PROCEDURE FOR INTRANASAL MEDICATIONS
MIDAZOLAM (VERSED) & NARCAN
ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION
- No IV access with the following symptoms:
  - Status epilepticus
  - Suspected narcotic intoxication with respiratory rate < 8

CONTRAINDICATION
- Epistaxis
- Complete mucosal blockage of both nostrils
- Nasal trauma
- Any recognizable septal abnormalities
- Retropharyngeal lacerations/ dissections

EQUIPMENT
- MAD adapter or Narcan Nasal Spray
- Syringe
- Suction

PROCEDURE
- Narcan Nasal Spray: Administer a single dose of Narcan Nasal Spray (4mg/spray) into one nostril. Administer additional doses of NARCAN Nasal Spray, using a new nasal spray with each dose, if the patient does not respond or responds and then relapses into respiratory depression, additional doses of NARCAN Nasal Spray may be given every 2 to 3 minutes
- MAD adapter: With medication in syringe, attach atomizer (do not lubricate tip). Stabilizing the head, place applicator in nares and briskly compress the syringe plunger.

SPECIAL CONSIDERATION
- Be attentive to excessive oral secretions, vomiting, and inadequate tidal volume.
- Intranasal administration of Midazolam is an optional medication delivery system

RELATED POLICIES/ PROCEDURES
- Seizure ALS N 2
- Coma/ ALOC N 1
- Respiratory Arrest R 1
- Pediatric Seizure P 9
<table>
<thead>
<tr>
<th>DRUG</th>
<th>CONCENTRATION</th>
<th>STANDARD DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activated Charcoal</td>
<td>25 gm/ bottle or 50 gm/ bottle</td>
<td>1 gm/ kg PO (not to exceed 50 gm)</td>
</tr>
<tr>
<td>Adenosine (Adenocard)</td>
<td>6 mg/ 2 ml</td>
<td>6 mg 1st dose, 12 mg 2nd dose (rapid IV/IO push) followed by 20 ml saline flush after each dose</td>
</tr>
<tr>
<td>Albuterol</td>
<td>2.5 mg/ 3ml NS</td>
<td>5 mg/ 6 ml NS; (MDI: Fireline only)</td>
</tr>
<tr>
<td>Amiodarone</td>
<td>150 mg/ 3ml</td>
<td>VFib or Pulseless VTach: 300 mg IV/IO push followed by one 150MG push in 3-5 min. Perfusing/Recurrent VTach–150 mg IV/IO over 10 min. (15 mg/ min); MR q 10 min. as needed</td>
</tr>
<tr>
<td>Aspirin (chewable)</td>
<td>Variable</td>
<td>162-325 mg PO</td>
</tr>
<tr>
<td>Atropine</td>
<td>1 mg/ 10 ml</td>
<td>Bradycardia: 0.5 mg IV/IO, MR q 3-5 min. to max of 3 mg.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organophosphate Poisoning: 2.0 mg slowly IV/IO; MR 2-5 min. until drying of secretions</td>
</tr>
<tr>
<td>Calcium chloride 10%</td>
<td>1 GM/ 10 ml</td>
<td>Crush syndrome: 1gm IV/IO slowly over 5 min. for suspected hyperkalemia (flush line with NS before &amp; after administration)</td>
</tr>
<tr>
<td>Dextrose 50%</td>
<td>25 GM/ 50 ml</td>
<td>25 GM IV/IO</td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>50 mg/ 1ml</td>
<td>Allergic reaction: 50 mg IV/IO/IM; max 50 mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phenothiazine reaction: 1 mg/ kg slowly IV/IO; max 50 mg.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motion sickness: 1 mg/kg IM/IV to maximum dose of 50 mg; maximum IV rate is 25 mg/minute</td>
</tr>
<tr>
<td>Dopamine</td>
<td>400 mg/ 250 ml Pre-mix</td>
<td>See specific policy dosing chart</td>
</tr>
<tr>
<td>Epinephrine 1:1000</td>
<td>1 mg/ 1ml</td>
<td>Allergic Reaction/ Anaphylaxis: 0.01 mg/kg IM to max 0.5 mg or EpiPen®; MR x 1 in 5 minutes</td>
</tr>
<tr>
<td></td>
<td>EpiPen® (0.3mg) auto-injector</td>
<td>Bronchospasm/ Asthma/ COPD: 0.01 mg/kg IM; max. dose 0.5 mg. MR once in 5 minutes or EpiPen®</td>
</tr>
<tr>
<td>Drug</td>
<td>Concentration</td>
<td>Route</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Epinephrine 1: 10,000</td>
<td>1 mg/ 10 ml</td>
<td>Anaphylaxis: If unresponsive, no palpable BP, no palpable pulse - give 0.01 mg/kg to max of 0.5 mg/ 0.5 ml IV/ IO Cardiac Arrest: 1mg (10 ml) IV/ IO followed by 20 ml NS flush q 3-5 min. during resuscitation</td>
</tr>
<tr>
<td>Glucose Paste</td>
<td>15 GM / tube</td>
<td>30 GM PO</td>
</tr>
<tr>
<td>Glucagon</td>
<td>1 mg IM</td>
<td></td>
</tr>
<tr>
<td>Ipratropium (Atrovent)</td>
<td>500 mcg per unit dose (2.5 ml)</td>
<td>500 mcg</td>
</tr>
<tr>
<td>Lidocaine 2% (preservative free)</td>
<td>20 mg / 1 ml</td>
<td>IO insertion: infuse 20-40 mg IO over 30-60 seconds</td>
</tr>
<tr>
<td>Nerve gas Auto-Injector Kit contains:</td>
<td>2 mg (0.7 ml) 600 mg (2 ml)</td>
<td>Small Exposure to vapors/ liquids: 1 dose of both medications (Atropine &amp; 2-PAM), MR X1 in 10 minutes. Larger exposure to liquids/ vapors: 3 doses initially (both medications)</td>
</tr>
<tr>
<td>Midazolam (Versed)</td>
<td>2 mg/2 ml (IV/IO/IM) 5 mg/1 ml (IN)</td>
<td>Cardioversion/ Pacing: 1 mg slow IV/ IO; MR 1 mg q 3 min.; Max dose = 0.05 mg/kg Seizure: 1 mg IV slowly; MR in 3 min. to maximum dose 0.05 mg/kg. For IN: 5 mg (2.5 mg in each nostril). For IM: 0.1 mg/kg; MR x 1 in 10 minutes. Sedation: see specific policy</td>
</tr>
<tr>
<td>Morphine Sulfate</td>
<td>10 mg/ 1ml</td>
<td>Chest Pain: 2-5 mg slow IV/IO; MR q 2-3 min. to max of 10 mg Pain Management/ Trauma Patient: 5 mg slow IV/ IO, MR q 5 min if SBP &gt;100; max dose 20 mg Pulmonary Edema: 2-5 mg slow IV/ IO. Physician Consult required</td>
</tr>
<tr>
<td>Naloxone (Narcan) Narcan Nasal Spray</td>
<td>2 mg/ 5 ml 4mg/spray</td>
<td>0.4- 2.0mg IV/IO/IM/SL/IN; MR in 5 min; or Narcan Nasal Spray one dose (spray) into single nostril; MR in 2-3 min</td>
</tr>
<tr>
<td>Nitroglycerine</td>
<td>0.4 mg/ tablet or spray</td>
<td>1 SL; MR q 5 min. if SBP &gt; 100</td>
</tr>
<tr>
<td>Ondansetron (Zofran)</td>
<td>4 mg</td>
<td>4 mg ODT/IM or slow IV over 30 sec; MR x 1 in 10 minutes</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>50 mEq/ 50 ml</td>
<td>1 mEq/ kg IV/ IO</td>
</tr>
</tbody>
</table>

