

Protocol Changes adopted by the MPCC on 9/11/09 for Immediate Implementation

- 1.) In order to better clarify, the heading in the Classification of Meds, column B, will become "Readminister or Titrate Drip".
- 2.) Modified CCT Acute MI Protocol 1202/2202 to allow CCT Class 1* (RN) team member to administer Nitroglycerin drip in a Field/911 scene response. Words "For Interfacility Transport Only" in Section B. 5. of the above protocol will be moved down to B. 6. Also, in the Classification of Meds: Anti-anginals, Nitroglycerin drip will be labeled "F" for Field/911 Utilization by appropriate CCT personnel. [See *CCT Acute MI Protocol 1202/2202 B.5. and B.6.; Classification of Meds, Anti-anginals*].

For clarification, nitroglycerin SL was added to the Classification of Meds list as 6,6,N/A, field use drug. Sublingual nitroglycerin is already carried, but had been left off the previous drug list. Nitroglycerin IV was already listed. [See *Classification of Meds, Anti-anginals*].
- 3.) Modified C3-IFT protocols to allow these personnel to adjust certain critical drips under direct order of MCP, if needed. This includes Amiodarone, Procainamide, and Diltiazem drips and Magnesium sulfate drips. These drugs were previously "monitor only" status. This change will be designated in the Classification of Meds list as "3 ++" with footnote added to indicate "C3-IFT may adjust drip rate only, and then only by order of MCP." [see *C3-IFT Anti-arrhythmic Protocol 3203 paragraph 2, and C3-IFT Electrolyte Protocol 3604 B.4.*].
- 4.) Modified C3-IFT protocol changing the maximum number of IV antibiotics being run from "Limit 1 Ab" to "Limit 2 Ab". This will now allow the C3-IFT medic to monitor up to two IV antibiotics during transport. [See *Classification of Meds: Antibiotics and C3-IFT Antibiotic Protocol 3602 B.1.*].
- 5.) The previous decision to phase out morphine sulfate has been carefully re-examined and morphine **will not** be phased out. There has been concern regarding giving fentanyl to children due to a rare side effect called Rigid Chest Syndrome. The Patient Comfort Protocols 4902, 5902, and C3-IFT Analgesic Protocol 3901 have been modified to reflect that morphine is the drug of choice for children and that fentanyl has been restricted to adults and children ≥12 years old by adding the footnote: *Do NOT administer fentanyl to children <12 years old. Observe all patients for Rigid Chest Syndrome which is usually reversed with naloxone (*Narcan*). Some patients may rarely need intubated. [See *Patient Comfort Protocol 4902 E.1. and E.2.; Patient Comfort Protocol 5902 E. and F; Analgesic Protocol 3901 B.5.ii*].
- 6.) Ketoralac (Toradol) has been added to the Classification of Meds list as a 4,4,N/A, field use drug. Ketoralac is already carried by paramedics but was inadvertently omitted from the previous med lists. [See *Classification of Meds, Analgesics*].

7.) The 2007 ACC/AHA Update for Treatment of STEMI indicates that morphine is the drug of choice for chest pain. Due to this, morphine will be listed first and fentanyl second in the treatment options for use by MCP for chest pain not relieved by sublingual nitroglycerin. [See *Chest Pain/ACS Protocol 4202 I.1. and I.2.*; *Chest Pain/ACS Protocol 5202 I.1. and I.2.*].

8.) Sodium bicarbonate has been added to the Classification of Meds list as a 5,5,3, field use drug. This drug is already carried and was inadvertently left off previous lists. The drug has also been added to the C3-IFT Reversal Agent Protocol 3903 for aspirin and tricyclic anti-depressant overdose. [See *Classification of Meds, Miscellaneous; Analgesics C3-IFT Reversal Agent Protocol 3903, C.4.*].

9.) Modified EMT-B MAMP Protocol 6201 to allow MCP to consider NTG SL for CHF or pulmonary edema. [See *MAMP Protocol 6201 E.6.*].

10.) A new Intraosseous Placement Protocol 8201 was developed to standardize the procedure for placement of intraosseous access using drill devices only. I/O insertion is approved for life-threatening emergencies only, not for prophylactic access. Site selection is approved for proximal tibia, distal tibia, proximal humerus—in this order unless contraindicated. This procedure is approved for EMSA-I and above, if so trained and approved by the agency's Medical Director. [See *Intraosseous Placement Protocol 8201*].

Also, modified MAMP Protocols 4201 D.2. and 5201 D.3. to refer to this new Intraosseous Placement Protocol 8201, and removing previous limitation for proximal tibia placement only. [See *MAMP Protocol 4201D.2. and 5201 D.3.*]. Note: MAMP Protocol 5201 A.1.c. was added to correct a previous omission of the CPAP option.



CCT-RN/Paramedic Treatment Guideline 1202/2202

Acute Myocardial Infarction

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Follow **Chest Pain (ACS) Protocol 4202** and **MAMP Protocol 1201/2201**, as applicable, with the following modifications:

A. Patient Assessment.

1. If field/911 response, obtain 12 lead ECG and transmit to accepting facility and/or Medical Command, if possible;
If interfacility transfer, obtain copy of 12 lead ECG and consult with sending personnel regarding type of myocardial infarction.

2. If findings of Inferior Wall infarct (ST elevations in leads II, III, aVf), perform right sided ECG looking for ST elevation in V4R. *ST elevations in V4R would suggest Right Ventricular (RV) infarct. **Do not give nitroglycerin to patients with RV infarct since they need preload.***

B. Treatment for Acute ST-Elevated Myocardial Infarction (STEMI) –[**not Inferior Wall MI with RV infarct**].

1. Ensure that ASA 325 mg PO has been given per **Chest Pain (ACS) Protocol 4202** unless contraindicated.

2. Clopidogrel (*Plavix*) 300 mg PO unless contraindicated.*

*Contraindications include age ≥ 75 , recent or ongoing bleeding, or if interfacility transport for the purpose of emergency coronary artery bypass graft (CABG).

3. If chest pain persists and BP >90 systolic, ensure that nitroglycerin 0.4 mg SL has been given and may repeat every 5 minutes up to 3 doses, per **Chest Pain (ACS) Protocol 4202** unless contraindicated. ***Withhold nitroglycerin if Inferior Wall MI with RV infarct unless directed by MCP.***

4. If chest pain persists and BP >100 systolic, consider morphine 2 mg slow IVP. May repeat every 5 minutes (up to 10 mg total), if chest pain persists and BP >100 systolic.

