Manual Emergency Medical Services Administrative Policies and Procedures	Policy Number: 540.02 Page 1 of 3
Subject Critical Care Paramedic Treatment Protocols **GENERAL PROCEDURES**	
References Title 22, Division 9, Chapter 4 of the California Code of Regulations	Effective 06/01/2018

I. POLICY

Critical Care Paramedics (CCP) shall work under the existing medical control system and follow EMS Agency policies and procedures, as approved by the EMS Medical Director.

II. SCOPE OF PRACTICE

The Scope of Practice for a CCP in the Central California EMS region includes the following:

A. Any treatment, medication, or procedure described in the EMS Agency's basic and optional scope of practice for paramedics and those locally approved skills identified in Title 22.

B. Through the use of an IV pump, the intravenous infusion of the following:

1. Amiodarone Hydrochloride
2. Blood/Blood Products Infusion
3. Calcium Channel Blocker Infusion
4. Dopamine Hydrochloride
5. Fentanyl Infusion
6. Glycoprotein IIb/IIIa Receptor Inhibitors
7. Heparin
8. Lidocaine
9. Magnesium Sulfate Infusion
10. Midazolam Infusion for Intubated patients
11. Morphine Sulfate
12. Nitroglycerin
13. Norepinephrine
14. Potassium Chloride
15. Sodium Bicarbonate
16. Total Parenteral Nutrition

C. Sedation for ventilator/agitated patients

D. Monitor and adjustment of ventilators

Approved by		Revision
EMS Director	**Daniel J. Lynch** (Signatures on File at EMS Agency)	**01/03/2024**
EMS Medical Director	**Jim Andrews, M.D.** (Signatures on File at EMS Agency)	

E. Monitor thoracostomy tubes

F. Administer oxygen via High Flow Nasal Cannula.

G. Monitor pre-established invasive blood pressure lines.

H. CCPs are not allowed to start new medications in the CCP scope of practice during transport unless the transferring physician has written an order, or they receive an order from a base hospital physician. Any procedure or medication in the CCEMSA paramedic scope of practice may be used as indicated in Policy 530: Paramedic Treatment Protocols. Consider base hospital consultation.

III. TRANSFERRING PHYSICIAN ORDERS

The transferring physician specifies standing orders for a patient based on skills and medications included in the CCP scope of practice.

The CCP may take orders from any physician if those orders are authorized in this policy. All orders must be from the transferring physician in writing, reviewed by the CCP with the physician, and signed by the physician prior to patient transport. Verbal orders or telephone orders may be transcribed by a registered nurse (RN), reviewed with the CCP, and then signed by the transcribing RN referencing the ordering physician. For unapproved orders, allow the transferring physician to modify the orders or contact the appropriate base hospital for clarification and direction.

IV. PATIENT CARE OUTSIDE OF THE CRITICAL CARE PARAMEDIC SCOPE OF PRACTICE

When a patient's treatment/care is beyond the CCP scope of practice, the patient may be transported by the CCP unit when:

A. A licensed medical professional (e.g. RN, Nurse practitioner, physician assistant, or MD) is in attendance and assumes control and responsibility for providing care outside the paramedic scope of practice; AND

B. Medication and equipment needed by the patient that is not stocked on the CCP unit is provided by the sending facility.

V. STANDARD TREATMENT AND VITAL SIGNS

Patient being treated by a CCP under these protocols shall have the following:

A. All patients shall be placed on cardiac and pulse oximeter monitors throughout the entire transport.

B. A full set of Vital signs (including GCS) shall be obtained every 15 minutes, unless required to be in lesser time increments.

1. A manual blood pressure is required to confirm and verify any systolic blood pressure that is <90 or >180.

C. Where medication rates are determined by weight, the paramedic will document the weight of the patient within the last 24 hours or the weight that the sending facility used to determine the medication dosage.

D. Infusions must be regulated by a mechanical pump familiar to the CCP. If pump failure occurs and cannot be corrected, the CCP is to discontinue the medication/product infusion and notify the base physician.

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VI. DOCUMENTATION

A. An electronic patient care report (ePCR) shall be appropriately completed on each patient

B. A copy of the ePCR shall be given to the receiving facility prior to the CCP leaving the facility. If the facility is out of area and the CCP is unable to leave an ePCR with the patient, the CCP will provide for the submittal of the PCR by Fax or email (whichever is preferable to the receiving facility).

CCEMSA CRITICAL CARE PARAMEDIC TRANSFER ORDERS
(To be completed by transferring physician)

[√] **Patient Information**

Patient Name: _____ DOB: _____

Patient Weight: _____

[√] **Transfer Information**

Sending Facility: _____ Receiving Facility: _____

Sending MD: _____ Receiving MD: _____

[√] **Vital Signs Measurement**

Vital signs (BP, HR, RR, GCS) will be measured and recorded every _____ minutes (minimum every 15 minutes).

Waveform capnography will be monitored throughout transport if patient is intubated or receiving a morphine infusion, fentanyl push dose, or midazolam infusion.

