



Medical Directive

Directive Number	<u>11-04a</u>
Publish Date	<u>01 June 2011</u>
Effective Date	<u>01 June 2011</u>
Subject	<u>Correction to MD 11 - 04 System DOS Pronouncements</u>
Update to Clinical Operating Guidelines v 01.06.11	

Credentialed System Responder	Information
Credentialed EMT	Information
Credentialed EMT-Intermediate	Information
Credentialed EMT-Paramedic	Action
Credentialed EMD	Action

On May 26, 2011 the Office of the Medical Director published Medical Directive 11-04. Shortly after distribution it was discovered that the directive contained an error. The directive included information on the removal of atropine from Protocol CA-02 which was intended to be distributed after the appropriate training in the next education session. We are issuing Medical Directive 11-04a which supersedes and invalidates version (11-04). The removal of Atropine from Protocol CA – 02 will be appropriately covered during the next quarterly CE session. A Medical Directive will be issued in the future to incorporate updates to the protocols as needed.

Medical Directive 11-04a is as follows:

In an effort to standardize and facilitate Medical Direction for DOS Pronouncements the following documents have been revised to reflect the need for EMT-P Credentialed providers to contact a “System Medical Director” as applies per Protocols CA -02, CA – 03, PCA – 02, PCA - 03, Clinical Standard CS - 08, CS – 09 and Clinical Reference CR – 17.

We apologize for any confusion or inconvenience this may have caused.

Thanks for all you do. As always, please let us know if you have any questions.

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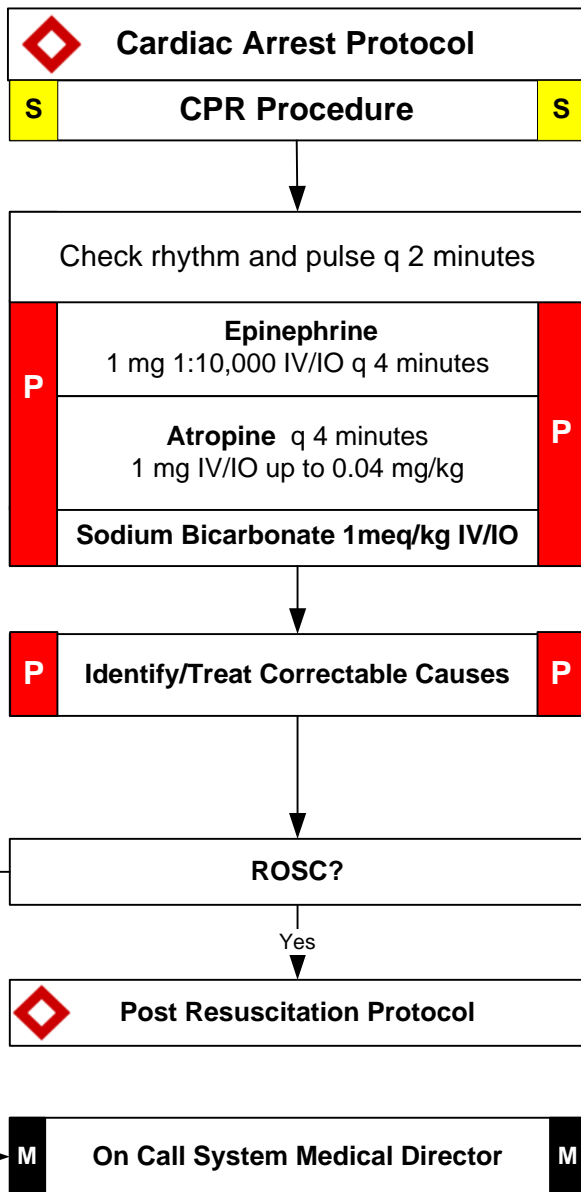
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Asystole/PEA