CCT Class 1*:

5. If chest pain persists and BP >100 systolic, consider nitroglycerin infusion, starting at 5 mcg/min via IV pump. May titrate up by 5 mcg/min every 5 minutes, if needed as long as BP >90 systolic. Max dose: 40 mcg/min. ***Withhold nitroglycerin if Inferior Wall MI with RV infarct.***



CCT-RN/Paramedic Treatment Guideline 1202/2202

Acute Myocardial Infarction

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(For Interfacility Transfer Only)

6. In consultation with sending and/or receiving physicians, RN may initiate thrombolytic and/or heparin therapy **as directed by physicians**.

Standard heparin dosing is as follows:

Heparin bolus: 60 Units/kg IVP, not to exceed 5000 Units

Heparin drip: 12 Units/kg/hour, not to exceed 1000 Units/hour

7. If heparin, thrombolytics, or other IV drip meds have already been started by sending facility, maintain infusion rate as set by sending facility unless changed by MCP or receiving physician.

8. If not already given, *for patients who are hypertensive (BP >140/80) and do not have any of the contraindications below*, consider metoprolol (*Lopressor*).

Metoprolol 5 mg slow IV push every 5 minutes, up to total of 15 mg, as long as patient remains hemodynamically stable and none of the following contraindications are present. [**Contraindications include signs of heart failure; heart rate <60; BP <120 systolic; signs of CHF including rales/crackles; 1st, 2nd, or 3rd degree heart block; active asthma, or reactive airway disease; or increased risk for cardiogenic shock including age >70.**]

C. Treatment for Acute Inferior Wall MI with Right Ventricular Infarct.

1. Perform those steps in B. above **except** for administration of nitroglycerin.

2. If hypotension, consider volume loading with IV 0.9% normal saline boluses of 250 ml each, may repeat up to 1 - 2 liters total, as long as lungs remain clear. Titrate IV fluids to maintain BP >90 systolic.

3. If persistent hypotension not corrected by IV fluids, **Consult MCP** for consideration of vasopressors such as:

CCT Class 1*: dobutamine (*Dobutrex*) 2 mcg/kg/min, titrate up for BP >90 systolic (max. 20 mcg/kg/min), **per direct order by MCP**,
OR

CCT Class 2: dopamine 5 mcg/kg/min, titrate up for BP >90 systolic (max. 20 mcg/kg/min), **per direct order by MCP**.





CCT-RN/Paramedic Treatment Guideline 1202/2202

Acute Myocardial Infarction

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D. Treatment for Acute Coronary Syndrome (ACS or Non ST-Elevated MI).

1. For interfacility transport, continue any medications that were started by the sending physician, as appropriate.

2. **CCT Class 1:** If not already established, **Consult with MCP** regarding GIIb/IIIa inhibitor:

eptifibatide (*Integrilin*) 180 mcg/kg bolus over 2 minutes, then
2 mcg/kg/min,

OR

tirofiban (*Aggrastat*) 0.4 mcg/kg/min for 30 minutes, then 0.1 mcg/kg/min





Class 3 IFT-Paramedic Treatment Protocol 3203

Anti-arrhythmic Protocol

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Medications administered in order to control atrial and/or ventricular arrhythmias and improve cardiac pumping action and cardiac output.

Medications in this protocol are **not** to be started primarily by the C3-IFT paramedic, but are interfacility infusions only. Drip rates of medications in this protocol may be adjusted only **by order of MCP**.

A. Perform **Class 3 IFTA Protocol 9201**.

B. Treatment

1. Continue infusion rate as **ordered by the sending physician**.
2. Blood pressure and heart rate should be assessed and documented every 15 minutes while anti-arrhythmic medications are infusing.
3. Monitor for signs or symptoms of hypoperfusion such as hypotension, bradycardia, pallor, dyspnea, nausea, vomiting, and altered mental status.

4. Discontinue medication and **consult MCP** if patient exhibits signs of hypoperfusion.



C. Medications

1. **Amiodarone (Cordarone)**: 0.5 to 1 mg/min IV is common therapeutic dose.
2. **Diltiazem (Cardizem)**: 5 to 15 mg/hr IV is common therapeutic dose.
3. **Procainamide (Pronestyl)**: 1 to 4 mg/min is common therapeutic dose.



Class 3 IFT-Paramedic Treatment Protocol 3602

Antibiotic Protocol

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Any antibiotic must have been infusing for at least 15 minutes prior to transport and determination made that patient is not experiencing an allergic reaction to the medication.

- A. Perform **Class 3 IFTA Protocol 9201**.
- B. Treatment
 1. Maximum of two antibiotics may be infusing at the time of transport.
 2. Continue infusion rate as **set by the sending physician**.
- C. Monitor patient for symptoms of an allergic reaction: rash, hives, dyspnea, itching, and/or tachycardia.

D. If symptoms occur, stop the infusion, refer to **Allergic Reaction / Anaphylaxis Protocol 4501** and **consult MCP** for further orders.





Class 3 IFT-Paramedic Treatment Protocol 3604

Electrolyte / Nutrition Protocol

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- A. Potassium Chloride (KCl):** Used for potassium replacement in the patient with hypokalemia or related cardiac arrhythmias. **Must be on a pump and at a concentration of no more than 40 meq/1000ml. Must be given over no less than 2 hours.**
1. Perform **Class 3 IFTA Protocol 9201**.
 2. Continue infusion rate as **ordered by the sending physician**.
 3. Assess IV site for signs of infiltration.
 4. KCl infusions are **monitor only for the C3-IFT paramedic**.
 5. Monitor patient for arrhythmias, confusion, restlessness, and ECG changes.
 6. If symptoms occur, **contact medical command and consult MCP**.
- B. Magnesium Sulfate:** Used for prevention and treatment of hypomagnesemia and related cardiac dysrhythmias, management of obstetrical emergencies and preterm labor, and as an anticonvulsant.
1. Perform **Class 3 IFTA Protocol 9201**.
 2. Continue infusion rate as **ordered by the sending physician**.
 3. Assess IV site for signs of infiltration.
 4. Magnesium sulfate drip rate may be adjusted **by order of MCP only**.
 5. Monitor patient for arrhythmias, confusion, lack of muscle and reflex tone, restlessness, and ECG changes.
 6. If symptoms occur, **contact medical command and consult MCP**.
 7. For magnesium toxicity, perform C3-IFT Protocol 3903 Reversal Agent Protocol.
- C. Total Parenteral Nutrition (TPN):** Primary or supplemental nutrition that bypasses the gastrointestinal tract by being infused directly into the blood stream.
1. Perform **Class 3 IFTA Protocol 9201**.
 2. Continue infusion rate as **ordered by the sending physician**.
 3. Assess IV site for signs of infiltration.
 4. TPN infusions are **monitor only for the C3-IFT paramedic**.
 5. TPN should only be administered via central venous catheter.
 6. **Contact Medical Command** if questions or complications develop during transport.