Temperature will be measured and recorded every 15 minutes if blood products are infusing.

[ ] **Amiodarone Hydrochloride Infusion**

Pediatric:
Maintain infusion rate at _____ mcg/kg/min (5 - 15 mcg/kg/min; 2 mg/min maximum).

*Optional: Pediatric: Reduce infusion rate to _____ mcg/kg/min (5 – 15 mcg/kg/min; 2 mg/min maximum) at _____ hours (0000 – 2400 military time).

Adult:
Maintain infusion rate at _____ mg/min (2 mg/min maximum).

Optional: Adult: Reduce infusion rate to _____ mg/min (2 mg/min maximum) at _____ hours (0000 – 2400 military time).

[ ] **Blood/Blood Products Infusion** (wide open (w/o) is acceptable for emergency situations)

Pediatric: (1 unit ≈ 300 ml)

pRBC: Transfuse _____ ml (10 – 40 ml/kg) packed red blood cells at an infusion rate of _____ ml/hour (5 ml/kg/hr – w/o).

Cryoprecipitate: Transfuse 0.1 – 0.2 units/kg; 10 units maximum.

FFP: Transfuse _____ ml (10 – 40 ml/kg) fresh frozen plasma at an infusion rate of _____ ml/hour (5 ml/kg/hr - w/o).

Platelets: Transfuse _____ ml (10 – 40 ml/kg) platelets at an infusion rate of _____ ml/hour (10 ml/kg/hr – w/o).

TXA: Infuse _____ mg (15 mg/kg) TXA over 10 minutes. Maintenance infusion of _____ mg/kg/hr (2 mg/kg/hr) for the next _____ hours.

Adult:
pRBC: Transfuse _____ unit(s) (1 - 2 units) packed red blood cells at an infusion rate of _____ ml/hr (0.5 units/hr – w/o).

Cryoprecipitate: Transfuse 0.2 units/kg; 10 units maximum.

FFP: Transfuse _____ unit(s) (1 – 2 units) fresh frozen plasma at an infusion rate of _____ ml/hr (0.5 units/hr – w/o).

Platelets: Transfuse _____ unit(s) (1 – 2 units) platelets at an infusion rate of _____ ml/hr.

TXA: Infuse _____ mg (15 mg/kg) TXA over 10 minutes. Maintenance infusion of _____ mg/kg/hr (2 mg/kg/hr) for the next _____ hours.

[ ] **Calcium Channel Blocker Infusion**

Diltiazem: Maintain infusion rate at _____ mg/hr. (2-15 mg/hr) and titrate every 15 minutes by increments of 2.5 mg/hr to maintain heart rate between _____ and _____ beats per minute.
Nicardipine: Maintain infusion rate at _____ mg/hr. (15 mg/hr maximum) and titrate every 15 minutes by increments of 2.5 mg/hr to maintain systolic between _____ and _____ mm Hg (160-180 mm Hg).

[ ] **Dopamine Hydrochloride**

Begin infusion rate at _____ mcg/kg/min (5-20 mcg/kg/min). Titrate infusion to maintain systolic blood pressure between _____ and _____ mm Hg (above 90 mm Hg recommended).

[ ] **Fentanyl (Sublimaze)**

Pediatric:
Slow IV push dose of _____ mcg/kg (1-3mcg/kg). Inject slowly over 1-2 min. Titrate to maintain comfort (verbally or visually).
Can repeat dose _____ times.

Adult:

Slow IV push dose of _____ mcg (25 – 100 mcg) Inject slowly over 1-2 min. Titrate to maintain comfort (verbally or visually).
Can repeat dose _____ times.

[ ] **Fentanyl Infusion (Sublimaze)**

Adult:
Begin infusion rate at _____ mcg/hr (25-300 mcg/hr). Titrate infusion to desired response.

[ ] **Glycoprotein IIb/IIIa Receptor Inhibitors Infusion**

Adult:
Abciximab (Reopro): Maintain infusion rate at _____ mcg/kg/min (0.125 mcg/kg/min; 10 mcg/min maximum).
Eptifibatide (Integrillin): Maintain infusion rate at ____ mcg/kg/min (2 mcg/kg/min; 15 mg/hr maximum).
Tirofiban (Aggrastat): Maintain infusion rate at _____ mcg/kg/min (0.15 mcg/kg/min maximum).

[ ] **Heparin Infusion**

Pediatric:
Maintain infusion rate at _____ units/kg/hour (15 – 30 units/kg/hour; maximum 1,500 units/hr).

Adult:
Maintain infusion rate at _____ units/kg/hour (maximum 1,500 units/hour).

[ ] **High Flow Nasal Cannula**

Oxygen flow rate: _____ liters per minute.

FiO_2: _____ %

Maintain O_2 saturation between: _____ and _____ %

CCEMSA CRITICAL CARE PARAMEDIC TRANSFER ORDERS
(To be completed by transferring physician)

[ ] **Lidocaine Infusion**

Pediatric:
Maintain infusion rate at _____ mcg/kg/min (20 – 50 mcg/kg/min; 4 mg/min maximum).