History: <ul style="list-style-type: none"> • Past medical history • Medications • Events leading to arrest • End stage renal disease • Estimated downtime • Suspected hypothermia • Suspected overdose • DNR 	Signs and Symptoms: <ul style="list-style-type: none"> • Pulseless • Abnormal Breathing (gasp) • No electrical activity on ECG • No auscultated heart tones 	Differential: <ul style="list-style-type: none"> • Medical or Trauma • Hypoxia • Potassium (hyper/hypo) • Drug overdose • Acidosis • Hypothermia • Device (machine error) • Obvious Death
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AT ANY TIME
Return of Spontaneous Circulation
Declare a Resuscitation Alert and go to :
Post Resuscitation Protocol

AT ANY TIME
Change in Rhythm go to :
Appropriate Protocol



Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Look for treatable causes:
Hypoxia
Hypothermia
Hypovolemia
 (NS 1L bolus IV/IO)
Hypoglycemia
 (D50 25g IV/IO)
Acidosis
 (Sodium Bicarbonate 1meq/kg IV/IO)
Hyperkalemia
 (Calcium gluconate 1g IV/IO)
 (Sodium Bicarbonate 1meq/kg IV/IO)
OD Calcium channel/Beta blocker
 (Calcium Gluconate 1g IV/IO)
 (Glucagon 3mg IV/IO)
Tension Pneumothorax
 (Chest Decompression)

Pearls:

- Always confirm asystole in more than one lead.
- Correctable causes must be addressed.

Ventricular Fibrillation & Pulseless Ventricular Tachycardia

History: <ul style="list-style-type: none"> • Estimated Down Time • Past Medical History • Medications • Events leading to arrest • Renal Failure / Dialysis • DNR 	Signs and Symptoms: <ul style="list-style-type: none"> • Unresponsive, Apneic, Pulseless • Ventricular fibrillation or ventricular tachycardia on ECG 	Differential: <ul style="list-style-type: none"> • Asystole • Artifact / Device Failure • Cardiac • Endocrine / Medicine • Drugs • Pulmonary
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Cardiac Arrest Protocol

Defibrillation Procedure q2 minutes:
AED or 360J manual device.
Immediately Resume CPR Procedure

Check rhythm and pulse q 2 minutes ONLY

Epinephrine 1:10,000 1mg IV
Repeat q 4 minutes

Amiodarone 300mg IV push
Repeat in 4 min at 150 mg IV push x 1

Sodium Bicarbonate 1 meq/kg

Lidocaine 1.5 mg/kg IV every 4 minutes
until Max dose = 3mg/kg

Consider :
Magnesium Sulfate 2 grams slow IV push
Calcium Gluconate 1 gram IV
Sodium Bicarbonate 1 meq/kg

If hyperkalemic arrest suspected consider early use of Calcium and Sodium Bicarbonate

ROSC?

ON Call System Medical Director

Post Resuscitation Protocol

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

AT ANY TIME
Change in Rhythm go to :
Appropriate Protocol

Pearls:

- ECAs, EMT-Basics and EMT-Intermediates may only use automated defibrillation (AED).
- Reassess and document ETT/BIAD placement after every move and at transfer of patient care.
- Continuous ETCO2 should be initiated as soon as practicable.
- Calcium and sodium bicarbonate should be given early if hyperkalemia is suspected (renal failure, dialysis)
- Tx priorities: uninterrupted compressions, defibrillation, then IV/IO and airway control.
- Polymorphic VT (Torsades) may benefit from magnesium sulfate.
- Effective CPR and prompt defibrillation are the keys to successful resuscitation.

MEDICAL ARREST: Termination of Resuscitation without OLMC Checklist:

- Pt \geq 18 yoa or family of minor is agreeable (consult Commander/DMO)
- Adequate CPR has been administered
- Airway managed with ET, King, Cric
- IV/IO Access has been achieved
- Rhythm appropriate meds/treatment administered
- Persistent (>20 min) Asystole/Agonal rhythm with no reversible causes
- Failure to establish ROSC at any time
- Failure to establish recurring/persistent v-fib
- Arrest not due to suspected hypothermia
- Providers agree with decision to cease efforts

If all of the above are not met contact an on call System Medical Director for termination of efforts.

TRAUMATIC ARREST: Termination/withholding of Resuscitation Checklist:

- Obvious injuries incompatible with life
- Pt is pulseless and apneic on arrival of first Provider **AND**
- Lacks respiratory effort after basic airway maneuvers **AND**
- Lacks organized electrical activity on ECG w/ rate > 40.
- Medical cause of arrest has been considered.