Class 3 IFT-Paramedic Treatment Protocol 3901

Analgesic Protocol

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A. Perform **Class 3 IFTA Protocol 9201**.

B. Treatment

1. Assess and document presenting signs and symptoms that require the administration of an analgesic medication.
2. Obtain and document current vital signs.
3. Opiate analgesic administration to a patient with respiratory depression, hypotension, or altered mental status is contraindicated.
4. Administer the approved analgesic medication as **ordered by the sending physician**.
5. Approved medications:
 - i. **Morphine sulfate**: 2-4 mg slow IV, over 1 to 2 minutes. May repeat every 30 minutes up to 8 mg total. **Additional doses per order of MCP**. Continuous infusions of Morphine must be maintained at the **dose ordered by the sending physician**. Morphine sulfate continuous IV infusion is **monitor only for the C3-IFT paramedic**.
 - ii. **Demerol (Meperidine)**: 25 mg slow IV, over 2 minutes. Must be diluted in 5 ml of normal saline. May repeat one time after 60 minutes. **Additional doses per order of MCP**.
 - iii. **Fentanyl (Sublimaze)**: 1 mcg/kg slow IV (**pediatric dose also 1 mcg/kg). May repeat 50 mcg increments (**1 mcg/kg increments in peds) every 30 minutes up to 3 mcg/kg total (adults or peds). **Additional doses per order of MCP**.
Note: fentanyl is in micrograms (mcg), NOT milligrams (mg).
****Do NOT administer fentanyl to children < 12 years old. Observe all patients for Rigid Chest Syndrome which is usually reversed with naloxone (Narcan). Some patients may rarely need intubated.**
5. Document outcome and effectiveness of medication administered.
6. If no improvement or medication administered is ineffective, **contact Medical Command**.

C. **Morphine Sulfate is the only opiate analgesic that can be monitored as a continuous IV infusion by the C3-IFT paramedic.**



Class 3 IFT-Paramedic Treatment Protocol 3903

Reversal Agent Protocol

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This protocol is used ONLY in situations where medical personnel have overmedicated the patient with opiate or benzodiazepine medications, causing unwanted CNS depression and/or hypoventilation; or, the patient is on a magnesium sulfate drip and exhibits signs of toxicity (decreased mental status or respiratory depression); or, in cases where alkalinization of the urine for aspirin or tricyclic anti-depressant overdoses is needed.

This protocol is per order of Medical Command Physician only.

A. Perform **Class 3 IFTA Protocol 9201**.

B. Treatment

1. Observe patient for decreased level of responsiveness from baseline and/or decreased respiratory effort/rate.
2. Confirm reversal agent medication **provided and ordered by the sending physician**.
3. **Consult Medical Command Physician** to confirm indication for administration of reversal agent and discuss potential untoward effects.
4. If ordered by MCP, administer approved reversal agent as listed below.
5. If no improvement in symptoms provide supportive care and **consult MCP** for further treatment.

C. Approved reversal agents:

1. Flumazenil (*Romazicon*) 0.2 mg IV over 15 seconds for benzodiazepine overdose. If the desired result is not achieved, may repeat every 60 seconds up to maximum dose of 1 mg IV.
2. Naloxone 0.4 mg IV over 60 seconds for opiate overdose. May repeat every 3-5 minutes to a maximum dose of 10 mg.
3. Calcium gluconate: If patient is on a magnesium sulfate drip for premature labor or pre-eclampsia and develops signs of magnesium



Class 3 IFT-Paramedic Treatment Protocol 3903

Reversal Agent Protocol

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toxicity (decreased mental status or respiratory depression), first stop the magnesium sulfate drip, then consider calcium gluconate 10% 1gm IV slowly over 3-5 minutes until depressive effects are reversed **per MCP order**.

4. Sodium bicarbonate: Used for alkalinization of the urine in aspirin and tricyclic anti-depressant overdoses. Typical dose is 1 - 2 amps Sodium bicarbonate in 1 liter of 0.9% normal saline, run as intravenous infusion, **per order MCP**.



EMT-Paramedic Treatment Protocol 4201

Medical Assessment and Management Guideline (MAMP)

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The initial procedures needed to assess and manage medical patients are similar. Medical patients commonly suffer from cardiac or respiratory illnesses. Patients experiencing a cardiac emergency may present in many different ways including: chest pain, dyspnea, syncope, diaphoresis, weakness, dysrhythmias, or symptoms similar to previous cardiac problems. Patients may experience respiratory distress as a result of many different causes. This protocol outlines the **Medical Assessment and Management Procedures (MAMP)**. When directed by a protocol to "**Perform MAMP**", this protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

A. Airway and Oxygenation Management.

1. If airway is patent and spontaneous breathing is adequate and:
 - a. No or mild to moderate dyspnea, then administer oxygen at 2 - 6 LPM nasal cannula to maintain pulse oximeter >94%.
 - b. Severe dyspnea, then administer oxygen at 15 LPM non-rebreather mask to maintain pulse oximeter >94%.
 - c. Signs and symptoms consistent with CHF, pulmonary edema, asthma, COPD, or pneumonia, then evaluate for possible treatment with CPAP per **CPAP Protocol 8301** if agency is approved for optional **CPAP Protocol**.
2. If airway is not patent or breathing is inadequate, ventilate with 100% oxygen and perform **Airway Management Protocol 4901** as indicated.

