Suggested Protocol Changes for the September 2022 MCB Meeting

Allergic Reaction/Anaphylaxis – Adult

- Moved Albuterol up to EMT

Spinal Injuries – Adult & Pediatric

In General:

- Added "Adult & Pediatric" to title
- Removed the "Purpose" statement
- Removed Red Flag
- Word smithing

EMT/AEMT/Paramedic Standing Orders:

- Moved extrication and apply adequate padding bullets below applying a collar bullets.

Airway Management Protocol – Adult
Airway Management Protocol – Pediatric

- Bullets were rearranged and/or added to both Adult & Pediatric to better align the two

Endotracheal Tube Introducer "Bougie"

- Added pediatrics

Indications:

- Removed bullet saying unable to fully visualize vocal cords

Limitations

- Changed the wording "should not" to "cannot"
- Added a bullet for pediatric

Procedures:

- Word smithed bullets 3, 5 & 6
- Moved bullet 7 up from 9

Tracheostomy Care

EMT/AEMT Standing Care – Procedure:

- 3rd bullet added "humidified if available" referencing oxygen

12-Lead Acquisition

Indications:

- In ROSC bullet added "at least 8 minutes post ROSC"

Gastric Tube Insertion

- No changes

Intraosseous Access

- General word smithing of redundancies and saline reference to fluids

Equipment:

- Primed IV tubing bullet added "for alert patients with 2% lidocaine (preservative free)
- Changed 10 mL syringe with 0.9% NaCL to IV flush
- Removed "1 vial" in lidocaine bullet
- Removed 5 mL in syringe bullet

Approved sites:

- Removed the whole section

Procedure:

- Added to first bullet, “at sites where the provider has been trained.”
- Bullet 1 removed (to lay patient supine)
- Bullet 3 changed “prep the site” to “cleanse the site”
- Bullet 7 removed reference to IV pumps

Quantitative Waveform Capnography

- No changes

Taser

- Removed the protocol and added the removal procedure to Policy Custody protocol

Police Custody

Tasers® (Conductive Electrical Weapon):

- Removed reference to Tasers Procedure
- Added Procedure for Removal

Vascular Access Via Central Catheter

Recommend developing an online module

Procedure for implanted catheter (Port-a-Cath, P.A.S. port, Medi-port):

- Bullet 10 expanded on why having the patient cough may help.
- Bullet 10 added another sub-bullet to have the patient lift their arms.

2.2A Anaphylaxis/Allergic Reaction Adult DRAFT

Medical Protocol 2.2A

EMT STANDING ORDERS

E

- Routine Patient Care.
- For anaphylaxis, administer: (anterolateral thigh preferred administration site)
  - Adult epinephrine autoinjector 0.3 mg IM, **OR**
  - Epinephrine 1mg/1mL: Administer 0.3 mg (0.3 mL) IM*.
  - If signs and symptoms do not resolve may repeat in 5 minutes.
    - For additional dosing, contact **Medical Control**.

***EMTs must have completed the Ready, Check & Inject training, found at: https://nhoodle.nh.gov/ola/course/index.php?categoryid=41*

Moved Albuterol up to EMT

- For respiratory symptoms / wheezing consider albuterol 2.5mg via nebulizer. Repeat albuterol 2.5 mg, every 5 minutes (4 doses total) via nebulizer.

ADVANCED EMT STANDING ORDERS

A

- For anaphylaxis:
  - Repeat epinephrine every 5 minutes until signs and symptoms resolve
  - For signs of shock consider fluid per Shock – Non-Traumatic Protocol 2.19.

PARAMEDIC STANDING ORDERS

P

- After epinephrine has been administered or for isolated skin symptoms of allergic reaction consider:
  - Diphenhydramine 25 – 50 mg ~~IM~~/IV/IM/PO.
- For anaphylaxis refractory to 3 or more doses of IM epinephrine, (e.g., persistent hemodynamic compromise, bronchospasm), consider:
  - Epinephrine by push dose (dilute boluses) prepare 10 mcg/mL by adding 1 mL 0.1 mg/mL epinephrine to 9 mL normal saline, then administer 10 – 20 mcg boluses (1 – 2 mL) every 2 minutes. Switch to infusion as soon as practical. **AND/OR**
  - Epinephrine infusion 2 - 10 micrograms/minute until symptoms resolve, pump required, see Drip Rate Reference Appendix 5

EMT/ADVANCED EMT EXTENDED CARE ORDERS

- Diphenhydramine 25 – 50 mg PO. May repeat every 4-6 hours as needed; maximum dose of 300 mg in 24 hours.

PARAMEDIC EXTENDED CARE ORDERS

X

- Dexamethasone 10 mg IV/IM/PO **OR**
- Methylprednisolone 125 mg IV/IM **OR**
- Prednisone 60 mg by mouth.
- Famotidine 20 mg IV/IM/PO
- ~~Cimetidine (need dose)~~

CAUTION: Epinephrine is available in different routes and concentrations. Providers are advised to re-check the dosing and concentration prior to administration.

In anaphylaxis, do not delay epinephrine administer for second-line medications such as diphenhydramine.

PEARLS:
Anaphylaxis: Potential allergen exposure AND any two of the following:

- Angioedema: facial/lip/tongue swelling, throat tightening, voice change.
- Breathing: shortness of breath, wheeze, stridor, cyanosis.
- Poor perfusion: hypotension, altered mental status, syncope, delayed capillary refill
- Skin: Hives, itching, extremity swelling, erythema.
- Gastrointestinal: vomiting, abdominal pain, diarrhea.

4.7 Spinal Trauma Adult & Pediatric

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

~~PURPOSE~~: ~~This protocol provides guidance regarding the assessment and care of patients who have a possible spinal injury.~~

Patients who have experienced a mechanism of spinal injury (esp. high risk mechanisms. See Red Flag Box.) require spinal motion restriction (as described further on) and protection of the injury site if they exhibit:

- Midline spinal pain or tenderness with palpation.
- Abnormal (i.e. not baseline) neurological function or motor strength in any extremity.
- Numbness or tingling (paresthesia).
- Sensation is not intact and symmetrical (or baseline for patient).
- Cervical flexion, extension and/or rotation elicits midline spinal pain.

OR

If they cannot competently participate in the assessment due to one of the following:

- Altered mental status (e.g., dementia, acute or preexisting brain injury, developmental delay, psychosis).
- Alcohol or drug intoxication.
- Unable to participate in assessment (e.g., distracted by significant injuries to self or others).
- Insurmountable communication barriers (e.g., deafness, or hard of hearing, language barrier).

Patients without any of the above findings should generally be transported without the use of a cervical collar or other means to restrict spinal motion. Utilize spinal motion restriction only where, in the professional judgment of the provider, the patient is at high risk for spinal injury as described above ~~or with clear clinical indications of injury (e.g., midline spinal pain or deformity of the spine).~~

~~Long backboards do not have a role for patients being transported between facilities. If the sending facility has the patient on a long backboard or is asking EMS to use a long backboard for transport, EMS providers should discuss not using a long backboard with the sending facility physician before transporting a patient. If a long backboard is used, it should be padded to minimize patient discomfort.~~

PEARLS:

- Secondary injury to the spine often arises from increased pressure (e.g. swelling, edema, hemorrhage) or from hypoperfusion or hypoxia (e.g., vascular injury). While the optimal treatment for secondary injury has not been established, providers should protect the injury site. Protecting the injury site from pressure may be as important as reducing spinal movement.
- In some circumstances, extrication of a patient using traditional spinal immobilization techniques may result in greater spinal movement or may dangerously delay extrication.
- Patients with penetrating trauma **DO NOT** require spinal motion restriction. All patients who have suffered possible spinal trauma should be handled gently and spinal motion should be minimized.
- Even with neurologic deficits caused ~~by transection~~ injury to of the spinal cord, additional movement will not worsen an already catastrophic injury. Emphasis should be on airway and breathing management, treatment of shock, and rapid transport to a Level 1 or 2 trauma center.
- Caution should be exercised in older patients (e.g., 65 years or older) and in very young patients (e.g., less than 3 years of age), as spinal assessment may be less sensitive in discerning spinal fractures in these populations.

Protocol Continues

Spinal Trauma
Adult & Pediatric

4.7

Protocol Continues

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

- Routine Patient Care.
- Maintain manual in-line stabilization during assessment.
- Minimize spinal movement during assessment and extrication.

If patient requires spinal motion restriction:

- Apply a rigid cervical collar.
  - If collar does not fit properly or patient poorly tolerates collar (e.g., due to anxiety, shortness of breath, torticollis), apply soft collar, towel roll and/or padding.

Moved down below applying collar

- Self-extrication by patient is allowable if patient is capable.
- A long backboard, scoop stretcher, vacuum mattress, or other appropriate full length extrication device may be used for extrication if needed. Do not use short board or KED device.
- Apply adequate padding to prevent tissue ischemia, minimize discomfort and maintain spinal neutrality after removing helmet or pads

E/A/P

- Allow ambulatory patients to sit on stretcher and then lie flat. Position backboarded patient on stretcher then remove backboard.
- Situations or treatment priorities may require patient to remain on rigid vacuum mattress or backboard including the combative patient, elevated intracranial pressure see Traumatic Brain Injury 4.9 or rapid transport of unstable patient.
- With patient lying flat, secure patient firmly with all stretcher straps and leave collar in place. Instruct patient to avoid moving head or neck as much as possible.
- Elevate stretcher back only if necessary for patient compliance, respiratory function, or other significant treatment priority.
- Patients with nausea or vomiting may be placed in a lateral recumbent position. Maintain neutral head position with manual stabilization, padding/pillows, and/or patient's arm.

Pediatric Patients Requiring a Child Safety Seat

If child requires spinal motion restriction, transport in a child safety seat/device see Pediatric Transportation Policy 8.13.

- Apply cervical collar. Use rolled towels/padding if infant/child will not tolerate collar.
- Patient may remain in own safety seat after motor vehicle crash if it meets the 5 criteria listed in Pediatric Transportation Policy 8.13
- If required treatment (e.g., airway management) cannot be performed in a safety seat, secure patient directly to stretcher using padding and pediatric-sized restraints.

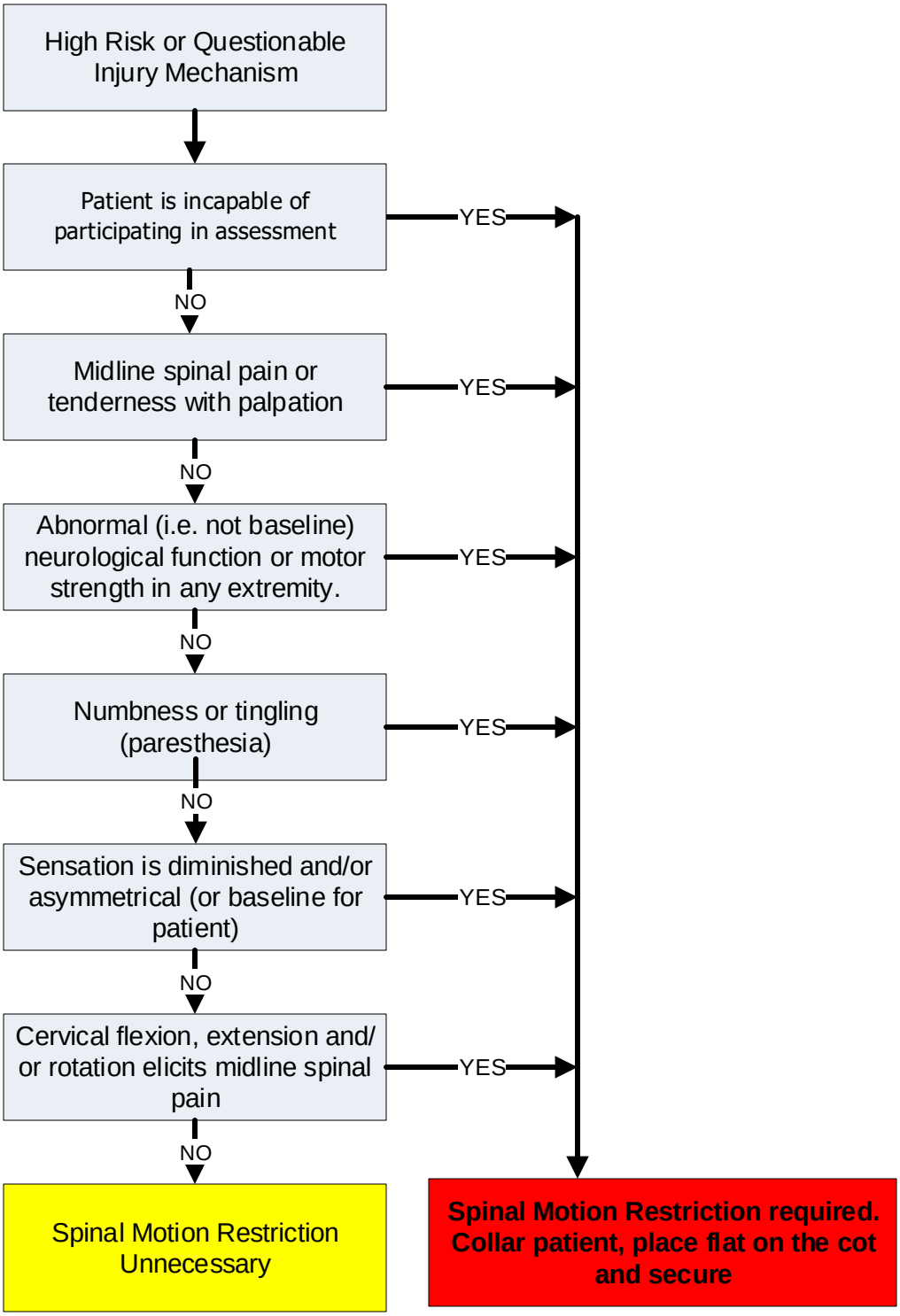
RED FLAG: Mechanisms that indicate a high risk for spinal injury include:

- Motor vehicle crash >60 mph, rollover, ejection (low-speed, rear-end can usually be excluded).
- Falls >3 feet/5 stairs (patient standing with feet 3' above floor).
- Axial load to head/neck (e.g., diving accident, heavy object falling onto head, contact sports).
- Significant injury or mechanism of injury above the clavicle.
- Injuries involving motorized recreational vehicles.
- Bicycle struck/collision.

Protocol Continues

Spinal Trauma
Adult & Pediatric

Protocol Continues



Airway Management – Adult 5.1A

EMT/AEMT STANDING ORDERS

E/A

- Routine patient care.
- Establish airway patency.
  - Open the airway.
    - Effective patient positioning is essential to effective airway management. See Airway Management 5.0 (moved to match pedi
    - Consider inserting an oropharyngeal and/or nasopharyngeal airway adjunct. Often multiple adjuncts are beneficial.
  - Suction as needed.
  - Clear foreign body obstructions.
- Titrate oxygen saturation to 94% - 98%.
- If patient has a tracheostomy tube, follow the procedure for Tracheostomy Care Procedure 5.11. (Moved up to match pedi)
- ~~Consider inserting an oropharyngeal and/or nasopharyngeal airway adjunct. Often multiple adjuncts are beneficial.~~
- Assist ventilations with a bag-valve-mask device and supplemental oxygen as needed.
- For adult Cardiac Arrest: consider insertion of a supraglottic airway; see procedures for Supraglottic Airways 5.10.
- For adults in severe respiratory distress (Asthma/COPD/Pulmonary Edema/ Near Drowning) consider use of CPAP. See CPAP Procedure 5.4.

PARAMEDIC STANDING ORDERS

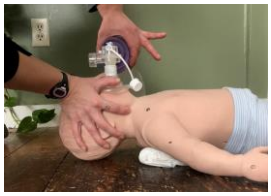
P

- The appropriate method of airway management should be determined based on patient condition. If basic procedures are deemed inappropriate or have proven to be inadequate then more advanced methods should be used.
- Consider BiPAP Procedure 5.3.
- For impending respiratory failure with intact gag reflex or trismus: consider Nasotracheal Intubation, see Nasotracheal Intubation Procedure 5.7.
- For apnea/respiratory failure or impending respiratory failure with impaired or absent gag reflex: consider supraglottic airway device or intubation. See Supraglottic Airways 5.10 or Orotracheal Intubation 5.8.
- For adults with immediate, severe airway compromise ~~where respiratory arrest is imminent and other methods of airway management are ineffective~~: consider Rapid Sequence Intubation see, Rapid Sequence Intubation Prerequisite Procedure 7.4.
  - **Note: this procedure is only to be used by paramedics who are trained and credentialed to perform RSI by the NH Bureau of EMS.**
- If feasible, place an ~~oro~~gastric tube to decompress the stomach.
- If you cannot establish an airway or ventilate:
  - Consider Cricothyrotomy – Percutaneous Procedure 5.5 **OR**
  - Consider ***Surgical Cricothyrotomy – Bougie Assisted Prerequisite Procedure 7.5.
    ***Note: this is a prerequisite procedure only to be used by paramedics who are trained and credentialed to perform bougie assisted surgical cricothyrotomy by the NH Bureau of EMS.**

5.1P Airway Management – Pediatric

Airway Protocol Procedure 5.1P

EMT/AEMT STANDING ORDERS



- Routine patient care.
- Establish airway patency.
  - Open Airway.
    - Consider patient positioning by placing padding under shoulders to ensure sternal notch and ear are at the same level with the face flat. See Airway Management 5.0P
    - If unable to maintain an open airway through positioning, consider placing an oropharyngeal and/or nasopharyngeal airway. Often multiple adjuncts are beneficial.
  - Suction as needed.
  - Clear foreign body obstructions.
  - Titrate oxygen saturation to 94% - 98%. (moved up to match adult)
- If patient has a tracheostomy tube see Tracheostomy Care 5.11.
- ~~Consider additional help.~~
- For respiratory distress:
  - Administer high concentration oxygen (~~preferably~~ humidified if available) via mask positioned on face or if child resists, held near face.
  - Monitor closely ~~observe~~ for fatigue, decreased mentation, and respiratory failure.
  - For children with chronic lung disease or congenital heart disease, maintain or increase home oxygen level to patient's target saturations.
    Note: Pulse oximetry is difficult to obtain in children. Do not rely exclusively on pulse oximetry. If child continues to exhibit signs of respiratory distress despite high oxygen saturation levels, continue oxygen administration.
- For respiratory failure or for distress that does not improve with oxygen administration:
  - Assist ventilations with a bag-valve-mask at rate appropriate for child's age. Reference Pediatric Color Coded Appendix A3.
  - ~~If unable to maintain an open airway through positioning, consider placing an oropharyngeal and/or nasopharyngeal airway.~~
- Determine if child's respiratory distress/failure is caused by a preexisting condition
  - For Allergic Reaction/Anaphylaxis, refer to the Allergic Reaction/Anaphylaxis Protocol 2.2P.
  - For Asthma/Reactive Airway Disease/Croup, refer to the Asthma/Bronchiolitis/ Croup Protocol 2.3P.
- For Pediatric Cardiac Arrest: consider insertion of a supraglottic airway; see procedures for Supraglottic Airways 5.10
- For pediatrics in severe respiratory distress due to asthma consider use of CPAP. See CPAP Procedure 5.4.

PARAMEDIC STANDING ORDERS

- The appropriate method of airway management should be determined based on patient condition. If basic procedures are deemed inappropriate or have proven to be inadequate then more advanced methods should be used.
- If feasible, place an orogastric tube to decompress the stomach.
- If you cannot establish an airway or ventilate, see Cricothyrotomy Percutaneous Procedure 5.5.

~~Pediatric Respiratory Distress~~	~~Pediatric Respiratory Failure~~
• ~~Hallmarks of respiratory failure are respiratory rate less than 20 breaths per minute for children <6 years old; less than 12 breaths per minute for children <16 years old; and >60 breaths per minutes for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, and depressed mental status.~~	• ~~Child is able to maintain adequate oxygenation by using extra effort to move air.~~ • ~~Signs include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.~~

Respiratory distress in children and infants must be promptly recognized and aggressively treated as patient may rapidly decompensate.

Endotracheal Tube Introducer "Bougie" – ~~Adult~~ 5.6

PARAMEDIC STANDING ORDERS – ADULT

INDICATIONS

- ~~Unable to fully visualize vocal cords during an intubation attempt.~~
- To facilitate routine placement of endotracheal tube.

LIMITATIONS

- Adult Bougies ~~should not~~ cannot be used on less than 6.0 ETT.
- Pediatric Bougies cannot be used on less thant 4.0 ETT

PROCEDURE

1. Endotracheal tube may be preloaded on bougie if provider is familiar with technique being used. Always lubricate cuff of endotracheal tube with water-based lubricant.
2. Using techniques described in the Orotracheal Intubation Protocol 5.8 attempt to visualize the vocal cords. Always use all techniques necessary to optimize laryngeal view before trying to pass the bougie.
3. If the vocal cords are partially visualized, pass the bougie through the cords while ~~attempting to feel~~ assessing for signs of tracheal placement (see below). ~~Gently advance bougie until holdup is felt. If the bougie does not stop advancing the bougie is likely in the esophagus.~~
4. If the vocal cords are not visualized, pass the bougie behind the epiglottis, guiding the tip of the bougie anteriorly toward the trachea and assess for signs of tracheal placement (see below). Do not attempt to pass the bougie if the epiglottis is not visualized.
   Gently advance bougie until holdup is felt. If the bougie does not stop advancing the bougie is likely in the esophagus.
5. With laryngoscope still in place:~~, advance preloaded tube off bougie or have assistant load the tube onto the bougie and advance it to the lip line.~~
   - If pre-loaded, advance tube (not Bougie)
   - if not pre-loaded, have assistant load the tube onto the Bougie and advance it.
6. ~~Advance the ETT over the Bougie,~~ Rotate ~~ing~~ the ETT ~~about 1/4 turn~~ counterclockwise so that the bevel is oriented vertically as the ETT passes through the vocal cords. This maneuver allows the bevel to gently spread the arytenoids with a minimum of force, thus avoiding injury. If resistance is felt, withdraw the ETT, rotating it in a slightly more counterclockwise direction, and advance the tube again. Advance the tube until the cuff is just past the vocal cords.~~to a lip-line of 24 cm in an adult male, and 22 cm in an adult female or until cuff is seen passing through cords.~~
7. Inflate the cuff with 5 – 10 mL of air
8. Holding the ETT firmly in place, have an assistant remove the Bougie.
9. Remove the laryngoscope.
10. Follow the procedures outlined in Procedure: Orotracheal Intubation 5.8 to confirm placement, secure the ETT, monitor and document placement of the ETT.

Moved "inflate" bullet up

SIGNS OF TRACHEAL PLACEMENT

- The Bougie is felt to "hold up" as the airway narrows and is unable to be advanced further. This is the most reliable sign of proper Bougie placement. If the Bougie enters the esophagus, it will continue to advance without resistance.
- It may be possible to feel the tactile sensation of "clicking" as the Bougie tip is advanced downward over the rigid cartilaginous tracheal rings.
- The Bougie may rotate as it enters a mainstem bronchus. Usually it is a clockwise rotation as the Bougie enters the right mainstem bronchus, but occasionally it will rotate counterclockwise if the Bougie enters the left mainstem bronchus.
- If the patient is not paralyzed, he/she may cough

5.11 Tracheostomy Care

EMT/ADVANCED EMT STANDING ORDER – ADULT & PEDIATRIC

E/A

INDICATIONS

- An adult or pediatric patient with an established tracheostomy in respiratory distress or failure.

PROCEDURE

- Consult with the patient's caregivers for assistance.
- Assess tracheostomy tube: Look for possible causes of distress which may be easily correctable, such as a detached oxygen source.
- If the patient's breathing is adequate but exhibits continued signs of respiratory distress, administer high-flow oxygen (humidified if available) via non-rebreather mask or blow-by, as tolerated, over the tracheostomy.
- If patient's breathing is inadequate, assist ventilations using bag-valve-mask device with high-flow oxygen.
- If on a ventilator, remove the patient from the ventilator prior to using bag valve mask device as there may be a problem with the ventilator or oxygen source.
- Suction if unable to ventilate via tracheostomy or if respiratory distress continues.
- Use no more than 100 mmHg suction pressure.
- If the tracheostomy tube has a cannula, remove it prior to suctioning.
- Determine proper suction catheter length by measuring the obturator.
- If the obturator is unavailable, insert the suction catheter approximately 2 – 3 inches into the tracheostomy tube. **Do not use force!**
- 2 – 3 ml saline flush may be used to help loosen secretions.
- If the patient remains in severe distress, continue ventilation attempts using bag valve mask with high-flow oxygen via the tracheostomy. Consider underlying reasons for respiratory distress and refer to the appropriate protocol for intervention.

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

INDICATIONS

- An adult or pediatric patient with an established tracheostomy, in respiratory distress or failure where EMT and Advanced EMT tracheostomy interventions have been unsuccessful.
- Dislodged tracheostomy tube.

CONTRAINDICATIONS

- None.

PROCEDURE:

- If the patient continues in severe respiratory distress, remove tracheostomy tube and attempt bag valve mask ventilation.
- If another tube is available from caregivers, insert into stoma and resume ventilation (a standard endotracheal tube may be used or the used tracheostomy tube, after being cleaned).
  - Bougie may be used to assist with placement of endotracheal tube into stoma.
- If unable to replace tube with another tracheostomy tube or endotracheal tube, assist ventilations with bag valve mask and high-flow oxygen.

12-Lead ECG Acquisition 6.0

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDER

Obtain 12 lead ECG with baseline vitals within 10 minutes if available and practical. Transmit per local guidelines.

INDICATIONS

- Congestive Heart Failure/Pulmonary Edema.
- Dysrhythmias and/or Palpitations
- Suspected Acute Coronary Syndrome.
- Syncope.
- Shortness of breath.
- Stroke/CVA.
- Cardiac Arrest with Return of Spontaneous Circulation (ROSC) at least 8 minutes post ROSC
- Upper Abdominal Pain
- Dizziness/ lightheadedness

PROCEDURE

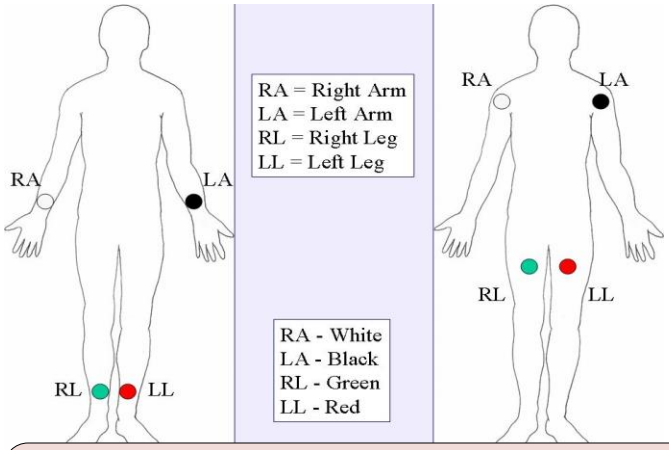
E/A/P

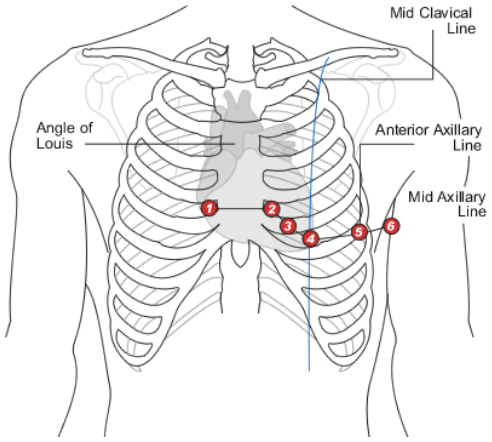
1. Prepare ECG Monitor and connect cable with electrodes.
2. Properly position the patient (supine or semi-reclined).
3. Enter patient information (e.g., age, gender, name) into monitor, when able.
4. Prep chest as necessary, (e.g., hair removal, skin prep pads).
5. Apply chest and extremity leads using recommended landmarks:
   - RA – Right arm or shoulder.
   - LA – Left arm or shoulder.
   - RL – Right leg or hip.
   - LL – Left leg or hip.
   - V1 – 4TH intercostal space at the right sternal border.
   - V2 – 4TH intercostal space at the left sternal border.
   - V3 – Directly between V2 and V4.
   - V4 – 5th intercostal space midclavicular line.
   - V5 – Level with V4 at left anterior axillary line.
   - V6 – Level with V5 at left midaxillary line.
6. Instruct patient to remain still.
7. Acquire the 12 lead ECG.
8. If 12 lead ECG indicates a STEMI (e.g., ECG identifies ***Acute MI Suspected*** and/or Paramedic interpretation) transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements. Notify receiving facility of a “STEMI Alert” and patient information as requested.
9. For patients with continued symptoms consistent with acute coronary syndrome, perform repeat ECGs, as indicated, during transport to evaluate for evolving STEMI. Leave 12 lead attached.
10. Copies of 12 lead ECG labeled with the patient’s name and date of birth should be left with the receiving hospital.
11. Document the procedure and time of the ECG acquisition in appropriate section of the Patient Care Record. Include the ECG printout/image in the PCR, if possible.

Protocol Continues

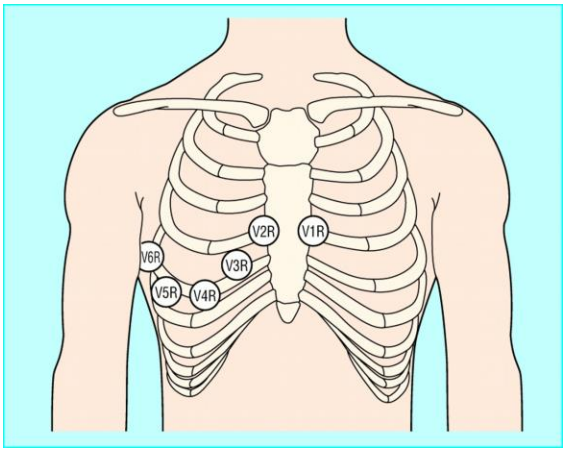
6.0 12-Lead ECG Acquisition

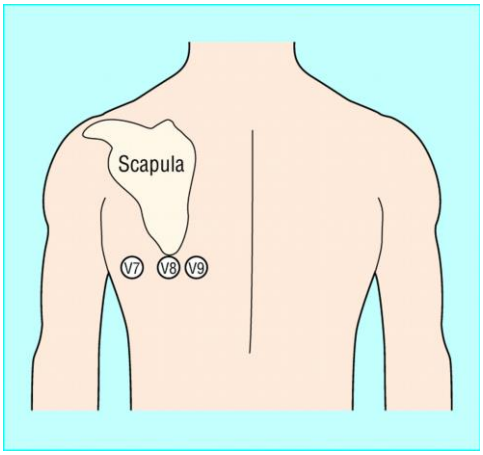
Protocol Continues





- For isolated ST depression in leads VI – V3 consider posterior ECG
- For suspect inferior MI consider right sided ECG.
  - Label these ECG printouts as applicable.





PEARLS:

- Enter the patient's age for proper interpretation.
- When transmitting either include the patient's name or notify the receiving facility of the patient's identity.
- Be alert for causes of artifact: dry or sweaty skin, dried out electrodes, patient movement, cable movement, vehicle movement, electromagnetic interference, static electricity
- Dried out electrodes are a major source of artifact; keep in original sealed foil pouches; plastic bags are not sufficient. Use all the same kind of electrodes. Press firmly around the edge of the electrode, not the center.
- Sweaty patients should be dried thoroughly. Consider tincture of benzoin. Dry skin is especially problematic. Clean the site (e.g., alcohol prep pad) and gently abrade skin using a towel or 4x4 gauze.
- Check for subtle movement: toe tapping, shivering, muscle tension (e.g., hand grasping rail or head raised to "watch")

Gastric Tube Insertion 6.3

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

INDICATIONS

- Intubated patients (Orogastric preferred)

CONTRAINDICATIONS

- If suspected basilar skull fracture, do not use nasogastric tube.
- Severe facial trauma with distortion of airway anatomy

EQUIPMENT

- Salem sump gastric tube of appropriate size; for pediatric size refer to the length based tape.
- 60 mL syringe with Toomey tip (catheter tip); use 5-10 mL syringe for pediatric
- Lubricant
- Stethoscope
- Method of securing

OROGASTRIC TUBE PROCEDURE

1. Size a Salem sump gastric tube by measuring from the epigastrium, around the ear, and to the mouth.
2. Lubricate the distal portion of the tube with water based lubricant.
3. If possible, flex the head forward to better align the esophagus for tube placement.
4. Insert the tube into the mouth and advance until the measured depth is reached. If the tube coils or does not advance, pull it back, reposition, and try again. A maximum of three attempts are allowed.
5. Once the tube is in place confirm placement by instilling air into the tube using 60 mL syringe and auscultating the epigastrium for gastric sounds.
6. Secure the tube with tape or other device as necessary.
7. Perform low intermittent suctioning.

NASOGASTRIC TUBE PROCEDURE

1. Size a Salem sump gastric tube by measuring from the epigastrium, around the ear, and to the nose. The largest and least occluded nares should be utilized.
2. Lubricate the distal portion of the tube with water based lubricant.
3. If possible, flex the head forward to better align the esophagus for tube placement.
4. Insert the tube into the nares and advance until the measured depth is reached. If the tube coils or does not advance, pull it back, reposition, and try again. A maximum of three attempts are allowed.
5. Once the tube is in place confirm placement by instilling air into the tube using 60 mL syringe and auscultating the epigastrium for gastric sounds.
6. Secure the tube with tape or other device as necessary.
7. Perform low intermittent suctioning.

6.4 Intraosseous Access

ADVANCED EMT/PARAMEDIC STANDING ORDERS– ADULT & PEDIATRIC

~~Provider Level Approved~~

- ~~Advanced EMT, commercial intraosseous introduction device (e.g., EZ-IO).~~
- ~~Paramedic.~~

Definition

Intraosseous insertion establishes access in a patient where venous access cannot be rapidly obtained. The bone marrow space serves as a "noncollapsible vein" and provides access to the general circulation for the administration of fluids and resuscitation drugs. ~~This protocol applies to all appropriate IO insertion sites.~~

Indication

- Drug or fluid resuscitation of a patient in need of immediate life-saving intervention and unable to rapidly obtain peripheral IV access.
- May be used as a primary vascular device in cardiac arrest.

A/P

Contraindications

- Placement in or distal to a fractured bone.
- Placement near prosthetic limb, joint or orthopedic procedure.
- Placement at an infected site.
- Inability to find landmarks.

Complications

- ~~Infusion rate may not be adequate for resuscitation of ongoing hemorrhage or severe shock,~~ extravasation of fluid, fat embolism, and osteomyelitis (rare).

Equipment:

- 15 – 19 gauge bone marrow needle or FDA-approved commercial intraosseous infusion device.
- Povidone-iodine or chlorhexidine solution and gloves.
- Primed IV tubing [for alert patients with 2% lidocaine (preservative free)], IV stopcock, solution.
- ~~10 ml syringe with 0.9% NaCl.~~ IV flush
- Pressure pump/bag or 60 ml syringe for volume infusion or slow push.
- ~~1 vial of~~ 2% lidocaine (preservative free) .
- ~~5 mL~~ syringe.

Procedure Continues

Protocol Continues

~~**Approved sites:**~~

- ~~Per FDA-approved manufacturer's recommendation~~

Procedure:

- When using an FDA-approved commercial IO device, follow manufacturer's instructions at sites where the provider has been trained.

1. ~~Place the patient in a supine position.~~
2. Identify the bony landmarks as appropriate for device.
3. ~~Prep~~ Cleanse the site.
4. Needle is appropriately placed if the following are present:
   - Aspiration with syringe yields blood with marrow particulate matter.
   - Infusion ~~of saline~~ does not result in infiltration at the site.
   - Needle stands without support.
5. Attach IV tubing, with or without stopcock.
6. For alert patients prior to IO syringe bolus (flush) or continuous infusion:
   - Ensure that the patient has no allergies or sensitivity to lidocaine.
   - If using an extension tubing without stopcock, prime with lidocaine 2% (preservative free).
   - SLOWLY administer lidocaine 2% (preservative free) device catheter into the medullary space.
   - Allow 2 – 5 minutes for anesthetic effects, if feasible:
   - Adult: 1 – 2.5 ml (20 – 50 mg) 2% lidocaine.
   - Pediatric: 0.5 mg/kg 2% lidocaine.
7. Flush with 10 ml of ~~0.9% NaCl~~ rapid fluid bolus prior to use:
   - Recommend use of a stop cock inline with syringe for bolus infusions.
   - Use a pressure bag for crystalloid ~~continuous 0.9% NaCl~~ infusions.
   - ~~Infuse emergent pressors using an IV pump.~~
8. Stabilize needle:
   - Consider utilizing a commercially available stabilization device as recommended by the manufacturer, **OR**
   - Stabilize needle on both sides with sterile gauze and secure with tape (avoid tension on needle).

A/P

No Change

Capnography 6.1

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Indications:

- Routine monitoring of ventilation status and indirectly circulatory and metabolic status in adults and children with:
  - Respiratory distress (e.g., CHF, COPD, Asthma, Pulmonary embolus)
  - Altered mental status
  - Traumatic brain injury
  - Diabetic ketoacidosis
  - Circulatory shock
  - Sepsis
  - Cyanide and/or carbon monoxide poisoning
  - Administration of sedative medication
- Advanced Airway Devices:
  - Confirm and document placement of advanced airway devices, see Airway Management 5.0 and 5.1 A&P
  - To confirm continued placement of advanced airway devices after every patient move and at transfer of care.
- Monitoring of CPR quality and for signs of return of spontaneous circulation (ROSC).
  - High quality chest compressions are achieved when the $ETCO_2$ is at least 20 mmHg. If $ETCO_2$ abruptly increases it is reasonable to consider that this as an indicator of ROSC.
- To assist with termination of resuscitation efforts when $ETCO_2$ is <20 mmHg despite adjusting the quality of chest compressions.
  - Low CO_2 production after 20 minutes of effective CPR is a predictor of mortality. See Resuscitation Initiation & Termination Policy 8.16.

E/A/P

Procedure:

1. Attach the sensor to endotracheal tube, supraglottic airway, BVM or apply cannula with $ETCO_2$ mouth scoop or bi-cannula.
2. Assess ETCO2 numeric levels and waveform:
   - Normal $ETCO_2$ range 35-45 mmHg
   - Elevated $ETCO_2$ may indicate hypoventilation/CO_2 retention.
   - Low $ETCO_2$ may indicate hyperventilation, low perfusion, pulmonary embolus, sepsis.
3. With abnormal $ETCO_2$ levels consider adjusting rate and depth of ventilations.

Any abrupt loss of $ETCO_2$ detection or loss of continuous waveform may indicate a catastrophic failure of the airway, apnea, drug overdose, deep sedation and/or cardiac arrest warranting assessment of the airway, breathing, circulation, and/ or airway device.

PEARLS

- Colorimetric CO_2 detectors are not an approved alternative to quantitative waveform capnography. Airway device placement confirmation and device monitoring should always be confirmed using quantitative waveform capnography.
- Numeric capnometry and capnography waveform morphology should be documented in the ePCR.

Procedure 6.1

6.6 Tasers (Conductive Electrical Weapon)

State and local law enforcement may use a conductive energy weapon called a Taser. When used, the device discharges a wire that, at the distal end, contains a dart-like barbed projectile that penetrates the suspect's skin and embeds itself, allowing a 5-second incapacitating electric shock. Current medical literature does not support routine medical evaluation for an individual after Taser application. **In most circumstances probes can be removed by law enforcement without further medical intervention.**

Remove and include in Police Custody

EMT/ ADVANCED EMT / PARAMEDIC STANDING ORDERS

EMS should be activated for Taser application in the following circumstances:

- The probe is embedded in the eye, genitals or bone.
- Seizure is witnessed after Taser application.
- There is excessive bleeding from probe site after probe removal.
- Cardiac arrhythmias, complaints of chest pain, palpitations.
- Respiratory distress.
- Change in mental status after application.
- Pregnancy.

E/A/P

INDICATIONS FOR REMOVAL

- Patient with uncomplicated conducted electrical weapon (Taser) probes embedded subcutaneously in non-vulnerable areas of skin.

CONTRAINDICATIONS TO REMOVAL

- Patients with probe penetration in vulnerable areas of the body as mentioned below should be transported for further evaluation and probe removal.
- Genitalia, female breast, or skin above level of clavicles.
- Suspicion that probe might be embedded in bone, blood vessel, or other sensitive structure.

PROCEDURE

1. Ensure wires are disconnected from weapon.
2. Stabilize skin around probe using non-dominant hand.
3. Grasp probe by metal body using dominant hand.
4. Remove probe by pulling straight out in a single quick motion.
5. Removed probes should be handled and disposed of like contaminated sharps in a designated sharps container, unless requested as evidence by police.
6. Cleanse wound and apply dressing.
7. If last tetanus immunization was greater than 5 years, advise the patient that they may need one.
8. Obtain a refusal of care for patients refusing transport.

8.14 Police Custody

Purpose
The purpose of this policy is to give EMS guidance for patients who are in police custody, restrained, and/or protective custody is required.

Protective Custody
Protective custody is a civil status in which an incapacitated person is detained by a peace officer for the purposes of:
(a) Assuring the safety of the individual or the public or both; and
(b) Assisting the individual to return to a functional condition.

- Patients with evidence of suicidal ideation who refuse care may be placed into protective custody under RSA 135C:28 III.
- Patients who present with an altered level of consciousness, diminished mental capacity, or evidence of impaired judgment from alcohol or drug use may be placed into protective custody under RSA 172 and 172:B3.
- If law enforcement refuses to place a patient into protective custody at the request of EMS, on-line medical control must be contacted and a law enforcement supervisor should be requested for further guidance.

Police Custody
- Police custody for this policy, shall mean a person under arrest.
- Patients who EMS believe require medical care should be transported to a medical facility. If police and EMS disagree about whether a patient in police custody requires transport to a medical facility for further assessment or treatment, on-line medical control must be contacted and a law enforcement supervisor should be requested for guidance.

EMS Initiated Restraints

For any patient potentially requiring restraints by EMS, see the Restraints Procedure 6.5.

Police Restraint Devices
Patients transported by EMS who have been restrained by law enforcement devices (e.g., handcuffs) should be accompanied, in the patient compartment, by a law enforcement officer who is capable of removing the device. If this is not feasible, the officer MUST follow directly behind the transporting ambulance to the receiving hospital.

Tasers® (Conductive Electrical Weapon)
~~Patients who have been subdued by a Taser device, see Tasers Procedure 6.6.~~
Patient's with uncomplicated Taser probes embedded in non-vulnerable areas should use the below procedure to have them removed if requested by law enforcement. Probes that are embedded in complicated areas (i.e. face, groin, neck) should be transported to the hospital for evaluation and removal.

Procedure for Removal:
1) Ensure the wires have been disconnected from the weapon.
2) Stabilize the skin around the probe and grasp the metal body of the probe.
3) Remove the probe by pulling straight out in a single, swift motion.
4) Place the probes in a sharps container and clean/dress the wounds as needed.
5) Obtain refusal of care documentation unless transport is warranted.

Pepper Spray
Patients who have been subdued by pepper spray, see Eye and Dental Protocol 4.2.

Excited Delirium
Excited/Agitated Delirium is characterized by extreme restlessness, irritability, and/or high fever. Patients exhibiting these signs are at high risk for sudden death, see Restraints Procedure 6.5.

Vascular Access via Central Catheters

6.7

PARAMEDIC – ADULT & PEDIATRIC

PROVIDER LEVEL:

- Medical Director approved program and/or the NH Bureau of EMS and Medical Control Board approved learning objectives.

INDICATIONS

- In the presence of a life threatening condition, with clear indications for immediate use of medication or fluid bolus. (Not for prophylactic IV access.)

Online training

CONTRAINDICATIONS

- Suspected infection at skin site.

PROCEDURE

Determine the type of catheter present: PICC, Broviac, Hickman, Groshong, Mediport, etc.

Procedure for peripherally inserted Central Catheter (Cook, Neo-PICC, etc.) and Tunneled Catheter (Broviac, Hickman, Groshong, etc.)

P

1. Utilize good hand-hygiene with either alcohol gel based cleanser or soap and water.
2. Utilize respiratory precautions if indication of respiratory infection in provider or patient:
   - Mask the provider and/or the patient.
3. Prepare equipment:
   - 2 - 3 10 mL prefilled syringes of 0.9% NaCl.
   - Sterile gloves (if available).
4. If more than one lumen is available (PICCs, Hickmans and Broviacs can have one, two, or three lumens), select the largest lumen available.
5. Vigorously cleanse the cap of the lumen with chlorhexidine or 70% alcohol prep pad.
   - Allow to dry.
6. Unclamp the selected catheter lumen and using a prefilled 10 mL syringe.
   - Vigorously flush the catheter ~~using a pulsating technique and~~ maintaining pressure at the end of the flush to prevent reflux of fluid or blood.
   - If catheter does not flush easily (note that a PICC line will generally flush more slowly and with greater resistance than a typical intravenous catheter), re-clamp the selected lumen and attempt to use another lumen (if present).
   - If unable to flush any of the lumens, the catheter is unable to be used.
7. Attach primed IV administration set and observe for free flow of IV fluid.
   - Utilizing an IV pump, set the flow rate based on the patient condition and in accordance to NH Protocols.

- Do not exceed recommended flow rates.
- Avoid taking a blood pressure reading in the same arm as the PICC.

CATHETER	SIZE	MAX FLOW RATE
PICC	Less than 2.0 fr	125 mL/hr
PICC	Greater than 2.0 fr	250 mL/hr
Groshong PICC	3 fr	240 mL/hr
Groshong PICC NXT	4 fr	540 mL/hr
Groshong PICC NXT	5 fr	200 mL/hr
Hickman/Broviac		
Hickman/Broviac – Power Port	8 – 9.5 fr	3000 mL/hr

PEARLS:

- There are many peripherally inserted, tunneled and/or implanted ports options. Providers should do their best to discern what option the patient has. Patient may be carrying a reference/wallet card about their device.
- PICC lines will not tolerate rapid infusions or infusions under pressure.

Procedure Continues

6.7 Vascular Access via Central Catheter

Procedure Continued

Procedure for implanted catheter (Port-a-Cath, P.A.S. port, Medi-port)

1. Utilize good hand-hygiene with either alcohol gel based cleanser or soap and water.
2. Utilize respiratory precautions if indication of respiratory infection in provider or patient.
   - Mask the provider and/or the patient.
3. Prepare all necessary equipment:
   - Non-coring, right angle needle specific for implanted vascular access ports.
   - 2 - 3 10 mL prefilled syringes of 0.9% NaCl.
   - Sterile infusion port cap.
   - Sterile gloves (if available).
   - Sterile occlusive dressing large enough to completely cover the insertion site
4. Identify the access site; usually located in the chest.
5. Vigorously cleanse the access site with chlorhexidine or 70% alcohol prep pad.
   - Allow to dry.
6. Attach the infusion port cap to the end of the non-coring, right angle needle tubing.
7. Prime the non-coring needle with attached tubing with saline using one of the prefilled 10 ml syringes.
   - Leave the syringe attached to the tubing.
8. Palpate the port to determine the size and center of the device.
   - If not utilizing sterile gloves, re-clean the skin and apply new gloves.
9. Secure the access point port firmly between two fingers and firmly insert the non-coring needle into the port, entering at a direct 90^{o} angle.
10. Aspirate 3 – 5 mL of blood with the syringe.
    - If unable to aspirate blood, re-clamp the catheter and do not attempt further use.
    - Dispose of aspirated blood in bio hazard container.
    - Asking the patient to cough a couple times and then retry aspiration, coughing my may facilitate aspiration of blood. ~~access of the port.~~
    - Asking the patient to lift their arms may also help facilitate aspiration of blood.
11. Flush the catheter with 3 – 5 ml 0.9% NaCl using a prefilled 10mL syringe.
    - If catheter does not flush easily, do not attempt further use.
12. Attach primed IV administration set and observe for free flow of IV fluid.
    - Utilizing an IV pump, set the flow rate based on the patient condition and in accordance with NH Protocols.
13. ~~Cover the needle and insertion site with the sterile occlusive dressing.~~

- Only non-coring, right angle needles specific for implanted ports are to be used for vascular access devices that are implanted in the patient. These are generally not carried by EMS units but may be provided by the patient.
- Priming the tubing of the non-coring needle is essential to prevent air embolism.

PEARLS:

- Many of the newer implanted ports are double lumen ports. Providers should ask the patient or family if they have a double lumen port or palpate carefully to discern this.
- Newer non-coring, right angle insertion needles have a hard plastic top which later serves as a safety device, housing the needle when the port is de-accessed.