DNR Advanced Directives

Standard:

In the event any provider of the EMS System is presented with a completed Out of Hospital Do Not Resuscitate (OOH-DNR) form and/or OOH-DNR ID device, the provider shall withhold CPR and the listed therapies in the event of cardiac arrest. The form and device may be from any (US) State. Refer to DSHS Rule 157.25.

Exceptions:

- A patient that is known to be pregnant.
- If there are any indications of unnatural or suspicious circumstances.

The provider shall begin resuscitation efforts until such time as a physician directs otherwise.

Purpose:

- To honor the terminal wishes of the patient and to prevent the initiation of unwanted resuscitation.

Application:

1. When confronted with a cardiac arrest patient, the following conditions must be present in order to honor the DNR request and withhold CPR and ALS therapy:
 - Out-of-Hospital Do Not Resuscitate (OOH-DNR) – or – OOH-DNR ID device; (Original or Copy)
 - Valid Out-Of-Hospital Do Not Resuscitate Written Order (Original or Copy) or Device from any (US) State;
 - A licensed physician on scene or in contact by telephone orders that no resuscitation efforts are to take place
2. A DNR request may be overridden by:
 - The patient or person who executed the order destroying or directing someone in their presence to destroy the form and/or remove the identification device
 - The patient or person who executed the order telling the EMS Providers or attending physician that it is his/her intent to revoke the order
 - The attending physician or physician's designee, if present at the time of revocation, recording in the patient's medical record the time, date and place of the revocation and enters "VOID" on each page of the OOH-DNR
3. In the event there is a question regarding whether to honor or not honor an OOH-DNR or Advanced Directive, contact an on call System Medical Director.
4. An advanced directive does not imply that a patient refused supportive or palliative care.

Discontinuation of Prehospital Resuscitation

Standard:

Unsuccessful cardiopulmonary resuscitation (CPR) and other advanced life support (ALS) interventions may be discontinued prior to transport when this standard is followed.

Purpose:

The purpose of this standard is to allow for discontinuation of prehospital resuscitation after the delivery of adequate and appropriate ALS therapy.

Application:

1. Any System Credentialed Provider, in the following circumstances, may discontinue resuscitation efforts without OLMC:
 - Resuscitation efforts were inappropriately initiated when criteria outlined in the Criteria for Death/Withholding Resuscitation Standard were present
 - A valid Out of Hospital Do Not Resuscitate Form (OOH-DNR) and/or OOH-DNR ID device was discovered after resuscitative efforts have been initiated. The form and device may be from any (US) State (Original or Copy) as defined in the DNR Standard
2. In addition to the previously stated criteria a Paramedic Credentialed Provider, in the following circumstances, may discontinue resuscitation efforts without OLMC:
 - If the patient suffers a traumatic injury meeting the following criteria:
 - The patient is pulseless and apneic on arrival of the first provider on scene **AND**
 - Lacks respiratory effort after basic airway maneuvers **AND**
 - Lacks organized electrical activity on ECG with a rate > 40.
3. In the case of suspected medical cause of arrest all of the following criteria must be met:
 - Patient must be at least 18 years of age **OR** the family of a minor is agreeable;
 - Cause of arrest is NOT due to suspected hypothermia;
 - Adequate CPR has been administered;
 - Airway has been successfully managed with verification of device placement. Acceptable management techniques include endotracheal intubation, blind insertion airway device (King) or cricothyrotomy;
 - IV/IO access has been achieved;
 - Rhythm-appropriate medications and defibrillations have been administered according to protocol;
 - Persistent (>20 min) Asystole or agonal rhythm is present and no reversible causes are identified;
 - Failure to establish spontaneous circulation (palpable pulse) at any point in the arrest;
 - Failure to establish persistently recurring or refractory ventricular fibrillation/tachycardia or any continued neurological activity (eye opening, or motor response) after appropriate BLS and ALS resuscitation efforts over 20 minutes;
 - All Paramedic Credentialed providers on scene agree with decision to cease efforts.
 - If all of the above are not met and the provider feels it is appropriate to discontinue resuscitative efforts contact an on call System Medical Director.
4. When an on call System Medical Director is involved in the decision to terminate; resuscitative efforts must be continued while:
 - the family is counseled on the patients unchanging condition and impending discontinuation of efforts;
 - requesting a pronouncement from an on call System Medical Director.
5. If termination of efforts is anticipated Victim Services, when available, should be contacted as early as possible
6. Document all patient care and any interactions with the patient's family, personal physician, medical examiner, law enforcement, and medical control in the EMS patient care report (PCR)