B. Circulation, Vital Signs, and Rhythm Assessment.

1. If no pulse present, perform **CAT Protocol 4204** and CPR and treat per appropriate protocol.
2. If pulse is present, obtain vital signs.
3. Place patient on ECG monitor and pulse oximeter.
4. If arrhythmia present or potential cardiac arrest suspected, perform **CAT Protocol 4204** and treat per appropriate protocol.



EMT-Paramedic Treatment Protocol 4201

Medical Assessment and Management Guideline (MAMP)

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- C. Prepare for transport and transport if it does not interfere with definitive treatment.
- D. Establish venous access. Do not delay treatment or transport if immediate IV access is not critical to immediate treatment.
1. IV, preferably antecubital, with saline lock or normal saline at KVO.
 2. If unable to establish and patient has a life-threatening emergency, consider establishing intraosseous infusion per **Intraosseous Placement Protocol 8201**.
- E. If known, treat cause of respiratory distress per appropriate protocol:
1. If allergic reaction, refer to **Anaphylaxis/Allergic Reaction Protocol 4501**.
 2. If lung sounds of wheezes or rhonchi with prolonged expiratory phase, refer to **Bronchospasm Protocol 4302**.
 3. If lung sounds of rales or crackles with extremity edema or frothy sputum, refer to **Pulmonary Edema Protocol 4303**.
 4. If inhalation injury, refer to **Inhalation Injury Protocol 4304**.
 5. If airway obstruction, refer to **Airway Obstruction Protocol 4305**.
 6. If cardiac chest pain, refer to **Chest Pain Protocol 4202**.
- F. If cardiac emergency, consider causes that are potentially field reversible. Treat per appropriate protocols or as directed by **Medical Command**.
- | | |
|---------------------------|------------------------------------|
| Drug OD (4606) | Tension Pneumothorax (4104) |
| Hypovolemia (4108) | Chest Pain - ACS (4202) |
| Hypoxia (4901) | Hypothermia (4503) |
- G. Expedite transport if not already enroute.

- H. Repeat 20 ml/kg normal saline IV **per order of Medical Command**.





EMT-Paramedic Treatment Protocol 4202

Chest Pain/Discomfort, Acute Coronary Syndrome (ACS)

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- A. Indications for this protocol include one or more of the following:
1. Male over 25 years of age or female over 35 years of age, complaining of substernal chest pain, pressure or discomfort unrelated to an injury.
 2. History of previous ACS/AMI with recurrence of “similar” symptoms.
 3. Any patient with a history of cardiac problems who experiences lightheadedness or syncope.
 4. Patients of any age with suspected cocaine abuse and chest pain.
- B. Perform **MAMP (4201)**
- C. Obtain 12 lead ECG, if available and causes no delay in treatment or transport.
- D. If patient has no history of allergy to aspirin **and** has no signs of active bleeding (i.e., bleeding gums, bloody or tarry stools, etc.), then administer 4 (four) 81 mg chewable aspirin orally (324 mg total). Note: May be administered prior to establishment of IV access.
- E. If blood pressure > 90 systolic and patient has **not** taken sildenafil (*Viagra*) or vardenafil (*Levitra*) within last 24 hours [or tadalafil (*Cialis*) within the last 48 hours]:
1. Administer nitroglycerin 0.4 mg SL. Note: May be administered prior to establishment of IV access.
 2. Repeat nitroglycerin 0.4 mg SL every 3 - 5 minutes until pain is relieved.
 3. If blood pressure falls below 90 systolic or decreases more than 30 mmHg below patient’s normal baseline blood pressure, then discontinue dosing and **contact MCP** to discuss further treatment.





EMT-Paramedic Treatment Protocol 4202

Chest Pain/Discomfort, Acute Coronary Syndrome (ACS)

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- F. If blood pressure <90 systolic and/or patient is experiencing severe bradycardia or tachycardia, treat according to appropriate protocol. Further treatment per MCP orders. If patient has taken sildenafil (*Viagra*) or vardenafil (*Levitra*) within last 24 hours, or tadalafil (*Cialis*) within the last 48 hours, nitroglycerin should only be given **by MCP order**.



G. Transport.

H. Contact **Medical Command**.

I. If chest pain persists:

1. Morphine sulfate 2 mg slow IV **per order of Medical Command**

OR

Fentanyl (*Sublimaze*) 1 mcg/kg slow IV **per order of Medical Command**. **Note: fentanyl is in micrograms (mcg), NOT milligrams (mg).**

2. May administer additional morphine sulfate 2 mg increments slow IV **OR** fentanyl 50 mcg increments slow IV **per order of Medical Command** after five minutes if pain persists and BP is over 100 systolic.
3. Administer additional nitroglycerin 0.4 mg SL **per order of Medical Command**.



J. Treat dysrhythmias according to specific protocols.

K. If transport time permits, complete **AHA Fibrinolytic Checklist (STEMI)**. (See next page.)



EMT-Paramedic Treatment Protocol 4902

Patient Comfort

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Pain management in the field may be indicated when there is isolated trauma to extremities, severe burns, or amputations. Occasionally, patients with severe musculoskeletal back, neck, or flank pain may require pain treatment in order to facilitate packaging and transport. Except in rare circumstances, pain medication **should not** be administered to multiple trauma patients with possible head, abdomen, or chest injuries.

In some patients non-narcotic pain medication may be more appropriate. Extreme care must be exercised in determining the patient's risk for complications associated with the administration of this class of drugs (*Toradol*). Carefully determine if the patient has a history of kidney problems, gastrointestinal ulcers, or bleeding disorders, as well as cardiac problems, or allergies to aspirin or ibuprofen. These patients may not be candidates to receive ketorolac tromethamine (*Toradol*) in the field. **Consultation with MCP** is essential on all patients in which *Toradol* is considered.

Nausea and/or vomiting can be a side-effect of narcotic pain medications or associated with many conditions including motion sickness while being transported. Promethazine may be administered **per order of Medical Command** for patients suffering from severe nausea or to prevent nausea associated with these conditions.

- A. Perform **TAMP (4101) or MAMP (4201)**.
- B. Review patient's allergies, current medications, and past medical history.
- C. IV normal saline KVO or saline lock.
- D. Contact Medical Command.

- E. 1. If severe pain, administer:
Fentanyl (*Sublimaze*) 1 mcg/kg slow IV (**pediatric dose also 1mcg/kg) **per order of Medical Command**.
Note: fentanyl is in micrograms (mcg), NOT milligrams (mg).
OR
Morphine sulfate 2 – 4 mg IV (pediatric dose 0.05 mg/kg) **per order of Medical Command**.



*****Do NOT administer fentanyl to children < 12 years old. Observe all patients for Rigid Chest Syndrome which is usually reversed with naloxone (Narcan). Some patients may rarely need intubated.***



EMT-Paramedic Treatment Protocol 4902

Patient Comfort

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2. If pain not relieved, may repeat:

Fentanyl (*Sublimaze*) dosing **per MCP order** as follows:

Adult: 50 mcg increments slow IV.

Pediatric: 1 mcg/kg increments slow IV, up to maximum total dosage of 3 mcg/kg. **[Do NOT administer to children <12 year old]**

OR

Morphine sulfate, may repeat dosing **per MCP order**. Doses greater than 4 mg IV in a single dose **require MCP order**.



3. If non-narcotic pain medication appears more appropriate for patient, administer ketoralac (*Toradol*) 15 - 30 mg IV or 30 - 60 mg IM **per MCP order**. IM dosing should be reserved for longer transport times.

- F. To prevent or treat nausea and vomiting, consider administration of:

Ondansetron (*Zofran*) 4 mg IV (pediatric dose 0.15 mg/kg IV up to 4 mg maximum dose) **per order of Medical Command**.

OR

Promethazine (*Phenergan*) 6.25 to 12.5 mg IV (pediatric dose 0.5 mg/kg to total single dose of 6.25 mg) diluted with minimum of 3 ml of normal saline, **per order of Medical Command**.



- G. Expedite transport and monitor vital signs and mental status closely.

Special Note:

1. Reduced doses of promethazine (*Phenergan*) may be indicated in the elderly, those with asthma, and those susceptible to CNS depression.
2. Do not mix ketoralac (*Toradol*) in syringe with any other medication.
3. Do not administer ketoralac (*Toradol*) to patients with aspirin or ibuprofen allergy or elderly patients with a cardiac history. Patients with history of renal problems, GI bleeding, ulcers, or bleeding disorders are usually **not** candidates for ketoralac (*Toradol*).



EMSA-Intermediate Treatment Protocol 5201

Medical Assessment and Management Procedures (MAMP)

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The initial procedures needed to assess and manage medical patients are similar. Medical patients commonly suffer from cardiac or respiratory illnesses. Patients experiencing a cardiac emergency may present in many different ways including: chest pain, dyspnea, syncope, diaphoresis, weakness, dysrhythmias, or symptoms similar to previous cardiac problems. Patients may experience respiratory distress as a result of many different causes. This protocol outlines the **Medical Assessment and Management Procedures (MAMP)**. When directed by a protocol to “**Perform MAMP**”, this protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

A. Airway and Oxygenation Management.

1. If airway is patent and spontaneous breathing is adequate and:

- a. No or mild to moderate dyspnea, then administer oxygen at 2 - 6 LPM nasal cannula to maintain pulse oximeter >94%.
- b. Severe dyspnea, then administer oxygen at 15 LPM non-rebreather mask to maintain pulse oximeter >94%.
- c. Signs and symptoms consistent with CHF, pulmonary edema, asthma, COPD, or pneumonia, then evaluate for possible treatment with CPAP per **CPAP Protocol 8301** if agency is approved for optional **CPAP Protocol**.

2. If airway is not patent or breathing is inadequate, ventilate with 100% oxygen and perform **Airway Management Protocol 5901** as indicated.

B. Circulation, Vital Signs, and Rhythm Assessment.

1. If no pulse present, perform **CAT Protocol 5204** and CPR and treat per MCP.

2. If pulse is present, obtain vital signs.

3. Place patient on ECG monitor and pulse oximeter.

4. If arrhythmia present or potential cardiac arrest suspected, perform **CAT Protocol 5204** and treat per appropriate protocol.

C. Prepare for transport and transport if it does not interfere with definitive treatment.

D. Establish venous access. Do not delay treatment or transport if immediate IV access is not critical to immediate treatment.



EMSA-Intermediate Treatment Protocol 5201

Medical Assessment and Management Procedures (MAMP)

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1. IV, preferably antecubital, with saline lock or normal saline at KVO.
 2. If unable to establish an IV, and patient is critically ill and unconscious, consider EMT-P intervention *or*,
 3. If unable to establish IV and patient has a life-threatening emergency, consider establishing intraosseous infusion per **Intraosseous Placement Protocol 8201**.
- E. If known, treat cause of respiratory distress per appropriate protocol:
1. If allergic reaction, refer to **Anaphylaxis/Allergic Reaction Protocol 5501**.
 2. If lung sounds of wheezes or rhonchi with prolonged expiratory phase, refer to **Bronchospasm Protocol 5302**.
 3. If lung sounds of rales or crackles with extremity edema or frothy sputum, refer to **Pulmonary Edema Protocol 5303**.
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 5. If airway obstruction, refer to **Airway Obstruction Protocol 5305**.
 6. If cardiac chest pain, refer to **Chest Pain Protocol 5202**.
- F. If cardiac emergency, consider causes that are potentially field reversible. Treat per appropriate protocols or as directed **by Medical Command**.
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| Drug OD (5606) | Tension Pneumothorax (5104) |
| Hypovolemia (5108) | Chest Pain - ACS (5202) |
| Hypoxia (5901) | Hypothermia (5503) |
- G. Expedite transport if not already enroute.

H. **Contact Medical Command.** Further treatment as **ordered by Medical Command.**





EMSA-Intermediate Treatment Protocol 5202

Chest Pain/Discomfort Acute Coronary Syndrome (ACS)

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- A. Indications for this protocol include one or more of the following:
1. Male over 25 years of age or female over 35 years of age, complaining of substernal chest pain, pressure or discomfort unrelated to an injury.
 2. History of previous ACS/AMI with recurrence of "similar" symptoms.
 3. Any patient with a history of cardiac problems who experiences lightheadedness or syncope.
 4. Patients of any age with suspected cocaine abuse and chest pain.
- B. Perform **MAMP (5201)**.
- C. Obtain 12 lead ECG, if available and causes no delay in treatment or transport.
- D. If patient has no history of allergy to aspirin **and** has no signs of active bleeding (i.e., bleeding gums, bloody or tarry stools, etc.), then administer 4 (four) 81 mg chewable aspirin orally (324 mg total). Note: May be administered prior to establishment of IV access.
- E. If blood pressure > 90 systolic and patient has **not** taken sildenafil (*Viagra*) or vardenafil (*Levitra*) within last 24 hours [or tadalafil (*Cialis*) within the last 48 hours]:
1. Administer nitroglycerin 0.4 mg SL. Note: May be administered prior to establishment of IV access.
 2. Repeat nitroglycerin 0.4 mg SL every 3 - 5 minutes until pain is relieved.
 3. If blood pressure falls below 90 systolic or decreases more than 30 mmHg below patient's normal baseline blood pressure, then discontinue dosing and **contact MCP** to discuss further treatment.





EMSA-Intermediate Treatment Protocol 5202

Chest Pain/Discomfort Acute Coronary Syndrome (ACS)

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- F. If blood pressure < 90 systolic and/or patient is experiencing severe bradycardia or tachycardia, treat according to appropriate protocol. Further treatment **per MCP orders**. If patient has taken sildenafil (*Viagra*) or vardenafil (*Levitra*) within last 24 hours, or tadalafil (*Cialis*) within the last 48 hours, nitroglycerin should only be given **by MCP order**.



- G. Transport.
- H. Contact Medical Command.
- I. If chest pain persists:

1. Morphine sulfate 2 mg slow IV **per order of Medical Command**.

OR

Fentanyl (*Sublimaze*) 1 mcg/kg slow IV **per order of Medical Command**. **Note: fentanyl is in micrograms (mcg), NOT milligrams (mg).**

2. May administer additional morphine sulfate 2 mg increments slow IV **OR** fentanyl 50 mcg increments slow IV **per order of Medical Command** after five minutes if pain persists and BP is over 100 systolic.
3. Administer additional nitroglycerin 0.4 mg SL **per order of Medical Command**.



- J. Treat dysrhythmias according to specific protocols.
- K. If transport time permits, complete **AHA Fibrinolytic Checklist (STEMI)**. (See next page).

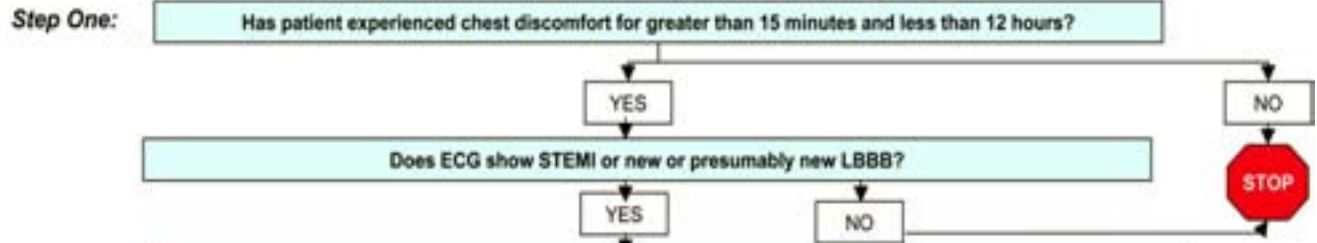


EMSA-Intermediate Treatment Protocol 5202

Chest Pain/Discomfort Acute Coronary Syndrome (ACS)

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CHEST PAIN CHECKLIST FOR STEMI FIBRINOLYTIC THERAPY



Step Two:

Are there contraindications to fibrinolysis?
If **ANY** of the following is CHECKED **YES**, fibrinolysis **MAY** be contraindicated.

- | | | |
|---|---------------------------|--------------------------|
| Systolic BP greater than 180 mm Hg | <input type="radio"/> YES | <input type="radio"/> NO |
| Diastolic BP greater than 110 mm Hg | <input type="radio"/> YES | <input type="radio"/> NO |
| Right vs. left arm systolic BP difference greater than 15 mm Hg | <input type="radio"/> YES | <input type="radio"/> NO |
| History of structural central nervous system disease | <input type="radio"/> YES | <input type="radio"/> NO |
| Significant closed head/ facial trauma within the previous 3 months | <input type="radio"/> YES | <input type="radio"/> NO |
| Recent (within 6 wks) major trauma, surgery (including laser eye surgery), GI/GU bleed | <input type="radio"/> YES | <input type="radio"/> NO |
| Bleeding or clotting problem or on blood thinners | <input type="radio"/> YES | <input type="radio"/> NO |
| CPR greater than 10 minutes | <input type="radio"/> YES | <input type="radio"/> NO |
| Pregnant female | <input type="radio"/> YES | <input type="radio"/> NO |
| Serious systemic disease (eg, advanced/terminal cancer, severe liver or kidney disease) | <input type="radio"/> YES | <input type="radio"/> NO |

Step Three:

Is patient at high risk?
If **ANY** of the following is CHECKED **YES**, CONSIDER Transport/ Transfer to PCI Facility

- | | | |
|--|---------------------------|--------------------------|
| Heart rate greater than or equal to 100 bpm AND systolic BP less than 100 mm Hg | <input type="radio"/> YES | <input type="radio"/> NO |
| Pulmonary edema (rales) | <input type="radio"/> YES | <input type="radio"/> NO |
| Signs of shock (cool, clammy) | <input type="radio"/> YES | <input type="radio"/> NO |
| Contraindications to fibrinolytic therapy | <input type="radio"/> YES | <input type="radio"/> NO |



EMSA-Intermediate Treatment Protocol 5902

Patient Comfort

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Pain management in the field may be indicated when there is isolated trauma to extremities, severe burns, or amputations. Occasionally, patients with severe musculoskeletal back, neck, or flank pain may require pain treatment in order to facilitate packaging and transport. Except in rare circumstances, pain medication **should not** be administered to multiple trauma patients with possible head, abdomen, or chest injuries.

Nausea and/or vomiting can be a side-effect of narcotic pain medications or associated with many conditions including motion sickness while being transported. Contact Medical Command for assistance for patients suffering from severe nausea or to prevent nausea associated with these conditions.

- A. Perform **TAMP (5101) or MAMP (5201)**.
- B. Review patient's allergies, current medications, and past medical history.
- C. IV normal saline KVO or saline lock.
- D. Contact Medical Command.

- E. If severe pain, administer:
 - Fentanyl (*Sublimaze*) 1 mcg/kg slow IV (**pediatric dose also 1mcg/kg) **per order of Medical Command.**
 - Note: fentanyl is in micrograms (mcg), NOT milligrams (mg).**
 - OR**
 - Morphine sulfate 2 – 4 mg IV (pediatric dose 0.05 mg/kg) **per order of Medical Command.**



*****Do NOT administer fentanyl to children < 12 years old. Observe all patients for Rigid Chest Syndrome which is usually reversed with naloxone (Narcan). Some patients may rarely need intubated.***



EMSA-Intermediate Treatment Protocol 5902

Patient Comfort

Page 2 of 2

F. If pain not relieved, may repeat:

Fentanyl (*Sublimaze*) dosing **per MCP order** as follows:

Adult: 50 mcg increments slow IV.

Pediatric: 1 mcg/kg increments slow IV, up to maximum total dosage of 3 mcg/kg. [**Do NOT administer to children < 12 years old**]

OR

Morphine sulfate, may repeat dosing **per MCP order**. Doses greater than 4 mg IV in a single dose **require MCP order**.



G. Expedite transport and monitor vital signs and mental status closely.



EMT-Basic Treatment Protocol 6201

Medical Assessment and Management Procedures (MAMP)

Page 1 of 2

The initial procedures needed to assess and manage medical patients are similar. Medical patients commonly suffer from cardiac or respiratory illnesses. Patients experiencing a cardiac emergency may present in many different ways including: chest pain, dyspnea, syncope, diaphoresis, weakness, dysrhythmias, or symptoms similar to previous cardiac problems. Patients may experience respiratory distress as a result of many different causes. This protocol outlines the **Medical Assessment and Management Procedures (MAMP)**. When directed by a protocol to “**Perform MAMP**”, this protocol should be performed in conjunction with the remaining procedures outlined in each individual treatment protocol.

A. Airway and Oxygenation Management.

1. If airway is patent and spontaneous breathing is adequate and:
 - a. No or mild to moderate dyspnea, then administer oxygen at 6 LPM nasal cannula to maintain pulse oximeter > 94%.
 - b. Severe dyspnea, then administer oxygen at 15 LPM non-rebreather mask to maintain pulse oximeter > 94%.
 - c. Signs and symptoms consistent with CHF, pulmonary edema, asthma, COPD, or pneumonia, then evaluate for possible treatment with CPAP per **CPAP Protocol 8301** if agency is approved for optional **CPAP Protocol 8301**.
2. If airway is not patent or breathing is inadequate, ventilate with 100% oxygen and perform **Airway Management Protocol 6901** as indicated.

B. Circulation and Vital Signs.

1. If no pulse present, perform **CAT Protocol 6204** and CPR and treat per MCP.
2. If pulse is present, obtain vital signs.

C. Prepare for transport and transport if it does not interfere with definitive treatment.

D. If chest pain, treat per **Chest Pain Protocol 6202**.



EMT-Basic Treatment Protocol 6201

Medical Assessment and Management Procedures (MAMP)

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E. If known, treat cause of respiratory distress per appropriate protocol and/or direct MCP order:

1. If allergic reaction, refer to **Anaphylaxis/Allergic Reaction Protocol 6501**.
2. If lung sounds of wheezes or rhonchi with prolonged expiratory phase, refer to **Bronchospasm Protocol 6302**.
3. If inhalation injury, refer to **Inhalation Injury Protocol 6304**.
4. If airway obstruction, refer to **Airway Obstruction Protocol 6305**.
5. If cardiac chest pain, refer to **Chest Pain Protocol 6202**.

6. If signs and symptoms are clearly consistent with CHF or pulmonary edema, and the patient's blood pressure is >100 systolic, the **Medical Command physician** may consider direct order for nitroglycerin 0.4mg sublingual.



F. Expedite transport if not already en route.

G. **Contact Medical Command.** Further treatment as **ordered by Medical Command.**





EMT-Paramedic Treatment Protocol 8201

Intraosseous Placement

Page 1 of 4

Intraosseous placement is intended **only** for those patients needing immediate vascular access in whom peripheral access cannot be established. In rare cases, it may be considered **prior** to peripheral attempts, but only as outlined below. This procedure may only be used by personnel specifically trained in this procedure and signed off by their agency's Medical Director.

A. Indications.

1. Immediate vascular access in life-threatening emergencies.

Note:IO insertion shall *not* be performed just for prophylactic access****

2. Intravenous fluids or medications are urgently needed and peripheral intravenous access cannot be established in a timely manner **AND** the patient exhibits one or more of the following:
 - a. Altered mental status (GCS \leq 8)
 - b. Respiratory compromise (pulse oximeter $<$ 90% after appropriate O₂ therapy, or respiratory rate $<$ 10 or $>$ 40).
 - c. Hemodynamic instability (systolic BP $<$ 90)
3. Intraosseous may be considered **prior** to peripheral IV attempts where successful rapid peripheral IV placement is doubtful, as in the following situations:
 - a. Cardiac arrest (medical or trauma)
 - b. Profound hypovolemia with altered mental status
 - c. Patient in extremis with immediate need for medication or intravenous fluids (patient in status epilepticus, impending arrest, etc.)

B. Contraindications.

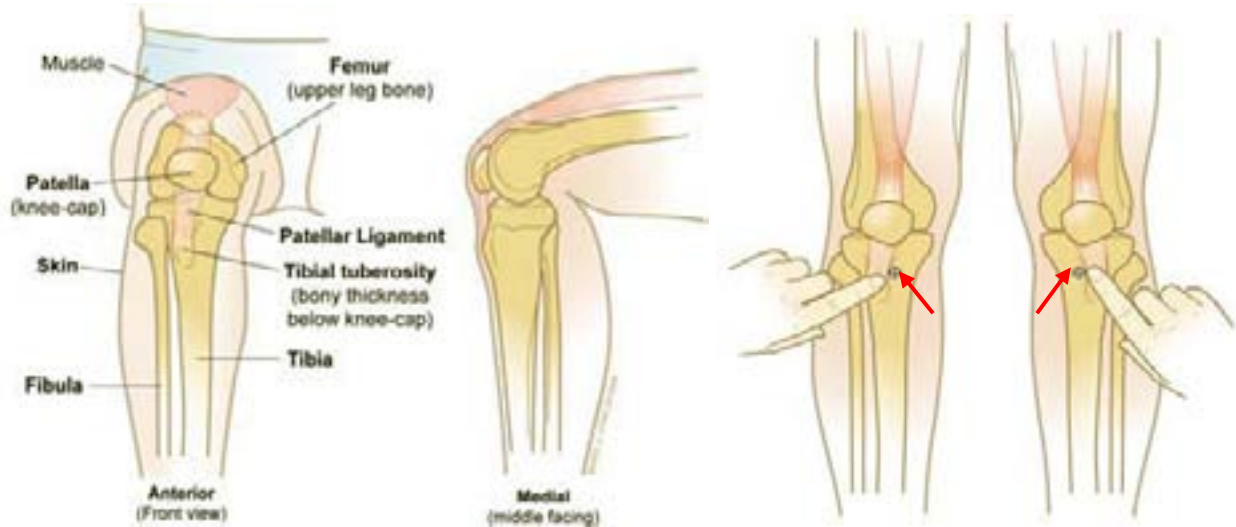
1. Fracture of the bone selected for IO infusion (*consider alternate side*)
2. Absence of anatomic landmarks at selected site
3. Previous significant orthopedic procedure (prosthesis, recent surgery)
4. Infection at the selected site

