**

**Transport to emergency department (ED) by EMT's**

# Bradycardia Symptoms

## ***Symptoms include:***

- Light-headedness
- Nausea
- Diaphoresis
- Tinnitus
- Confusion
- Weakness
- Visual disturbance
- Loss of consciousness

Most common seen by spinal injectionists – vasovagal syncope

Symptoms usually preceded by triggering event (pain)

# Bradycardia Protocol

## **Assess appropriateness for clinical condition:**

- Heart rate typically <50/min if bradyarrhythmia

## **Identify and treat underlying cause:**

- Maintain patent airway; assist breathing as necessary
- Oxygen (if hypoxemic)
- Cardiac monitor to identify rhythm; monitor blood pressure and oximetry
- IV access
- 12-Lead ECG if available; don't delay therapy

## **Persistent bradyarrhythmia causing:**

- Hypotension?
- Acutely altered mental status?
- Signs of shock?
- Ischemic chest discomfort?
- Acute heart failure?



## **Bradycardia Protocol cont.**

### **If Yes: Atropine**

Atropine IV Dose:

First dose: 0.5 mg bolus

Repeat every 3-5 minutes Maximum: 3mg

### **If atropine ineffective:**

#### ***Transcutaneous pacing***

OR

#### ***Dopamine infusion***

Dopamine IV Infusion: 2-10 mcg/kg per minute

OR

#### ***Epinephrine infusion*** Epinephrine IV Infusion:

2-10 mcg per minute

### **Consider:**

Expert consultation Transvenous pacing

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From the American Heart Association-May 2011: "Bradycardia with a Pulse Algorithm"

# Cardiac Chest Pain Symptoms

## ***Symptoms include:***

- Chest pain radiating to left > right arm, jaw, epigastrium pain described as tightness, squeezing or pressure,
- SOB, dyspnea on exertion, diaphoresis, weakness, lightheadedness, n/v, palpitations
- Loss of consciousness and sudden death can occur

## **Symptoms in women may be atypical:**

- Most common symptoms of MI in women are SOB, weakness and fatigue
- In women, chest pain may be less predictive of coronary ischemia
- At least 25% (range 22-64%) of all myocardial infarctions are silent (asymptomatic) and are discovered later on EKG, autopsy, etc.

# Cardiac Chest Pain Protocol

## **Check responsiveness: "Are you okay?"**

- If unresponsive, call for help
- Call code in facility (PICS)
- Call 911

## **Recommend reviewing **ACLS Algorithm****

## **Call for help:**

- Call code in facility
- Call 911 if needed - use clinical judgment
- AED and crash cart brought to room

## Cardiac Chest Pain Protocol cont.

### Check airway:

- Position patient supine
- Open airway with head-tilt, chin lift
- Insert airway device if needed

### Check for breathing:

- Watch for chest rise, feel for breath, listen for breath sounds

### Administer 100% oxygen via mask Check circulation:

- Check pulse
- If no pulse, start chest compressions at 100/minute until AED arrives
- When AED arrives, attach and follow instructions

### If still no pulse, proceed to **Cardiac Arrest Protocol** If patient has pulse:

- Administer aspirin 325 mg po, chewed or suppository
- Administer nitroglycerine if SBP > 90
  - Give 0.4 mg sublingual q 5 minutes
  - Repeat administration two times
- Start 20g IV
  - Administer morphine 2-5 mg IV q 5-30 minutes as necessary if no pain relief from nitroglycerine administered three times
- Check vital signs q 2 minutes
  - blood pressure
  - heart rate
  - respiratory rate
  - oxygen saturation
- Monitor for respiratory depression, hypotension and lethargy
- Transport to ED via EMT's

# High Spinal Block Symptoms

## *Symptoms include:*

### • Respiratory

- Difficulty breathing or apnea
- Difficulty speaking, cough
- Reduced O<sub>2</sub> saturation, respiratory arrest

### • Cardiac

- Hypotension
- Bradycardia
- Cardiac arrest (asystole)

### • Neurological

- Anxiety
- Paralysis of upper/lower extremity
- High sensory level
- Loss of consciousness

### • Other

- GU - loss of bladder control

# High Spinal Block Protocol

## **Call for help:**

- Call code in facility
- Call 911 if needed - use clinical judgment
- AED and crash cart brought to room

## **Check airway:**

- Position patient supine
- Open airway with head-tilt, chin lift
- Insert airway device as needed

## High Spinal Block Protocol cont.

### Check for breathing:

- Watch for chest rise, feel for breath, listen for breath sounds

### Administer 100% oxygen via mask

Be prepared to assist respirations with an ambu bag if showing signs of poor respiratory effort, whispering, paradoxical respirations, or anxiety

If apneic, decreasing LOC or respirations < 6/min, and/or sat < 90% on 100% oxygen:

- Prepare for intubation

If needed, based on clinical judgment, establish airway via intubation with ETT or LMA based on skill level

- Verify tube position
- Chest movement vs. abd distension
- Breath sounds vs. gastric gurgle
- CO<sub>2</sub> monitor in line with tube

### Check circulation:

- Check pulse
- If no pulse, go to **Cardiac Arrest Protocol**

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Modified from World Anesthesia. Update in Anesthesia. Issue 14 Article 14. Case Report - Total Spinal Anesthesia Dijkema L., Haisma H. Department of Anesthesiology. University Hospital Groningen. The Netherlands

# Opiate Respiratory Depression Symptoms

## ***Symptoms include:***

- Sedation
- Pupillary constriction
- Hypoxia
- Slowing or cessation of respiration

