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**STATE OF IDAHO**

**EMS PHYSICIAN COMMISSION**

**STATEWIDE PROCEDURES**

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Corresponding to Idaho EMS Scope of Practice 2017-1

\* Including EMSPC required Protocols and Procedures

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Adopted by \_\_\_\_\_ (Agency Name)

Medical Director Name \_\_\_\_\_

Medical Director Signature \_\_\_\_\_ Date \_\_\_\_\_



# Procedures Legend

The procedures listed below have been coded to be consistent with the Idaho EMSPC SOP 2017-1 for each level of provider including "Optional Modules". It is the responsibility of each provider to know which interventions they are licensed, authorized, and credentialed to perform by their medical director. Some of the procedures referenced are included in this manual while EMS training programs and education publishers also provide comprehensive resources. The procedures with an **!** are required to be used for specific optional modules as adopted by the EMSPC .

## Assessment Procedures

R	Adult Assessment		R
R	Pediatric Assessment		R
R	Pain Scale		R
E	Pulse Oximetry		E
R	Temperature		R
R	Cincinnati Stroke Screen		R
A	Blood Glucose <b>!</b>		
A	Verification of Tube Placement		
A	Continuous ETCO2 <b>!</b>		

## Trauma Procedures

R	Wound Care – General	R
R	Hemorrhage Control	R
E	Extremity Splinting	
E	Selective C-Spine	
E	Pelvic Immobilization Device	
R	Eye Irrigation	R
R	Active External Rewarming	R
R	Passive External Rewarming	R
P	Morgan Lens Irrigation	P
P	Stinger Removal	P
P	Active Internal Rewarming	P

## Airway Procedures

R	Foreign Body Obstruction	R
R	Ventilation - BVM	R
R	Oral Airway	R
E	Nasal Airway	E
R	Upper Airway Suction	R
A	Blind Inserted Airway Device - Adult	
P	Blind Inserted Airway Device - Pediatric	P
P	Continuous Positive Airway Pressure	
P	Direct Laryngoscopy	P
P	Nasotracheal Intubation	P
P	Nasal/Oral Gastric Tube	P
P	Tracheal Suctioning	P
P	Percutaneous Needle Cricothyrotomy	P
P	Needle-Chest Decompression	P
	Intubation- Medication Assisted	
	Surgical Cricothyrotomy	

## Drug Administration Procedures

E	Epi Auto Injector <b>!</b>		
A	Sub-Q & IM Injection <b>!</b>		
A	Nebulized Bronchodilator		
P	Lidocaine IO <b>!</b>		
P	Tranexamic Acid		P

## Cardiac Procedures

R	CPR	R
R	Automated defibrillation	R
P	Manual Defibrillation	P
P	Transcutaneous Pacing	P
P	12-Lead EKG	
P	Cardiac Monitor	P
P	Vagal Maneuvers	P
P	Targeted Temperature Management	P

## Miscellaneous Procedures

R	Childbirth - Normal	R
E	Childbirth - Complicated	E
R	Cooling Measures	R
E	Physical Restraints	E
R	Safe Haven	R
O	Taser Barb Removal	O

## IV Access Procedures

A	Peripheral IV	
A	Intraosseous Infusion, Pediatric	
A	Intraosseous Infusion, Adult	
A	External Jugular IV	

# Procedure: Adult Assessment



## **Clinical Indications;**

- Any patient who does not meet the definition of a pediatric patient.

## **Procedure;**

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, bystander safety, and patient/caregiver interaction.
2. Assess need for additional resources.
3. Initial assessment includes a general impression as well as the status of a patient's airway, breathing, and circulation.
4. Assess mental status and disability (e.g., GCS, AVPU).
5. Establish spinal immobilization if suspicion of spinal injury.
6. Perform a focused history and physical based on patient's chief complaint.
7. Assess need for critical interventions.
8. Complete critical interventions and perform a complete secondary exam to include a baseline set of vital signs as directed by protocol.
9. Maintain an on-going assessment throughout transport to include patient response, possible complications of interventions, need for additional interventions, and assessment of evolving patient complaints/conditions.
10. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.
11. Document all findings and information associated with the assessment, performed procedures, and any administration of medications in the patient care report (PCR).

## **Skills Maintenance Suggestions;**

- Practice full adult assessments on simulated adult patients on a periodic basis.

# Procedure: Pediatric Assessment



## Clinical Indications;

- Any patient <12 years of age or who can be measured with the Broselow-Luten Resuscitation Tape.

## Procedure;

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, bystander safety, and patient/caregiver interaction.
2. Assess need for additional resources.
3. Assess patient using the pediatric triangle of ABCs:
  - Airway and appearance: speech/cry, muscle tone, inter-activeness, look/gaze, movement of extremities
  - Work of breathing: absent or abnormal airway sounds, use of accessory muscles, nasal flaring, body positioning
  - Circulation to skin: pallor, mottling, cyanosis
4. Establish spinal immobilization if suspicion of spinal injury.
5. Establish responsiveness and disability appropriate for age (AVPU, GCS, etc.)
6. Color code using Broselow-Luten tape.
7. Perform a focused history and physical exam based on patient's chief complaint. Recall that pediatric patients easily experience hypothermia and thus should not be left uncovered any longer than necessary to perform an exam.
8. Assess need for critical interventions.
9. Complete critical interventions and perform a complete secondary exam to include a baseline set of vital signs as directed by protocol. If > 3 years of age, record BP. If < 3 years of age, record cap refill.
10. Maintain an on-going assessment throughout transport to include patient response, possible complications of interventions, need for additional interventions, and assessment of evolving patient complaints/conditions.
11. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.
12. Document all findings and information associated with the assessment, performed procedures, and any administration of medications in the patient care report (PCR).

## Skills Maintenance Suggestions;

- Practice full pediatric assessments on simulated pediatric patients on a periodic basis.

# Procedure: Pain Assessment and Documentation



## Clinical Indications;

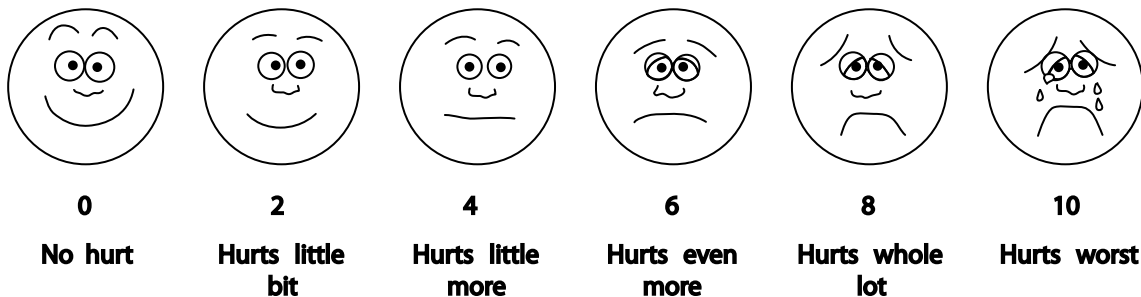
- Any patient with pain

## Definitions;

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

## Procedure;

1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self report.
2. Pain should be assessed and documented in the PCR during initial assessment, before starting pain control treatment, and after pain control treatment.
3. Pain should be assessed using the appropriate approved scale.
4. Two commonly used pain scales are the "0 – 10" scale and the Wong - Baker "FACES" scale.
  - **0 – 10 Scale:** the most familiar scale used by EMS for rating pain with patients. It is primarily for adults and is based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.
  - **Wong – Baker "FACES" scale:** this scale is primarily for use with pediatrics but may also be used with geriatrics or any patient with a language barrier. The faces correspond to numeric values from 0-10. This scale can be documented with the numeric value.



## Skills Maintenance Suggestions;

- Practice pain assessments on a periodic basis.

# Procedure: Pulse Oximetry



## Clinical Indications;

- Patients with suspected hypoxemia.

## Procedure;

1. Apply probe to patient as recommended by the device manufacturer. Pediatric patients may require pediatric specific sensors.
2. Allow machine to register saturation level. Monitor patient for a few minutes as oxygen saturation can vary.
3. Verify pulse rate on monitor with actual pulse of the patient.
4. Record time and initial saturation percent on room air if possible in the patient care report (PCR).
5. Monitor critical patients continuously until arrival at the hospital.
6. Document percent of oxygen saturation every time vital signs are recorded and in response to therapy to correct hypoxemia.
7. Treat the patient, not the data provided by the device. Use the pulse oximetry as an added tool for patient evaluation.
8. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress.
9. Factors which may reduce the reliability of the pulse oximetry reading include:
  - Poor peripheral circulation (shock, hypothermia, cool extremities)
  - Excessive pulse oximeter sensor motion
  - Fingernail polish (may be removed with acetone pad)
  - Carbon monoxide bound to hemoglobin
  - Inflation of BP cuff on same extremity as pulse ox probe.

## Skill Maintenance Suggestions:

- Practice placing pulse oximeter on all size patients on a periodic basis.

# Procedure: Cincinnati Stroke Scale



## Clinical Indications;

- Suspected Stroke Patient

## Procedure;

1. Assess and treat suspected stroke patients as per protocol.
2. The Cincinnati Prehospital Stroke Scale interpretation. If any one of these three signs is abnormal, the probability of a stroke is 72%.
  - **Facial Droop** (have patient show teeth or smile)
    - Normal – both sides of the face move equally
    - Abnormal- one side of the face does not move as well as the other side
  - **Arm Drift** (patient closes eyes and holds both arms straight out for 10 seconds)
    - Normal both arms move the same or both arms do not move at all
    - (other findings such as pronator drift may be helpful)
    - Abnormal – one arm does not move or one arm drifts down compared with the other.
  - **Abnormal Speech** (Have the patient say “you cant teach an old dog new tricks”)
    - Normal Patient uses correct words with no slurring
    - Abnormal- patient slurs words, uses the wrong words, or is unable to speak
3. If any one of the three signs is abnormal, the stroke scale is positive.
4. Note any Conjugate Eye Deviation – patient’s with a positive Cincinnati Stroke Screen and positive eye deviation need to be transported to a Stroke Center.
5. The results of the Cincinnati Prehospital Stroke Scale should be documented in the PCR.

## Skills Maintenance Suggestions;

- Practice performing the Cincinnati Stroke Scale on a periodic basis

## Pearls;

- Conjugate Eye Deviation is a condition in which both eyes are turned to the same side during a CVA; eyes will deviate toward the affected side.

# Procedure: Blood Glucose Analysis



## **Clinical Indications;**

- Patients with suspected hypoglycemia (Known Diabetic, Abnormal mental status, Sweating with rapid heart rate, Seizures, Focal neurological deficit, Behavioral changes.)

## **Procedure;**

1. Prepare the device according to the manufacturer's instructions
2. Explain the procedure to the patient
3. Obtain verbal consent, if possible, from patient or family
4. Use body substance isolation procedures
5. Cleanse the puncture site prior to obtaining blood sample
6. Obtain a drop of blood
7. Apply the blood to the test strip according to the manufacturer's instructions
8. Obtain and record the reading from the device
9. Apply a dressing to the patient's puncture site
10. Properly dispose of test supplies
11. Continue your assessment and treatment of the patient

## **Skills Maintenance Suggestions;**

- Calibrate a glucometer and perform a Blood Glucose Analysis on a periodic basis



# Procedure: 12 Lead EKG

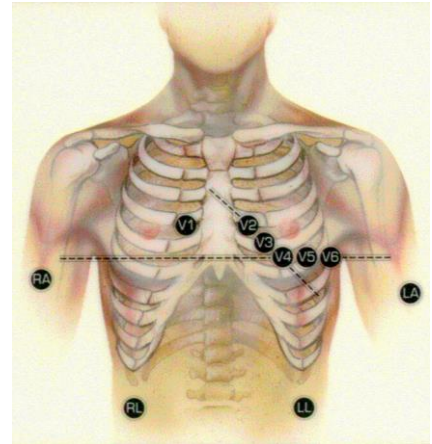


## Clinical Indications:

- Suspected cardiac patient; Cardiac Chest Pain; STEMI
- Syncope
- Dysrhythmia

## Procedure: Procedure may vary by manufacturer of Monitor

1. Assess patient and monitor cardiac status.
2. Administer oxygen as patient condition warrants.
3. If patient is unstable, 12 lead acquisition should not delay definitive treatment with sufficient resources present, treatment and 12 lead may be performed simultaneously.
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter the required patient information (patient name, etc.) into the 12 lead ECG device.
6. Expose chest and prep as necessary. Modesty of the patient should be respected.
7. Apply chest leads and extremity leads using the following landmarks:
  - RA -Right arm
  - LA -Left arm
  - RL -Right leg
  - LL -Left leg
  - V1 -4<sup>th</sup> intercostal space at right sternal border
  - V2 -4<sup>th</sup> intercostal space at left sternal border
  - V3 -Directly between V2 and V4
  - V4 -5<sup>th</sup> intercostal space at midclavicular line
  - V5 -Level with V4 at left anterior axillary line
  - V6 -Level with V5 at left midaxillary line
8. Instruct patient to remain still.
9. Press the appropriate button to acquire the 12 Lead ECG.
10. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the acquisition may be interrupted until the noise is removed.
11. Once acquired, transmit the 12 lead ECG to the appropriate hospital or print and deliver with patient. Contact the receiving hospital to notify them that a 12 Lead ECG has been sent.
12. Monitor the patient while continuing with the treatment protocol. Repeat 12 lead ECG after change in patient condition.
13. Document the procedure, time, and results in the patient care report (PCR). Attach a copy of the 12 Lead ECG to the PCR.



## Skills Maintenance Suggestions;

- Acquire and transmit a 12 lead ECG according to local procedure on a periodic basis.

# Procedure: Foreign Body Obstruction



## Clinical Indications;

- Sudden onset of respiratory distress often with coughing wheezing, gagging, or stridor due to a foreign-body obstruction of the upper airway.
- Conscious and unable to speak with extreme anxiety.
- Unconscious and unable to ventilate.

## Procedure;

1. Assess the degree of foreign body obstruction:
  - Do not interfere with a mild obstruction allowing the patient to clear their airway by coughing.
  - In severe foreign-body obstructions, the patient may not be able to make a sound. The victim may clutch his/her neck in the universal choking sign.
2. **For an infant**, deliver 5 back blows (slaps) followed by 5 chest thrusts repeatedly until the object is expelled or the victim becomes unresponsive.
3. **For a child**, perform a subdiaphragmatic abdominal thrust (Heimlich Maneuver) until the object is expelled or the victim becomes unresponsive.
4. **For adults**, a combination of maneuvers may be required.
  - First, subdiaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved.
  - If abdominal thrusts are ineffective, chest thrusts should be used. Chest thrusts should be used primarily in morbidly obese patients and in patients who are in the late stages of pregnancy.
5. If the victim becomes unresponsive, begin CPR immediately but look in the mouth before administering each ventilation cycle. If a foreign-body is visible, remove it.
6. In unresponsive patients, Paramedic level professionals should visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign-body using Magill forceps.

## Skills Maintenance Suggestions;

- On a periodic basis perform digital foreign body removal and Magill-assisted (Paramedic) foreign body removal on adult, child, and infant intubation mannequins.
- On a periodic basis demonstrate the Heimlich Maneuver, chest thrusts, and back slaps on adult, child, and infant CPR mannequins.

# Procedure: Nebulized Bronchodilator



## Clinical Indication:

- Patients requiring nebulized medication.

## Procedure:

1. Gather the necessary equipment.
2. Assemble the nebulizer kit.
3. Instill the premixed drug (such as Albuterol or other approved drug) into the reservoir well of the nebulizer.
4. Connect the nebulizer device to oxygen at 4 - 6 liters per minute or adequate flow to produce a steady, visible mist.
5. Instruct the patient to inhale normally through the mouthpiece of the nebulizer. The patient needs to have a good lip seal around the mouthpiece. Utilize a facemask for blow-by on patients who cannot tolerate a mouthpiece.
6. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in nebulizing all of the solution.
7. Monitor the patient for medication effects. This may include the patient's assessment of his/her response to the treatment and reassessment of vital signs, ECG, and breath sounds.
8. Document the treatment, dose, and route in the patient care report (PCR).
9. Use an in-line adapter for nebulizer treatment of ventilated patient.

## Skills Maintenance Suggestion:

- Assemble nebulizer and inline adapter on a periodic basis.

# Procedure: CPAP



## Clinical Indications; for Continuous Positive Airway Pressure (CPAP) Use;

- CPAP is indicated in all patients whom inadequate ventilation is suspected. This could be as a result of pulmonary edema, pneumonia, COPD, asthma, etc.
- May be a bridge in imminent respiratory failure to avoid/delay intubation.

## Contraindications;

- Unconscious, unresponsive, inability to protect airway
- Inability to sit up
- Persistent nausea or vomiting
- Respiratory arrest or agonal respirations
- Suspected pneumothorax, penetrating chest trauma

## Procedure; Be familiar with and follow the manufacturer recommendations for your device.

1. Ensure adequate oxygen supply to ventilation device.
2. Explain the procedure to the patient. Anticipate and control anxiety with verbal coaching. Consider low dose benzodiazepines.
3. Consider placement of a nasopharyngeal airway.
4. Oxygen should be flowing through the device before placement. Place the delivery mask over the mouth and nose.
5. Secure the mask with provided straps starting with the lower straps until minimal air leak occurs.
6. If the Positive End Expiratory Pressure (PEEP) is adjustable on the CPAP device adjust the PEEP beginning at 0 cmH<sub>2</sub>O of pressure and slowly titrate to achieve a positive pressure as follows:
  - **5 – 10 cmH<sub>2</sub>O for CHF**
  - **3 – 5 cmH<sub>2</sub>O for all other conditions**
  
  - **EMT – 2011 can use setting of 5 cmH<sub>2</sub>O**
  - **AEMT – 2011 and Paramedic – 2011 can use setting of up to 10 cmH<sub>2</sub>O**
7. Evaluate the patient response; assess changes in breath sounds, oxygen saturation, and general appearance.
8. If chronic CO<sub>2</sub> retention is suspected, if possible, titrate FIO<sub>2</sub> to achieve a POX of 90-92%.
9. Encourage the patient to allow forced ventilation to occur. Observe closely for signs of complications.

## Skills Maintenance Suggestion;

- Set up and operate CPAP on a patient, possibly yourself

# Procedure: Verification of Tube Placement

## Clinical Indications;

- Verifying correct placement of an endotracheal tube, nasotracheal tube, or BIAD.

## After tube placement, utilize the following methods to verify:

- Continuous waveform capnography.
- Colorimetric device.
- Auscultate lung sounds as well as over the epigastrium.
- Observe bilateral chest rise and fall.
- Esophageal Detector Device.

## Skill Maintenance Suggestion:

- Practice applying various types of tube placement verification devices.
- Practice auscultating breath sounds.
- Review capnography waveforms.

## Pearls:

- Document method of tube verification and time of tube placement.

# Procedure: Continuous ETCO<sub>2</sub>



## **Clinical Indications:**

- Capnography should be used when available with all invasive airway devices including endotracheal intubation, nasotracheal intubation, cricothyrotomy, or Blind Insertion Airway Devices (BIAD).
- Capnography should also be used, when possible, with CPAP.

## **Procedure: Assemble, prepare, and operate device according to manufacturer guidelines and instructions.**

1. Attach capnography sensor to the BIAD, endotracheal tube, or oxygen delivery device.
2. Note and document CO<sub>2</sub> level and waveform changes. See protocols for specific target values.
3. CO<sub>2</sub> level should be continuously monitored throughout care and transport.
4. Any loss of CO<sub>2</sub> detection or waveform indicates an airway problem and should be investigated and documented.
5. Document the procedure and results in the Patient Care Report (PCR).

## **Skills Maintenance Suggestions;**

- Review manufacturer guidelines for your agency device.

# Procedure: Injections: Subcutaneous and Intramuscular

## For the administration of Glucagon, Adrenaline and Epi-Pen



### Clinical Indications;

- When medication administration is necessary and the medication is to be given via the SQ or IM route using a syringe or an auto injector.

### Procedure;

1. Receive and confirm medication order or perform according to standing orders.
  - For glucagon, mix diluent with powder following manufacturers recommendations using sterile technique.
  - Ensure clarity and color of the medication is appropriate.
  - Check expiration date.
  - Withdraw medication from ampules or vials using sterile technique. An equal volume air may need to be injected into the medication vial to equalize pressure before medication is withdrawn. Use a filter needle to withdraw medication from a glass ampule; dispose after draw.
2. Expel air from the syringe and needle before injection.
3. Explain the procedure to the patient and reconfirm patient allergies. Confirm the 6 "Rights"  
**Rights:**
  - Right medication**
  - Right route**
  - Right time**
  - Right person**
  - Right dose**
  - Right documentation**
4. The most common site for subcutaneous injection is the upper arm. Injection volume should not exceed 1 ml.
5. The possible injection sites for intramuscular injections include the deltoid, buttock, and thigh. Injection volume should not exceed 2 ml for the deltoid injection; volume should not exceed 5 ml in the thigh or buttock. (*Brady*)
6. The thigh should be used for injections in pediatric patients. Injection volume should not exceed 1 ml.
7. Expose the selected area and cleanse the injection site with alcohol.
8. Insert the needle into the skin with a smooth, steady motion
  - SQ: 45-degree angle skin pinched Needle size 24-26 gauge 3/8 - 1"
  - IM: 90-degree angle skin flattened 21-23 gauge 5/8-1.5"
  - Epi-Pen, remove cap and push injector firm against the patients lateral thigh at 90-degree angle. Hold in place for 10 seconds after it activates
  - Aspirate for blood, if blood is aspirated, choose new site.
  - Inject the medication slowly, withdraw the needle quickly, and dispose of properly without recapping.
  - Apply pressure to the site.
9. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
10. Document the medication, dose, route, and time in the patient care report (PCR).

### Skills Maintenance Suggestions;

- Practice complete Epi-Pen, SQ and IM procedure on appropriate simulated sites on a periodic basis.

E		Epi Auto Injector	!		R
A		Sub-Q & IM Injection	!		R

# Procedure: Safe Haven



As of July 1, 2001, the Idaho Safe Haven Act protects abandoned infants. This law is intended to provide a safe alternative for parents who otherwise might abandon their babies.

A safe haven is authorized by law to accept a baby less than 30 days of age, directly from a parent, without identifying the parent. The parent is not required to provide any information to the safe haven, but may volunteer medical or other information. The parent remains anonymous and will not be prosecuted for child neglect or abandonment.

## **The law specifically identifies the following safe havens;**

- Emergency medical personnel, when responding to a 911 call requesting a safe haven;
- Licensed physicians and staff working at the physician's office or clinic;
- Advanced practice professional nurses, including certified nurse midwives, nurse practitioners, and registered nurse anesthetists;
- Licensed physician assistants;
- Hospitals licensed in Idaho.

## **The safe haven will;**

- Accept the baby from the parent;
- Make certain the baby receives necessary medical attention;
- Immediately contact law enforcement. Law enforcement will establish emergency protective custody of the baby and contact the Idaho Department of Health and Welfare, which will provide an emergency home and prepare and file a Certificate of Live Birth Foundling with the Vital Statistics Unit;
- Not ask the parent's name, but may ask the parent if they wish to provide medical or other information about the baby.

## **More Information;**

- Idaho CareLine, 2-1-1 or 1-800-926-2588;
- Health and Welfare Child Protection:
  - Statewide: 1-855-552-KIDS (5437)
  - Treasure Valley: 208-334-KIDS (5437)



# Procedure: Intubation, Medication Assisted Paralytic

## Page 1



### Clinical Indications;

- Need for endotracheal intubation in a non-cardiac arrest patient AND one of the following:
  - patient has intact protective airway reflexes
  - is not flaccid

### Relative Contraindication;

- Anticipated difficult airway (consider drug assisted intubation-sedation only, nasal intubation).

### Succinylcholine Contraindications;

- Significant burns between 24 hours old and 2 weeks old.
- Known neuromuscular disease such as myasthenia gravis, amyotrophic lateral sclerosis, muscular dystrophy, Guillain-Barre syndrome.
- Patient or family history of malignant hyperthermia

### Minimum Required Equipment (Per EMS Minimum Equipment Standards);

- Oxygen delivery, Bag Valve Mask, Suction device,
- Endotracheal tubes: ETT size selection should be based on patient age or size of 5<sup>th</sup> finger or nares.
- Use “cuffed” ETT between sizes 3.5 and 8.0.
- Laryngoscope blades: Adult and pediatric blades. At least three sizes of two different blade types (e.g., Miller, Macintosh, other).
- Pulse oximeter: Pulse oximetry should be monitored before, during, and after intubation.
- Rescue device: At least one device must be available (e.g., Blind Insertion Airway Device, bougie/flexguide).
- ETT placement confirmation device: Either end-tidal CO<sub>2</sub> detection (qualitative or quantitative) or an esophageal detector device (EDD) must be available.

### Procedure;

1. Prepare, position and oxygenate the patient with 100% Oxygen by BVM. Consider ear-to-sternal notch positioning unless C-spine immobilization is indicated. Consider apneic oxygenation via nasal cannula at 15 L/min.
2. Select proper ETT (and stylet, if used) and have suction ready.
  - If age <2yrs administer Atropine.
  - Administer sedation
  - Administer paralytic
3. Using laryngoscope, visualize vocal cords.
4. Limit each intubation attempt to 30 seconds with BVM between attempts.
5. Visualize ETT passing through vocal cords.
6. Inflate the cuff with 3-10 cc of air and confirm and document ETT placement using end-tidal CO<sub>2</sub> detection or an EDD. ETT placement should be confirmed using multiple additional methods such as presence of bilaterally equal breath sounds, absence of sounds over the epigastrium, chest rise, ETT misting, and patient response. If you are unsure of placement, remove ETT and ventilate patient with BVM.
7. Secure the ETT to the patient’s face.
8. Consider using a BIAD, bougie/flexguide, or other difficult airway device or rescue airway device if intubation efforts are unsuccessful.

# Procedure: Intubation Drug Assisted Paralytic

## Page 2



### Procedure (continued);

9. EMS personnel may not attempt intubation more than 3 times each. All EMS personnel from the same EMS agency may not collectively attempt intubation more than 5 times. An intubation attempt is defined as passing the laryngoscope blade or endotracheal tube past the teeth or inserted into the nasal passage.

10. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient's teeth or lips on/with the patient care report (PCR). Document all devices used to confirm initial ETT placement. Also document positive or negative breath sounds before and after each movement of the patient

11. Paramedics should consider NG or OG tube placement to clear stomach contents after the airway is secured with an ETT.

12. If available, continuous end-tidal CO<sub>2</sub> Capnography and Pulse Oximetry are strongly recommended to monitor the airway. Record readings on scene, enroute to the hospital and at the hospital.

### Performance Assessment and Improvement;

- EMS personnel must maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure.
- Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.
- Assessment must include an annual (or more frequent) demonstration of intubation proficiency and an annual (or more frequent) review of intubation to include cognitive and psychomotor components with an emphasis on team coordination.
- All intubation attempts must be monitored by the local EMS System. Monitoring must include 100% chart review and tracking of the following EMS agency and EMS personnel parameters:
  - Intubation success rate
  - 1<sup>st</sup> attempt intubation success rate
  - Complications including unrecognized right mainstem intubation, unrecognized esophageal intubation, airway or dental trauma, hypoxia during intubation, bradycardia during intubation, inappropriate ETT size' and inappropriate ETT placement location (ETT depth).
- The local EMS system must also monitor rescue airway device utilization.
- The local EMS Medical Director must oversee remediation of intubation performance.

### Pearls:

- ETCO<sub>2</sub> is the gold standard for confirmation of tube placement.

# Procedure: Needle Chest Decompression

## Clinical Indications;

- Patients with increasing shortness of breath.
- Patients with hypotension (SBP <90), clinical signs of shock, and at least one of the following signs:
  - Jugular vein distention.
  - Tracheal deviation away from the side of the injury (often a late sign).
  - Absent or decreased breath sounds on the affected side.
  - Hyper-resonance to percussion on the affected side.
  - Increased resistance when ventilating a patient.
- Patients in traumatic arrest with chest or abdominal trauma for whom resuscitation is indicated. These patients may require bilateral chest decompression even in the absence of the signs above.

## Procedure;

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Administer high flow oxygen.
3. Identify and prep the site:
  - Locate the second to third intercostal space in the mid-clavicular line on the same side as the pneumothorax.
  - If unable to place anteriorly, lateral placement may be used at the *fourth to sixth ICS mid-axillary line, avoiding liver/spleen puncture.*
  - Prepare the site with antiseptic.
4. Insert the catheter (14 gauge 3.25" for adults) into the skin over the rib and direct it just over the top of the rib (superior border) into the pleural space.
5. Advance the catheter through the parietal pleura until a "pop" is felt and air or blood exits under pressure through the catheter, remove needle, then advance catheter.
6. Secure the catheter hub to the chest wall with dressings and tape.
7. Secure a one way valve to catheter hub.

## Skills Maintenance Suggestions;

- Perform a needle decompression on an appropriate mannequin on a periodic basis.

# Procedure: Tranexamic Acid (TXA)

## Clinical Indications;

- Patients with signs and symptoms consistent with traumatic hemorrhagic shock.
  - Tachycardia; Adults: HR >110bpm, Peds: related to age
  - Hypotension; Adults: SBP <90, Peds: related to age
  - **Suspected onset of injury must be < 3 hours; preferably given within 1 hour of injury**

## Contraindications;

- **Contraindicated if onset of injury is outside of 3 hours**
- Isolated head injury

## Procedure;

1. Secure and maintain the airway, administer oxygen and provide ventilatory assistance as needed.
2. Control external bleeding as effectively as possible. Consider use of tourniquet as appropriate.
3. Establish IV of Normal Saline.
4. Administer TXA:
  - Adult: 1 gram over 10 minutes (1gram/hour drip for 6 hours)
  - Pediatrics: 15mg/kg, max 1gram over 10 minutes (15/mg/kg/hour over 6 hours)

## Pearls;

- If given too quickly, may cause hypotension.

## Skills Maintenance Suggestions;

- Review the TXA procedure on a periodic basis.

# Procedure: Wound Care - General

## Clinical Indications:

- Protection and care for open wounds prior to and during transport.

## Procedure:

1. Don BSI.
2. Apply direct pressure to bleeding site, followed by a pressure dressing.
3. For minor injuries or injuries with minimal bleeding, remove loose debris and irrigate with saline as appropriate. Consider analgesia per protocol prior to irrigation.
4. Cover wounds with sterile gauze/dressings. Check distal pulses, sensation, and motor function to ensure the bandage is not too tight.
5. Monitor wounds and/or dressings throughout transport for bleeding.
6. Document wound assessment and care in the patient care report (PCR).

## Skills Maintenance Suggestions:

- Practice bandaging and dressing skills on a periodic basis.

# Procedure: Hemorrhage Control

## Clinical Indications:

- Patient with life threatening hemorrhage.

## Procedure:

1. Apply direct pressure to bleeding site, followed by pressure dressing.
2. If direct pressure or pressure dressing is ineffective or impractical:
  - a. If the bleeding site is amenable to tourniquet placement, apply tourniquet to extremity
  - b. If the bleeding site is not amenable to tourniquet placement (i.e. joint injury).
  - c. Tourniquet should be placed 4" proximal to the injury, not over a joint, and tightened until bleeding stops.
  - d. If bleeding continues, place a second tourniquet proximal to the first
  - e. For thigh wounds, consider placement of two tourniquets, side-by-side, and tighten sequentially to eliminate distal pulse.
3. If groin/axillary injury:
  - a. apply direct pressure to wound
  - b. If still bleeding, pack wound tightly with gauze and continue direct pressure
  - c. Consider hemostatic adjuncts
4. Manage pain (see Pain Management Protocols G-6 and G-7).
5. Stabilize suspected fractures/dislocations.

## Skills Maintenance Suggestions;

- Practice applying tourniquets used by your agency, on arms and legs, on a periodic basis.
- Train with the hemostatic gauze used by your agency on a periodic basis.

## Pearls;

- If tourniquet is used, ensure that it is sufficiently tight to occlude the distal pulse.
- Tourniquet needs to be visible to ensure all subsequent providers are aware of the presence of the tourniquet.
- Do not remove tourniquet or dressing in order to assess bleeding.
- **Document time of tourniquet placement!**

# Procedure: Extremity Splinting

## Clinical Indications:

- Immobilization of an extremity due to suspected fracture, sprain, or injury.
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters.

## Procedure:

1. Assess and document pulses, sensation, and motor function prior to placement of the splint.

If no pulses are present and a fracture is suspected, consider gentle traction and realignment to neutral anatomic position prior to placement of the splint. If there is resistance, stop the realignment.

2. Expose the extremity as needed.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed. Immobilize the joint above and below injury if possible.
5. Pad and place the splint and secure appropriately.
4. Do not secure the splint straps directly over the injury or medical device.
6. Document pulses, sensation, and motor function after placement of the splint. If there has been a deterioration in any of these 3 parameters, remove the splint and reassess.
7. If a femur fracture is suspected and there is no evidence of pelvic fracture or instability, the following procedure may be followed for placement of a femoral traction splint:
  - Assess neurovascular function as in step #1 above.
  - Apply traction splint according to manufacturer guidelines.
  - Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, release traction and reassess.
  - Assure foot does not rotate
  - protect genitalia.
8. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report (PCR).

## Skills Maintenance Suggestions:

- Practice applying multiple types of splints on upper and lower extremities on a periodic basis.
- Practice applying your agency traction splints on a periodic basis.

# Procedure: Pelvic Immobilization Device

## Clinical Indications:

- Patients with suspected unstable pelvic fractures.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Remove objects from the patient's pocket or pelvic area.
3. Follow the manufacturers directions when applying the pelvic immobilization device.
4. Follow the protocol for Selective C-Spine Immobilization as needed.

## Skills Maintenance Suggestions:

- Practice appropriate placement of pelvic immobilization device and review manufacturers directions.

## Pearls:

- It is likely that a patient who has sustained a pelvic fracture has also sustained a mechanism of injury for a spinal cord injury.



# Procedure: Eye Irrigation

## Clinical Indications:

- For patients who have sustained chemical splashes to the eyes, patients who have non-penetrating superficial foreign bodies, or other foreign materials to the eye(s).

## Procedure:

1. Assure the scene is safe and don BSI.
2. Seat or lie the patient with their head supported.
3. Consider administration of anesthetic eye drops prior to irrigation.
4. Choose a method to irrigate the patient's eye(s):

### Nasal Cannula:

Set up a 1 L bag of Normal saline with a 10gtt set. Connect the nasal cannula to the end of the IV tubing. Place the nasal cannula over the bridge of the patient's nose with the prongs pointed toward the patient's tear duct. Irrigate the eye(s) for at least 5 minutes.

### Shower:

Have the patient bend over with head tilted to the side with the effected eye downward so the irritant will not drain into the other eye. Have the patient or another provider hold the patient's eye lids open. Using the head of the shower irrigate the patient's eye(s) for 5 minutes.

### Bottle:

While patient is laying down, hold patients eye lid open. Pour saline or sterile water into patient's eye near the tear duct. Irrigate eye(s) for 5 minutes.

### Basin:

Fill a basin with sterile water or a saline solution. Have the patient tilt their head to the side and place their face into the water far enough to submerge the affected eye.

## Skills Maintenance Suggestions:

- Practice choosing a method of irrigation and walking through the steps of how to irrigate the eyes.

## Pearls:

- If the eye was burned by an alkali or strong acid, irrigate the eye continuously for 20 minutes.
- Always flush from the nose side of the eye toward the outside to avoid flushing material into the other eye.

# Procedure: Active External Rewarming

## Clinical Indications:

- Patients who are moderately hypothermic with a core temperature of 30° C to 34° C or 86° to 93.2°.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Maintain airway, breathing and circulation.
3. Actively rewarm the patient by:
  - Turning on heat in the ambulance.
  - Warm blankets or heating pads.
  - Placing hands and feet in warm water.
  - Using hot packs.
4. Monitor vital signs and patient's temperature.
5. Place patient on a monitor, watch for cardiac dysrhythmias in patients who are hypothermic.

## Skills Maintenance Suggestions:

- Review types of Active External Rewarming procedures.

## Pearls:

- Be sure to monitor the patient's skin after applying active external rewarming techniques to prevent dermal heat injuries.

# Procedure: Passive External Rewarming

## Clinical Indications:

- Patients who are mildly hypothermic or are becoming hypothermic with a core temperature greater than 34° C or 93.2° F.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Maintain airway, breathing and circulation.
3. Passively rewarm the patient by:
  - Removing wet clothing.
  - Drying the patient's skin.
  - Use blankets.
  - Use space blanket.
4. Monitor vital signs and patient's temperature.

## Skills Maintenance Suggestions:

- Review types of Passive External Rewarming procedures.

## Pearls:

- If patient is not responding to passive external rewarming techniques, utilize active external rewarming techniques.

# Procedure: Active Internal Rewarming

## Clinical Indications:

- Patients who are severely hypothermic with a core temperature less than 30° C or 86° F.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Maintain airway, breathing and circulation.
3. If needed follow Protocol C-1 Asystole & Pulseless Electrical Activity.
4. Actively rewarm the patient by:
  - Administering warm IV fluids.
  - Apply warm, humid oxygen.
5. Monitor vital signs and patient's temperature.

## Skills Maintenance Suggestions:

- Review types of Active Internal Rewarming procedures.

# Procedure: Morgan Lens Irrigation

## Clinical Indications:

- For continuous medication or lavage to the cornea and conjunctiva
- Ocular injuries due to acid burns or solvents, gasoline, detergents, etc..
- Thermal, alkali or actinic burns
- Non-embedded foreign bodies or foreign body sensation with no visible foreign body

## Contraindications:

- Do not use when there is a protruding foreign body
- Do not use with penetrating eye injuries
- Do not use with suspected or actual rupture of the globe
- Do not use anesthetic agents if there is a known allergy

## Procedure:

1. Assure the scene is safe and don BSI.
2. If no known allergies, administer anesthetic eye drops prior to irrigation.
3. Attach Morgan Lens to Morgan Lens Delivery Set or IV tubing.
4. Prime tubing and lens with irrigating solution.
5. Start minimal flow of irrigation solution.
6. Insert lens: Have patient look down, insert lens under upper eyelid.
7. Have patient look up, retract lower lid, drop lens in place.
8. Release lower lid over Morgan Lens.
9. Adjust flow to desired rate.
10. Tape tubing to patient's forehead to prevent accidental removal.
11. Direct and absorb outflow with Medi-Duct, towels, blue pads, or fluid collection device.
12. Irrigate with amount specified in protocol or physician's order (generally continue irrigation until the pH of the eye returns to 7.5 to 8.0). Do not allow flow to stop.
13. Remove lens: Continue flow, have patient look up, retract lower lid
14. Hold position and slide lens out. Terminate flow.

# Procedure: Morgan Lens Irrigation Cont.

15. Wait 5 to 10 minutes and check pH of eye to ensure it remains in acceptable range. Repeat irrigation if necessary until pH stabilizes.

16. Document procedure, noting use of the Morgan Lens, type, amount and strength of topical anesthetic and absence of allergy to medication, type and amount of irrigating solution used, length of time of irrigation, which eye/eyes were irrigated, patient tolerance to procedure, visual acuity (both pre- and post-therapy if available), pH readings (both pre- and post-therapy if available), and any treatment of other injuries or concurrent use of gross decontamination if indicated.

## Skills Maintenance Suggestions:

- Practice procedure for Morgan Lens Irrigation.

## Pearls:

- Mortan, Inc. recommends the use of lactated Ringer's (Hartmann's Solution) for irrigation due to its pH and buffering capacity.
- During insertion, the lens may be rotated slightly to fit more easily into a smaller opening such as a pediatric patient.

# Procedure: Stinger Removal

## Clinical Indications:

- Patients who have been stung or bit by arthropods.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Determine if the stinger still attached to the patient.
3. Remove:

### Bee Sting:

- - Use a scalpel blade to gently scrape the stinger and venom sac from the wound
- - Use a credit card or other type of hard plastic to scrape the stinger and venom sac from the wound
- - \*Do not use tweezers to remove the stinger\*

### Tick Bites:

- Use forceps or tweezers to grasp the tick by the head, as close to the skin as possible and pull straight upward.

4. Clean the wound thoroughly with soap and water.
5. Apply cold packs to the site for pain relief.
6. Follow Protocol “Allergic Reaction M-2” if needed.
7. Consider Protocol “Pain Management Adult G-6” or “Pain Management Pediatric G-7”.

## Skills Maintenance Suggestions:

- Review Stinger Removal procedure and protocol E-1 “Bites & Envenomations”.
- Review signs and symptoms of anaphylaxis caused by a bee sting.

# Procedure: Ventilation - BVM

## Clinical Indications:

- Patients who are in respiratory arrest or need to be ventilated.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Choose the proper mask size to seat the mask from the bridge of the nose to the chin.
3. Position the mask on the patient's face and ensure an adequate seal.
4. Open the patient's airway and hold the mask in place with one hand as you squeeze the bag with the other hand. Allow the bag to re-inflate slowly and completely.

### Intubated patient:

- Remove mask and connect the BVM to the endotracheal tube.

### Patient with tracheostomy tube:

- Remove the mask and attach the BVM to the tracheostomy tube.

### Patient with a stoma:

- With the patient's head in a neutral position, locate and expose the stoma
  - Place the BVM over the stoma and ensure an adequate seal
  - Ventilate the patient
5. Assess for adequate ventilation by observing chest rise.
  6. Auscultate over the lungs to confirm adequate ventilation.
  7. If within your scope of practice, monitor the patient's SpO<sub>2</sub>% level.

## Skills Maintenance Suggestions:

- Practice using a BVM on a simulated mannequin.

## Pearls:

- Be sure to assess the patient's airway prior to ventilating - check for teeth, food, blood, or dental appliances.



# Procedure: Oral Airway

## Clinical Indications:

- Patients who are at risk for airway obstruction due to relaxed upper airway muscles or blockage of the airway by the tongue.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Choose the correct size OPA by measuring from the corner of the patient's mouth to the angle of the mandible.
3. Before inserting the airway, be sure the mouth is clear of secretions by suctioning the airway as needed.
4. Place the oral airway into the mouth with the curved end toward the roof of the mouth.
5. As you are inserting the device and it approaches the posterior pharynx, rotate the device 180°.
6. After the airway has been inserted the flange of the device should rest on the patient's lip

## Skills Maintenance Suggestions:

- Practice measuring and inserting an OPA on a simulated mannequin.

## Pearls:

- Be sure to choose the correct size OPA, an OPA that is too big can cause injury or block the airway.

# Procedure: Nasal Airway

## Clinical Indications:

- Patients who need and open airway with an intact gag reflex.

## Contraindications:

- Suspected fracture to the base of the skull or mid-face.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Choose the correct size NPA by measuring from patient's nostril to the meatus of the ear.
3. Apply lubricant to the NPA.
4. Insert the NPA with the bevel toward the septum.
5. Advance the NPA along the septum horizontally, then rotate 90° to lie in the nasopharynx. The flange should be resting on the flare of the nostril.
6. If you meet resistance, remove the NPA and try inserting in the other nostril.

## Skills Maintenance Suggestions:

- Practice measuring and inserting an NPA on a simulated mannequin.

# Procedure: Blind Insertion Airway Device

## Clinical Indications:

- Inability to adequately ventilate a patient with a Bag Valve Mask.
- Endotracheal intubation is not possible due to patient access or difficult airway.
- Inability to secure an ET tube in a patient when at least one failed intubation attempt has occurred.

## Contraindications:

- Ingestion of caustic substances.
- Patient with intact gag reflex.
- Patient with known esophageal disease.

## Procedure:

1. Preoxygenate the patient.
2. Select the appropriate tube size for the patient.
3. Test that cuffs properly inflate.
4. Lubricate the tube.
5. Open the patient's mouth by using the crossfinger technique or the tongue-jaw lift and position the patient's head.
6. Insert the BIAD according to manufacturer's directions.
7. Confirm placement of the tube with end-tidal CO<sub>2</sub>, colorimetric device, auscultation of lung sounds, etc..
8. Continue ventilating the patient.
9. Secure the tube and note time of placement.

## Skills Maintenance Suggestions:

- Practice using a BIAD on an adult and pediatric mannequin.
- **End-tidal CO<sub>2</sub> is the gold standard for tube placement confirmation.**

A

Blind Inserted Airway  
Device – Adult

E

P

2,3

Blind Inserted Airway  
Device - Pediatric

P

# Procedure: Direct Laryngoscopy

## Clinical Indications:

- Patient who is unable to control their airway.
- Inability to adequately ventilate or oxygenate a patient with a Bag Valve Mask.

## Procedure:

1. Preoxygenate the patient for 2 to 3 minutes with a bag-mask device and 100% oxygen. Consider apneic oxygenation via nasal cannula at 15 L/min.
2. Check, prepare, and assemble your equipment.
3. Place the patient's head in the sniffing position.
4. Insert the blade into the right side of the patient's mouth, and displace the tongue to the left.
5. Gently lift the long axis of the laryngoscope handle until you can visualize the glottic opening and the vocal cords.
6. Insert the ET tube and visualize its entry between the vocal cords.
7. Remove the laryngoscope from the patient's mouth.
8. Remove the stylet from the ET tube.
9. Inflate the distal cuff of the ET tube with 5-10mL of air and detach the syringe from the inflation port.
10. Attach the bag-mask device, ventilate, and auscultate over the apices and bases of both lungs and over the epigastrium to confirm placement.
11. Attach the end-tidal carbon dioxide detector to the ET tube.
12. Confirm placement and then secure the ET tube.
13. Note the tube "length marking" in centimeters.

## Skills Maintenance Suggestions:

- Practice intubation skills on a mannequin.
- Practice utilizing methods of tube placement confirmation.

# Procedure: Nasotracheal Intubation

## Clinical Indications:

- Patient who with impending respiratory failure.
- Patient who is breathing spontaneously but requires definitive airway management.

## Contraindications:

- Apneic patients.
- Head trauma and facial trauma to maxilla or nose.

## Procedure:

1. Preoxygenate the patient for 2 to 3 minutes with a bag-mask device and 100% oxygen.
2. Check, prepare, and assemble you equipment.
3. Place the patient's head in a neutral position and explain the procedure to the patient.
4. Pre-form the ET tube by bending it in a circle.
5. Lubricate the tip of the tube with a water-soluble gel.
6. Perform direct laryngoscopy or utilize bougie.
7. Remove bougie (if used) and remove laryngoscope.
8. Gently insert the ET tube into the most compliant nostril with the bevel facing toward the septum and advance the tube along the nasal floor.
9. Advance the tube through the vocal cords as the patient inhales.
10. Inflate the distal cuff with 5-10mL of air and detach the syringe.
11. Attach an end-tidal carbon dioxide detector to the ET tube.
12. Attach the bag-mask device, ventilate, and auscultate over the apices and bases of both lung and over the epigastrium.
13. After confirming placement, secure the ET tube.

## Pearls:

- Bleeding is the most common complication associated with nasotracheal intubation; this can be reduced by gently inserting the tube into the nostril.
- When performing nasotracheal intubations, use the patient's spontaneous respirations to guide the ET tube into the trachea.

## Skills Maintenance Suggestions:

- Practice intubation skills on a mannequin.
- Practice utilizing methods of tube placement confirmation.

# Procedure: Nasal/Oral Gastric Tube

## Clinical Indications:

- Provides a means for gastric decompression.
- Patient who will need positive-pressure ventilation for an extended period of time.

## Contraindications:

- Use of an NG tube with severe facial injuries.

## Procedure:

### 1. Prepare equipment:

- Select the proper size of tube.
- Measure the tube on the patient – the length of the tube should be the same as the distance from the lips (for OG) or tip of the nose (for NG) to the earlobe, plus the distance from the earlobe to the xiphoid process.
- Place the patient in a supine position.
- Assess patient's gag reflex – if the patient is unresponsive and has a poor or absent gag reflex, perform endotracheal intubation before gastric tube placement.
- In a trauma patient, maintain in-line stabilization of the cervical spine as needed.
- Lubricate the end of the tube.

### 2. Explain the procedure to the patient

#### OG Tube Insertion:

- Position the patient's head in a neutral or flexed position.
- Introduce the tube at the midline, and advance it gently into the oropharynx
- Advance the tube into the stomach

#### NG Tube Insertion:

- Advance the tube gently along the nasal floor.
- Encourage the patient to swallow or drink to facilitate passage of the tube into the esophagus
- Advance the tube into the stomach.

3. To confirm proper placement: auscultate over the epigastrium while injecting 30-50mL of air and/or observe for gastric contents in the tube.

4. Apply suction to the tube to aspirate the stomach contents.

## Pearls:

- For children, use a tube size that is twice the ET tube that child would require. For example, a child who would need a 5.0-mm ET tube needs a 10F OG or NG tube.
- Use with extreme caution in patients with known esophageal disease.

## Skills Maintenance Suggestions:

- Practice inserting NG and OG tubes on a mannequin.

# Procedure: Upper Airway Suction

## Clinical Indications:

- Obstruction of the upper airway (secondary to secretions, blood, or any other substance) in a patient who cannot maintain or keep the airway clear.

## Procedure:

1. Ensure suction device is in proper working order.
2. Preoxygenate the patient.
3. Measure the catheter from the corner of the mouth to the earlobe.
4. Attach catheter to the suction device and be sure it is assembled properly
5. Before applying suction, open the patient's mouth by using the crossfinger technique or the tongue-jaw lift, and insert the tip of the catheter to the predetermined depth. \*Do not suction while inserting the catheter\*
6. Apply suction in a circular motion while removing the catheter.
7. Use the suction device to remove any secretions, blood, or other substance.
8. Record the time and result of the suctioning in the patient care report (PCR).
9. Insert an airway device and ventilate the patient as needed.

## Pearls;

- Suctioning Time limits:
  - Adult – 15 seconds
  - Child – 10 seconds
  - Infant – 5 seconds
- Mechanical or vacuum-powered suction should be capable of generating a vacuum of 300mmHg.
- Be sure not to stimulate the back of the throat in young children and infants as the vagal stimuli can cause the heart rate to drop.

## Skills Maintenance Suggestions:

- Perform suctioning on mannequin with agency equipment on a periodic basis.

# Procedure: Tracheal Suctioning

## Clinical Indications:

- Intubated patient who's secretions are interfering with ventilation.

## Procedure:

1. Check, prepare, and assemble your equipment.
2. Preoxygenate the patient for 2-3 minutes.
3. Lubricate the suction catheter.
4. Detach the bag-mask device gently insert the catheter into the ET tube until resistance is felt.  
\*Do not suction while inserting the catheter\*
5. Suction in a rotating motion while withdrawing the catheter. Monitor the patient's cardiac rhythm and oxygen saturation during the procedure.
6. Reattach the bag-mask device and resume ventilation and oxygenation.

## Pearls:

- Suction for no more than 15 seconds.

## Skills Maintenance Suggestions:

- Practice intubating and suctioning techniques on a mannequin.



# Procedure: Percutaneous Needle Cricothyrotomy

## Clinical Indications:

- Inability to ventilate the patient by other, less invasive techniques.
- Massive maxillofacial trauma.
- Inability to open the patient's mouth.
- Uncontrolled oropharyngeal bleeding.

## Procedure:

1. Check, prepare, and assemble your equipment.
2. Attach a 14- to 16-gauge IV catheter to a 10-mL syringe containing approximately 3 mL of sterile saline or water.
3. Place the patient's head in a neutral position and locate the cricothyroid membrane .
4. Aspirate with the syringe to determine correct catheter placement.
5. Slide the catheter off the needle until the hub of the catheter is flush with the patient's skin.
6. Place the syringe and needle in a sharps container.
7. Attach BVM to the catheter and begin ventilating patient .
8. Auscultate the apices and bases of both lungs and over the epigastrium to confirm correct catheter placement.
9. Secure the catheter with a 4"x 4" gauze pad and tape
10. Continue ventilations while frequently reassessing for adequate oxygenation and any potential complications.
11. Place patient on capnography.

## Skills Maintenance Suggestions:

- Practice performing a needle cricothyrotomy on a mannequin.

# Procedure: Surgical Cricothyrotomy

## Clinical Indications:

- Inability to ventilate the patient by other, less invasive techniques.
- Massive maxillofacial trauma.
- Severe foreign body upper airway obstructions that cannot be extracted with Magill forceps.

## Procedure:

1. Check, prepare, and assemble your equipment.
2. Place the patient's head in a neutral position and locate the cricothyroid membrane.
3. Cleanse the area with an iodine-containing solution.
4. Stabilize the larynx and make a 1- to 2-cm vertical incision over the cricothyroid membrane.
5. Puncture the cricothyroid membrane and make a horizontal cut 1 cm in each direction from the midline.
6. Spread the incision apart with curved hemostats. The blunt end of the scalpel can also be used to facilitate passing the ET tube.
7. Insert the tube into the trachea.
8. Inflate the distal cuff of the tube.
9. Attach an ETCO<sub>2</sub> detector in between the tube and the bag-mask device.
10. Ventilate the patient and confirm correct tube placement by auscultating the apices and bases of both lungs and over the epigastrium.
11. Secure the tube with a commercial device or tape. Reconfirm correct tube placement and resume ventilations at the appropriate rate.

## Skills Maintenance Suggestions:

- Practice performing a surgical cricothyrotomy on a mannequin or cadaver if available.

# Procedure: Childbirth - Normal

## Clinical Indications:

- Active labor, crowning confirmed by visual inspection.

## Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Create a clean field around the vaginal opening with clean towels.
3. Prepare for delivery:
  - Have the mother lie in a semi-Fowler's or Trendelenburg position.
  - Elevate buttocks with pillows or blankets.
  - If another position is preferred, attempt to accommodate the mother.
4. Support the infant's head as it delivers. Apply gentle pressure on the baby's head with the palm of your gloved hand to prevent an explosive delivery.
5. As the head begins to deliver, the head will turn. Support the head as it turns; but DO NOT attempt to pull the baby from the vagina. If the amniotic sac remains intact after the head is delivered, tear the sac with your fingers or forceps.
6. Check for a nuchal cord. If there is a nuchal cord, try to slip it gently over the baby's head. If this fails, and if the cord is wrapped tightly around the neck, place umbilical clamps 2" apart and cut the cord between the clamps.
7. Clear the baby's airway by suctioning with a bulb syringe. Suction the mouth first and then the nose.
8. Gently guide the baby's head downward to allow delivery of the shoulder.
9. Gently guide the head upward to allow delivery of the other shoulder.
10. Once shoulders are delivered, the baby's trunk and legs will follow rapidly. Be prepared to grasp and support the newborn.
11. Clamp the umbilical cord about 8" from the infant's navel, using 2 clamps about 2" apart. Cut the cord between the two clamps.
12. Wipe any blood or mucus from the baby's nose and mouth with sterile gauze. Vigorously dry the baby with sterile, dry towels.
13. Record APGAR scores at 1 and 5 minutes.
14. The placenta will deliver spontaneously, usually within 5-25 minutes after delivery of the infant. DO NOT force the placenta to deliver or pull on the umbilical cord.
15. If mother and baby's condition allow, massage the uterus and/or initiate breast feeding to stimulate uterine contractions.
16. Expedite transport following the delivery of the baby. Do not delay transport for delivery of the placenta.

	Description	Score of 0	Score of 1	Score of 2
Appearance	Skin color/Complexion	Skin color is pale blue	Body is pink and extremities are blue	Entire body is pink
Pulse	Pulse rate is evaluated by stethoscope	Absent	Less than 100 beats per minute	Greater than 100 beats per minute
Grimace	Reflex irritability is a response to stimulation such as a mild pinch	No reaction	Grimace/feeble cry when stimulated	Grimacing and a cough, sneeze or vigorous cry. Cry or pull away when stimulated
Activity	Muscle tone	Muscle loose and floppy	Some muscle tone	Active motion, flexed arms and legs that resist extension
Respiration	Breathing effort	Not breathing	Respirations slow or irregular, weak, gasping	Strong, lusty cry

# Procedure: Childbirth - Complicated

## Clinical Indications:

- If complications of delivery are identified, follow the following steps

## Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Apply supplemental oxygen to the mother.

## Breech Presentation:

- If head fails to deliver, place gloved hand into vagina with your palm toward the baby's face to create an open airway. Form a "V" with your fingers on either side of the baby's nose and push the vaginal wall away from the baby's face until the head is delivered.
- Provide rapid transport as soon as possible.

## Prolapsed Umbilical Cord:

- Position the mother supine with her hips elevated as much as possible.
- Instruct the mother to breathe with each contraction to prevent her from bearing down.
- With two fingers of a gloved hand, gently push the baby (not the cord) back into the vagina to prevent the presenting part from pressing on the cord.
- While one provider maintains pressure on the presenting part, another provider will cover the exposed portion of the cord with dressings moistened in normal saline.
- Provide rapid transport as soon as possible.

## Shoulder Dystocia:

- Hyperflex the mother's hips to severe supine knee-chest position.
- Apply firm suprapubic pressure to attempt to dislodge shoulder.
- Provide rapid transport as soon as possible.

## Uterine Inversion:

- Keep the patient lying down.
- If the placenta is still attached to the uterus DO NOT attempt to remove it.
- Carefully monitor vital signs and treat for shock.
- Make one attempt to replace the uterus by pushing the uterine fundus up through the vaginal canal by applying pressure with the fingertips and the palms of a gloved hand.
- If this procedure fails, cover protruding tissues with moist sterile dressings.
- Provide rapid transport as soon as possible.

## Premature and Small Infants:

- Keep the baby warm and dry thoroughly, wrap in dry blanket or foil bunting, place baby on mother's chest.
- Keep the ambulance interior warm.
- Maintain the baby's airway.
- Prevent bleeding from the umbilical cord.
- Administer supplemental oxygen to the newborn.
- Prevent contamination.

# Procedure: Childbirth – Complicated cont.

## Postpartum Hemorrhage:

- Continue uterine massage.
- Encourage the mother to breast feed.
- Provide rapid transport as soon as possible.
- Manage external bleeding from perineal tears with firm pressure. Do not attempt to pack the vagina with any form of dressing.

## Pearls:

- ***Alert the hospital, as soon as possible, so that they can have the appropriate personnel on hand when you arrive.***
- Recognize serious conditions associated with hemorrhage during pregnancy even when hemorrhage or pregnancy is not apparent, e.g. ectopic pregnancy, abruption placenta, placenta previa.
- Prolonged, non-progressive labor distresses the fetus and mother. Be sure to reassess mother's vital signs often.
- Average blood loss during labor is ~150mL of blood. When blood loss exceeds 500mL of blood in the first 24 hours it is considered postpartum hemorrhage.

# Procedure: Physical Restraints

## Page 1



### Clinical Indication;

Patients of all ages who are exhibiting agitated, violent, or uncooperative behavior or who are a danger to self or others

### Procedure;

#### 1. Patient Rapport:

- Attempt verbal reassurance and calm patient prior to use of chemical and/or physical restraints
- Engage family members/loved ones to encourage patient cooperation if their presence does not exacerbate the patient's agitation
- Continued verbal reassurance and calming of patient following chemical/physical restraints

#### 2. Chemical Restraints

#### 3. Physical Restraints

- Body
  - i. Stretcher straps should be applied as the standard procedure for all patients during transport
  - ii. Sheets can be used as additional stretcher straps if necessary
  - iii. Stretcher straps and sheets should never restrict the patient's chest wall motion
  - iv. Placement of stretcher straps or sheets (to prevent flexion/extension of torso, hips, legs) around:
    1. the lower lumbar region, below the buttocks, or
    2. the thighs, knees, and legs
- Extremities
  - i. Soft or leather restraint devices should not require a key to release them
  - ii. Restrain all four extremities to maximize safety for patient, staff, and others
  - iii. Restrain all extremities to the stationary frame of the stretcher
  - iv. Multiple knots should not be used to secure the restraint device

### Patient Safety Considerations;

1. Don personal protective equipment (PPE)
2. Do not attempt to enter or control a scene where physical violence or weapons are present
3. Dispatch law enforcement immediately to secure and maintain scene safety
4. Urgent de-escalation of patient agitation is imperative in the interest of patient safety as well as for EMS personnel and others on scene
5. Uncontrolled or poorly controlled patient agitation and physical violence can place the patient at risk for sudden cardiopulmonary arrest due to the following etiologies:
  - a. Excited delirium/exhaustive mania: A postmortem diagnosis of exclusion for sudden death thought to result from metabolic acidosis (most likely from lactate) stemming from physical agitation or physical control measures (including TASER®s) and potentially exacerbated by stimulant drugs (e.g. cocaine) or alcohol withdrawal
  - b. Positional asphyxia: Sudden death from restriction of chest wall movement and/or obstruction of the airway secondary to restricted head or neck positioning resulting in hypercarbia and/or hypoxia

# Procedure: Physical Restraints

## Page 2



### Patient Safety Considerations (continued);

6. Apply a cardiac monitor as soon as possible, particularly when chemical restraints have been administered
7. All patients who have received chemical restraints must be monitored closely for the development of oversedation. Utilize capnography if available
8. Patients who have received antipsychotic medication as a chemical restraint must be monitored closely for the potential development of :
  - a. Dystonic reactions (this can easily be treated with diphenhydramine/benzodiazepines)
  - b. Mydriasis (dilated pupils)
  - c. Ataxia
  - d. Cessation of perspiration
  - e. Dry mucous membranes
  - f. Cardiac arrhythmias (particularly QT prolongation)
9. Placement of stretcher in sitting position prevents aspiration and reduces the patient's physical strength by placing the abdominal muscles in the flexed position
10. Patients who are more physically uncooperative should be physically restrained in the lateral decubitus position (one arm above the head and the other arm below the waist), rather than the prone, to avoid airway compromise
11. Patients should never be transported while hobbled, "hog-tied", or restrained in a prone position with hands and feet behind the back
12. Patients should never be transported while "sandwiched" between backboards or mattresses

### Pertinent Assessment Findings;

1. Airway patency
2. Respiratory status with pulse oximetry and/or capnography
3. Circulatory status with frequent blood pressure measurements
4. Mental status and trends in level of patient cooperation
5. Cardiac status, especially if the patient has received chemical restraints
6. Extremity perfusion with capillary refill in patients in physical restraints

### Skills Maintenance Suggestions;

- Review the physical restraints procedure on a periodic basis.

# Procedure: Taser Barb Removal

## Clinical Indications:

- Patient received either the direct contact discharge or the distance two barbed dart discharge of the conducted electrical weapon.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Before the removal of the barbed dart make sure the cartridge has been removed from the conducted electrical weapon.
3. To remove, grasp barb firmly with one hand and pull. Remove one dart at a time.  
  
\*Do not remove dart if barb is located in the eye, face, neck, breast, or groin area.
4. Reassess the patient, to include EKG or 12-lead.
5. Follow Protocol "Behavioral M-5" if needed.

## Skills Maintenance Suggestions:

- Review Taser Barb removal procedures.

## Pearls:

- Patient may have sustained fall or physical confrontation trauma



# Procedure: CPR

## Clinical Indications:

- Patient who is not breathing and does not have a pulse.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Position the patient supine and on a hard flat surface.
3. Place the heel of one hand on the center of the chest (lower half of the sternum). Place the heel of your other hand over the first hand.
4. With your arms straight, lock your elbow and position your shoulders directly over your hands. Be sure to allow full chest recoil between compressions.
  - Compress the chest at least 2 inches in adults and at least one third the dimension of the chest in children and infants.
5. Use a CPR ratio of 30 compressions to 2 breaths for adults.
  - 15 compressions to 2 breaths for 2-rescuer CPR on a child or infant
6. Minimize interruptions in chest compressions to less than 10 seconds.
7. Open the patient's airway and ventilate. Avoid excessive ventilation by looking for minimal chest rise at a rate of <12 breaths/min.
8. Place AED/monitor on patient as soon as possible.
9. Continue chest compressions until ROSC or termination of resuscitative efforts. Rotate compressors every 2 minutes.

## Skills Maintenance Suggestions:

- Practice CPR on a CPR mannequin.

## Pearls:

- Application of a mechanical CPR device should not delay the initiation of CPR or delay chest compressions.
- Airway management should not interrupt CPR. High quality CPR and defibrillation are the priority in resuscitation.

# Procedure: Automated Defibrillation

## Clinical Indications:

- Patient who is not breathing and does not have a pulse.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Attach the two self-adhesive electrode pads firmly to the patient's chest – the sternal pad at the junction of the right clavicle and upper border of the sternum; the apex pad along the left lower rib margin at the anterior axillary line.
3. Turn on the AED.
4. Stop CPR, and instruct everyone to get clear of the patient.
5. AED assess patient's heart rhythm (for 6 to 20 seconds) and determines whether it is a "shockable" rhythm.
6. If the AED detects a shockable rhythm, it automatically starts charging, which takes 5 to 10 seconds.
7. Defibrillating shocks are then delivered (automatically or by the rescuer, depending on the AED).

## Skills Maintenance Suggestions:

- Practice CPR and utilizing an AED with a CPR mannequin and an AED trainer.
- Train with the manufacture's instructions for the AED that your agency carries.

## Pearls:

- Be sure to minimize interruptions of chest compressions to less than 10 seconds.

# Procedure: Manual Defibrillation

## Clinical Indications:

- Patient who is not breathing and does not have a pulse.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Turn the power to the monitor on, and make sure the synchronize switch is off.
3. Set the energy level at 200 Joules (biphasic) and 360 Joules (monophasic).
4. Lubricate the paddles and position them on the chest or place the hands-free pads on the chest.
5. Charge the paddles.
6. Instruct everyone to get clear of the patient.
7. Discharge the defibrillator.
8. Resume CPR and recheck the rhythm in 2 minutes.

## Skills Maintenance Suggestions:

- Train with the manufacturer's instructions for the monitor that your agency carries.

## Pearls:

- Be sure to minimize interruptions of chest compressions to less than 10 seconds.

# Procedure: Transcutaneous Pacing

## Clinical Indications:

- Patient with bradyarrhythmias or heart blocks.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Apply the pads to the patients and explain the procedure to them.
3. Consider sedation for the conscious patient.
4. Apply pads to the patient in sternum/apex or anterior/posterior placement. Ensure the monitor is set to limb leads.
5. Turn on the pacing function and set the pacing rate between 60 and 80.
6. Set the milliamps reading to "0"
7. Evaluate the EKG to confirm the pacemaker is recognizing QRS complexes.
8. Beginning at 20mA, increase the amperage in increments of 20 mA until electrical capture has been achieved (pacer spike followed by a wide QRS).
9. Check the patient's pulse for mechanical capture and assess patient's blood pressure.

## Skills Maintenance Suggestions:

- Train with the manufacture's instructions for the monitor that your agency carries.

# Procedure: Cardiac Monitor

## Clinical Indications:

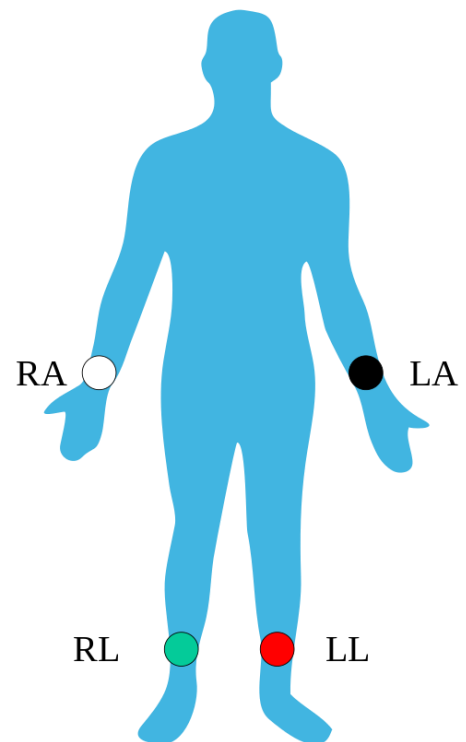
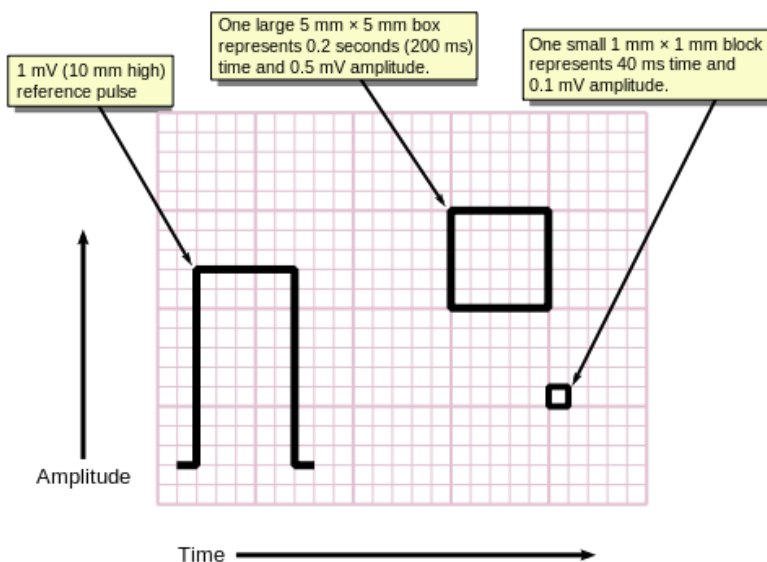
- All unconscious patients or syncopal patient's.
- Patient's with chest pain or dyspnea.
- Patient's with abnormal vital signs.
- Other reasons as indicated by the provider.

## Procedure:

1. Explain the procedure to the patient.
2. Skin may need to be dried, cleaned or hair may need to be shaved to ensure the electrodes will adhere.
3. Attach the electrodes to the monitoring leads.
4. Electrodes are placed distally on limbs.
  - LA (black) and RA (white) are placed proximally on the arms.
  - LL (red) and RL (green) are placed proximally on the legs.
5. If the strip shows any artifact, verify that all electrodes are firmly applied to the skin and the monitor cable is plugged in correctly.

## Skills Maintenance Suggestions:

- Practice reading ECG rhythms on a regular basis.



# Procedure: Vagal Maneuvers

## Clinical Indications:

- Narrow complex tachycardia.

## Procedure:

1. Explain the procedure to the patient. Patient should have continuous EKG monitoring and IV access.
2. Instruct the patient to inhale and hold their breath and bear down as if to have a bowel movement and hold this position for 20-30 seconds or blow forcefully through a straw for as long as possible.
3. Monitor rhythm continuously.
4. Stop maneuver if:
  - Patient becomes confused.
  - HR drops below 100 BPM.
  - Asystole occurs.
5. Document any changes noted.