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.
ROUTINE MEDICAL CARE (RMC)

BLS

ALWAYS USE BODY SUBSTANCE ISOLATION STANDARD PRECAUTIONS

INDICATION
- To define Routine Medical Care (RMC) in the pre-hospital setting

TREATMENT
- Assess Airway, Breathing and Circulation (ABC)
- Apneic and/or pulseless:
  - Begin CPR in accordance with the standards established by the American Heart Association, including Early Defibrillation
- Patient breathing with pulse present:
  - Administer oxygen per the Airway/Oxygen protocol; using airway adjuncts indicated for signs and symptoms
- Control significant external bleeding using direct pressure. If bleeding remains uncontrolled, apply tourniquet or hemostatic dressing.
  - Limb with the tourniquet must remain exposed.
  - Hemostatic dressing must be approved by EMS Authority
- Check vital signs – repeat q 5 min. for emergent patients and q 15 min. for non-emergent patients.
- Obtain pulse oximetry, if available
- Obtain:
  - Chief complaint
  - History of current event
  - Past medical history
  - Medications
  - Allergies
- Perform full secondary patient exam.
- If indicated, apply spinal motion restriction.
- Place patient in position of comfort or in other positions as needed to maintain adequate breathing and/or circulation.
COLD INDUCED INJURY
ALWAYS USE BODY SUBSTANCE ISOLATION STANDARD PRECAUTIONS

INDICATION
- Exposure to cold and/or wet environment

CRITICAL INFORMATION
- Mild Hypothermia (32-35C/89.6-95F)- Clinical features: Shivering, often painful. May display any of the following: dysarthria, apathy, poor judgment, ataxia (e.g., stumbling), tachycardia and tachypnea. Presentation includes normal blood pressure and level of consciousness.
- Moderate Hypothermia (30-32C/86-89.6F)- Clinical features: In addition to above symptoms, the patient may display an absence of shivering, stupor, progressive decrease in level of consciousness as temperature drops, and atrial arrhythmias, especially atrial fibrillation, which will resolve with rewarming.
- Severe Hypothermia (<30C / 86F) – Clinical features: Minimal voluntary motion, minimal or no response to pain, decreasing level of consciousness, hypotension, ventricular arrhythmias, especially ectopy. Peripheral pulses may be difficult to obtain.

TREATMENT
- Move to a warm environment
- Remove any wet clothing and cover entire body (including head & hands) with warm blankets
- ALS RMC – treat hypoglycemia per policy; obtain IV/IO access
- Mild Hypothermia:
  - Apply heat packs to neck, axilla, and groin
  - IV warm NS 250 ml bolus
- Moderate and Severe Hypothermia (all patients)
  - Cardiac monitor – treat dysrhythmias per appropriate policy
  - Handle patient gently
  - Keep patient horizontal
  - High flow oxygen
  - Check central pulse, auscultate heart sounds and assess cardiac electrical activity for 60 seconds, anticipating bradycardia (may be profound)
- Moderate and Severe Hypothermia with signs of life (respirations and/or pulse present)
  - Administer 20ml/kg bolus of warmed NS; reassess after 500 ml and repeat as needed
  - Continue with active re-warming as above
- Moderate and Severe Hypothermia without signs of life (absent respirations, no pulse, fixed and dilated pupils, cold to the touch and muscular rigidity simulating rigor mortis)
  - If no pulse or electrical activity after 60 seconds, ventilate with warmed oxygen (if available) for three minutes. Re-check for pulse and electrical activity for at least 60 seconds. If still no pulse, begin CPR.
  - If patient has cardiac electrical activity:
    1. Ventricular tachycardia – defibrillate once at 360J (or biphasic equivalent); if no pulse after defibrillation, start CPR
    2. Organized QRS complexes without pulse/ PEA even if very slow – withhold CPR, begin transport, handle gently, and attempt intubation
    3. Administer 20ml/kg bolus of warmed NS; reassess after 500 ml and repeat as needed
4. Withhold ACLS medications until temperature reaches 30C / 86F

SPECIAL CONSIDERATION

- More subtle presentations exist in the elderly, newborns, chronically ill, patients taking medications and alcohol
- Handle the patient gently for all procedures; physical manipulations have been reported to precipitate ventricular fibrillation.
- Cautions re. Resuscitation if <32: Severe hypothermia causes cardiac instability. Physical stimuli (includes jostling, exercise, chest compression, and endotracheal intubation) can cause ventricular fibrillation in a cold heart that is functioning effectively
ADULT CARDIAC ARREST GUIDELINE
ALWAYS USE BODY SUBSTANCE ISOLATION STANDARD PRECAUTIONS

INDICATION
- To provide effective, quality cardiopulmonary resuscitation in a sequential and organized manner

CRITICAL INFORMATION
- Witnessed vs. unwitnessed
- Bystander CPR vs. No Bystander CPR
  - For documentation purposes, inappropriately given CPR = NO CPR

TREATMENT
- If unwitnessed arrest, complete 5 cycles (2 minutes) of CPR before rhythm analysis. If witnessed arrest with effective bystander CPR, immediately attach monitor/defibrillator.
  - Compressions
    - Begin compressions at a rate of at least 110 per minute, using a metronome or other similar device that produces regular, metrical feedback at 110 beats per minute.
    - Consider mechanical CPR device if available
    - Compress the chest at least 2 inches and allow for full recoil of chest
    - Change compressors every 2 minutes
    - Minimize interruptions in compressions. If necessary to interrupt, limit to 10 seconds or less
    - Do not stop compressions while defibrillator is charging
    - Resume compressions immediately after any shock
  - Monitor/Defibrillator
    - Priority of second rescuer is to apply pads while compressions are in progress
    - Determine rhythm and shock if indicated
    - Follow specific treatment guideline based on rhythm
  - Basic Airway Management
    - During the first 5 minutes of resuscitation BLS airway management is preferred
    - Open airway and provide 2 ventilations after every 30 compressions
    - Ventilation should be about one second each- enough to cause visible chest rise. Avoid excessive ventilation.
    - Use two-person BLS Airway management (one holding mask and one squeezing bag) whenever possible
  - Establish IV/IO Access (IO preferred)
  - Advanced Airway Management
    - Placement of advanced airway is not a priority during the first 5 minutes of resuscitation unless no ventilation is occurring with basic maneuvers
    - King Airway is the preferred device if an advanced airway is required.
    - Laryngoscopy for endotracheal tube placement must occur with CPR in progress. Compressions should not be interrupted for more than 10 seconds for advancement of tube through the cords
    - AVOID EXCESSIVE VENTILATION – provide no more than 8-10 ventilations per minute
    - Maintain O2 saturation level of ≥94% and <100% 94%-99%.
    - Continuous monitoring of End-Tidal CO2 to monitor effectiveness of CPR and advanced airway placement.
  - Treatment on Scene
    - Movement of patient during CPR may be detrimental to patient outcome.
- Provide resuscitation on scene until ROSC, or patient meets Determination of Death criteria, or transport is indicated. Paramedic discretion to transport patients receiving CPR may be warranted in certain situations (refractory VF, unsafe scene conditions, hypothermic, etc.).
- Regardless of the above, transportation is warranted in the following situations: refractory VF, unsafe scene conditions, unstable airway, hypothermia as a primary cause of arrest (<95F/35C), pediatric patients.
- Manual CPR is not advised in the back of a moving ambulance. If transporting a patient needing CPR, consider using mechanical CPR if available.
- To assure ROSC continues, remain on scene for 5-10’ to assure ROSC, and then transport to a STEMI Receiving Center.