C. Procedure

1. Select insertion site in the following order, unless contraindicated:
Proximal tibia, then distal tibia, then proximal humerus.

Note: Red arrows point to targeted insertion sites.

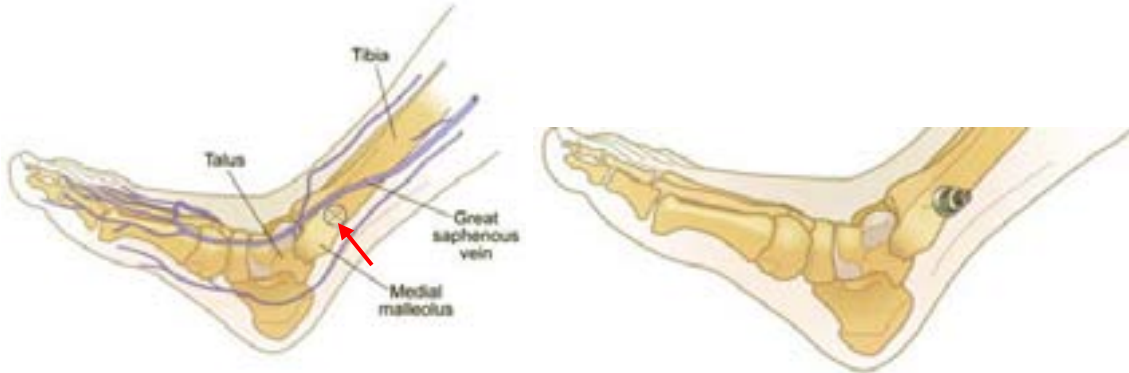
- a. Adult proximal tibia: Measure one fingerbreadth *medial* to the tibial tuberosity, along the flat aspect of the medial tibia as shown below.*



- b. Pediatric proximal tibia: one finger width distal to tibial tuberosity OR if unable to palpate tibial tuberosity, two finger widths below the patella along the flat aspect of the medial tibia.* Avoid growth plates.



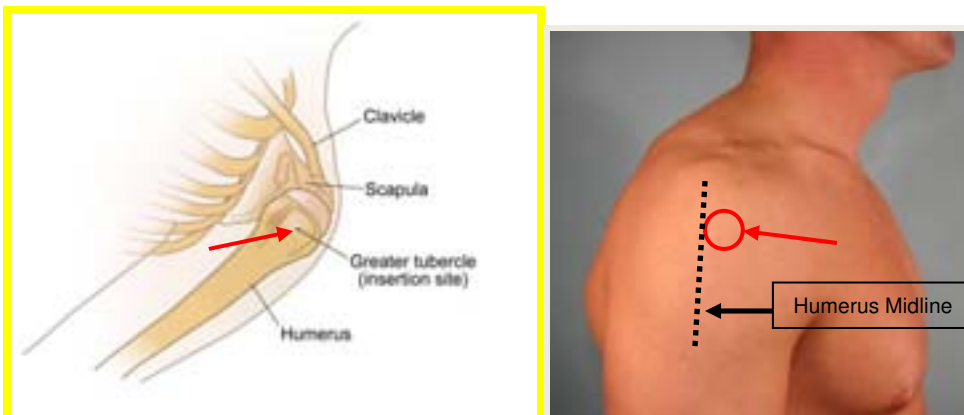
- c. Adult distal tibia: two finger widths proximal to the medial malleolus and midline on the medial shaft.*



- d. Pediatric distal tibia: one finger width proximal to the medial malleolus along the flat aspect of the medial distal tibia.*



- e. Adult and Ped proximal humerus: greater tubercle just anterior to midline.*





EMT-Paramedic Treatment Protocol 8201

Intraosseous Placement

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2. Prepare the skin site with antiseptic.
3. Prepare IO drill and needle set and load the needle onto the driver
4. Hold the IO drill in one hand and stabilize the extremity near the insertion site with the opposite hand
5. Position the drill at the insertion site with the needle at a 90 degree angle to the surface of the bone. Insert IO. Stabilize needle.
6. Analgesia. In the conscious/awake patient, slowly administer lidocaine 2% (**cardiac lidocaine 100mg/5ml [20mg/ml] - preservative free**) through the IO hub as follows. *Ensure that the patient has no allergy to lidocaine.*
 - a. Adults: Lidocaine 40 mg (2 ml) **slow** IO
 - b. Peds: Lidocaine 0.5 mg/kg **slow** IOAllow the lidocaine to work from 30 – 60 seconds before giving the flush.
7. Flush. To ensure proper infusion, administer a **rapid syringe bolus flush** as follows and repeat if necessary:
 - a. Adults and Peds: 10 ml normal saline rapid IO bolus
 - b. Include any pediatric flushes into totals for IV fluids given and record the amounts.
8. If no soft tissue infiltration is seen, attach IV line and infuse fluids and /or medications as usual; for adults, the IV bag will need to be under pressure. If the flow through the intraosseous line decreases after initial success, consider repeating the flush.
9. Monitor the area for signs of soft tissue infiltration and stop all infusions if infiltration is suspected.
10. Notify the receiving facility of the presence of the IO device prior to moving to the hospital stretcher.

* Permission to use the anatomic photos in this protocol was provided by Vidacare Corporation.