# Opiate Respiratory Depression Protocol

**Check responsiveness - "Are you okay?"**

## **If no response:**

- Call code in facility
- Call 911 if needed-use clinical judgment
- AED and crash cart brought to room

***If unresponsive --- check airway:***

- Position patient supine
- Open airway with head-tilt, chin lift
- Insert airway device as needed

## **Check for breathing:**

- Watch for chest rise, feel for breath, listen for breath sounds

## **If breathing:**

- Administer 100% Oxygen via mask and monitor O<sub>2</sub> saturation via pulse ox

**If patient is snoring, insert nasal airway and assist with breathing with ambu bag as necessary If respirations < 6/min, and/or sat < 90% on 100% oxygen:**

- Insert oral/nasal airway as tolerated
- Assist ventilation with ambu bag/mask

**Establish airway via intubation with ETT or LMA based on skill level**

# Opiate Respiratory Depression Protocol cont.

**Start 20g IV**

**Check vitals signs and O<sub>2</sub> sat q 2 minutes Circulation**

**Check pulse:**

- If no pulse, go to cardiac arrest protocol
- When AED arrives, attach and follow instructions

**Consider use of Narcan:**

- Note: Narcan must be used with extreme caution in patients taking opioids on a routine or chronic basis

**If the decision is made to administer Narcan:**

- Dilute 1ml (0.4 mg/ml) in 9 ml of sterile saline and give 1-2 ml IV q 2-5 x minutes
- Titrate until saturation >90% on room air

**Once patient is revived, mix 4 vials Narcan in 1000 ml of saline and run IV at 50-200 ml/hr-titrate to effect**

**If patient shows signs of agitation, sniffing, or other signs of withdrawal, decrease infusion rate Continue to monitor vital signs q 2 minutes**

**Transport to ED in care of EMT's**

# Seizure Symptoms

## **Symptoms include:**

- Sudden involuntary contraction of muscles and loss of consciousness

# Seizure Protocols

## **Check responsiveness - "Are you okay?"**

## **If unresponsive, call for help**

- Call code in facility
- Call 911

## **Have AED brought to room and attach to patient**

## **ASAP check airway:**

- Position patient left lateral decubitus
- Open airway with head tilt-chin lift
- Remove dentures if present
- Insert nasopharyngeal airway if obstruction noises heard

## **Check for breathing:**

- Watch for chest rise, feel for breath, listen for breath sounds
  - **If breathing - administer 100% oxygen via face mask**
  - **If not breathing - go to respiratory arrest protocol**

## **Check circulation:**

- Check pulse
- If absent, proceed to Cardiac Arrest Protocol

## **Consider possibility of reactive seizure**

## **Most common cause is hypoglycemia**



## Seizure Protocols cont.

**Start IV and administer Midazolam 0.2 mg/kg IV bolus, which, in 75kg (165 lb.) individual=15mg**

- Note - may be given intranasally at identical dose

**Monitor level of consciousness, oxygen saturation and vital signs every 2 minutes**

**Be prepared to manage airway and breathing after administration of Versed**

**If breathing:**

- Administer 100% oxygen via mask and monitor O<sub>2</sub> saturation via pulse ox

**If patient is snoring, insert nasal airway and assist with breathing with ambu bag as necessary**

**If respirations < 6/min, and/or sat < 90% on 100% oxygen:**

- Insert oral or nasal airway as tolerated
- Assist ventilation with ambu bag/mask

**Establish airway via intubation with ETT or LMA based on skill level**

- Verify tube position
- Chest movement vs. abd distension
- Breath sounds vs. gastric gurgle
- CO<sub>2</sub> monitor in line with tube

**Transport to ED in care of EMT's**

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Modified from MARX: Rosen's Emergency Medicine: Concepts and Clinical Practice, 7th Ed.

Copyright 2009; Duviver, E. Pollack, C. Chapter 100 - Seizures Mosby

# Additional Resources

## ACLS Algorithm

### 1. Check responsiveness: "Are you okay?"

- If unresponsive, call for help
- Call code in facility
- Call 911

### 2. Start CPR

- Give Oxygen
- Attach monitor/defibrillator

**Rhythm shockable?**

**Yes? Go to **step 3****

**No? Go to **step 10****

**3. VF/VT**

**4. Shock**

**5. CPR 2 min**

- IV/IO access

**Rhythm shockable?**

**Yes? Go to **step 6****

**No? Go to **step 13****

## 6. Shock

## 7. CPR 2 min

- Epinephrine every 3-5 min
- Consider advanced airway capnography

**Rhythm shockable?**

**Yes? Go to **step 8****

**No? Go to **step 13****

## 8. Shock

## 9. CPR 2 min

- Amiodarone
- Treat reversible causes

**Rhythm shockable?**

**Yes? Go to **step 6****

**No? Go to **step 13****

**10. Asystole/PEA**

**11. CPR 2 min**

- IV/IO access
- Epinephrine every 3-5 min
- Consider advanced airway, capnography

**Rhythm shockable?**

**Yes? Go to **step 6** or **step 8****

**No? Go to **step 12****

## 12.CPR 2 min

- Treat reversible causes

**Rhythm shockable?**

**Yes? Go to **step 6** or **step 8****

**No? Go to **step 13****

**13. If no signs of return of spontaneous circulation (ROSC), go to **step 11** or **step 12****

**If ROSC, follow Post-Cardiac Arrest Care**

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## **Return of Spontaneous Circulation (ROSC)**

- Pulse and blood pressure
- Abrupt sustained increase in PETCO<sub>2</sub> (typically ~40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring