

SIERRA-SACRAMENTO VALLEY EMS AGENCY PROGRAM POLICY

REFERENCE NO. 841

**SUBJECT: INTRAVENOUS INFUSION OF MAGNESIUM SULFATE,
NITROGLYCERIN, HEPARIN &/OR AMIODARONE DURING
INTERFACILITY TRANSPORTS**

PURPOSE:

To provide a mechanism for paramedics to be permitted to monitor infusions of magnesium sulfate, nitroglycerin, heparin and/or amiodarone during interfacility transports.

AUTHORITY:

Division 2.5, Health and Safety Code, Sections 1797.220

California Code of Regulations, Title 22, Chapter 4, Article 1, Section 100145

POLICY:

- A. Only those paramedics who have successfully completed training program(s) approved by the S-SV EMS Agency Medical Director on magnesium sulfate, nitroglycerin, heparin and/or amiodarone infusions will be permitted to monitor them during interfacility transports.
- B. Only those ALS ambulance providers approved by the S-SV EMS Agency Medical Director will be permitted to provide the service of monitoring magnesium sulfate, nitroglycerin, heparin and/or amiodarone infusions during interfacility transports.
- C. Patients that are candidates for paramedic transport will have pre-existing magnesium sulfate, nitroglycerin, heparin and/or amiodarone infusions in peripheral or central IV lines. Prehospital personnel will not initiate magnesium sulfate, nitroglycerin, heparin and/or amiodarone infusions. The magnesium sulfate, nitroglycerin, heparin and/or amiodarone infusion will have been running for at least 10 minutes prior to transport. Patients will have maintained stable vital signs for the previous 30 – 60 minutes and will not have more than two medication infusions running exclusive of potassium chloride (KCl). The timeframes listed above will not apply to patients who require immediate transport for critical interventions when the transferring and/or receiving physician(s) determine that immediate transport is in the best interest of patient care.
- D. Magnesium sulfate infusions are only approved for patients with suspected pre-eclampsia.

Effective Date: 06/01/2011
Next Review Date: 09/2013
Approved:

Date last Reviewed / Revised: 11/10
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SIGNATURE ON FILE
S-SV EMS Medical Director

SIGNATURE ON FILE
S-SV EMS Regional Executive Director

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PROCEDURE:

- A. All patients will be maintained on a cardiac monitor and a non-invasive blood pressure monitor.
- B. The paramedic shall receive the transferring orders from the transferring physician prior to leaving the sending hospital, including a telephone number where the transferring physician can be reached during the patient transport. Transferring physicians must be aware of the general scope of practice of paramedics and the transport protocol parameters outlined below. The written orders must include the type of solution, dosage and rate of infusion for the IV fluids.
- C. Patients will be hemodynamically stable at the time of transport and will not have more than two medication infusions running exclusive of KCl.
- D. Patients will meet pre-established criteria for hemodynamic stability, as noted by the transferring physician on the magnesium sulfate, nitroglycerin, heparin and / or amiodarone transferring orders.
- E. If medication administration is interrupted (infiltration, accidental disconnection, malfunctioning pump, etc.), the paramedic may restart the line as delineated in the transfer orders.
- F. All medication drips will be in the form of an IV piggyback monitored by a mechanical pump familiar to the paramedic. In cases of pump malfunction that cannot be corrected, the medication drip will be discontinued and the transferring physician and base hospital notified as soon as possible. The S-SV EMS Agency Medical Director shall be notified of the pump malfunction within 24 hours.
- G. The paramedic shall document on the patient care report (PCR) the total volume infused throughout the duration of the transport.

1. MAGNESIUM SULFATE INFUSIONS

Paramedics are allowed to transport patients on magnesium sulfate infusions within the following parameters:

- a. Infusion fluid will be NS. Medication concentration will be 10Gms/100mL.
- b. Regulation of the infusion rate will be within parameters defined by the transferring physician.
- c. If patient develops signs of magnesium toxicity, the medication drip will be discontinued and the transferring physician and base hospital will be notified.
- d. Signs of magnesium toxicity include:

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- Thirst
- Diaphoresis
- DTR's (Deep Tendon Reflexes)- depressed or absent
- Hypotension
- Flaccid paralysis
- Respiratory depression
- Circulatory depression or collapse
- CNS depression
- Urine output < 30 ml/hr
- Chest pain or pulmonary edema

- e. Vital signs will be monitored and documented every 15 minutes and immediately if there is any change in patient status or change in medication adjustment.

2. NITROGLYCERIN INFUSIONS

Paramedics are allowed to transport patients on nitroglycerin infusions within the following parameters:

- a. Infusion fluid will be D5W. Medication concentration will be 50mg/250mL.
- b. Regulation of the infusion rate will be within parameters defined by the transferring physician, but in no case will changes be greater than 10mcg/minute increments every 5-10 minutes. In cases of severe hypotension, the medication drip will be discontinued and the transferring physician and base hospital will be notified.
- c. Discuss with transferring physician concomitant use of analgesics during transport, e.g. IV morphine sulfate.
- d. Vital signs will be monitored and documented every 15 minutes and immediately if there is any change in patient status or change in medication adjustment.

3. HEPARIN INFUSIONS

Paramedics are allowed to transport patients on heparin infusions within the following parameters:

- a. Infusion fluid will be D5W or saline. Medication concentration shall not exceed 100units/mL of IV fluid (25,000 units/250mL).
- b. Infusion rates will remain constant during transport. No regulation of the rate will be performed except to turn off the infusion completely.

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- c. Infusion rates will not exceed 1600 units/hour.
- d. Vital signs will be monitored and documented every 15 minutes.

4. AMIODARONE HYDROCHLORIDE INFUSIONS

Paramedics are allowed to transport patients on amiodarone infusions within the following parameters:

- a. Medication concentration must be a minimum concentration of 150mg/250mL (0.6 mg/mL); medication is unstable in more dilute solutions.
- b. Infusion rates must remain constant during transport with no regulation of rates being performed by the paramedic, except for the discontinuation of the infusion.
- c. Infusion rates may vary between 0.25 – 1 mg/min.
- d. Vital signs will be monitored and documented every 15 minutes.
- e. Y-Injection incompatibility; the following will precipitate with amiodarone hydrochloride:
 - Heparin
 - Sodium Bicarbonate
- f. Amiodarone hydrochloride intravenous infusion monitoring is not approved for patients < 14 years old without base / modified base physician contact.
- g. For infusions > one hour, amiodarone hydrochloride concentrations should not exceed 2mg/mL unless a central venous catheter is used.

CONTINUOUS QUALITY IMPROVEMENT (CQI):

All calls will be audited by the provider agency CQI process. Audits will assess compliance with physician orders and regional protocols, including base hospital contact in emergency situations. Reports will be sent to the EMS Agency as requested.

CROSS REFERENCES:

Prehospital Care Policy Manual

Paramedic Interfacility Transport Optional Skills: Transferring Hospital Requirements,
Reference No. 341

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Paramedic Interfacility Transport Optional Skills: Service Provider Requirements and Responsibilities, Reference No. 441

Paramedic Interfacility Transport Optional Skills: Application and Approval Process, Reference No. 442