RELATED POLICIES/ PROCEDURES
- Determination of Death  ATG6
- Determination of Death  BLS5
- King Airway Procedure  ALS14
- Ventricular Fibrillation / Pulseless Ventricular Tachycardia  C1
- PEA  C2
- Asystole  C3
- Return of Spontaneous Circulation  C10
SPINAL MOTION RESTRICTION (SMR)
ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION
Any patient identified by Marin County's Spinal Injury Assessment [GPC 13A] to warrant full or modified SMR. The spinal injury assessment should be performed prior to application of SMR. SMR describes the procedure used to care for patients with possible unstable spinal injuries.

CONSIDERATIONS
- Full SMR is not benign; it can lead to pain, respiratory compromise, skin breakdown (decubiti) and contribute to cerebral hypo-perfusion in patients with stroke or head injury
- **Routine use of SMR should be avoided.** Its use should be reserved for patients with confirmatory physical findings or high clinical suspicion of unstable spinal fracture
- **SMR is not indicated in patients with isolated penetrating trauma [GPC 13A]**
- Use SMR with caution with patients presenting with *dyspnea* and position appropriately
- If patient experiences negative effects of SMR methods used, alternative measures should be implemented as soon as possible.
- **Pregnant patients** (>20 Weeks) should be positioned on the left side, immobilized as appropriate, supporting fetus
- **Combative patients:** Avoid methods that provoke increased spinal movement and/or combativeness
- **Athletic Equipment** (football helmet and shoulder pads; lacrosse helmet and shoulder pads; baseball/softball catcher’s helmet)
  - In event of suspected spine injury during participation in equipment-intensive sport, removal of equipment is recommended prior to application of SMR
    - Equipment should be removed by the rescuers most familiar with the equipment (i.e. Athletic Trainers when present)
    - Removal of helmet and/or shoulder pads provides early access to the patient’s airway/chest
- **Pediatric patients**
  - Consider the use of SpO2 and EtCO2 to monitor respiratory function
  - Consider use of padded pediatric motion restricting board
  - Avoid methods that provoke increased spinal movement
  - If choosing to apply SMR to patient in car seat, ensure that proper assessment of patient posterior is performed
  - **Car seats:**
    - Infants or children restrained in a front or rear-facing car seat (excludes booster seats) may be immobilized and extricated in the car seat. The infant or child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).
    - Children restrained in a booster seat (with or without a back) need to be extricated and immobilized following standard SMR procedures.

PROCEDURE
**Full SMR** (Cervical Collar with full length-vacuum splint or rigid device with lateral immobilization and straps)
- **Indications**
  - Patients with obvious acute neurologic deficit (paralysis or weakness)
  - Priapism or suspected spinal shock
• Procedure
  • Assess motor/sensory function before SMR and regularly reassess and document motor/sensory function (include finger abduction, wrist/finger extension, plantar/dorsal flexion and sharp/dull exam if possible) following application of SMR
  • Remove athletic equipment (if applicable)
  • Apply soft or rigid cervical collar
    • Cervical collar may be omitted for patients with isolated lumbar and/or lower thoracic spine tenderness.
  • If needed, extricate patient limiting movement of the spine
  • Apply adequate padding on backboards or use vacuum mattress to prevent tissue ischemia and increase comfort.
  • Secure patient to device.
  • Consider the use of SpO2 and EtCO2 to monitor respiratory function

Modified SMR (may include any of the following: soft or rigid cervical collar alone; self limiting motion; padding to limit movement; KED; or ½ length vacuum splint)
• Indications
  • Patients who do not meet criteria above but who are at high risk due to blunt trauma mechanism
  • Ambulatory/self-extricated patients who have mid-line neck pain and/or tenderness.
• Procedure
  • Use the least invasive methods/tools available which minimize patient discomfort and respiratory compromise. Least invasive examples: Lateral, semi-fowler’s or fowler’s position with cervical collar only; soft collars; pillows; vacuum splint or gurney mattress; children’s car seats.
  • Hard backboards should only be used when absolutely necessary (e.g. patient transfer). Consider pull sheets, other flexible devices (e.g. flat stretchers), or scoops and scoop-like devices.
  • Provide manual stabilization restricting gross motion. Alert and cooperative patients may be allowed to self-limit motion if appropriate with or without cervical collar
  • self-extrication is allowable for patients meeting criteria for Modified SMR

RELATED POLICIES/ PROCEDURES
Spinal Injury Assessment GPC13A
PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS (ALOC)

ALWAYS USE BODY SUBSTANCE ISOLATION STANDARD PRECAUTIONS

INDICATION
- Abnormal neurologic state where child is less alert and interactive than is age appropriate

CRITICAL INFORMATION
- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Treat according to length-based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; Infant = four weeks to 1 year; Child = 1-14 years; Adolescent = >14 years
- Narcan is contraindicated with neonatal resuscitation

TREATMENT
- ALS RMC
- Check blood glucose and treat if < 60 mg/dl (neonate < 40 mg/dl):
  - Neonate = D10W 2 ml/kg IV/IO
  - Infant - 2 years = D25W 2 ml/kg IV/IO or D10W 4ml/kg IV/IO
  - >2 years = D50W 1 ml/kg IV/IO
- If unable to establish vascular access; Glucagon .03 mg/kg (max = 1 mg) IM; MR x 2 q 15 minute intervals
- If strong suspicion of opiate exposure, Narcan 0.1 mg/kg IM/IV/IO/IN. MR Q 5 minutes up to 2 mg if no improvement or Narcan Nasal Spray (4mg/spray) single dose in one nostril. MR Q 2-3 minutes. in ALOC and strong suspicion of opiate exposure

RELATED POLICIES/PROCEDURES
- Intranasal Medications Midazolam (Versed) and Narcan ALS PR 7
- Pediatric Dosing Guide P18A
# PEDIATRIC MEDICATIONS

