

MEMORIAL EMS SYSTEM
ADULT PREHOSPITAL CARE MANUAL

GENERAL ASSESSMENT AND INTERVENTIONS



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ADULT PREHOSPITAL CARE MANUAL

**Patient Assessment Process &
Goals of Patient Care**

The goal of the patient assessment process is to measure the status of the patient's perfusion, identify life-threatening conditions, determine the patient's chief complaint and/or mechanism of injury, evaluate the complaint (OPQRST) and obtain a (SAMPLE) history.

The components of the patient assessment process include the scene survey, initial assessment (ABCs) and rapid trauma assessment or detailed physical exam. A focused physical exam may be conducted if the general impression of the patient's condition appears to be of a specific nature.

The EMS provider must constantly monitor the patient's perfusion status. Perfusion is defined as the adequate flow of blood through the body's tissues. For perfusion to be adequate the patient must have an adequate blood volume (with adequate supplies of oxygen and glucose), a properly functioning cardiovascular system and an intact neurological system for regulation of vascular dilation. Failure of the body to maintain adequate perfusion will result in signs and symptoms of shock.

Signs and symptoms of shock vary depending on the degree and cause of shock. Level of consciousness is an important assessment of the patient's vital organ perfusion status. A patient with an altered level of consciousness must be considered at risk of shock. Peripheral tissue condition is another important indicator of perfusion status. A patient with cool, clammy, pale or cyanotic skin should be considered at risk for shock.

If the patient is found to be in shock, the assessment process should be directed at finding the cause of shock, immediate interventions to support perfusion and prompt transport. Conversely, if the mechanism of injury or assessment findings suggests that the patient may have a condition that could result in shock, EMS personnel should carefully assess the patient's perfusion status and prepare to treat shock.

The goal of patient care is to identify patients in shock or at risk of shock, initiating care that will directly assist maintaining the patient's perfusion and safely transporting the patient to an appropriate emergency department or trauma center in a timely manner.

The EMS provider must maintain a constant awareness as to what would be the best course of action for optimum and compassionate patient care. The benefit of remaining on scene to establish specific treatments versus prompt transport to a definitive care facility should be a consideration of each patient contact.

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**General Patient Assessment &
Initial Care Procedure**

Scene Size-Up

1. Initiate body substance isolation (BSI) precautions prior to arrival at the scene for all patient contacts. Apply appropriate personal protective equipment (PPE). Use special care in the handling of sharps, contaminated objects, linens, etc.
2. Assure the well-being of the EMS crew by assessing **scene safety**. If the scene is not safe, do not enter until appropriate authorities have secured the area (i.e. violent crime calls, domestic violence calls, hazardous materials, etc.).
3. Determine the mechanism of injury, number of patients and need for additional resources.

General Patient Assessment

1. Initial Assessment (Primary Survey)
 - a) Airway: Assess airway patency and assess for possible spinal injury.
 - b) Breathing: Assess for respiratory distress, bilateral chest expansion, rate, pattern & depth of ventilations, adequacy of gas exchange, use of accessory muscles and lung sounds.
 - c) Circulation: Assess rate, quality & regularity of pulses, skin condition, hemodynamic status, and neck veins. Evaluate and record cardiac rhythm if indicated.
 - d) Disability: Mini-neuro exam to include brief pupil check and assessment of mental status:
 - A – Alert
 - V – Not alert but responds to verbal stimuli
 - P – Not alert but responds to painful stimuli
 - U – Unresponsive to all stimuli
 - e) Expose: Examine patient as indicated.
2. Focused History and Physical Exam (Secondary Survey)
or Detailed Physical Exam
 - a) Vitals signs and Glasgow Coma Score
 - b) Chief complaint and history of present illness
 - c) Past medical history, current medications and allergies
 - d) Systematic head-to-toe assessment (detailed exam/secondary survey)

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**General Patient Assessment &
Initial Care Procedure**

Initial Medical Care

1. **Airway:** Establish and maintain a patient's airway by using appropriate patient positioning, airway adjuncts, suctioning and advanced airway control (intubation). Consistently monitor patient's ability to maintain their airway.
2. **Breathing:** Evaluate adequacy of respirations by assessing chest movement, lung sounds and skin condition. Initiate oxygen therapy if indicated and provide or assist ventilations as necessary.
3. **Circulation:** Evaluate perfusion status by assessing carotid and peripheral pulses and skin condition. Initiate CPR and early defibrillation if indicated. Control any external hemorrhage as soon as it is identified and establish IV access with IVF if indicated. No more than two (2) attempts should be made to establish an IV on scene unless requested by Medical Control. Assess both central and peripheral skin for cyanosis.
4. Loosen tight clothing and reassure patient; keep NPO (nothing by mouth) unless specified by SOP or Medical Control.
5. BLS/ILS Units: Initiate ALS intercept if indicated (Refer to *Intercept Policy* for optimal patient care).
6. Place the patient in a semi-Fowler's (45°) position of comfort unless contraindicated. Patients with altered mental status should be placed on their side. The backboard should be tilted for immobilized patients with altered mental status to prevent aspiration.
7. Evaluate pain. Ask the patient to rate any pain on a scale of "0-10" with "0" indicating a pain-free state and "10" being the worst pain imaginable.
8. Recheck and record vital signs and patient responses at least every **15 minutes** for stable patients, every **5 minutes** for critical patients **and after each intervention**. Be sure to accurately document the times the vitals were obtained.
9. Establish Medical Control contact as indicated.
10. Transport to the closest appropriate hospital. NOTE: Follow System-specific policies regarding patient destination and bypass procedures.

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**Routine (Initial) Patient Care
Protocol**

Emergency Medical Responder Care

First Responder Care should be focused on assessing the situation and establishing initial care to treat and prevent shock:

1. Open and/or maintain an open airway.
2. Loosen all tight clothing and be prepared to expose vital body regions if necessary.
3. Reassure patient by identifying yourself, explaining how you will help them and inform the patient that additional help is en route.
4. Place patient in a position of comfort. Sit patient upright unless the patient is hypotensive (BP<100mmHg systolic) or has a potential for cervical spine injury.
5. **Oxygen:** If the patient appears to be in respiratory distress administer oxygen via nonrebreather mask at 15 L/min or nasal cannula at 6L/min. Be prepared to support the patient's respirations with BVM, if necessary, and have suction readily available.
 - a. In no obvious distress, attach pulse oximeter and obtain analysis. If $\leq 89\%$ apply oxygen via nasal cannula at 2-6 L/ min to maintain $\geq 94\%$ saturation. If unable to increase $\geq 94\%$ utilize nonrebreather at 15 LPM. If $\geq 94\%$ and no sign/symptoms of respiratory distress, no Oxygen is required.
6. Ensure that EMS has been activated for further care and transport. Provide responding units with pertinent patient information.
7. Monitor the patient's level of consciousness, vital signs, etc. for any acute changes.

BLS Care

BLS Care should be directed at conducting a thorough patient assessment, providing care to treat for shock and preparing or providing patient transportation.

1. BLS Care includes all components of *Emergency Medical Responder Care*.
2. Attach cardiac monitor and print rhythm strip for documentation by ALS, if indicated.
 - a. If indicated and capabilities exist, obtain and transmit 12 lead EKG. Print two extra copies for ALS.
3. Initiate ALS intercept, if indicated (or ILS intercept **if** ALS is unavailable).
4. Simultaneously with above, perform physical exam/assessment, obtain baseline vital signs and obtain patient history.
5. Continue to reassess patient en route to the hospital.
6. Transport should be initiated at the earliest possible opportunity.

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**Routine (Initial) Patient Care
Protocol**

ILS Care

ILS Care should be directed at conducting a thorough patient assessment, providing care to treat for shock and preparing or providing patient transportation. The necessity of establishing IV access is determined by the patient's condition and chief complaint. Consideration should also be given to the proximity of the receiving facility.

1. ILS Care includes all of the components of *BLS Care*.
2. If indicated, establish IV access using a 1000mL IVF with macro drip or blood tubing. No more than two (2) attempts should be made on scene. Infuse at a rate to keep the vein open (TKO) – approximately 8 to 15 drops (gtts) per minute. If no concern for fluid needs, an IV lock can be utilized.
3. Dependent upon patient condition, consider initiating IV access en route to the hospital.
4. Obtain a 12-Lead EKG, if indicated and transmit to receiving hospital. Provide the receiving nurse/physician with a copy of the 12-Lead upon arrival in the ED with request for physician review of the EKG as soon as possible.

ALS Care

ALS Care should be directed at conducting a thorough patient assessment, providing care to treat for shock and preparing or providing patient transportation. The necessity of establishing IV access is determined by the patient's condition and chief complaint. Consideration should also be given to the proximity of the receiving facility.

1. ALS Care includes all of the components of *ILS Care*.
2. Additional ALS care based on complaint specific protocol.

Pearls

- **Transfers home, to an ECF, or inter-facility with an IV lock only (no meds or fluids) may be taken at the BLS level.**
- **Routine IV Fluids such as Normal Saline, Lactated Ringers, Dextrose solutions etc. may be transferred from facility to facility (at the ILS level and above) without medical control consultation.**
- When determining the extent of care needed to stabilize the patient, the EMS provider should take into consideration the patient's presentation, chief complaint, risk of shock and proximity to the receiving facility.
- IV access should not be attempted on scene with a trauma patient.
- Obtain a 12-Lead EKG as soon as possible if indicated. See *12-Lead EKG Procedure* for indications.

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Intravenous Cannulation Procedure
(ILS, TEMS, & ALS Only)

Intravenous cannulation is used in the Prehospital setting to establish a route for drug administration and/or to provide fluid replacement. Intravenous cannulation should not significantly delay scene times or be attempted while on scene with a trauma patient who meets load-and-go criteria.

1. Explain to the patient the need for and a brief description of the procedure.
2. Observe the universal precautions for body substance exposure.
3. Obtain an appropriately sized catheter
4. Check the fluid:
 - a) Is it the right fluid?
 - b) Check the expiration date.
 - c) Check for color and clarity (IVF should be clear with no particles).
5. Connect the administration set to the IV fluid. Make sure that air bubbles are expelled from the tubing and that all chambers have the appropriate fluid levels.
 - a) Macro drip tubing should be used unless specified by specific protocol.
6. Maintain a clean environment and protect the administration set from contamination.
7. Apply a venous tourniquet just proximal to the antecubital area.
8. Select (by palpation) a prominent vein. Choose a distal vein on the forearm or back of the hand. The antecubital space may be used if needed for drug administration, fluid replacement, the patient condition requires a more proximal site, or in cases where no other vein is accessible.
9. Cleanse the site with an alcohol prep pad using a circular motion moving outward from the site.
10. Stabilize the vein by applying traction below the puncture site.
11. Inform the patient of your intent to puncture the site.
12. Enter the vein directly from above or from the side of the site. With the bevel of the needle upward, puncture the skin at a 30 to 45 degree angle.
13. If blood returns through the catheter, proceed with insertion. If you do not see blood return, release the tourniquet and discontinue the attempt. If time and patient condition allows, you may attempt another site with a new catheter (do not exceed more than two (2) attempts).
14. Insert the catheter. Carefully lower the catheter and advance the needle and catheter just enough to stabilize the needle in the vein. Slide the catheter only into vein.
15. Slightly occlude the vein proximal to the catheter with gentle finger pressure. Remove the needle and immediately dispose of it in an approved sharps container.
16. Release the tourniquet and connect the administration set to the catheter.
17. Open the flow regulator on the administration set and briefly allow IV fluid to run freely to assure a patent line (less than 20mL). If the line is patent, adjust flow rate as indicated by protocol or Medical Control order.
18. Secure the catheter and tubing using a veniguard or tape. Loop and secure tubing near insertion site. Never wrap tape circumferentially.

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Intravenous Cannulation Procedure
(ILS, TEMS, & ALS Only)

Saline Locks

Saline locks may be used if fluid replacement is not indicated:

1. Assemble the pre-filled saline and tubex syringe or draw up 2-3mL of sterile saline.
2. Obtain and inspect an injection site link. Inject saline and expel air from the injection site chamber leaving the syringe attached.
3. After successful venipuncture, connect the saline lock to the catheter.
4. Pull back (aspirate) on the syringe to confirm placement by observing for blood return. If blood is aspirated, continue by injecting 3mL of saline into the chamber. If no blood is aspirated, discontinue the attempt and prepare to repeat the procedure at a new site.
5. If fluid replacement becomes necessary, attach an administration set to the injection port by needleless device or Luer adapter.
6. Secure the catheter and link using a veniguard or tape.

External Jugular Vein Cannulation (ALS Only)

External Jugular (EJ) access can be utilized only if traditional extremity cannulation cannot be established and the patient requires immediate stabilizing fluid replacement and/or drug administration route.

1. Position the patient supine with feet elevated.
2. Turn the patient's head in the direction away from the side to be cannulated.
3. Cleanse the site with a prep pad using a circular motion moving away from the site.
4. Stabilize the vein by applying traction just above the clavicle.
5. Attach a 10mL syringe to the IV catheter. Align the catheter and point the tip of it toward the patient's feet.
 - a. If unable to attach syringe to angiocath, extreme caution must be used to not allow air to enter catheter during procedure.
6. Enter the vein midway between the angle of the jaw and the clavicle. With the bevel of the needle upward, puncture the skin using a 30 degree angle and aim toward the shoulder on the same side.
7. As you enter the vein, apply gentle aspiration by pulling on the syringe plunger. If blood returns through the flash chamber and syringe, proceed with insertion. Slightly occlude the vein proximal to the catheter with gentle finger pressure. Connect the administration set to the catheter and secure the site.

If you do not see blood return through the flash chamber and syringe, discontinue the attempt. Only one (1) attempt at EJ vein cannulation may be made in the Prehospital setting.

Intravenous Cannulation Procedure
(ILS, TEMS, & ALS Only)

Pearls

- If blood begins to back-flow in the IV tubing, check the location of the bag to assure it is in a gravity flow position and check to assure all valves are properly set. If the IV equipment is properly set and blood continues to back-flow, re-examine the vessel to assure arterial cannulation has not occurred.
- Edema, pain and lack of fluid flow at the site indicates infiltration and the IV must be discontinued.
- Do not partially withdraw a needle and reinsert into the catheter. This can cause catheter shear.
- Do not substitute a saline lock for IV fluids in trauma patients, patients who are in shock, patients with unstable vital signs or patients requiring multiple drug administrations.
- External jugular vein cannulation is contraindicated in patients with suspected cervical spine injury.
- Medication infiltrates need to be verbally reported to receiving staff. Additional medical treatment may be required based on the medication and quantity of medication that infiltrated.

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**Intraosseous Cannulation
Procedure (ILS & ALS Only)**

In patients presenting with conditions such as shock from any cause, cardiac arrest, overdose with airway compromise, impairment in mentation or hemodynamic parameters, severe dehydration associated with unresponsiveness or shock, and multi-system trauma, it may be impossible to find an accessible vein. This is a challenge commonly faced by prehospital providers, which hinders optimal patient care by limiting treatment options and increasing scene time trying to obtain vascular access.

The intraosseous space may be viewed as a non-collapsible, easily accessed space for any fluid or medication. Intraosseous infusion is preferred over endotracheal routes of medication administration and is a viable alternative when IV therapy is not available or not accessible. Intraosseous infusion is immediately available, safe and effective.

Indications

1. Intravenous fluids and medications are emergently needed **AND** the patient demonstrates one of the following criteria (no I.V. attempts are required) :
 - Clinical signs of shock (syncope/ near syncope, confusion, diaphoresis, pallor, combativeness, tachycardia, tachypnea, hypotension) from any cause with a systolic BP less than 80 mm Hg.
 - Patients in extremis (at immediate risk of death or disability). Examples include: multi-system trauma, anaphylaxis, status asthmaticus, status epilepticus, life-threatening dysrhythmia or bradycardia, severe respiratory distress with hypoxia and/or alteration in consciousness, respiratory arrest, and overdose associated with alteration in vital signs, mental status, and/or dysrhythmia.
 - Cardiac/ Respiratory/ Traumatic Arrest
2. EZ-IO is only approved for patients greater than 3 kg. **If less than 3 kg**, ALS should initiate an IO using a **Jamshidi needle**.

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**Intraosseous Cannulation
Procedure (ILS & ALS Only)**

Contraindications

1. Fracture of the bone selected for IO infusion (consider another approved site of insertion)
2. Excessive tissue at insertion site with absence of anatomical landmarks (consider another approved site of insertion)
3. Previous significant orthopedic procedures (i.e. prosthesis or hardware placement) (consider another approved site of insertion)
4. Infection at the site selected for insertion (consider another approved site of insertion)

Considerations

- Drip rates will be slower than achieved with intravenous (IV) access. To improve continuous infusion rates, use a pressure infusion bag (or BP cuff).
- Insertion of the EZ-IO in conscious patients or patients responsive to pain has been noted to cause mild to moderate discomfort comparable to the insertion of a large bore IV catheter. IO infusion, however, has been noted to cause severe discomfort.

EZ-IO Procedure

1. Observe universal precautions.
2. Prepare the EZ-IO driver and needle set:
 - a) 15ga, 15mm long needle for patients weighing between 3kg and 39kg
 - b) 15ga, 25mm long needle for patients weighing greater than 40kg
 - c) 15ga, 45 mm long needle for patients weighing greater than 40kg with excessive tissue depth
3. Locate an appropriate insertion site. Approved sites and positioning include:
 - *Proximal Humerous* (preferred site) - Patient arm internally rotated with palm over the Abdomen. Place ulnar aspect of one hand over the Biceps tendon. Place the other hand over the middle of the Humerus. Using your thumbs, identify the greater Tuberosity. Insert the IO 1cm above the surgical neck. Angle the IO at a 45 degree angle to optimize insertion.
 - *Proximal Tibia*- 2 finger breadths below the Patella, 1-2cm medial to the Tibial Tuberosity.
 - *Distal Tibia*- Palpate the Medial Malleolus and then palpate 2cm proximal. Identify the borders of the Tibia to ensure optimal insertion.
4. Prep the site with Betadine or chlorhexidine and set up infusion solution as for regular IV.

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Intraosseous Cannulation Procedure
(ILS & ALS Only)

5. Stabilize site and insert appropriate needle set.
6. Remove EZ-IO driver from needle set while stabilizing catheter hub.
7. Remove stylet from the catheter; place stylet in EZ-IO shuttle or approved sharps container.

EZ-IO Procedure {Continued}

8. Attach 5-10mL syringe and aspirate bone marrow (0.5 mL) to confirm placement.
 - a) IO catheter should be at a 90 degree angle and firmly seated in the bone.
 - b) Blood may be visible at the tip of the stylet.
 - c) The IO catheter should flush freely without difficulty or evidence of extravasation. 5-10 mL IVF should be rapidly infused.
9. Connect the luer-lock equipped IV administration set.
10. For **patients responsive to pain** (or for previously unresponsive patients who become conscious or aware of pain):
 - a) Adult patients: **Lidocaine:** 40 mg IO (slowly) to reduce discomfort from infusion.
 - b) Pediatric patients: **Lidocaine:** 0.5 mg/kg up to 40 mg IO (slowly) to reduce discomfort from infusion.
11. Flush the IO catheter with 10mL of normal saline.
12. Utilize a pressure bag for continuous infusions where applicable. If a pressure bag is not available, wrap a BP cuff around the bag of normal saline and inflate the cuff until desired flow rate is achieved.
13. Dress site, secure tubing and apply wristband as directed. Can be accomplished with tape or commercial wristband.
14. Closely monitor EZ-IO site en route.

Pearls

- The Humeral head is the preferred site for IO access as it has flow rates 5x that of proximal tibia and is comparable to large bore peripheral IVs.
- Do not use an area previously used for IO attempts.
- **Sometimes marrow cannot be aspirated and does not necessarily indicate improper placement.**
- Excessive movement of the IO needle may result in leakage.
- Do not place more than one IO unless absolutely necessary.
- Cease use of device immediately if extravasation is evident.

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Medication Administration Procedure

Medication administration is accomplished by specific routes as indicated by the protocols. This procedure describes the traditional medication routes for use in the prehospital setting.

Preparation Steps

1. Observe universal precautions for body substance exposures.
2. Confirm the drug order, amount to be given and route.
3. Confirm that the patient is not allergic to the medication.
4. Check the medication:
 - Is it the right medication? *Beware of similar looking medications or a medicine not being in the 'normal' location.*
 - Expiration date?
 - Color and clarity?
5. Explain to the patient *what* medication you are giving them and *why* you are giving it.
6. Assemble the necessary equipment.
 - Filter needles must be utilized any time a medication is removed from an ampule.
7. Calculate and draw up the desired volume of the drug or confirm the concentration of the drug if administering from a pre-filled syringe.
8. Eject any air from the syringe.
9. Confirm the medication again:
 - Is it the **right medication**?
 - Is it the **right patient**?
 - Is it the **right dose**?
 - Is it the **right route**?
 - Is it the **right time**?
 - Is it the **right documentation** in the chart?

Intravenous Medication Administration

This procedure utilizes an IV that has previously been established and patency has been confirmed.

1. Cleanse the injection port or luer port with an alcohol prep pad.
2. Insert the needle into the inlet port or attach the syringe to the luer port.
3. Stop the flow of the IV by pinching off the IV tubing above the port.
4. Inject the desired amount of drug at the rate indicated by protocol.
5. Release the IV tubing and flush with approximately 20mL of fluid to assure delivery of the drug.
6. Properly dispose of the contaminated equipment.
7. Document the name of the medication, the dose, the route of administration and the time that the drug was administered.
8. Monitor and document the patient's response to the medication.

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Medication Administration Procedure

EZ-IO Medication Administration

Refer to *Intravenous Medication Administration* steps. Unless specifically noted with a medication, any medication that can be given IV can be given IO.

Subcutaneous Medication Administration

Subcutaneous injections are administered into the subcutaneous tissue (not the superficial dermis or the muscle).

1. Identify an injection site (the subcutaneous tissue over the tricep muscle of the upper arm is commonly used).
2. Clean the injection site with an alcohol prep.
3. Pull the skin away from the underlying muscle by “tenting” or pinching the site.
4. Advise the patient to expect a “stick” and to try to relax the deltoid muscle.
5. Insert the needle at a 45-90 degree angle into the subcutaneous tissue and administer the medication.
6. Withdraw the needle and apply pressure to the site with a gauze pad.
7. Document the name of the medication, the dose of the medication, the route of administration and the time that the drug was administered.
8. Properly dispose of the contaminated equipment.
9. Monitor and document the patient’s response to the medication.

Medication Administration Procedure

Intramuscular Medication Administration

Intramuscular (IM) injections in the prehospital setting are relatively uncommon. IM injections are administered into the muscle tissue and require adequate perfusion for absorption.

1. Identify an injection site (the deltoid muscle of the upper arm or the quadriceps muscle of the left thigh are commonly used).
 - a. If medication comes in an ampule, utilize a filter needle to draw up the medication. Change to the injection needle prior to administration.
2. Clean the injection site with an alcohol prep.
3. Stretch or “flatten” the skin overlying the site with your fingers.
4. Advise the patient to expect a “stick” and to try to relax.
5. Insert the needle (preferably a 2-inch, 22g needle) at a 90 degree angle into the muscle tissue.
6. Pull back (aspirate) on the syringe to confirm that the needle is not in a vessel by observing for blood return.
 - If blood is aspirated into the syringe, discontinue the injection and start the procedure over, including utilization of new needle and syringe and drawing up new medication solution.
 - If blood is not aspirated into the syringe, slowly inject the drug into the muscle tissue.
7. Withdraw the needle and apply pressure to the site with a gauze pad.
8. Document the name of the medication, the dose of the medication, the route of administration and the time that the drug was administered.
9. Properly dispose of the contaminated equipment.
10. Monitor and document the patient’s response to the medication.

Medication Administration Procedure

Intranasal Medication Administration

Introduction and Indications

The intranasal route of medication administration offers another option when intravenous access is either unavailable, or when a parenteral delivery system is impracticable or contraindicated. Examples would include agitated or combative patients, contamination of a patient where an adequate site cannot be cleansed, or when, because of extenuating circumstances, clothing cannot be removed to access an IM administration site. Intranasal administration is safe, effective, and decreases risk of inadvertent needle stick injuries.

Contraindications

- Nasal trauma or recent sinus or nasal surgery
- Epistaxis, nasal congestion, or significant nasal discharge
- Cardiac Arrest

Equipment

- Medication to be delivered
 - Approved I.N. medication- Narcan
- 1 or 3 mL syringe with appropriate transfer device (vial access cannula or needle)
- Mucosal atomizer device

Procedure

1. Select desired medication and determine dose (See Medication Table).
2. Draw up appropriate dose (volume) of medication plus an additional 0.1 ml to account for dead space in the atomizer device.
3. Attach the Mucosal Atomizer Device to syringe.
4. Use one hand to support back of patient's head as needed.
5. Place tip of atomizing device snugly against nostril aiming slightly upward and outward.
6. Rapidly administer one half of the dose of medication into one nostril, administering the other half into the other nostril.
7. Maximum volume per nostril is 1 mL (more than 1 mL will cause medication run off)
8. Monitor for medication effectiveness, and continue with treatment protocol.

Medication Administration Procedure

Intranasal Medication Administration (Cont.)

Pearls

- Divide the total amount of fluid to be delivered equally between each nostril.
- Allow 15 minutes before administering subsequent intranasal doses.
- Patients who have abused inhaled stimulants such as cocaine may have decreased effectiveness of intranasal medications.
- Hypotension may decrease absorption.



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Pain Control Protocol

Pain, and the lack of relief from the pain, is the most common complaint among patients. Pain control can reduce the patient's anxiety and discomfort, making patient care easier. The patient's severity of pain must be properly assessed in order to provide appropriate relief. Managing pain clinically in the prehospital setting will provide greater patient care. While society is facing a narcotic medication addiction epidemic, the care provided by EMS in regards to pain management should be focused on the event at hand rather than concerns of increasing that problem in society. As such, Pain Control will be reviewed through the CQI process.

Emergency Medical Responder Care

First Responder Care should focus on the reduction of the patient's anxiety due to the pain.

1. Render initial care in accordance with the *Routine Patient Care Protocol*.
2. Assess level of pain using the *Pain Assessment Scale* (0-10) or the *Wong-Baker Faces Pain Rating Scale*.
3. Place patient in a position of comfort.
4. Reassure the patient.
5. Consider ice or splinting.
6. Reassess level of pain using the approved pain scale.

BLS Care

BLS Care should focus on the reduction of the patient's anxiety due to the pain.

1. BLS Care includes all of the components of *Emergency Medical Responder Care*.
2. Initiate ALS intercept, if indicated.

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Pain Control Protocol (cont.)

ILS Care

ILS Care should focus on the reduction of the patient's anxiety due to the pain as well as initiating pharmaceutical management.

1. ILS Care includes all of the components of *BLS Care*.
2. Initiate ALS intercept, if indicated.
3. In cases of **extremity pain (deformity, inability to bear weight, inability to flex joints etc.), back pain, chest pain, burns, abdominal/ flank pain, and discomfort from an IO infusion pain medication may be given without calling medical control** if the systolic BP > 90mmHg. **Any other situation involving pain medication administration requires Medical Control order prior to giving the medication**
 - a) **Fentanyl:** 1mcg/kg IV (Maximum 100 mcg dose) over 2 minutes for pain. If unable to establish IV access, may administer Fentanyl 1mcg/kg IM (Maximum 100 mcg dose).

--In patients with known renal failure, the Fentanyl dose must be reduced by half.

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Pain Control Protocol (cont.)

ALS Care

ALS Care should focus on initiating and/or continuing pharmaceutical management of the patient's pain.

1. ALS Care includes all of the components of *ILS Care*.
2. In cases of **extremity pain (deformity, inability to bear weight, inability to flex joints etc.)**, **back pain, chest pain, burns, abdominal/ flank pain, and discomfort from an IO infusion pain medication may be given without calling medical control** if the systolic BP > 90mmHg. **Any other situation involving pain medication administration requires Medical Control order prior to giving the medication.**
 - a) **Morphine Sulfate:** 2-4mg IV every **5 minutes** to reduce the patient's anxiety and severity of pain.
If unable to establish IV access, may administer Morphine 2-4mg IM every **15 minutes**.
OR:
Fentanyl: 1mcg/kg IV (Maximum 100 mcg dose) over **2 minutes** for pain. This IV dose may be repeated one time in **5 minutes** to a maximum of 200 mcg.
If unable to establish IV access, may administer Fentanyl 1mcg/kg IM (Maximum 100 mcg dose). IM dose may be repeated one time in **15 minutes** to a total of 200mcg.
-Fentanyl and Morphine can be given in either order or one without the other based on patient situation and need.
-**In patients with known renal failure, the Fentanyl dose must be reduced by half. The dose may be repeated one time.**
 - b) **Ketamine:** 0.3 mg/ kg IV/IO IBW over **2 minutes** for continued pain only **after** either Morphine or Fentanyl has been administered.
Additional doses of Ketamine require medical control order.
-Additional doses of Morphine or Fentanyl may be given following Ketamine administration without medical control order.
Ketamine dosing is based upon Ideal Body Weight.

The formula for calculating IBW is:
Men= 50 kg + 2.3 kg for every inch over 5 foot tall.
Women= 45.5 kg + 2.3 kg for every inch over 5 foot tall.
**** Patient height must be documented in the PCR****
 - c) **Ondansetron (Zofran):** 4mg IV/ ODT for nausea and/or vomiting. May repeat X 1 in 30 minutes, if needed. If known pregnant female, contact medical control prior to administering any Ondansetron.

Pain Control Protocol (cont.)

Wong-Baker FACES® Pain Rating Scale



Pearls

- Monitor the patient for respiratory depression when administering narcotics.
- Blood pressure should be monitored closely – check 5 minutes after narcotic administration (and prior to administering repeat doses).
- Verify that the patient is not allergic to the pharmaceutical agent prior to administration.
- Patients with ALOC or patients with unstable vital signs **should not receive pain medications.**
- **In patients with known renal failure, the Fentanyl dose must be reduced by half (ILS/ALS). The dose may be repeated one time (ALS)**
- Pain medication may be given IO to conscious patients experiencing discomfort from IO infusion.
- When IBW is calculated, the estimated height must be documented in the PCR.

CQI

- Use and security of controlled substances must follow strict procedures. Providers must follow waste and documentation procedure at all receiving facilities.
- If medication is diluted for more controlled administration, dilution must be noted with the waste of the remaining solution for accurate testing.