

**IDAHO STATE BOARD OF DENTISTRY**  
**PO Box 83720**  
**Boise, ID 83720-0021**  
**GENERAL ANESTHESIA/DEEP SEDATION**  
**SIMULATED EMERGENCIES GUIDE AND ALGORITHMS**

**Laryngospasm:**

- Pack off surgical site
- Position patient/ upright/ most comfortable
- Suction patient – tonsillar suction
- Ventilate patient with positive pressure ventilation  
(full face mask/ambu bag with 100% oxygen)
- Auscultation of lung fields
- Succinylcholine (Anectine) 20mg/ml  
Ultra short-acting depolarizing skeletal muscle relaxant  
10-40mg IV (0.15-0.3mg/kg) or 4mg/kg IM
- Cricothyrotomy (if necessary)
- **Call 911**

**Bronchospasm and Airway Obstruction:**

- Establish airway and administer 100% oxygen with full face mask with positive pressure ventilation
- Albuterol (Ventolin) Metered Dose Inhaler  
Used in Asthma  
Beta-agonist bronchodilator
- Epinephrine  
Severe bronchospasm (1:1,000) 0.3-0.5mg SQ  
TB syringe 0.3-0.5ml of 1:1,000 SL/SQ  
1:10,000 dilution if used IV
- Benadryl ~50mg intravenously
- Auscultation of lung fields
- **Call 911 if not resolved**

**Emesis and Aspiration:**

- Change suction to Tonsillar suction
- Turn patient to right side—Trendelenburg position, check for foreign body
- 100% oxygen
- Auscultation of lungs
- Consider Anti Emetic Medications
- **If situation gets worse, (i.e. cyanotic, dyspnea) call 911**

**Bradycardia:**

- Monitor patient; recheck BP and pulse
- Stop procedure, pack wound site
- Consider etiology
- Consider Atropine (serious sign or symptoms?)

**Asystole/PEA (Pulse Arrest – NOT Shockable):**

- Epinephrine 1 mg IV repeat 3-5 min or
- Vasopressin 40 U IV to replace 1<sup>ST</sup> or 2<sup>ND</sup> dose epi
- Consider atropine 1 mg IV
- Find an treat factors  
H's and T's (hypovolemia, hypoxia, hydrogen ion, hypo-/hyperkalemia, hypoglycemia,  
hypothermia, toxins, tamponade, tension stx, thrombosis, trauma)

## SIMULATED EMERGENCIES – CONTINUED

### Angina Pectoris:

- Nitroglycerin (Nitrolingual, Nitroquick, Nitrostat)  
Check Date, use patients own NTG if possible  
Sublingual doses (0.3 mg= 1/200 grain, 0.4 mg = 1/150 grain 0.6 mg= 1/100 grain)  
SL/spray/oral  
Determine level of SBP (must be >90mmHg)  
Avoid in patients taking Sildenafil (Viagra)
- Place patient in comfortable position
- 100% oxygen, Nitrous Oxide
- Monitor patient
- If pain continues, administer one more tab/spray in 5 minutes
- If pain still continues, assess MI, **911** and transportation
- Third NTG dose 5 minutes later while waiting for ambulance

### Myocardial Infarction:

- Stop Surgery and Position Patient
- 100% Oxygen
- **Call 911**
- Establish IV
- Monitor Vitals, Consider Applying AED
- Chewable uncoated Aspirin 325mg orally
- Analgesia—Nitrous Oxide, NTG,  
Morphine 1-3mg doses IV administration during MI q5 min

### Cardiac Arrest:

- Look, Listen, Feel
- **Call 911**
- Ventilate with AMBU bag and 100% Oxygen
- Apply AED—Defibrillate if indicated
- Check Pulse—Begin Chest Compressions if no pulse
- Establish IV
- ACLS PROTOCOL  
Epinephrine 1mg IV q3-5min  
10ml dilution of 1:10,000  
Antiarrhythmics  
Amiodarone (50 mg/ml) 300mg IV once then 150mg IV  
Lidocaine (1-1.5mg/kg first dose)