## AUTHORIZED/ STANDARD INITIAL DOSE

<table>
<thead>
<tr>
<th>DRUG</th>
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<tr>
<td>Activated Charcoal</td>
<td>25 GM/ bottle</td>
<td>1 gm/ kg PO; not to exceed 50 gm.</td>
</tr>
<tr>
<td>Adenosine (Adenocard)</td>
<td>6 mg/ 2 ml</td>
<td>Tachycardia Poor Perfusion: 0.1mg/kg; max. first dose 6mg. MR x 1 (double the dose); max. dose 12mg. (Rapid IV/IO push, each dose followed by 5 ml NS flush). Tachycardia Adequate Perfusion: Dose as above after physician consult</td>
</tr>
<tr>
<td>Albuterol</td>
<td>2.5 mg/ 3 ml NS</td>
<td>2.5 mg/ 3ml NS</td>
</tr>
<tr>
<td>Amiodarone</td>
<td>150 mg/ 3 ml</td>
<td>Pulseless Arrest: 5 mg/ kg IV/ IO followed by or diluted in 20-30 ml NS. Maximum single dose 300 mg. Tachycardia with poor perfusion: 5mg/kg IV/IO over 20-60 min.</td>
</tr>
<tr>
<td>Atropine</td>
<td>1 mg/ 10 ml</td>
<td>Bradycardia: 0.02 mg/kg IV/ IO (minimum dose 0.1 mg.; single max. dose 0.5mg). MR X 1. Organophosphate Poisoning: 0.05 mg/kg IV/IO; MR q 5-10 min. max. dose 4mg or until relief of symptoms</td>
</tr>
<tr>
<td>Dextrose 10%</td>
<td>D10%</td>
<td>ALOC (Neonate): 2 ml/ kg IV/IO ALOC (&lt;2 years): 4ml/ kg IV/IO</td>
</tr>
<tr>
<td>Dextrose 25%</td>
<td>2.5 GM/ 10 ml</td>
<td>ALOC (&lt;2 years): 2 ml/ kg IV/IO</td>
</tr>
<tr>
<td>Dextrose 50%</td>
<td>25 GM/ 50 ml</td>
<td>ALOC (&gt;2 years): 1 ml/ kg IV/IO</td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>50 mg/ 1 ml “or” 50 mg/ 10 ml</td>
<td>1 mg/ kg IV/IO/IM IV/ IO max. dose 25 mg/ min. IM max. dose, 50 mg.</td>
</tr>
<tr>
<td>Drug</td>
<td>Dosage</td>
<td>Notes</td>
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<td>----------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Epinephrine 1:1000**                    | 1 mg/ 1 ml                      | *Allergic Reaction moderate/ severe/ anaphylaxis: 0.01 mg/ kg IM (0.01 ml/ kg). Max. dose of 0.6 mg (0.6 ml). EpiPen Jr®; repeat as needed in 5 min.*  
  *Upper Airway/ Stridor: 5mg in 5ml via nebulizer* |
| EpiPen Jr®                               | 0.15mg                           |                                                                      |
| **Epinephrine 1:10, 000**                 | 1 mg/ 10 ml                     | *Anaphylaxis: If no response to Epi 1:1000, give 0.01mg/ kg (0.1ml/kg) of 1:10,000 IV/ IO.*  
  *Bradycardia: 0.01mg/ kg (0.1ml/kg) IV/ IO.*  
  *Cardiac Arrest: 0.01 mg/kg (0.1ml/kg) IV/ IO* |
| **Glucagon**                              | 1 mg/ 1 ml                      | 0.03 mg/kg IM (max. dose 1 mg)                                      |
| **Ipratropium (Atrovent)**               | 500 mcg per unit dose (2.5 ml)  | Unit dose                                                           |
| **Lidocaine 2% (preservative free)**     | 20 mg/1 ml                      | *IO insertion for pts >3kg; Infuse 0.5mg/kg slowly (up to a maximum dose of 40mg). May repeat as needed x 1 using ½ of initial bolus.* |
| **Midazolam (Versed)**                   | 2 mg/ 2ml                       | *Cardioversion: 0.05 mg/kg slow IV/IO. Max. initial dose 1mg*       |
|                                          | IN:  5 mg/1 ml                  | *Seizure (see policy for specifics): IV/IO=0.05 mg/kg; MR q 3’ (Max=5mg) IM=0.1mg/kg; MR in 10 minutes x1 IN= 0.2mg/kg; Max.= 5 mg.* |
| **Morphine Sulfate**                     | 10 mg/ 10 ml                    | *Pain Management: 0.1mg/ kg (0.1ml/ kg) slow IV/ IO/ IM. MR X 1 in 15 min. if IV/ IO or 30 min if IM.*  
  *Burns: 0.1 mg/kg IV/IO/IM in incremental doses up to 0.3mg/kg* |
|                                          | 10 mg/ 1 ml                     |                                                                      |
| **Naloxone (Narcan) or Narcan Nasal Spray**| 2 mg/ 5 ml                      | *Suspected OD in non-neonate: 0.1 mg/ kg (0.25 ml/ kg) IV/ IO/ IM or single dose (spray) of Narcan Nasal Spray into one nostril* |
|                                          | 2mg/2ml                         |                                                                      |
|                                          | 4mg/spray                        |                                                                      |
| **Ondansetron (Zofran)**                 | 4 mg                            | *Patients ≥ 4 yrs: 4 mg ODT or slow IV over 30 seconds*  
  *Patients 2-4yrs: 2mg ODT or slow IV over 30 seconds.* |
| Sodium Bicarbonate | 50 mEq/ 50 ml | Tricyclic Antidepressant OD with significant dysrhythmias: 1mEq/ kg IV/ IO |

NOTE: If the above concentrations become unavailable, providers may use alternate available concentrations or packaging.
Active Shooter/Violent Encounters
ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS
DRAFT 3-17

I. PURPOSE

To provide triage, medical care and extrication to patients involved in an incident involving an active shooter/violent encounter or other hazardous incident being primarily managed by law enforcement agencies/departments.

II. RELATED POLICIES

GPC 12 MCI / MPMP
4613 Trauma Triage

III. AUTHORITY

1797.204, 1797.220, 1797.250, 1797.252, 1798.0, 1798.6 Health & Safety Code

IV. DEFINITIONS

TBD

V. POLICY

Active Shooter/Violent Encounter Response:

Education, training and joint exercises with Law Enforcement, Fire and EMS must be conducted before Fire and EMS providers are allowed to enter an active scene.

Any law enforcement, fire and/or EMS provider shall have department policies regarding entry of responders into warm zones or secure areas as described in this policy.

The EMS response to active shooter/violent encounter incidents needs to be coordinated under Unified Command with on scene Law Enforcement / Fire / EMS / Facility Cooperators.

Concepts applied are based on the Tactical Combat Casualty Course (TCCC), the International School of Tactical Medicine (ISTM) and the Unified Response to Violent Encounters (URVI).

Law Enforcement will be responsible for patient extrication if other first responders are not able to enter the scene. Patient extrication will be initiated at the earliest possible opportunity after the scene is relatively secured and/or the threat is neutralized.

