Tucson Medical Center Base Hospital Interfacility Transport Protocols

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Tucson Medical Center Base Hospital
Interfacility Transport Protocols

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Introduction

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Tucson Medical Center (TMC) Base Hospital InterfacilityTransport Protocols are offline procedures approved by TMC Base Hospital Medical Director. Each set will be reviewed by all EMCTs working under TMC Medical Direction. These evidence-based guidelines will be used to provide the care to the best of their education, experience and within their full scope of practice. TMC Base Hospital members will receive the full support of the Medical Director when providing care to this level.

Protocol Deviation Statement

It is not reasonable to expect any single document to cover all situations where providers may make an assessment that indicates a deviation from these protocols may be necessary. These guidelines are not meant to be absolute treatment doctrines nor are they a substitute for the judgment and experience of the provider. Providers are expected to utilize their best clinical judgment and deliver care and procedures according to what is reasonable and prudent for specific situations. Under rare circumstances deviation may be necessary.

In circumstance where it would not cause further harm and the provider believes a patient may clinically benefit from an intervention, or that following the protocol would be harmful or not in the best interest of the patient, the following procedure should be followed:

1. The EMCT on scene is responsible for performing a complete assessment and determining if a protocol deviation is warranted. Providers must be able to demonstrate they were aware of, and considered the guidance provided with TMC protocols, and understand the risks associated with deviating from protocol.
2. When considering a protocol deviation, a peer with the appropriate level of expertise should be consulted (if available) or call medical direction.
3. ONLY if a provider is comfortable performing the deviation and treatment is consistent with their level of training, may they proceed with the deviation. Documentation must include the reasons for the deviation, all clinical data validating safety, mitigating risk, and the response/effects. The provide must advise the receiving physician of the deviation and document it clearly on the PCR. In all cases providers are expected to deliver care within the scope of practice for their certification.
4. Any protocol deviations will be reported to their Supervisor, Agency EMS Coordinator and Base Hospital Manager within 24 hours. This serves as a safeguard to remind providers that protocol deviations are considered a rare necessity. All deviations are subject to review to determine whether or not it was appropriate.

Interfacility Transport EMCT Protocol

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Purpose

To ensure the patient will receive the appropriate care for their condition and follow AZDHS Statutes and Regulations and TMC Base Hospital Protocols for interfacility transfers on a non-emergent/emergent basis.

Determining Level of Care

Patients undergoing interfacility transport should be classified and aligned with transport resources appropriate for their needs. The skill level of the transporting unit personnel must be consistent with the level of care required by the patient needs during transport and documented on the Physician Certification Statement (PCS) form. ***If the EMCT has questions on the level of care needed, they should contact the Medical Direction Authority (a Base Hospital) they are transporting patient to for further direction.***

The following classification should be utilized:

1. Basic-Life-Support (BLS)
2. Advanced-Life-Support (ALS)

General Principles of Care and Medical Direction

1. Under no circumstances shall an EMCT function beyond the scope of their training and level of licensure/certification. The scope of practice for all EMTCs is limited to the levels of certification and training of the agency by which they are employed.
2. When providing interfacility transports, the EMCT will have medical direction through Medical Direction Authority. The Medical Director's name will be written in the Patient Care Reports (PCR)/Electronic Patient Care Reports (ePCR) as such.
3. All Interfacility Guidelines and Protocols will be followed for patient care.
4. All current adult, pediatric and procedures and protocols used by crews to treat patients in the 9-1-1 setting will apply to Interfacility Transports if applicable to patient's condition/situation. This includes, but is not limited to:
   a. **Nausea/Vomiting SO**
   b. **Pain Management SO**
5. EMS providers should contact Medical Direction Authority, if a patient's condition is unusual and is not covered by a specific guideline, if a patient's presentation is atypical and the guideline, treatment may be in question for the patient, or in any situation where there is question by the EMS provider about the best treatment for the patient.
6. If at any time an EMS provider feels a protocol/patient is beyond their skill or comfort level, **DO NOT PROCEED WITH THE TRANSPORT**. Contact Medical Direction Authority and/or your supervisor to discuss your concern.
7. Consider additional personnel (such as a second paramedic or EMT) because of types of drugs/devices that are required for the patient.

BLS Interfacility Transport Procedure

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Procedure

1. Upon arrival at the transferring facility, ensure that a BLS transport is appropriate.
2. Prior to accepting care of patient at sending facility:
    a. Utilize appropriate universal precautions and/or isolation precautions as needed.
    b. Perform initial patient assessment (form a general impression of the patient; assess for immediate life-threatening problems or instability; assess responsiveness, airway, breathing, and circulation)
    c. Obtain transfer information from sending facility. This includes but is not limited to:
        i. Bedside report from current rendering provider
        ii. Transfer papers (e.g. summary, appropriate clinical and diagnostic data including vital sign trends, laboratory data, diagnostic study/reports)
        iii. Be aware of appropriate clinical information on patient. (e.g. vital sign trends, diagnostic study/reports)
    d. Ensure that a BLS transport is appropriate
        i. EMT's can transport specific pharmacological agents per AZDHS Table 3A and TMC EMS Administrative Medical Direction Protocols during Interfacility transports:
            1. Electrolytes/crystalloids (Commercial Preparations) without pump
            2. Dextrose, 5% in H20, Normal Saline and Lactated Ringers without pump
3. Establish contact with the receiving facility to ensure patient has an accepting physician, room placement and report given **prior** to leaving sending facility with the patient.
    a. The report should include, at a minimum, the following information:
        - Names of transferring and receiving facilities
        - Patient's diagnosis
        - Reason(s) for transfer
        - Brief history of present illness, any intervention(s) or medications which has occurred to date.
        - Pertinent physical findings
        - Vital signs, including blood glucose reading (recent), temperatures, pain scale.
        - Current IV infusion with dosage and rate, if applicable
            - Any adjustments/titrations for the medications being infused must be cleared with Medical Direction (a Base Hospital) of receiving facility.
        - Any treatment(s) being performed (e.g., oxygen)
4. During interfacility transport:
    a. Medical direction will be through TMC's Medical Direction Authority.
    b. Continued assessment and documentation of all vital signs at minimum every 30 minutes, and every 5-15 minutes if patient has a change of status, from initiation of care to transfer of care at the receiving facility.
    c. Performance parameters will include but are not limited to appropriate vital signs, assessment and documentation, and medical direction contact.
    d. Contact Medical Direction Authority (a Base Hospital) if:
        - Acute decompensation of patient's condition
        - Patient's condition is atypical, or there is question on current treatment for transport
        - Meets ALS transfer criteria

ALS Interfacility Transport Procedure

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Procedure

1. Upon arrival at the transferring facility, ensure that a BLS transport is appropriate.
2. Prior to accepting care of patient at sending facility:
    a. Utilize appropriate universal precautions and/or isolation precautions as needed.
    b. Perform initial patient assessment (form a general impression of the patient; assess for immediate life-threatening problems or instability; assess responsiveness, airway, breathing, and circulation)
    c. Obtain transfer information from sending facility. This includes but is not limited to:
        i. Bedside report from current rendering provider
        ii. Transfer papers (e.g. summary, appropriate clinical and diagnostic data including vital sign trends, laboratory data, diagnostic study/reports)
        iii. Be aware of appropriate clinical information on patient. (e.g. vital sign trends, diagnostic study/reports)
    d. Ensure that a ALS transport is appropriate
        i. Paramedics can transport specific pharmacological agents per AZDHS Table 3A and TMC EMS Administrative Medical Direction Protocols during Interfacility transports.
3. Establish contact with the receiving facility to ensure patient has an accepting physician, room placement and report given **prior** to leaving sending facility with the patient.
    a. The report should include, at a minimum, the following information:
        - Names of transferring and receiving facilities
        - Patient's diagnosis
        - Reason(s) for transfer
        - Brief history of present illness, any intervention(s) or medications which has occurred to date.
        - Pertinent physical findings
        - Vital signs, including blood glucose reading (recent), temperatures, pain scale.
        - Current IV infusion with dosage and rate, if applicable
            - Any adjustments/titrations for the medications being infused must be cleared with Medical Direction Authority
        - Any treatment(s) being performed (e.g., oxygen)
4. During interfacility transport:
    a. Medical direction will be through TMC's Medical Direction Authority.
    b. Continued assessment and documentation of all vital signs at minimum every 30 minutes, and every 5-15 minutes if patient has a change of status, from initiation of care to transfer of care at the receiving facility.
    c. Performance parameters will include but are not limited to appropriate vital signs, assessment and documentation, and medical direction contact.
    d. Contact Medical Direction Authority (a Base Hospital) if:
        - Acute decompensation of patient's condition
        - Patient's condition is atypical, or there is question on current treatment for transport

Interfacility Transport Agents Protocol (1/2)

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Purpose

To ensure the patient will receive the appropriate care for their condition and follow AZDHS Statutes and Regulations and Tucson Medical Center (TMC) Base Hospital Protocols for interfacility transfers on a non-emergent/emergent basis.

Requirement

1. Paramedics with specific training and certification to administer and monitor transport agents during interfacility transport per AZDHS Table 3A and TMC Interfacility Protocol.
2. TMC Medical Direction Authority will approve Paramedics to administer, monitor and regulate administration of transport agents listed in AZDHS Table 3A with training.
3. Paramedics will follow all policies, protocols, and guidelines for interfacility transports.

Guidelines

1. Verify concentration, dosage, and vital sign (VS) parameters on all medications. Referring physician must specify the infusion rate within the orders. In addition, verify with receiving Medical Direction (Hospital transporting to) or Administrative Medical Direction (TMC Base Hospital).
2. Verify medication is in the correct concentration and on infusion pump as listed.
    a. Right patient, medication, dose, route, time, reason, documentation.
3. Document dose and route of administration at the beginning and end of transport and any patient changes.
4. Be familiar with the signs, symptoms, and treatment of any major adverse drug reactions of medications being used during transport.
5. Infusion rates must be confirmed with sending provider and remain constant during transport with no adjustments of rates being performed by the paramedic, unless otherwise directed by Medical Direction Authority.
6. All drips must be labeled on IV bag with drug name, and concentration.
7. Any additional agents allowed for interfacility transport should not be started by paramedic without approval by Medical Direction Authority.
8. Do not administer any other drug except the drug that is infusing into existing line. If no other line is initiated, start 2nd IV line.
9. Patients shall be placed on cardiac and oxygen saturation monitors for duration of transport.
10. A non-invasive blood pressure monitor device that will record and print out routine blood pressure readings every fifteen (15) minutes will be utilized. Monitor all other vital signs pertinent to patient's condition with documentation.
11. Reassess patient frequently during transport, documenting findings.
12. Contact receiving Medical Direction Authority during transport If:
    a. Pump failure occurs and cannot be corrected
    b. Patient experiences side effects from medication

Documentation

All Interfacility transports involving IV drips will have documentation, be it electronic or handwritten, that will detail the patient's chief complaint, reason for the transfer, historical data related to the current problem, pertinent past medical history, medication list, allergy list, and a timed, chronologic description of patient care, medications, vital signs, and changes in patient status with corresponding response of the paramedic to the changes.

Interfacility Transport Agents Protocol (2/2)

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Transport Checklist

1. Check the IV site and document findings.
    a. Location, patency, and redness etc.
2. Verify that IV fluids and medications running into the same site are compatible. (Best practice start 2nd IV line).
3. Verify that there are adequate medications for length of transport.
4. Follow all other guidelines listed in protocol.
5. Be aware of reason for medication infusion.
6. Providers orders must be written with:
    a. Name, dose, route of administration, rate of administration

Interfacility Drug Table (Table 3A)

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Introduction

The Arizona Department of Health Services (AZDHS) Medical Direction Commission is responsible for updates and revision to Table 3A, which details agents eligible for administration and monitoring during an Interfacility Transport. Agencies affiliated with Tucson Medical Center's Base Hospital EMS Program are authorized to administer and monitor these agents in accordance with AZDHS Statutes and Regulations and Tucson Medical Center (TMC) Base Hospital Protocols for interfacility transfers on a non-emergent/emergent basis.

The following list represents the most recent iteration of the Director-approved list of such special agents. These agents are only authorized for use during interfacility transports and under no circumstances shall an EMCT function beyond the scope of their training and level of licensure/certification. The scope of practice for all EMTCs is limited to the levels of certification and training of the agency by which they are employed.

Table 3: Special Agents Eligible for Administration and Monitoring

The Medical Direction Commission periodically reviews and makes recommendations to the Director of the Arizona Department of Health Services of agents that may be administered or monitored by EMCTs during an interfacility transport or in a hospital setting. An EMCT's administrative medical director may then authorize an EMCT to administer or monitor, through the administrative medical director's delegated authority, an agent approved by the Director.

The following list represents the most recent iteration of the Director-approved list of such special agents. Administrative medical directors may authorize EMCTs operating under their delegated medical authority to administer or monitor any or all of the agents from the list below, consistent with the authorized setting and the EMCT's certification level and required training on each agent.

Table 3A: Agents Eligible for Administration and Monitoring during an Interfacility Transport

KEY:
TA = Transport agent that may be administered by an EMCT if approved by administrative medical director
IP = Agent shall be administered by infusion pump
IV = Intravenous formulation
SVN = Agent shall be administered by small volume nebulizer
* = maintenance infusion only

	AGENT	MINIMUM SUPPLY	EMT	AEMT	EMT-I (99)	Paramedic	Paramedic with Critical Care Endorsement
1	Amiodarone IP	None	-	-	-	TA	TA
2	Antibiotics	None	-	-	TA	TA	TA
3	Blood products	None	-	-	-	TA	TA
4	Calcium Chloride	None	-	-	-	TA	TA
5	Colloids	None	-	-	TA	TA	TA
6	Corticosteroids IP	None	-	-	TA	TA	TA
7	Diltiazem IP	None	-	-	-	TA	TA
8	Diuretics	None	-	-	TA	TA	TA
9	Dopamine HCl IP	None	-	-	-	TA	TA

Table 3A: Agents Eligible for Administration and Monitoring during an Interfacility Transport

KEY:
TA = Transport agent that may be administered by an EMCT if approved by administrative medical director
IP = Agent shall be administered by infusion pump
IV = Intravenous formulation
SVN = Agent shall be administered by small volume nebulizer
* = maintenance infusion only

	AGENT	MINIMUM SUPPLY	EMT	AEMT	EMT-I (99)	Paramedic	Paramedic with Critical Care Endorsement
10	Electrolytes/ Crystalloids (Commercial Preparations)	None	TA	TA	TA	TA	TA
11	Epinephrine IP	None	-	-	TA	TA	TA
12	Fentanyl IP	None	-	-	TA	TA	TA
13	Fosphenytoin Na IP or Phenytoin Na IP	None	-	-	-	TA	TA
14	Glucagon	None	-	-	TA	TA	TA
15	Glycoprotein IIb/IIIa Inhibitors	None	-	-	-	TA	TA
16	H2 Blockers	None	-	-	TA	TA	TA
17	Heparin Na IP	None	-	-	-	TA	TA
18	Insulin IP	None	-	-	-	TA	TA
19	Lidocaine IP	None	-	-	TA	TA	TA
20	Magnesium Sulfate IP	None	-	-	-	TA	TA
21	Midazolam IP	None	-	-	TA	TA	TA
22	Morphine IP	None	-	-	TA	TA	TA
23	N-acetylcysteine IP*	None	-	-	-	TA	TA

Table 3A: Agents Eligible for Administration and Monitoring during an Interfacility Transport

KEY:
TA = Transport agent that may be administered by an EMCT if approved by administrative medical director
IP = Agent shall be administered by infusion pump
IV = Intravenous formulation
SVN = Agent shall be administered by small volume nebulizer
* = maintenance infusion only

	AGENT	MINIMUM SUPPLY	EMT	AEMT	EMT-I (99)	Paramedic	Paramedic with Critical Care Endorsement
24	Nitroglycerin IV Solution IP	None	-	-	-	TA	TA
25	Norepinephrine IP	None	-	-	-	TA	TA
26	Octreotide IP	None	-	-	-	TA	TA
27	Pantoprazole IP	None	-	-	-	TA	TA
28	Phenobarbital Na IP	None	-	-	-	TA	TA
29	Potassium Salts IP	None	-	-	-	TA	TA
30	Procainamide HCl IP	None	-	-	-	TA	TA
31	Propofol IP	None	-	-	-	TA	TA
32	Racemic Epinephrine SVN	None	-	-	-	TA	TA
33	Total Parenteral Nutrition, with or without lipids IP	None	-	-	-	TA	TA
34	Vitamins	None	-	-	TA	TA	TA

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Intravenous Infusion of Amiodarone

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Amiodarone infusions.
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
    - Must be on cardiac monitor. Monitor VS at minimum every 15 minutes during interfacility transport and more frequently based on patients' condition.
4. Amiodarone infusion must be initiated at the transferring hospital.
5. Indications:
    - Management/prophylaxis of life-threatening ventricular arrhythmias.
    - Control hemodynamically stable V-tach when cardioversion is unsuccessful, Rate control of A-fib/A-flutter.
6. Dosage:
    - Loading doses to be given at the transferring hospital
    - Maintenance infusion post resuscitation/conversion:
        - 1mg/min IV infusion for 6 hours, then up to 0.5 mg/min for up to 18 hours, maximum daily dose is 2.2 gm.
7. Precautions/Comments:
    - Contraindications:
        - Bradycardia, second-, or third-degree block without a pacemaker present, cardiogenic shock, hypotension, pulmonary congestion
    - Adverse reactions:
        - Bradycardia, hypotension, torsade de pointes, N/V, fever, dizziness, abnormal salivation

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Intravenous Infusion of Antibiotics

1. The following parameters shall apply to all patients with pre-existing Antibiotic infusions:
    - Monitor for signs and symptoms of an allergic response. If any symptoms are noted, stop infusion and **initiate Dyspnea: Allergic Reaction AO** if reaction is anaphylactic (Inclusion and Exclusion criteria in AO). Notify Medical Direction Authority if AO is initiated.
    - Allergic/hypersensitivity reactions commonly occur from start to 1 hour after administration of the first dose.
2. Indications:
    - Used to treat infectious diseases.
3. Dosage:
    - It is advisable to monitor the patient in the facility for a period of 15 minutes prior to start of transport.
    - Infuse IV antibiotics over 30-60 minutes or as directed by sending provider. Aminoglycosides over 60 minutes unless otherwise specified on the referring providers orders, along with receiving Medical Direction Authority
    - Can be set up as a “piggyback” (concurrent administration) or administered on a separate channel.
    - If IV antibiotics have finished infusing enroute, and is running on a saline lock, flush or keep line open with NS/LR TKO
4. Precautions/Comments:
    - Complications:
        - **Allergic reactions**: rash, swelling, nausea, vomiting, diarrhea, chills, fever, laryngeal edema, anaphylaxis. leukopenia. ototoxicity, nephrotoxicity (aminoglycosides)
    - Only antibiotics prepared in final dilution by the referring facility should be monitored.

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Intravenous Infusion of Blood/Blood Products

1. The following parameters shall apply to all patients with blood/blood product infusions:
    - Gravity infusion
    - Blood will be infusing a minimum of 30 minutes prior to transport.
    - Identify the patient and the blood by checking the patients ID band against the blood/blood product label and the blood/blood product order for the patients name, blood type, unit identifying number and expiration date.
    - Infusion will be through filtered infusion tubing compatible with the mechanical infusion device used.
    - The assessment of VS including TEMPERATURE every 30 minutes while blood is infusing and again when transfusion is completed. Vitals must be document.
2. Only infuse with normal saline via blood tubing. Not compatible with any other medications or solutions.
3. Dosage:
    - The dosage and rate of infusion depend on the patient's clinical condition and the severity of blood loss.
    - Sending facility will set their preferred rate and time of infusion.
    - For routine transfusions, the typical rate is around **2-5 mL/kg/hr.**, but this can vary based on the patient's needs and institutional protocols.
    - Paramedics cannot start another unit during transport.
4. Precautions and Comments:
    - Instruct patient to report onset of any unusual symptoms that might indicate a transfusion reaction:
        - Chills, dizziness, restlessness, nausea, headache, anxiety
    - Watch for signs of a transfusion reaction:
        - Temperature elevation, rash, cyanosis, facial flushing, sweating, tachycardia, bradycardia, hypotension, distended neck veins
5. If a transfusion reaction is suspected:
    - **Stop transfusion immediately, <u>do not clear tubing</u>, change tubing. Maintain IV with normal saline.**
    - **Initiate Dyspnea: Allergic Reaction AO.**
    - Save the remaining blood, bag, and tubing.

Interfacility Drug Profiles

- Notify receiving Medical Direction Authority about reaction. If inpatient, inquire if the patient should be taken to the emergency department. If unstable, divert to closest facility.
- Treat hypotension with normal saline infusion
- Monitor and treat other symptoms as needed.

6. Documentation will include but not limited to:
    - Type and volume of blood product infused.
    - Patient response
    - Any interventions initiated for transfusion reaction, if applicable
    - Time started and finished or transferred to receiving unit.

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Intravenous Infusion of Calcium Chloride

1. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
2. Indications:
   - Suspected hyperkalemia
   - Antidote for calcium channel blocker overdose
3. Contraindications:
   - Do not use in setting of suspected digoxin toxicity
   - Hypercalcemia
   - Suspected severe hypokalemia (life-threatening cardiac arrhythmias may occur)
   - Calcium chloride allergy
4. Dosage:
   - 200-1000mg IV over 10-20 minutes, not to exceed 100 mg/min
6. Precautions/Comments
   - Administered only by slow intravenous injection, preferably in a central or deep vein.
   - Will precipitate if mixed with sodium bicarbonate
   - Adverse reactions
     - Discomfort at injection site

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Intravenous Infusion of Colloids

1. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
2. Includes Albumin
3. Indications:
    - Shock
    - Peritonitis
    - Pancreatitis
    - Burns
    - Hypoproteinemia
    - Postoperative Albumin Loss
4. Contraindications:
    - Hypersensitivity
    - Heart failure
    - Severe Anemia
    - Volume overload risk
5. Dosage:
    - Initial dose: 250 or 500 mL IV at a rate of 1 to 2 mL per minute in the absence of overt shock.
6. Precautions/Comments
    - Adverse Reactions:
        - Anaphylaxis, heart failure, pulmonary edema, renal failure

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Intravenous Infusion of Corticosteroids

1. Must be transported with IV Pump.
2. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Medications:
   - Methylprednisolone
   - Dexamethasone
4. Indications:
   - Acute exacerbation of emphysema, chronic bronchitis, or asthma
   - Anaphylaxis
   - Burns
   - Cerebral edema (non-traumatic)
5. Dosage:
   - Adult
     - Methylprednisolone: (Solumedrol, Depomedrol)
       Asthma: 2 mg/kg every 4-6 hours until severe symptoms are controlled (125 mg slow IV push)
     - Dexamethasone: (Decadron)
       Cerebral Edema: Initial dose of 10 mg IV, followed by 4 mg IM every 6 hours.
       Severe Allergic Reactions: 4 to 10 mg IV as a single dose
6. Precautions/Comments
   - Adverse reactions
     - Hypertension, seizures, hyperglycemia
     - If any adverse reactions are apparent on patient, discontinue infusion, contact Medical Direction Authority, and treat per appropriate AO.

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Interfacility Drug Profiles

Intravenous Infusion of Diltiazem

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Diltiazem infusions:
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
   - Monitor vital signs: B/P, HR every 15 minutes with continuous EKG monitoring.
   - Notify receiving Medical Direction Authority if:
     - Heart rate > 110
     - Systolic BP < 90 or any AV Blocks.
4. Indications:
   - Rapid ventricular rates associated with atrial fibrillation and atrial flutter and for PSVT refractory to adenosine.
5. Dosage:
   - IV bolus will be given by referring facility.
   - Maintenance infusion 5 - 15 mg/hr IV.
   - Standard dilute 100mg (20mg) in 100 mL (1mg/mL) of NS or D5W.
6. Precautions and Comments:
   - Complications\Adverse Reactions:
     - CNS dizziness, paresthesias, headache, weakness, visual disturbance
     - CV: hypotension, facial flushing, junctional or AV dissociation, chest pain, congestive heart failure, ventricular or atrial arrhythmias, edema
     - Dermatologic: injection site reaction (itching, burning), sweating
     - GI: constipation, nausea, vomiting, dry mouth.
     - Contraindicated with Acute MI, Cardiogenic shock, Ventricular tachycardia (VT) or wide complex tachycardia of unknown origin, Beta Blocker use.

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Intravenous Infusion of Diuretics (e.g. Lasix/Furosemide)

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Lasix drips:
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
    - Assess serum potassium levels prior to leaving facility. Normal values are serum 3.5 - 4.5.
4. Dosage
    - 250 mg of Lasix in 250 cc of NS yielding 1 mg/ml.
    - Maintenance dose: 0.1 - 0.4 mg/kg/hr, not to exceed 4 mg/min.
5. Receiving Medical Direction Authority and/or Administrative Medical Direction Authority contact **criteria during transport:**
    - Notify if B/P drops below 15% of initial baseline.
    - Notify any new onset or increase of ventricular ectopy or tachycardia or signs and symptoms of adverse reaction as listed below.
    - If pump failure occurs and cannot be corrected, the paramedic is to discontinue the infusion and notify the receiving Medical Direction Authority and/or Administrative Medical Direction Authority
6. Precautions and Comments:
    - Complications: Digitalis toxicity, hypokalemia, ventricular ectopy, ototoxicity, electrolyte imbalance, potassium, and magnesium
    - Adverse Reaction: Hypotension, vertigo, tinnitus, hearing loss, rash, weakness, muscle spasm, photosensitivity, ventricular ectopy.

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Intravenous Infusion of Dopamine

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Dopamine infusions:
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
   - Monitor vital signs: BP, HR every 15 minutes with continuous EKG monitoring.
4. Indications:
   - Symptomatic bradycardia with hypotension
   - Hypotension without hypovolemia
5. Verify concentration and infusion rate prior to leaving referring facility, how supplied:
   - 400 mg in 250 mL D5W yielding a 1600mcg/ml concentration.
   - 800 mg in 250 mL D5W yielding a 3200 mcg/ml.
   - The maximum recommended rate is 50 mcg/kg/minute.
   - Dose:
     - Dopaminergic (renal) 2-5 mcg/kg/min
     - Beta agonist (cardiac) 5-15 mcg/kg/min
     - Alpha agonist (vasopressor) ≥ 15 mcg/kg/min
6. Drug interactions:
   - Incompatible in alkaline solutions (sodium bicarbonate)
   - Beta blocker may antagonize effects of dopamine.
7. Precautions and Comments:
   - Uncontrolled tachycardia, hypertension, ventricular irritability, angina, anxiety, decreased peripheral perfusion.
   - Low doses may cause decrease blood pressure from peripheral dilation.
   - Duration of action effects cease almost immediately with stopping drip.

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Intravenous Infusion of Epinephrine

1. The following parameters shall apply to all patients with pre-existing Epinephrine infusions.
2. Must be transported with IV Pump.
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction
    - Monitor vital signs: BP, HR every 15 minutes with continuous EKG monitoring.
4. Indications:
    - Cardiac arrest
    - Severe bronchospasm, Asthma
    - Bradycardia
    - Hypotension (only unresponsive to other therapy
    - Croup
5. Dosage:
    - Continuous infusion:
      1 mg added to 500 mL of NS or D5W administered at 1 mcg/min (dose rage 2-10 mcg/min)
    - Often drips are started at 1 mcg/min, and titrated up, at five-minute intervals, if needed, to a maximum of 4mcg/min for effect.
    - **Pediatric dosing**: 0.5-1mcg/kg/min.
6. Precautions and Comments:
    - Side effects include precipitation of V- tach and V- fib, coronary ischemia, and significant hypertension.
    - Any patient demonstrating increased ventricular ectopy, bursts of V-tach, or V-Fib is to have the drip immediately stopped. Notify receiving Medical Direction Authority
    - Epinephrine is sensitive to light and air; protection from light is recommended.
    - Oxidation turns drug pink, then a brown color; solutions should not be used if they are discolored or contain a precipitate

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Interfacility Drug Profiles

Intravenous Infusion of Fentanyl

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Fentanyl drips:
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
   - Monitor vital signs: BP, HR every 15 minutes with continuous EKG monitoring.
   - CNS, respiratory and to a certain extent cardiovascular can be reversed by Naloxone. **Use TOX-Opioid Poisoning/Overdose AO**
4. Indications:
   - Analgesic
   - Sedation post intubation
5. Dosage:
   - Fentanyl solution for continuous infusion is available as pre-mixed 100 mL bags at concentrations of 10 and 50 mcg/ml.
   - Usually, initial dose begins at dose of 25 mcg/hr. (1mcg/kg/hr.)
   - **DO NOT** exceed 50 mcg in an hour.
6. Patients should be regularly monitored for adequate pain relief. Use pain scale before, during and at transfer of patient.
7. Precautions and Comments:
   - Be prepared for airway management.
   - Fentanyl should be used with extreme caution in patients with pulmonary disease or in patients with other respiratory insufficiency or hypoxia.
   - Adverse Reactions
     - Brady-dysrhythmias, hypotension, respiratory depression, excess sedation, seizures, dizziness, diaphoresis, N/V
     - CNS: CNS depression (dizziness/confusion/sedation), seizures
     - Cardiovascular: bradycardia, vasodilation, edema
     - Respiratory: respiratory depression/dyspnea/apnea
     - Gastrointestinal: constipation, nausea, vomiting

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Intravenous Infusion of Fosphenytoin or Phenytoin

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Fosphenytoin or Phenytoin infusions:
    - Institute seizure precautions
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
4. Indications:
    - Treatment of seizures
5. Dosage:
    - Phenytoin
        - Adult 15-20 mg/kg. Rate should not exceed 25-50 mg/kg.
        - Pediatric 15-20 mg/kg; rate 1-3 mg/kg/min
    - Fosphenytoin
        - Fosphenytoin dosage is expressed as phenytoin equivalents (PE)
        - Adult Loading Dose:
            - 15–20 mg PE/kg, usually administered at 0.5–2.0 mg PE/kg/min, with a maximum rate of 3 mg PE/kg/min
        - Peds (< 18 years) Loading Dose**:**
            - 15 to 20 mg PE/kg IV; infuse at 2 mg PE/min (or 150 mg PE/min, whichever is slower)
        - Maintenance Dose:
            - Initial Maintenance Dose: 2 to 4 mg PE/kg/day IV administered 12 hours after loading dose; infuse at 1 to 2 mg PE/kg/min or 100 mg PE/min, whichever is slower
            - Maintenance dose after Initial Maintenance Dose: 4 to 8 mg PE/kg/day in 2 divided doses (every 12 hours); infuse at 1 to 2 mg PE/kg/min or 100 mg PE/min, whichever is slower
6. Precautions/Comments
    - Hypotension, ataxia N/V

If given with dopamine may cause additive hypotension

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Intravenous Infusion of Glucagon

1. The following parameters shall apply to all patients with pre-existing Glucagon infusions
2. Must be transported with IV Pump
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
   - Monitor vital signs: B/P, HR, FSBG every 15 minutes with continuous EKG monitoring.
4. Indications:
   - Hypoglycemia
   - Symptomatic bradycardia from beta blocker or calcium channel blocker overdose
5. Contraindications:
   - Glucagon allergy
   - Glucagon is not the first line treatment for hypoglycemia and should ONLY be used in patient with symptomatic hypoglycemia when the EMCT is unable to obtain IV access.
6. Dosage:
   - Loading dose of 3 - 10 mg IV x 1 should be given by referring facility
   - Maintenance dose: 0.1 mg/kg/hr IV (max 5 mg/h) in 5% Dextrose
6. Precautions/Comments:
   - May cause nausea and vomiting
   - Slower onset than IV dextrose when treating hypoglycemia
   - Glucagon will only work if there are sufficient stores of glycogen in the liver, and will not work if patient is malnourished.

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Intravenous Infusion of Glycoprotein IIb/IIIa Inhibitors (e.g. Eptifibatide/Integrelin)

7. The following parameters shall apply to all patients with pre-existing Glycoprotein Inhibitor infusions
8. Must be transported with IV Pump
9. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
    - Monitor vital signs: B/P, HR every 15 minutes with continuous EKG monitoring.
    - Monitor for signs and symptoms of bleeding.
4. Indications:
    - Treatment of acute coronary syndrome managed medically or those going to the Cath lab.
5. Dosage:
    - Infusion 2 mcg/kg/min
    - In patients with creatinine clearance ≤ 50 mL/min, dose is reduced to 1.0 mcg/kg/min.
6. Precautions/Comments:
    - Document of calculation of the ordered infusion rate based on recent patient weight (in kilograms). This is essential to decrease the incidence of major and minor bleeding episodes.
    - Minimizing vascular and other trauma is important in managing platelet aggregation inhibitors. Due to risk, procedures to be avoided if possible:
        - Venous punctures, IM injections, etc.
7. Document the following lab values (if available).
    - Blood Urea Nitrogen (BUN)
    - Creatine
    - Hemoglobin
    - Hematocrit
    - Platelet Count
    - Coagulation Studies

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Intravenous Infusion of H2 Blockers

Zantac, (ranitidine), Pepcid, (famotidine), Tagamet (cimetidine), Axid (nizatidine)

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing H2 Blocker drips:
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
4. Indications:
   - Treatment of intractable ulceration or hypersecretory conditions
   - Prevention of upper GI Bleeding
5. Usual dosages:
   - Zantac: 50 mg in 50-100 mL NS to be run 15- 30 minutes.
   - Pepcid: 20 mg in 50-100 mL NS infuse over 15-30 minutes.
   - Tagamet: Continuous infusion of 37.5 mg/hour (maximum 2400 mg/day)
6. Precautions and Comments:
   - Complications: Bradycardia with rapid administration
   - Adverse Reactions: Malaise, vertigo, reversible confusion, tachycardia, bradycardia, constipation, nausea, vomiting, rash, muscle cramping

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Intravenous Infusion of Heparin

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Heparin infusions:
   - Use **Heparin work sheet** and attach with PCR/ePCR.
   - Document calculation of the ordered infusion rate based on recent patient weight (in kilograms)
   - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Indications:
   - Situations where a hypo-coaguable state is required (i.e., post MI, CVA, pulmonary embolism)
4. Dosage:
   - **Standard Dose**: 20,000 to 40,000 units per 24 hours Maximum hourly dose will **NOT** exceed 1,000 units/hr.
   - If patient is on higher hourly dose, contact with the receiving base hospital medical direction and/or administrative base hospital medical direction **prior** to leaving the facility with the following:
     - Current dose patient is receiving.
     - If pt. received higher bolus than the maximum, notify base hospital for direction with drip amount.
     - If pt. is receiving higher drip rate than the maximum, notify receiving Medical Direction Authority and/or Administrative Medical Direction Authority for direction with drip amount.
     - Use of heparin worksheet attaching to PCR
5. Document the following lab values if available:
   - PT, PTT, INR
6. Precautions and Comments:
   - Skin necrosis can develop at site of injection.
   - Monitor for bleeding, bruising, fever, rash, urticaria.

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Intravenous Infusion of Insulin

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Insulin drips:
    - Verify concentration and infusion rate prior to leaving transferring facility and with receiving facility.
    - **Check FSGB prior** to report to Medical Direction Authority and **recheck hourly**, more frequently if patient becomes symptomatic.
    - If drip has only been less than 1 hour, monitor 30 minutes for the first hour after drip initiation.
    - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Indications:
    - Insulin dependent diabetes mellitus
    - Diabetic Ketoacidosis
4. Dosage
    - Adult: 0.1 unit/kg/hr as continuous infusion
    - Pediatrics: based on patient's size
5. If hypoglycemia occurs **STOP** the infusion:
    - FSBG falls below 200, contact Medical Direction Authority for orders to continue or discontinue drip.
    - Be prepared to treat hypoglycemia with D10 if necessary
6. Precautions and Comments:
    - Usage: Insulin is a naturally occurring hormone in the body that causes the uptake of glucose by the cells, decreases blood glucose, and promotes glucose storage. Used in the treatment of Type 1 and Type 2 diabetes that cannot be controlled by diet or oral agents, and severe diabetic ketoacidosis.
    - Incompatibilities/drug interactions
        - Potency may be reduced 20-80% by the plastic or glass container or tubing before reaching the patient.
        - Beta-blockers may block the S/S of hypoglycemia and delay recovery from hypoglycemia.

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Intravenous Infusion of Lidocaine

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Lidocaine drip:
   - Monitor for hypotension, may cause SA nodal depression or conduction problems.
   - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Indications: suppress ectopy, frequent PVCs
4. Dosage for maintenance infusion:
   - 1 - 4 mg/kg, typically 30 to 50 mcg/kg/minute depending on the patient's response and clinical condition.
   - Dose should be decreased for patients with hepatic failure, renal disease, poor perfusion or greater than 70 years of age.
5. Discontinue lidocaine if:
   - Confusion or agitation, tinnitus, dizziness, tremors, seizures
6. Precaution/Comments:
   - Use caution in patients with conduction disturbances (second- or third-degree blocks)

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Intravenous Infusion of Magnesium Sulfate

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Magnesium Sulfate:
    - Consider transporting patient on their left side if pregnant.
    - Assess and record vital signs, patellar reflex and if pregnant, fetal heart rate prior to transport.
    - **Titration with Medical Direction Only.**
    - Monitor vital signs every 15 minutes while drug is infusing. Monitor for weakness in extremities (by movement). Watch for signs of respiratory depression and second- and third-degree heart block.
    - Stop infusion if respiratory rate drops below 12 bpm.
    - Patients should be on oxygen therapy.
    - Early indicators of toxicity include profound thirst, feeling of warmth, sedation, confusion, muscle weakness.
3. Indications:
    - Pre-term labor
    - Pregnancy Induced Hypertension (PIH)
    - Magnesium deficiency (hypomagnesemia)
    - Cardiac arrhythmias, hypertension
    - Dehydration
    - ACS
4. Dosage:
    - Hypomagnesemia:
        - Mild: 1 gram IV every 6 hours for 4 doses.
        - Severe: 5 grams in 1 liter of appropriate diluent IV over 3 hours. Do not exceed an infusion rate of 150 mg/minute.
    - Pre-eclampsia/Eclampsia:
        - Initial Dose: 4 to 5 grams IV in 250 mL of diluent, with simultaneous IM administration of up to 5 grams in each buttock.
        - Maintenance Dose: 1 to 2 grams/hour IV by continuous infusion
    - Asthma:
        - Severe Asthma: 2 grams IV over 20 minutes
    - Torsade de Pointes:

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    - Initial Dose: 1 to 2 grams IV over 15 minutes.
    - Maintenance Dose: Continuous infusion of 0.5 to 1 gram/hour
5. Contact receiving Medical Direction Authority for **criteria during transport:**
    - If patient experiences a decreasing respiratory rate or other evidence of respiratory difficulty, discontinue drip, prepare to manage airway, consider calcium gluconate contact the online medical direction authority.
    - Decrease the drip rate by half and notify medical direction authority for any of the following:
        - Decrease in systolic pressure of 20mm from baseline.
        - Decrease in diastolic pressure of 10mm from baseline.
        - Decrease in patella reflex.
        - Change in mental status.

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Intravenous Infusion of Midazolam

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Midazolam:
    a. Regulation of the infusion rate will occur within the parameters as defined by the referring physician and receiving Medical Direction Authority. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Indications:
    - Anti-convulsion
    - Sedation
5. Dosage:
    - Seizure Management:
        - Loading Dose: 0.15 mg/kg IV over 10 minutes.
        - Maintenance Infusion: 0.05 to 0.1 mg/kg/hour
    - Sedation:
        - **Initial Dose**: 1 to 2.5 mg IV, administered slowly over 2 minutes. Additional doses of 1 mg may be given as needed, with a maximum total dose of 5 mg.
6. Receiving Medical Direction Authority or Administrative Medical Direction Authority contact **criteria during transport:**
    - In cases of severe respiratory depression, partial airway obstruction (especially when combined with narcotics), hypertension, hypotension, and excessive sedation the medication infusion will be discontinued and notify the receiving Medical Direction Authority and/or Administrative Medical Direction Authority
7. Precautions and Comments:
    - Dosage reductions are recommended for patients in CHF, septic shock, renal and/or hepatic dysfunction, low serum albumin, pulmonary insufficiency, COPD, or elderly patients.
    - Reduce dose by 30% in patients pre-medicated with narcotics and/or CNS depressants.

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Intravenous Infusion of Morphine Sulfate

1. Must be transported with IV Pump.
2. Monitor vital signs every 5 minutes.
3. The following parameters shall apply to all patients with pre-existing Morphine Sulfate drips:
    - Regulation of the infusion rate will occur within the parameters as defined by the referring physician and receiving Medical Direction Authority, but **may be titrated** to the individuals response during transport with Medical Direction Authority
    - Monitor pain scale with documentation before during and after transfer of care.
4. Indications:
    - Analgesia
    - Pulmonary edema
5. Dosage:
    - 0.8 - 10 mg/hr. IV infusion is typical, please verify dosing prior to transporting.
6. Receiving Medical Direction contact **criteria during transport:**
    - In cases of severe respiratory depression, sedation, confusion, hypotension, bradycardia, nausea and vomiting, the medication infusion will be discontinued and Naloxone, if indicated, may be administered as directed by your Administrative Medical Direction Authority per your Opioid Overdose AO. Notify the receiving Medical Direction Authority and/or Administrative Medical Direction Authority

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Intravenous Infusion of N-acetylcysteine (Acetadote®/Mucomyst®)

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing VI drips:
    - Regulation of the infusion rate will occur within the parameters as defined by the referring physician and receiving Medical Direction Authority, but **may be titrated** to the individuals response during transport with Medical Direction Authority
3. Indications
    - Acetaminophen overdose or toxicity
    - Administered for respiratory conditions with thick mucus or excessive mucus production
4. Absolute Contraindications
    - Hypersensitivity
    - Caution: Asthma, bronchospasm hx, upper GI bleeding
5. Dosage:
    - 21-hour IV Protocol
        - Loading dose: 150 mg/kg up to 15 g in 200 ml dextrose 5% water over 60 minutes.
        - Second (maintenance) dose: 50 mg/kg up to a maximum of 5 g in 500 ml dextrose 5% water over 4 hours (12.5 mg/kg/hour).
        - Third dose: 100 mg/kg up to 10 g in 1000 ml dextrose 5% water over 16 hours (6.25 mg/kg/hour).
6. Precautions/Comments
    - Adverse Reactions:
        i. Hypersensitivity reaction, bronchospasm, anaphylaxis, nausea, vomiting, tachycardia

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Intravenous Infusion of Nitroglycerin IV Solution

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Nitroglycerine drip.
3. Regulation of the infusion rate will occur within the parameters as defined by the referring physician and receiving Medical Direction Authority, but **may be titrated** to the individuals response during transport with Medical Direction Authority
   - Patients with hypotension should be administered with caution.
   - Brady-dysrhythmias and hypotension may respond to Trendelenburg position.
   - Document drip rate at the beginning of transport and patient's response
4. Indications:
   - Angina
   - MI
   - Congestive heart failure
5. Dosage
   - Start at low range 5 mcg/min.
   - Usual mixture: Nitroglycerine (50mg/250ml in D5W: 200 mcg/ml)
   - Increase in increments of 5 mcg/min every 3 - 5 minutes.
   - **Maximum Dose: The maximum recommended dose is 400 mcg/ minute.**
6. Precautions/comments:
   - Hypotension, bradycardia, reflex tachycardia, headache
7. Receiving Medical Direction Authority and/or Administrative Medical Direction Authority contact **criteria during transport:**
   - If systolic blood pressure drops below 100, decrease the nitroglycerine by 5 mcg/min or 3.3 mcg/min and if systolic blood pressure doesn't increase call receiving Medical Direction Authority for direction.

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Intravenous Infusion of Norepinephrine

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Levophed drip:
   - Monitor for tachycardia and hypotension.
   - Check BP every 2 minutes until desired MAP or Systolic BP is reached (MAP 55-65 **or** Systolic 80-100 mmHg) and then every 5-15 minutes thereafter.
   - **NEVER** leave patient unattended during infusion
   - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Indications:
   - Blood pressure support with hypotension
   - Treatment of shock
4. Dosage:
   - **Adult**: Start with 8 to 12 mcg/minute
   - **Sepsis or Septic Shock**: The recommended dose is 0.01 to 3 mcg/kg/minute, titrated to achieve the desired mean arterial pressure (MAP)
   - **Pediatric Dosing**: 0.1 mcg/kg/min up to a max of 1 mcg/kg/minute based on BP management.
5. Precautions/Comments
   - Adverse Reactions
     - Dizziness, weakness, headache, mood changed, bradycardia, tachycardia, chest pain, shortness of breath and diaphoresis.
     - Contraindications for hypotension secondary to hypovolemia prior to fluid replacement. Profound hypoxia or hypercarbia could cause V-Tach

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Intravenous Infusion of Octreotide

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Octreotide infusions.
    - **If Infusion not started**, consult with referring physician and/or medical direction authority.
    - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
    - Must be on cardiac monitor. Monitor VS at least every 15 minutes during interfacility transport and more frequently based on patients condition.
3. Indications:
    - Treatment of severe diarrhea in patients with GI endocrine tumors.
    - Management of diarrhea in AIDS patients or patients with fistulas.
    - Refractory hypoglycemia for sulfonylurea overdose.
    - Variceal upper GI bleeding.
4. Absolute Contraindications:
    - Hypersensitivity
5. Dosage:
    - Initial 25 – 100mcg IV Bolus (usual bolus dose: 50mcg)
    - Infusion of 25 – 50mcg/hr.
5. Precautions/Comments:
    - Confirm and document orders and rate of infusion. This is essential to decrease the incidence of major and minor bleeding episodes.
    - Helps control symptoms of GI bleeding by augmenting platelet aggregation.
    - Document the following lab values (if available).
        - Blood Urea Nitrogen (BUN), Creatinine, Hemoglobin, Hematocrit, Platelet Count, Coagulation Studies
        - Adverse reactions:
            - Dizziness, weakness, orthostatic hypotension, nausea/ vomiting, hyperglycemia, hypoglycemia

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Intravenous Infusion of Pantoprazole (Protonix)

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Pantoprazole infusions.
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority, preferred infusion rate remain constant, unless discontinuing.
4. Indications:
   - GI bleeding, esophageal varices, bleeding ulcer, stress ulcer prophylaxis
5. Dosage:
   - Continuous infusion: 8 mg/hour IV
   - Usual Infusion 80 mg in 100 ml (concentration: 0.8 mg/ml) of D5W or NS
6. Precautions/Comments:
   - Adverse reactions:
     - Headache, dizziness, vertigo, urticaria, allergic reaction, diarrhea, facial edema

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Intravenous Infusion of Phenobarbital

- Must be transported with IV Pump.
- The following parameters shall apply to all patients with pre-existing Phenobarbital infusions:
    - Monitor for respiratory depression.
    - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
    - Monitor vital signs every 15-30 minutes during transport or more frequently based on patient condition.
- Indications for use:
    - For treatment of seizures
- Dosage
    - Adult: 1 to 3 mg/kg/day IV or IM
    - Pediatric 10 - 20 mg/kg initially followed by 1- 6 mg/kg/day.
- Status Epilepticus
    - Adult: 15 - 20 mg/kg
    - Pediatric: 2.5 mg/kg IV every 12 hours or 5 mg/kg IV every 24 hours for children under 12 years old. Over 12 years old, 1.5 mg/kg IV every 12 hours or 3 mg/kg IV every 24 hours
- Precautions/Comments:
    - Allergic reaction can cause **ANGIOEDEMA.**
    - Pre-existing CNS depression
    - Uncontrolled severe pain
- Adverse Reactions:
    - Respiratory depression, Broncho spasm, hypotension, N/V, drowsiness, lethargy

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Intravenous Infusion of Potassium Chloride

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing potassium chloride infusions:
    - Potassium can be initiated in the field.
    - **IFT Infusion Titration** of medication can be made during transport with Rate Change Orders by Medical Direction Authority
    - Medication concentration will not exceed 40 mEq/liter of IV fluid.
    - Concentrations that exceed 20 mEq will be on **infusion pump.**
    - All IV bags will be labeled with the amount of drug within the IV bag.
3. Indications:
    - Potassium depletion
    - Treatment of certain arrhythmias due to cardiac glycoside toxicity
4. Complications:
    - Local irritation, burning along the vein of infusion, nausea, vomiting, abdominal pain, weakness in legs.
    - In high concentrations: flushing, agitation, hypotension, diaphoresis and peripheral vascular collapse.
    - EKG changes associated with potassium intoxication:
        - Tall, tented T waves
        - Depressed S-T segments
        - Prolonged P-R interval, loss of P-wave
        - Heart block, v-fib, cardiac arrest
    - If above s/s occur, stop infusion, and call Medical Direction Authority to notify.
    - Adverse Reactions:
        - Too rapid of IV infusion of an IV solution containing potassium.