Pediatric Asystole/PEA

History: <ul style="list-style-type: none"> Events leading to arrest Estimated downtime Past medical history Medications Existence of terminal illness FBAO Hypothermia 	Signs & Symptoms: <ul style="list-style-type: none"> Unresponsive Cardiac Arrest Signs of lividity or rigor 	Differential: <ul style="list-style-type: none"> Respiratory failure Foreign body Hyperkalemia Infection (croup, epiglottitis) Hypovolemia (dehydration) Congenital heart disease Trauma Tension pneumothorax Hypothermia Toxin or medication Hypoglycemia Acidosis
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Pediatric Cardiac Arrest Protocol

CPR Procedure

Pediatric Airway Protocol

P Epinephrine **0.01 mg/kg IV/IO** (max 1mg) (0.1 mL/kg of 1:10,000) or **0.1 mg/kg via ET** if no access (max 10mg) (0.1 mL/kg of 1:1,000) **P**
Repeat every 3-5 min

P Identify/Treat Correctable Causes **P**

ROSC?

NO
Consider: Criteria for Discontinuation Standard

Yes
Post Resuscitation Protocol

M On Call System Medical Director **M**

Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M

Look for treatable causes:

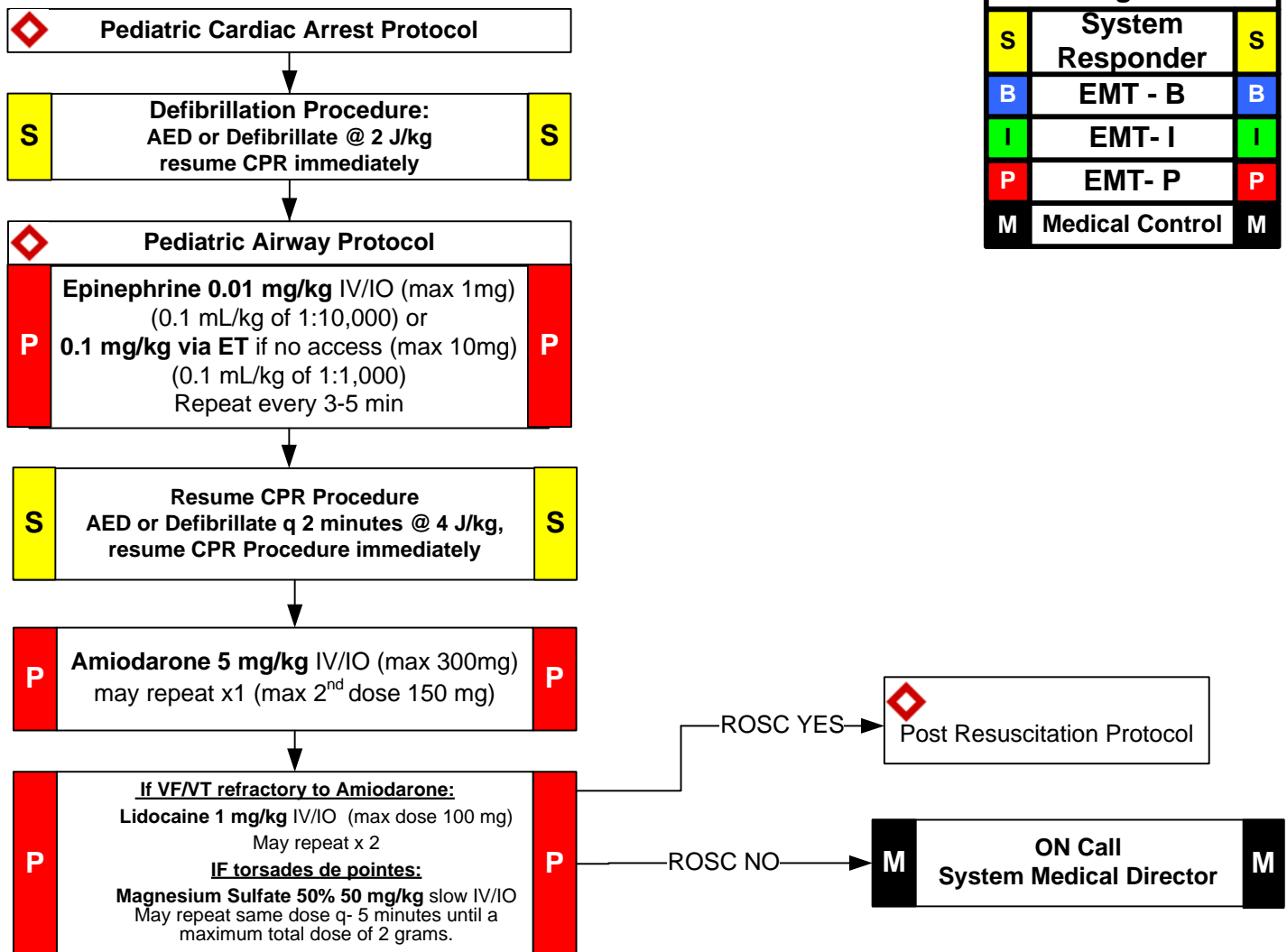
- Hypoxia**
- Hypothermia**
- Hypovolemia**
(NS 20mL/kg IV/IO may repeat x 1)
- Hypoglycemia**
(< 30d D50 1g/kg in 25mL run wide)
(>1m D50 1g/kg in 50mL run wide)
- Acidosis**
(Sodium Bicarbonate 1meq/kg IV/IO)
- Hyperkalemia**
(Calcium gluconate 100 mg/kg IV/IO)
(Sodium Bicarbonate 1meq/kg IV/IO)
- OD Calcium channel/Beta blocker**
(Calcium Gluconate 100 mg/kg IV/IO Max dose 1 g)
(Epinephrine infusion 0.1mcg/kg/min)
(Glucagon 0.1mg/kg IV/IO max 1mg)
- Tension Pneumothorax**
(Chest Decompression)

- Pearls:**
- In order to be successful in pediatric arrests, a cause must be identified and corrected.
 - Respiratory arrest is a common cause of cardiac arrest. Unlike adults early airway intervention is critical.
 - In most cases pediatric airways can be managed by basic interventions.
 - Effective CPR is critical 1) Push hard and fast at appropriate rate 2) Ensure full chest recoil 3) Minimize interruptions in CPR. Pause CPR < 10 seconds to verify rhythm.**

Pediatric V-Fib/Pulseless V-Tach

History: <ul style="list-style-type: none"> Events leading to arrest Estimated downtime Past medical history Medications Existence of terminal illness FBAO Hypothermia 	Signs & Symptoms: <ul style="list-style-type: none"> Unresponsive Cardiac Arrest 	Differential: <ul style="list-style-type: none"> Respiratory failure Foreign body Hyperkalemia Infection (croup, epiglottitis) Hypovolemia (dehydration) Congenital heart disease Trauma Tension pneumothorax Hypothermia Toxin or medication Hypoglycemia Acidosis
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Legend		
S	System Responder	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P
M	Medical Control	M



Pearls:

- In order to be successful in pediatric arrests, a cause must be identified and corrected.
- Respiratory arrest is a common cause of cardiac arrest. Unlike adults early ventilation intervention is critical.
- In most cases pediatric airways can be managed by basic interventions.
- Consider Epinephrine infusion 0.1mcg/kg/min if arrest is from beta/calcium channel blocker OD or anaphylaxis.**
- Effective CPR is critical 1) Push hard and fast at appropriate rate 2) Ensure full chest recoil 3) Minimize interruptions in CPR.**