The on scene Incident Commander / Unified Command, in addition to departmental policies, will determine PPE requirements for entry into any warm zones.
VI. Considerations

- Communications must be maintained throughout the incident with respective dispatch centers and on scene medical, fire and law enforcement.

- Law enforcement is in charge of the incident. While in a warm zone environment, EMS should follow the direction of law enforcement.

- **EMS providers** need to be ready to enter a secured scene quickly and aggressively.

- **Make sure law** enforcement command knows that an EMS team is ready, staged and awaiting direction. Most SWAT teams have an imbedded tactical medic that would be the logical liaison to EMS assets on scene.

- Law enforcement may provide a protective envelope (force protection model) around Fire/EMS providers and escort them into “warm zone” areas to treat or extricate victims (No Active Threat in the Area).

- **EMS providers** should be “forward leaning” and have trauma focused medical gear and triage tools available.

- **Working closely** with law enforcement is critical in getting life saving medical assets to the injured as soon as the threat has been mitigated or neutralized. The UNIFIED COMMAND model is best for these types of incidents.

- Make sure to have emergency egress routes and casualty collection points as well as evacuation rally points identified.

- If EMS team is brought into extricate patient, only minimal equipment should be carried. Roll up evacuation stretchers should be considered.

- EMS teams need to be prepared to split up if law enforcement requires it.

- EMS providers should use individual medical packs with life saving bleeding and airway tools so they can work "independently “ on trauma victims.

- Patients should be moved as quickly as possible from CCP to FRFTS with only life saving procedures performed in the warm zone if applicable.

- Spinal motion restriction is not indicated for patients suffering only from penetrating trauma not involving the spinal column.

- Once the threat is eliminated, law enforcement may be available to help extricate the injured.
VII. References

- The FEMA/US Fire Administration “Fire/EMS Department Operational Considerations and Guide for Active Shooter and Mass Casualty Incidents” (Sept. 2013)

- The FIRESCOPE “Emergency Response to Tactical Law Enforcement Incidents” position paper (Dec. 2014)

- The IAFF “Active Shooter” position statement (Aug. 2014)
VIDEO LARYNGOSCOPY

APPROVED:  

EMS Medical Director  
EMS Administrator

1 Goal/Purpose
   1.1 Video Guided intubation will improve visualization of the airway in the prehospital setting and provide verification of the successful intubation
   1.2 Video Guided intubation allows continuous cardiac compressions during resuscitation

2 Indications
   2.1 With appropriate training, video intubation with VividTrac shall be used in place of traditional endotracheal intubation

3 Contraindications
   3.1 Endotracheal tubes smaller than 6.0mm or larger than 8.5mm

4 Pediatric Considerations
   4.1 Bag valve mask ventilation is the preferred method of airway management in pediatric patients (under the age of 8).
   4.2 Endotracheal intubation should be considered only if the paramedic is unable to:
      4.2.1 Maintain patient airway using bag-valve-mask ventilation
      4.2.2 Provide adequate oxygenation with BVM
   4.3 Video laryngoscopy should only be attempted when paramedics are unable to maintain effective bag-valve-mask ventilation and the patients airway is able to accept a 6.5 ET tube

5 Equipment
   5.1 Display Computer with VividVision software installed
      5.1.1 USB Extension or Adapter Cable

Issue Date: Sept 1, 2012
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Next Review Date: April 2018
5.1 Display Computer with VividVision software installed
  5.1.1 USB Extension or Adapter Cable
5.2 VividTrac Video Intubation Device
5.3 Oxygen Source
5.4 BLS Airway Equipment
5.5 Suctioning Equipment
5.6 Bag Valve Mask
5.7 Stethoscope
5.8 Endotracheal Tube
5.9 10cc Syringe
5.10 Capnography Equipment
5.11 Tube Securing Device
5.12 Bougie
5.13 Lubrication Jelly
5.14 Cotton top applicator

6.1 Prepare, position (sniffing position, unless trauma patient) and oxygenate the patient with appropriate BLS airway adjunct and bag valve mask device. Maintain in-line stabilization in trauma patients.
6.1.1 Continuous cardiac compressions are to be continued through the intubation attempt.
6.2 Clear the patient's airway by applying suction as needed.
6.3 Power on display computer and connect USB extension or adapter cable. Open pouch of VividTrac device and remove just the USB cable and connect to the USB extension cable. Confirm video image is displayed.
6.3.1 If damage is noted upon opening package, discard VividTrac and use a new one.
6.4 Lubricate the first four (4) inches of an appropriately sized endotracheal tube (ETT), then load the ETT in the channel of the VividTrac device with a back and forth motion to lubricate the tube channel.
6.5 Load the straight end of the bougie down into the ETT which was already loaded in the VividTrac as described in 6.4.
6.6 Gently hold the VividTrac just below the proximal end of the device, with index and middle finger tip on metal side, and the thumb on the plastic side.
6.7 While looking at the patient's face, with your free hand slightly open the mouth and then place the blade tip of the VividTrac midline on the surface of the tongue. While keeping the body of the VividTrac parallel to the patient's neck, insert the VividTrac to a depth that the body of the VividTrac is touching the chin of the patient.
6.7.1 With the airway illuminated by the VividTrac device, look into the mouth and check for fluid in the airway, apply suction as needed.
6.8 Switch to view the live video image of the inside of the airway from the VividTrac on your display computer.
6.9 Check for fluid deeper in the airway and apply suction as needed.
6.10 Gently, with minimal force, insert the VividTrac deeper into the oral cavity
   6.10.1 Using a rotational motion, keeping it midline over the center of the tongue and not letting the blade slip to either side of the tongue; advance into the patient’s oropharynx all the while looking for key airway landmarks.
6.11 Once the epiglottis has been recognized, place the blade tip of the VividTrac in the center of the vallecula to view the vocal cords.
   6.11.1 Ensure the VividTrac is positioned straight and vertical with the VividTrac ETT channel at the center of the patient’s mouth and aligned with the patient’s nose.
   6.11.2 Make gentle alignment adjustments of the device to allow the airway to open up with vocal cords centered on the video image.
6.12 While allowing adequate distance from the vocal cords, gently advance the bougie toward and past the vocal cords into the trachea.
   6.12.1 If required, twist the ETT counter clockwise to direct the bougie to the left.
   6.12.2 If required, may switch to loading the coude tip of the bougie.
   6.12.3 If required, may advance the endotracheal tube to move the bougie anteriorly, or retract the ETT to move the bougie posteriorly.
6.13 Once the bougie is properly positioned in the trachea, advance the ETT down the bougie until the cuff on the ETT is visualized passing through the patient’s vocal cords.
6.14 With the vocal cords and the intubated ETT under visualization, inflate the cuff on the ETT.
6.15 Confirm proper ETT placement as described in Airway Management Procedure 5.
6.16 Separate the ETT from tube channel at the proximal end of the VividTrac by pushing the ETT forward and to the right.
6.17 Firmly hold the ETT in place at the corner of the patient’s mouth with one hand, while gently reversing the path of insertion and pulling the VividTrac out of the patient’s oral cavity with the other hand.
6.18 Secure the ETT with a tube securing device.
   6.19 Document and reassess the procedure in the patient’s PCR as described in Airway Management Procedure 5.