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Intravenous Infusion of Procainamide HCl

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing Procainamide infusions:
   - Patient should remain as close to sitting, semi-fowlers as is tolerable due to hypotension.
   - Monitor VS every 15 minutes during interfacility transport and more frequently based on patients condition.
   - Stop infusion if QRS complex widens by ≥ 50%, PR becomes prolonged, blood pressure drops below 90mmHg or toxic side effects and contact Medical Direction Authority
   - **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
3. Indications:
4.
   - Treatment of atrial and ventricular arrhythmias
   - Maintenance of sinus rhythm after conversion from atrial fibrillation or atrial flutter
4. Dosage:
   - Adult: loading infusion 15 to 18 mg/kg over 25-30 minutes followed by maintenance infusion of 1 - 4 mg/min
   - Pediatrics: 20-80 mcg/kg/min
5. Precautions/Comments:
   - Adverse reactions:
     - Confusion, seizures, dizziness, hypotension, ventricular arrhythmia, asystole, heart block
   - Use caution with:
     - MI, CHF
     - Reduce dose and frequency with geriatric patients.

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Intravenous Infusion of Propofol

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing potassium chloride infusions:
3. **Titration** of medication can be made during interfacility transport with Rate Change Orders by Medical Direction Authority
   - Monitor VS every 15 minutes during transport or more frequently based on patient status.
   - Assess level of sedation throughout transport
4. Indications:
   - Sedation of intubated, and/or mechanically ventilated patients
5. Dosage:
   - Adult 5 mcg/kg/min, increases in 5 – 10 mcg/kg/min increments until sedation achieved prior to transport. Usual range is 5 - 50 mcg/kg/min.
   - Pediatrics only recommended for procedural sedation not transfers.
6. Precautions/Comments
   - Short-acting hypnotic
   - Adverse reactions:
     - Bradycardia, hypotension, apnea, dizziness, headache, cough, hypertension, flushing, involuntary muscle movements, fever.

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Administration of Racemic Epinephrine SVN

1. The following parameters shall apply to all patients with pre-existing Racemic Epinephrine SVN:
   - Currently Racemic Epinephrine is approved for Interfacility use only. It is intended that the patient finish the SVN treatment initiated by the sending facility during transport, without a provider initiating subsequent doses.
2. Indications:
   - Bronchial Asthma, Bronchiolitis, Chronic Bronchitis, Chronic Obstructive Lung Disease, Croup, Laryngeal Edema

   Dosing: Inhalation only (small-volume nebulizer):

   - **Adult:** 0.5 mL of 2.25% solution diluted in 3 mL of normal saline (NS), administered via nebulizer over 15 minutes. This can be repeated every 3-4 hours as needed.
   - **Pediatric**: 0.25-0.75 ml of a 2.25% solution in 2.0 ml normal saline**.**
     - **<20 kg (child under 6 months):** Dilute 0.25ml (of 2.25% solution) in 2.5ml saline and administer via SVN.
     - **20 – 40 kg (child):** Dilute 0.5ml (of 2.25% solution) in 2.5 ml saline and administer via SVN
     - **>40 kg (adolescent):** Dilute 0.75ml (of 2.25% solution) in 2.5 ml saline and administer via SVN.

3. Precautions/ Comments
   - Allergy to any of the ingredients [may contain sulfite(s)], Epiglottitis, Hypertension, Underlying Cardiovascular Disease/Insufficiency
   - The use of Racemic Epinephrine will mainly be seen in the pediatric patient population, most commonly for the treatment of Croup.
   - Monitor vital signs closely.
   - Do not use concurrently with other bronchodilators.
   - After dilution, the solution should be used within 30 minutes. Do not use solution if discolored or if it contains a precipitate.
   - After inhalations, the sputum may be pink in color due to a chemical reaction between the mucous secretions and Racemic Epinephrine solution.

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- Excessive use may cause bronchospasm.
- Adverse Reactions:
  - Angina, Anxiety, Dysrhythmias, Fear, Headache, Lightheadedness, Nausea, Palpitations, Restlessness, Sleeplessness, Weakness

4. **Common practice** 1:1000 Epinephrine is substituted when the Racemic Epi solution is unavailable:
   - Pediatric dosing: <4 years of age = mix 2.5ml of 1:1000 Epi with 3ml saline and administer via SVN.
   - >4 years of age = mix 5ml of 1:1000 Epi with 3ml of saline and administer via SVN.
   - Adult dosing: mix 5ml of 1:1000 Epi with 3ml saline and administer via SVN.
   - **If needed**, get order prior to leaving for use of this if patient is still having issues.

TMC
EMS PROGRAM

Interfacility Drug Profiles

Administration of Total Parenteral Nutrition, with or without lipids (TPN)

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing TPN:
   - Verify solution formula and rate.
   - TPN is considered incompatible with all other medications and IV solutions. **Nothing is to be added to the bag or IV tubing.**
   - Monitor for S/S of hyper/hypoglycemia. Obtain Blood Glucose as needed and document what the last reading was before to transportation.
   - This should be going through a port/central line. If leaking or cracked, clamp off port and notify Medical Direction Authority
3. Indications:
   - Provides long term nutrition.
4. Precautions and Comments:
   - Hyperglycemia, hyperosmolar syndrome, electrolyte disturbance

TMC
EMS PROGRAM

Interfacility Drug Profiles

Intravenous Infusion of Vitamin IV Additive (MVI)

1. Must be transported with IV Pump.
2. The following parameters shall apply to all patients with pre-existing VI drips:
    - VI dose must be diluted in a solution of 500-1000 mL of either LR, NR or D5½.
    - Know compatibility before administering any IV medications through the IV infusion.
    - Access IV insertion site for any redness, swelling or tenderness. If this occurs, STOP infusion, and discontinue.
3. Precautions/Comments
    - Fainting and dizziness with undiluted drug administration

TMC EMS PROGRAM

Heparin Worksheet

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Patient's name: _____

Agency Incident Number: _____

1. Patient's weight: _____ kg

2. Time of Transport-Current IV drip rate at: _____

Heparin drip concentration: Units/ml _____
Heparin drip ordered dose: Units/kg/hr _____
Time drip started: _____
Heparin drip dosage with pump setting units/hr: _____
Patency of IV confirmed: _____YES_____NO
Drip IV site/location: _____

3. Lab Values (If available; do not delay transportation for lab results):

Last recorded values:
Date: _____
TIME: _____
PT: _____
PTT: _____
INR: _____

4. Reviewed with sending RN with print name and signature:
_____

5. Medical Direction Authority called prior to leaving with approval of dosing:
_____YES _____NO

6. Paramedic transporting: _____