## Pearls:

- Vagal maneuvers shall not delay in synchronized cardioversion when needed.

## Skills Maintenance Suggestions:

- Review protocols for Tachycardia with a Pulse, Adult and Pediatric (C-8 and C-9).

# Procedure: Peripheral IV

## Clinical Indications:

- Patient who needs fluid resuscitation.
- Patient who needs medication.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Spike a bag of IV fluid, fill the drip chamber, and flush or “bleed” the tubing to remove and air bubbles by opening the roller clamp.
3. Tear a piece of tape or have Tegaderm available.
4. Apply the constricting band above the intended IV site.
5. Palpate a suitable vein.
6. Clean the area using aseptic technique. Use an alcohol pad to cleanse in a circular motion, from the inside out. Use a second alcohol pad to wipe straight down the center.
7. Choose the appropriate sized catheter and examine it for any imperfections.
8. Insert the catheter at a approximately 45° angle with the bevel up while applying distal traction with the other hand.
9. Observe for a “flash” as blood enters the catheter.
10. Occlude the catheter to prevent blood leaking while removing the stylet.
11. Immediately dispose of all sharps in the proper container.
12. Attach the prepared IV line or IV lock.
13. Remove the constricting band.
14. Open the IV line or flush the lock to ensure fluid is flowing and the IV is patent. Observe for swelling or infiltration around the IV site.
15. Secure the catheter with tape or Tegaderm.
16. Secure the IV tubing/lock and monitor patient.

## Skills Maintenance Suggestions:

- Practice and review steps for initiating IV.

## Pearls:

- You should start distally and work your way up the patient’s extremity when starting an IV.

# Procedure: IO Infusion, Adult

## Clinical Indications:

- Patient who needs infusion therapy or medication administration urgently.
- Unable to obtain peripheral IV and patient has an altered mental status (GCS of 8 or less), respiratory compromise, hemodynamically unstable (BP <90mmHg), or in cardiopulmonary arrest.

## Contraindications:

- Fracture of the tibia, femur, or humerus.
- Previous orthopedic procedure (knee or shoulder replacement) or IO within 24 hours.
- Infection or burn.
- Inability to locate landmark due to:
  - Significant edema
  - Excessive tissue

## Procedure:

1. Assure the scene is safe and don BSI.
2. Identify an appropriate insertion site.
3. Cleanse the skin using aseptic technique.
4. Determine the appropriate needle length.
5. Perform IO procedure based on manufacturer's recommendations.
6. Attach the syringe and extension set to the IO needle. Pull back on the syringe to aspirate blood or marrow. Note that you may not get any return.
7. For a conscious patient, administer 20-40mg of LIDOCAINE 2% over 30-45 seconds, wait 20-60 seconds then flush with normal saline.
8. Connect the administration set and adjust the flow rate.
9. Secure the needle with tape and bulky dressings.

## Skills Maintenance Suggestions:

- Practice and review steps for initiating an IO.
- Understand the possible complications of an IO.
- Review manufacturers directions for the IO device your agency carries.

## Pearls:

- Fluid does not flow as rapidly through an IO and a infuser device needs to be utilized.



# Procedure: IO Infusion, Pediatric

## Clinical Indications:

- Pediatric patient who needs infusion therapy or medication administration urgently.
- Unable to obtain peripheral IV and patient has an altered mental status (GCS of 8 or less), respiratory compromise, hemodynamically unstable (BP <90mmHg), or in cardiopulmonary arrest.

## Contraindications:

- Fracture of the tibia, femur, or humerus.
- Previous orthopedic procedure (knee or shoulder replacement) or IO within 24 hours
- Infection or burn.
- Inability to locate landmark due to:
  - Significant edema
  - Excessive tissue

## Procedure:

1. Assure the scene is safe and don BSI.
2. Identify an appropriate insertion site (distal or proximal tibia).
3. Cleanse the skin using aseptic technique.
4. Determine the appropriate needle length for a pediatric patient.
5. Perform IO procedure based on manufacturer's recommendations.
6. Attach the syringe and extension set to the IO needle. Pull back on the syringe to aspirate blood or marrow. Note that you may not get any return.
7. For a conscious pediatric patient, administer 0.5mg/kg of LIDOCAINE 2% over 30-45 seconds, wait 20-60 seconds then flush with normal saline.
8. Connect the administration set and adjust the flow rate.
9. Secure the needle with tape and bulky dressings.

## Skills Maintenance Suggestions:

- Practice and review steps for initiating an IO.
- Understand the possible complications of an IO.
- Review manufacturers directions for the IO device your agency carries.

## Pearls:

- Fluid does not flow as rapidly through an IO and a infuser device needs to be utilized.

# Procedure: Intraosseous Lidocaine



**Use only 2% concentration Intravenous Lidocaine that is preservative free and does not contain epinephrine**

## **Recommended anesthetic for adult patients responsive to pain from IO fluid infusion:**

- Observe recommended cautions/contraindications to using 2% preservative and epinephrine free lidocaine (intravenous lidocaine)
- Prepare 40mg dose of lidocaine dose for injection by drawing up 2ml of 2% solution in the syringe
- Administer through EZ-Connect extension set or closest tubing port
- *Note that the priming volume of the EZ-Connect is approximately 1.0mL*
- Slowly infuse 40mg lidocaine IO over 2 minutes then flush tubing with 1-2 ml saline
- Allow lidocaine to dwell in IO space 1 minute
- Flush with 5 to 10mL of normal saline
- Prepare 20mg dose of lidocaine by drawing up 1ml in syringe
- Slowly administer the additional 20mg of lidocaine IO over 1 minute followed by a 1-2 ml saline flush
- Allow lidocaine to dwell in the IO space for 60 seconds then infuse IV fluids
- Consider systemic pain control for patients not responding to IO lidocaine

## **Recommended anesthetic for infant/child responsive to pain:**

- Observe recommended cautions/contraindications to using 2% preservative and epinephrine free lidocaine (intravenous lidocaine)
- Use Broselow Tape or Pedi-Wheel to estimate patient weight
- Prepare initial dose of 0.5mg/kg, not to exceed 40mg by drawing up the appropriate amount in a syringe. 1ml = 20mg
- Administer through EZ-Connect extension set or closest tubing port
- *Note that the priming volume of the EZ-Connect is approximately 1.0mL*
- For small doses of lidocaine, consider administering by carefully attaching syringe directly to needle hub (prime EZ-Connect with normal saline)
- Slowly infuse lidocaine over 2 minutes followed by 1-2ml tubing flush with normal saline
- Allow lidocaine to dwell in IO space 1 minute
- Flush with 2-5 mL of normal saline
- Prepare and administer subsequent lidocaine 0.25ml/Kg IO over 1 minute followed by 1-2ml tubing flush with normal saline or begin fluid infusion
- Consider systemic pain control for patients not responding to IO lidocaine

## **Skills Maintenance Suggestions;**

- Practice complete drug dosage calculations and IO drug administration procedure on appropriate simulated sites on a periodic basis.

# Procedure: External Jugular IV

## Clinical Indications:

- Patient who needs fluid therapy.
- Patient who needs medication.
- Unable to initiate IV in a peripheral vein.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Spike a bag of IV fluid, fill the drip chamber and flush or “bleed” the tubing to remove and air bubbles by opening the roller clamp.
3. Tear a piece of tape or have Tegaderm available.
4. Apply the constricting band above the intended IV site.
5. Place the patient in a supine position, turn the patient's head to the side opposite the intended venipuncture site.
6. Locate and palpate the external jugular vein.
7. Cleanse the site.
8. Align the catheter in the direction of the vein, with the point aimed toward the shoulder.
9. Make the puncture midway between the angle of the jaw and the midclavicular line.
10. Observe for a “flash” as blood enters the catheter.
11. Occlude the catheter to prevent blood leaking while removing the stylet.
12. Immediately dispose of all sharps in the proper container.
13. Attach the prepared IV line or IV lock.
14. Open the IV line or flush the lock to ensure fluid is flowing and the IV is patent. Observe for swelling or infiltration around the IV site.
15. Secure the catheter with tape or Tegaderm.
16. Secure the IV tubing/lock and monitor patient.

## Skills Maintenance Suggestions:

- Practice and review steps for initiating an external jugular IV.

# Procedure: Cooling Measures

## Clinical Indications:

- Patients suffering from heat illness.

## Procedure:

Monitor cardiac rhythm, vital signs, temperature, and end-tidal carbon dioxide.

### Heat Cramps

1. Remove the patient to a cool environment.
2. If the patient is not nauseated, encourage to drink a diluted sports drink.
3. If patient is nauseated (and if it's within your scope of practice) administer normal saline via IV.

### Heat Exhaustion

1. Remove the patient to a cool environment.
2. Spray, sponge, or drip the patient with tepid water and fan gently.
4. Oral hydration with sports drinks and water may be appropriate.

### Heat Stroke

1. Remove the patient to a cool environment.
2. Remove the patient's clothing.
3. Spray the patient with tepid water and fan constantly.
4. Apply ice packs to the patient's neck, groin, and axillae.
5. If within your scope of practice – start an IV line, give normal saline.
6. Check blood sugar level.

## Skills Maintenance Suggestions:

- Practice and review steps for initiating cooling methods.

# Procedure: Targeted Temperature Management

## Clinical Indications:

- Return of spontaneous circulation (ROSC) patient that remains unconscious.

## Contraindication:

- Conscious patient.
- Pregnant patient.
- Pre-existing hypothermia.

## Procedure:

1. Assure the scene is safe and don BSI.
2. Secure and maintain airway, administer oxygen and provide ventilatory assistance as required. If the patient is intubated, ensure adequate ventilation to maintain waveform capnography between 35-45mmHg
3. Initiate cardiac monitoring, document a rhythm strip, and acquire and interpret a 12-lead.
4. Cool the patient externally, by applying ice packs to the neck, groin, and axilla.
5. Initiate IV and infuse chilled Normal Saline.
6. Patient should be cooled to a target temperature of 90°-96° F.

## Skills Maintenance Suggestions:

- Practice and review steps for Targeted Temperature Management

## Pearls:

- **External cooling is preferred over a rapid infusion of chilled saline.**