7 Complications/Special Information
7.1 Fluid in the airway
   7.1.1 Finger sweep to clear the airway

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7.1.2 Suction the airway to remove blood, vomitus, or secretions

7.2 Fogged/obstructed camera view
7.2.1 Anti-fog camera, so it is likely a foreign body or fluid over the lens
7.2.1.1 Remove the device from the airway, invert and tap the device, camera down to dislodge particle from view
7.2.1.2 Functioning camera can be instantly recognized as video will be clear if resolved
7.2.1.3 Cotton tip applicator (Q-tip) can be used to clean the lens if image still not clear
7.2.2 If above does not resolve the issue, use a different video device or direct laryngoscopy or King Airway or Bag-Valve Mask

7.3 Each intubation attempt is limited to 30 seconds
7.3.1 Once the limit is reached, the paramedic will remove the device, re-evaluate technique and patient position and the patient will be ventilated prior to the next attempt

7.4 If video guided intubation is unsuccessful after the allotted attempts a BLS airway should be established and maintained
7.4.1 The King Airway may be used if it is needed to protect the airway due to blood, stomach contents or other secretions

7.5 No video/malfunctioning equipment
7.5.1 If there is equipment failure revert to the standard intubation technique or use other appropriate airway adjuncts – King Airway or Bag-Valve Mask.
7.5.2 Notify your JPA or AMR supervisor

8 Documentation
8.1 Signs and symptoms along with clinical criteria before intubation
8.2 Document tube size, distance at the teeth, ETCO2, lung sounds, and save video/picture to ePCR
8.3 Patient’s response and outcome
8.4 Document confirmed tube placement after each move with a photo using the video intubation device
8.5 If video intubation was not performed, then documentation as to the reasons why alternate means was utilized should be completed in the video intubation survey
8.6 Complete the video intubation online survey
EMS LAB TRAINING WORKSHEET

FOR

VIVIDTRAC VIDEO LARYNGOSCOPE

Overview

This VividTrac EMS training class is designed that a majority of all training content is provided by the suite of training videos. That the instructor be more of a facilitator, and provide expert instructional assistance during the manikin lab session part of the class. The instructor will also be responsible to provide final confirmation that each attending trainee reached a level of proficiency that they can perform the procedure in the field. You will want to tailor the class content to match your official field procedure and protocol document so that the training supports and matches the procedure steps approved by your local medical director.

All trainees will be required to watch the full suite of training videos listed below on the use of the VividTrac. The trainee will then be required to perform a defined list of hands on lab exercises with an airway manikin. It is highly recommended that the trainee use the same display computer or tablet during the training that they will be using in the field. Q&A should be conducted throughout the training session to insure that the trainee knows the materials before moving onto the next step.

The lab work is to provide the user the opportunity to perform repeated manikin intubations with varied and challenging designed exercises to ensure the user gains the proper hands-eye coordination to insert, align and intubate patients with the VividTrac Video Intubation device under challenging conditions. The goal of the repeated exercises is to also overcome the user's past muscle-memory reflexes of using force established from years of using a direct laryngoscope. The Class Instructor will need to watch the trainees carefully to insure they are holding the device in the correct manner (three-fingers), and are inserting the device correctly midline so the blade tip easily reaches the base of the tongue.

After the basic technique of using the VividTrac has been achieved by the trainee, it is highly recommended to recreate by positioning the airway manikin to mimic the most common patient positions encountered in the field when performing intubations. Such as placing the manikin on the floor or intubating from a chair to the side of a patient such as might happen in the back of a moving vehicle. Having the trainees work in teams, on a simulated floor intubation, where they switch roles on who intubates, has also been shown to be a productive exercise to improve final results in the field.

The content of this lab class is a work in progress, so expect on-going improvements overtime to the content of the videos and lab exercise assignments. Your professional feedback is the main criteria used to make these improvements, so please share your ideas with Vivid Medical (feedback@vividmed.com) so others can benefit in the future.

1.0 Training Videos

Have the entire class watch the following videos, stop the video presentation if any questions are asked:

- Overview of the VividTrac Device
- Quick Procedure Summary Overview
- Exercise - Backing Out Device
- EMS Field Equipment Overview
- Example Patient Use Videos (PUVs)
- EMS Field Floor Exercise
- Example Patient Use Videos with Commentary

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2.0 Hands-On Lab Training

Lab#1.1 - Equipment Setup

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<tr>
<td>1.1.1</td>
<td>Turn on display device, connect USB extension or adapter cable, and connect a VividTrac device to confirm a live video image is available.</td>
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<tr>
<td>1.1.2</td>
<td>Act out the process of lubricating an Endotracheal Tube (ETT) then insert the ETT into the channel of the VividTrac until the distal tip reaches the end of the black plastic body of the VividTrac.</td>
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<tr>
<td>1.1.3</td>
<td>Load the straight end of the bougie into the ETT tube until the distal tip is 1/4&quot; past tip of the ETT.</td>
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<tr>
<td>1.1.4</td>
<td>Demonstrate the proper method to hold the VividTrac device (using just three fingers).</td>
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Lab#2.1 - Midline Insertion

Goal for the user to be able to properly insert the Video Intubation device into the patient's airway, with the blade positioned center of the tongue and deep enough to reach the base of the tongue, and then position the blade correctly in the airway for proper alignment and distance from the vocal cords (vocal cords should be visible in the middle of the video image).

**Instructor Instructions:** Watch user's finger grip of the device to make sure NO FORCE is being exerted, and Video Intubation device is not being held like a handle. Also check that the blade is not being visibly bent by force and taking more than 10% of the video image at any time during intubation training.

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<tr>
<td>2.1.1</td>
<td>Demonstrate the proper method to hold the VividTrac device (using just three fingers).</td>
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<tr>
<td>2.1.2</td>
<td>Insert device midline into the mouth - now that the airway is illuminated by the light of the VividTrac - check for fluid in the airway - (act out) that fluid is present and use the Yankauer with your free hand to suction out the mouth ahead of the VividTrac device.</td>
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<tr>
<td>2.1.3</td>
<td>Confirm device is placed deep enough in the month that the device body is touching the chin of the manikin. Now start looking at the live video image. While looking at the video image, continue to advance the device into the airway with a rotational motion, sliding the blade along the surface of the tongue. All the while looking for airway landmarks. Position blade-tip either in the vallecula or pick up the epiglottis. Align device so the vocal cords are positioned in the center of the video image.</td>
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</tr>
<tr>
<td>2.1.2</td>
<td>If using a Bougie inside ETT: (a) Advance just the bougie past the cords and into the trachea. Advance the ETT down the bougie until the cuffs are past the cords. Remove bougie. Remove ETT from the VividTrac channel (forward and to the corner of the month), hold ETT firmly and remove VividTrac device by pushing the device away from you in a rotational manner. <em>(Optionally - after Bougie is properly placed in the trachea, you can remove the ETT w/bougie from the channel of the VividTrac before advancing the ETT. This is beneficial if there is some resistance in the channel when advancing the ETT.)</em> If using ETT with no Bougie: (b) Advance ETT so the cuff is past the cords. Remove ETT from the VividTrac channel (forward and to the corner of the month), hold ETT firmly and remove VividTrac device by pushing the device away from you in a rotational manner.</td>
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Lab#2.2 - 45 Degrees off Midline Insertion

Repeat the same procedure, but now use the 45 degrees off midline insertion method.