### Hypotension:

- Terminate Surgery
  - Position Patient—Trendelenburg—Supine
  - Check Pulse and BP
  - Stimulate Patient
  - Increase IV Fluids (IV access if not already established)
  - Isotonic intravenous fluids (0.9% Normal Saline, Lactated Ringers) Ephedrine sulfate (Ephedrine) 50mg/ml  
Alpha-1, Beta-1, Beta-2 receptor agonist  
Must be diluted! (50mg/ml vial diluted with 9ml saline= 5mg/ml)  
2.5-5mg IV SLOW q5-10min  
(pediatric – 0.5mg/kg IM or SQ)
  - **Call 911 if necessary**
- If Bradycardic (HR<60) and Hypotensive
- Atropine (Atropine) 0.4 mg/ml  
(Atropine - Ansy® prefilled syringe)  
0.1mg/ml  
Muscarinic receptor antagonist  
Used to treat Bradycardia  
Adults: 0.5 – 1.0mg  
Peds: 0.01 to 0.03 mg/kg body weight
  - **Call 911 if necessary**

## SIMULATED EMERGENCIES – CONTINUED

### Hypertension:

- Consider all possible etiologies and treat the cause if known
- Most hypertensive episodes are transient
- Careful consideration for therapeutic intervention
- Labetalol (Trandate) 5mg/ml
  - mixed alpha/beta adrenergic antagonist (alpha & beta-blocker)
  - IV infusion of 2mg/min (additional dosing 5-20mg IV)
  - Relative contraindications for use in patients with asthma, congestive heart failure, any degree of heart block, bradycardia, or those in cardiogenic shock.
- Esmolol (Brevibloc) 10mg/ml (500mcg/kg slow delivery over 1 minute)
  - Cardioselective beta1 receptor blocker
  - Rapid onset and a very short duration of action
  - Commonly used in patients during surgery to prevent or treat tachycardia, and is also used in treatment of acute supraventricular tachycardia
- **Call 911 if necessary**

### Acute Allergic Reaction:

- Mild Reaction (rash, hives)--- Benedryl 25-50mg IV or IM
- Severe Reaction (wheezing, angioedema, laryngoedema, bronchospasm)
  - Epinephrine—0.3mg-0.5mg SL, SC, IM, IV
  - Bronchodilator mist
  - Benedryl—50mg IV or IM
  - Repeat Epinephrine if needed in 3-5 min
  - Call 911**, Continue BLS
  - May give Corticosteroid (Solu-Medrol, Decadron)
  - Increase IV Fluids
  - Cricothyrotomy

### Syncope, Loss of Consciousness:

- Position Patient—Trendelenburg—raise legs
- Oxygen, monitor vitals
- Ammonia Inhalants
- Start IV Fluids
- BLS if unresponsive
- Apply AED, **call 911 if necessary**
- Consider Hypoglycemia (glucagon, instagluose)

### Hyperventilation:

- Calm the patient, Position patient Upright
- Breath into paper bag, cupped hands, or full mask with 0.5L of Oxygen flow
- May need to sedate with Valium or Versed

### Convulsions:

- Protect patient and gently restrain
- After seizure BLS—post ictal depression—maintain airway
- May need Valium or Versed –titrate in IV
- **Call 911 if necessary**

## SIMULATED EMERGENCIES – CONTINUED

### **Malignant Hyperthermia:**

- Avoid succinylcholine
- Avoid volatile inhalation anesthetics
- Nitrous oxide safe
- Need alternative muscle relaxation (non-depolarizing)
- Access to Dantrolene (Dantrium) – ER transfer

### **Obtundation and/or Over-Sedation:**

#### **Adult Patients:**

- Flumazenil  
IV or IM Injection  
0.2 mg (2 ml)
- Monitor patient
- **Call 911 if not resolved**

#### **Pediatric Patients:**

- Flumazenil  
IV or IM Injection  
Each dose 0.01 mg/kg up to 0.2 mg  
May repeat dose a maximum of 4 times
- Monitor patient
- **Call 911 if not resolved**