Adult:
Maintain infusion rate at _____ mg/min (1 – 4 mg/min; 4 mg/min maximum).

[ ] **Magnesium Sulfate Infusion**

Maintain infusion rate at _____ g/hr (2-4 g/hr, 4 g/hr maximum).

Note:
Discontinue infusion if somnolence, muscular paralysis, or respiratory depression is noted and contact the Base Hospital Physician. Antidote for Magnesium Sulfate Infusion toxicity is Calcium Chloride (1 g over 1-2 minutes IV push.

[ ] **Midazolam Infusion for Sedation of Intubated Patients**

Pediatric:
Begin infusion rate at _____ mg/hr (0.05 – 0.6 mg/kg/hr; maximum 6 mg). Titrate infusion to ventilator compliance

Adult:
Begin infusion rate at _____ mg/hr (1 – 10 mg/hr). Titrate infusion to ventilator compliance

[ ] **Morphine Sulfate Infusion**

Pediatric:
Begin infusion rate at _____ mg/hr (0.1 – 0.4 mg/kg/hr). Titrate infusion to maintain comfort (verbally or visually).

Adult:
Begin infusion at _____ mg/hr (2 – 10 mg/hr). Titrate infusion to maintain comfort (verbally or visually).

[ ] **Nitroglycerine Infusion**

Pediatric:
Begin infusion rate at _____ mcg/kg/min (1 – 5 mcg/kg/min; 20 mcg/kg/min maximum). Titrate to maintain systolic blood pressure between _____ mm Hg and _____ mm Hg.

Adult:
Begin infusion rate at _____ mcg/min (200 µg/min maximum). Titrate infusion to maintain systolic blood pressure between _____ mm Hg and _____ mm Hg.

[ ] **Norepinephrine Infusion**

Pediatric:
Begin infusion rate at _____ mcg/kg/min (0.05 – 2.0 mcg/kg/min; 2.0 mcg/kg/min maximum). Titrate to maintain systolic blood pressure between _____ mm Hg and _____ mm Hg.

Adult:
Begin infusion rate at _____ mcg/min (1 - 30 mcg/min). Titrate to maintain systolic blood pressure between _____ mm Hg and _____ mm Hg.

[ ] **Potassium Chloride Infusion**

Maintain infusion rate at _____ mEq/hr potassium component (10 mEq/hr maximum).

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(To be completed by transferring physician)

[ ] **Sedation using Midazolam**

Pediatric:
Begin IV slow push at _____ mg (0.05 – 0.1 mg/kg; maximum 2 mg). Titrate to maintain LOS noted below.

Adult:
Begin IV slow push at _____ mg (1 – 10 mg). Titrate to maintain LOC noted below.

Level of Sedation:
[ ] Awakens to voice
[ ] Awakens to light touch
[ ] Awakens to painful stimuli

[ ] **Sodium Bicarbonate Infusion**

Maintain infusion rate at _____ mEq/hr (1 mEq ≈ 84 mg).

[ ] **Thoracostomy Tubes**

[ ] Maintain suction on the collection container at _____ cm H_2O (20 cm H_2O maximum).

[ ] If patient decompensates, apply suction to collection container at 20 cm H_2O and check tubing for leaks, blood clots, or disconnection.

[ ] **Total Parenteral Nutrition**

Maintain infusion rate at _____ ml/hr.

If TPN infusion cannot be maintained, check blood glucose every hour of if there is a change in the patient's mental status.

[ ] **Ventilators**

Mode:
[ ] Assist Control (AC)
[ ] Bi-level Positive Airway Pressure (BiPAP)
[ ] Continuous Positive Airway Pressure (CPAP)
[ ] Controlled Mechanical Ventilation (CMV)
[ ] Pressure Control Ventilation (PC)
[ ] Synchronized Intermittent Mandatory Ventilation (SIMV)

Invasive Ventilation Settings

Tidal Volume: _____ (5 – 15 cc/kg)

Pressure: _____ (10 to 60 cm H_2O)

Pressure Support _____ (0 to 60 cm H_2O)

Rate: _____ bpm (8 – 20 bpm)

Oxygen: _____ % (21 - 100%)

PEEP: _____ cm H_2O (5 – 30 cm H_2O)

I:E Ratio _____ (Inverse I:E available)

Non-Invasive Ventilation Settings

BiPAP: _____

IPAP: _____ (6 to 60 cm H_2O)

EPAP: _____ (3 to 30 cm H_2O)

CPAP Pressure: _____ (3 to 30 cm H_2O)

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(To be completed by transferring physician)

Titrate oxygen concentration to maintain an oxygen saturation of ≥ _____ % (≥ 88%).

Titrate tidal volume and rate to maintain an end tidal CO_2 between _____ mm Hg (≥20 mm Hg) and _____ mm Hg (≤80 mm Hg).

Physician Signature: _____ Date: _____

Physician Printed Name: _____ Time: _____