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<tr>
<td>2.2.1</td>
<td>Insert the device into the mouth at 45 degrees off midline, until the body of the VividTrac device is touching the cheek of the patient. Now look at the live video image. While looking at the video image, both insert the device slightly and rotate the device upward to midline. The blade tip should now be perfectly positioned at the base of the tongue. Rotate the VividTrac device while inserting to bring the vocal cords into view. Position blade-tip either in the vallecula or pick up the epiglottis. Align device so the vocal cords are positioned in the</td>
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If using a Bougie inside ETT:
(a) Advance just the bougie past the cords and into the trachea. Advance the ETT down the bougie until the cuffs are past the cords. Remove bougie. Remove ETT from the VividTrac channel (forward and to the corner of the month), hold ETT firmly and remove VividTrac device by pushing the device away from you in a rotational manner. *(Optionally - after Bougie is properly placed in the trachea, you can remove the ETT w/bougie from the channel of the VividTrac before advancing the ETT. This is beneficial if there is some resistance in the channel when advancing the ETT.)*

If using ETT with no Bougie:
(b) Advance ETT so the cuff is past the cords. Remove ETT from the VividTrac channel (forward and to the corner of the month), hold ETT firmly and remove VividTrac device by pushing the device away from you in a rotational manner.

**Lab#2.3 - 90 Degrees off Midline Insertion**

Repeat the same procedure as defined in 2.2 above, but now use the 90 degrees off midline insertion method.

**Lab#2.4 - Device Alignment**

Goal for the User to be able to learn how to align the advancing ETT (or ETT+Bougie) to the vocal cords and to adequately place the ETT so the cuff is past the cords and in the trachea.

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<tr>
<td>2.4.1</td>
<td>With properly loaded VividTrac with ETT or ETT w/bougie, inserted into the airway until the vocal cords are in view.</td>
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<tr>
<td>2.4.2</td>
<td>Rotate the VividTrac device (left and right) to adjust position of the vocal cords (left and right) with respect to the direction of the ETT. Advance ETT or bougie to get a feel of your range of reach in either direction. Also mentally note position of vocal cords on the video image when ETT is aligned correctly to the cords.</td>
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<tr>
<td>2.4.3</td>
<td>Move the VividTrac device (forward and back) in an insertion or removal rotation motion, to raise or lower the view of the vocal cords with respect to the direction of the ETT. Advance ETT or bougie at maximum range of motion to get a feel of the range of reach in either position.</td>
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**Lab#2.5 - Counter Clockwise Twisting of ETT**

Goal for the User to learn the technique to twist the ETT counter clockwise to direct the distal tip of the ETT left.

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<tr>
<td>2.5.1</td>
<td>With properly loaded VividTrac with ETT or ETT w/bougie, inserted into the airway until the vocal cords are in view.</td>
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<tr>
<td>2.5.2</td>
<td>Advance the ETT 1&quot; towards the vocal cords, so the ETT is clearly in the view of the video image. Now twist the ETT forcefully counter clockwise (CCW), which should show the distal tip of the ETT on the video image be directed left. If the ETT is large and there is little free room in the channel, then reverse the ETT to the initial loaded position and attempt in unison to Twist CCW while advancing the ETT. Notice the direction of the distal tip of the ETT on the video image.</td>
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**Lab#2.6 - Exercise: Learn How to Reverse out Device**

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<tr>
<td>2.6.1</td>
<td>Insert the VividTrac using one of the methods defined above, but now position the blade tip positioned in the esophagus (deep as possible in the airway). There should be no visible airway landmarks on the video image.</td>
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<tr>
<td>2.6.2</td>
<td>While still looking at the live video image, slowly start to reverse out the VividTrac device while looking for airway landmarks. (step 1) Back out until the blade positions under the epiglottis and the vocal cords are visible. (step 2) Continue to back out the device until the blade tip is now in the vallecula above the epiglottis. (note some manikins may not support this position well) (step 3) Intubation by either advancing ETT or Bougie past the vocal cords.</td>
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Lab#2.7 - Exercise: Effect of Getting Too Close

Users of video laryngoscopes from other manufactures have a habit of positioning the VividTrac device too close to the vocal cords in a non-optimal position. The design of the VividTrac device provides a wider field of view of the airway and is designed to work best when positioned at a greater distance from the vocal cords than other devices. This provides an improved image of the airway to determine airway landmarks and to accurately view and align the advancing ETT. This exercise is to help User understand the optimal distance to position the VividTrac from the vocal cords.

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<td>2.7.1</td>
<td>Insert the VividTrac using one of the methods defined above, but now position the blade tip as close as possible to the vocal cords. Advance ETT (or bougie) notice the effects by observing the video image. <strong>Result</strong> - In many cases the ETT may hit or be obstructed by soft tissue on the right side. To correct slightly reverse out device until you are at the proper distance from the vocal cords and advance ETT unobstructed to confirm.</td>
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Lab#2.8 - Exercise: Let Go of Device

The design of the VividTrac to match the natural anatomy of the airway without the use of any force is demonstrated through this exercise where the User after the VividTrac has been correctly inserted in the airway, can completely let go of the VividTrac device, without losing visualization of the vocal cords. As an example, this can be extremely beneficial if the User needs to free their hands to maybe hold the bougie while they advance the ETT along the bougie into the trachea, etc.

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<td>2.8.1</td>
<td>Insert the VividTrac using one of the methods defined above and achieve a proper position and view of the vocal cords. Now completely release your hand hold of the VividTrac device and while looking at the live video image. <strong>Result</strong> - There may be no change in the quality of view of the vocal cords.</td>
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Lab#2.9 - Exercise: Lift the Soft Tissue

The design of the VividTrac device with the acute angled blade allows the User to gently pull the device toward the roof of the mouth to lift the soft tissue of the airway. This can open the airway to provide a more full view of the vocal cords.

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<td>2.9.1</td>
<td>Insert the VividTrac using one of the methods defined above and achieve a proper position and view of the vocal cords. While looking at the live video image, and holding the proximal end of the device, start to pull it toward you, or toward the roof of the mouth. <strong>Result</strong> - In the view image you will notice that the soft tissue of the airway is &quot;lifted&quot;.</td>
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Lab#2.10 - Exercise: Confirmation Insertion

At any time during transport, the field medic can reinsert the VividTrac device to confirm proper placement of the ETT. Some organizations perform a confirmation insertion at the time they transfer the patient from the vehicle to the Emergency Department to remove any later questions on the status of the patient in regards to establishing a definitive airway.

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<tr>
<td>2.10.1</td>
<td>With an ETT already intubated in the manikin, and the VividTrac device channel empty, insert the VividTrac device back into the patient's airway to get a confirmation view of the ETT entering the vocal cords, and at the proper depth. Recommended method is to move the ETT to the left side of the mouth, place the tip of the VividTrac blade on the ETT and follow the ETT into the airway until a view of the ETT and vocal cords is achieved.</td>
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Lab#2.11 - Using the Bougie

Goal to allow the User to experience the benefits of using a bougie loaded in the ETT when using the VividTrac.

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<tr>
<td>2.11.1</td>
<td>With VividTrac device out of the airway, first load an ETT into the tube channel, second load the straight end of the bougie into the end of the ETT, advance until the tip of the bougie is</td>
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2.11. With the VividTrac device still out of the airway:
(a) Advance just the bougie while observing the direction the bougie is advancing in relationship to the metal tip of the VividTrac. Result - Notice the bougie will be directed downward away from the tip of the metal blade.
(b) Now advance the ETT 1" inch - Again advance the just the bougie while observing the direction the bougie is advancing in relationship to the metal tip of the VividTrac. Result - Notice the tip of the bougie will be directed close to the tip of the metal blade.

2.11.2 With the VividTrac device still out of the airway, and ETT distal tip positioned correctly at the end of the black plastic body, load the bent end "coude tip" of the bougie in the end of the ETT:
(a) Advance just the bougie while observing the direction the bougie is advancing in relationship to the metal tip of the VividTrac. Result - Notice the tip of the bougie will be directed upward to but not quite touching the tip of the metal blade of the VividTrac.
(b) Now advance the ETT 1" inch - Again advance just the bougie while observing the direction of the bougie as it advances in relationship to the metal tip of the VividTrac. Result - Notice the bougie will actually touch the tip of the metal blade, and when past the tip blade will actually be positioned above the blade.

2.11.3 With a VividTrac preloaded with ETT and bougie, insert into the manikin's airway until a view of the vocal cords is achieved. Advance just the bougie and notice the alignment to the vocal cords, make adjustments by adjusting the ETT to align the bougie to the vocal cords.

2.11.4 Align to vocal cords then advance bougie first into trachea, advance ETT down bougie to intubate.

2.11.5 Advance ETT over the Bougie AFTER first releasing the ETT from the channel, and is held to the side of the device.

3.0 Advanced Techniques

Lab#3.1 - ETT Blocked within Trachea

There are times when the ETT has been advanced just past the vocal cords, but then the distal tip of the ETT hits the back wall of the trachea and does not want to be advanced. To address this experience, the user is taught the below technique.

<table>
<thead>
<tr>
<th>#</th>
<th>PERFORMANCE CRITERIA</th>
<th>COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1</td>
<td>With properly loaded VividTrac with ETT inserted into the airway until the vocal cords are in view, and advance the ETT until the distal tip is just past the vocal cords. Act that the ETT is now stuck or obstructed by hitting the back wall of the trachea.</td>
<td></td>
</tr>
<tr>
<td>3.1.2</td>
<td>Take ETT out of channel, hold ETT in right hand, pull tube back 1/4&quot;, twist ETT clockwise and advance gently, repeat while twisting ETT clockwise, until ETT smoothly advances down deeper in to the trachea.</td>
<td></td>
</tr>
</tbody>
</table>

Lab#3.2 - Replace ETT while VividTrac is in Patient

There may be a need to switch out an ETT while the VividTrac device is positioned correctly in the airway with the vocal cords under visualization. This

<table>
<thead>
<tr>
<th>#</th>
<th>PERFORMANCE CRITERIA</th>
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</thead>
<tbody>
<tr>
<td>3.2.1</td>
<td>With properly loaded VividTrac with ETT inserted into the airway until the vocal cords are in view, pull out the ETT from the channel and reinsert back into the tube channel until the tip is seen again on the live video image. Making sure the ETT did not fall out of the tube channel.</td>
<td></td>
</tr>
</tbody>
</table>

Lab#3.3 - Using a Stylet

Goal for the User to be able to intubate using a stylet loaded ETT outside the channel of the VividTrac device. This is a useful technique for cases where the User has years of past experience intubating a stylet/EET, or if there is a requirement to intubate with a tube that has an outside diameter that is too large for the tube channel of the VividTrac device.

Issue Date: Sept 1, 2012
Reviewed Date: April 27, 2015
Next Review Date: April 2018
<table>
<thead>
<tr>
<th>#</th>
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<th>COMPLETED</th>
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</thead>
</table>
| 3.3.1 | a) Preload ETT with stylet, DO NOT LOAD INTO CHANNEL. Bend ETT+stylet to proper angle similar to the VividTrac Plastic Body.  
b) Insert device into airway to achieve visualization of the vocal cords.  
c) Use the styletted ETT to the right of device “outside the channel” to intubate - remove and adjust angle of ETT+stylet until proper angle to the vocal cords is determined and intubation is achieved. |           |

**Lab#3.4 - Patient (Manikin) in Alternate Positions**

Goal for the User to be able to intubate patients in multiple challenging positions using either their right or left hand.

<table>
<thead>
<tr>
<th>#</th>
<th>PERFORMANCE CRITERIA</th>
<th>COMPLETED</th>
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</thead>
<tbody>
<tr>
<td>3.4.1</td>
<td>Standard Position - User above head of patient - use opposite hand</td>
<td></td>
</tr>
<tr>
<td>3.4.2</td>
<td>Left Side of head of patient</td>
<td></td>
</tr>
<tr>
<td>3.4.3</td>
<td>Right Side of head of patient</td>
<td></td>
</tr>
<tr>
<td>3.4.4</td>
<td>Patient upright, facing patient</td>
<td></td>
</tr>
<tr>
<td>3.4.5</td>
<td>Patient is on the floor</td>
<td></td>
</tr>
<tr>
<td>3.4.6</td>
<td>Patient is in moving vehicle - Medic is in a chair behind or along side of patient</td>
<td></td>
</tr>
<tr>
<td>3.4.7</td>
<td>Place neck constraint on manikin</td>
<td></td>
</tr>
<tr>
<td>3.4.8</td>
<td>Simulate Chest Compression</td>
<td></td>
</tr>
</tbody>
</table>
TRAINING COMPLETION SIGN OFF
(to be filled out by Instructor)

Student Name: ___________________________ Date: ___________________________

Instructor Name: ___________________________ Instructor Signature: ___________________________

Instructor Comments:
____________________________________________________________________________
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Issue Date: Sept 1, 2012
Reviewed Date: April 27, 2015
Next Review Date: April 2018
Appendix A

Required Training Equipment

The list of equipment below will be required to complete the classroom exercises defined above.

- Airway manikin
- Airway manikin lubrication
- VividTrac Video Intubation Device-ADULT
- Endotracheal Tubes (7.0mm, 7.5mm, 8.0mm)
- 10cc Syringe
- Bougie
- Stylet
- Suction wand (i.e. Yankauer)
- Magill Forceps (optional)
- Display Device (tablet or computer) and USB adapter cable if required
- USB Extension Cord
- Presentation Computer with overhead projector