

County of Santa Clara

Public Health Department

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January 23, 2012

To: Santa Clara County EMS System Stakeholders

From: Joe Williams
EMS Specialist



Subject: Policy # 302- Prehospital Care Assets Minimum Inventory Requirements Update.

As expected, effective February 2, 2012; the Santa Clara County EMS Agency is implementing alterations to Policy # 302- Prehospital Care Assets Minimum Inventory Requirements. This is to make accommodations for the new Prehospital Therapeutic Hypothermia Protocol (M16), removal of Atropine Preloads, and changes to both Morphine and Midazolam concentrations.

Therapeutic Hypothermia (M16) protocol taking effect on February 2, 2012, with the use of this protocol, the requirements of a refrigerator or other County approved chilling device have been added. Further, four 1000cc IV bags of Normal Saline must be chilled and maintained at 39 degrees Fahrenheit.

With regards to Atropine Preloads, as expected, Atropine Preloads are being removed from minimum inventory to coincide with the removal of Atropine from Cardiac arrest protocols. Multi dose Atropine will remain in inventory requirements going forward.

An additional change has been implemented with regards to Morphine and Midazolam. Morphine and Midazolam are no longer required to be carried in a specific concentration. Previously, Morphine was required to be carried as 10mg and Midazolam as 5mg/1cc. Morphine and Midazolam are now only required to be carried at the previous cumulative minimum levels, concentration or individual vial amounts are no longer specified. Be advised that there is an anticipated shortage of both these medications in the coming months. Please check with you respective suppliers to mitigate any supply shortages that may be on the horizon. If you choose to carry a different concentration of either of these medications be sure to educate your staff appropriately.

*Board of Supervisors: Mike Wasserman, George Shirakawa, Dave Cortese, Ken Yeager, Liz Kniss
County Executive: Jeffrey V. Smith*

Please review the tables below documenting changes in Policy 302.

Additions
Normal Saline 0.9% - 1000 cc IV bags (Chilled to 39 Degrees Fahrenheit and maintained)
Refrigerator or County approved cooling device able to chill at least 4, 1000cc Bags of Normal Saline, 39 degrees Fahrenheit

Removed
Atropine 1mg Preload

Morphine and Versed Prior to 2/2/2012
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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Midazolam 5mg/ 1cc	0	0	0	10mg	15mg	15mg	15mg	15mg
Morphine Sulfate 10mg	0	0	0	20mg	20mg	10mg	20mg	20mg

Morphine and Versed Effective 2/02/2012
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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Midazolam	0	0	0	10mg	15mg	15mg	15mg	15mg
Morphine Sulfate	0	0	0	20mg	20mg	10mg	20mg	20mg

Please review the attached documents and please distribute widely within your organizations. If there are any questions please contact Joe Williams at 408-792-5666 or email at joseph.williams@phd.sccgov.org.

Attachment:

- Policy #302 - Prehospital Care Assets Schedule A – Minimum Inventory Requirements
- Policy #302 - Prehospital Care Assets Schedule B – Spine Board Requirements
- Policy #302 - Prehospital Care Assets Schedule A Draft with Edits
- Therapeutic Hypothermia (M16)



County of Santa Clara Emergency Medical Services System

Policy #302-Prehospital Care Asset Minimum Inventory Requirements

PREHOSPITAL CARE ASSETS MINIMUM INVENTORY REQUIREMENTS

Effective Date February 2, 2012
Replaces September 31, 2011
Review Date February 2015

I. Purpose

To establish minimum inventory requirements for all prehospital care assets in the County of Santa Clara.

II. Definitions (Assets)

Air Ambulance – Any Santa Clara County permitted air ambulance, either basic or advanced life support in accordance with Title 22 Regulations. Staffed with one nurse and one additional nurse or paramedic.

ALS Ambulance – Any Santa Clara County approved advanced life support ambulance staffed by at least one paramedic and one EMT or paramedic.

ALS Unit (Non-Transport) – Any unit charged with emergency medical response at the advanced life support level that is not designed for the transport of a patient including fire engines, trucks, Quick Response Vehicles, etc. Staffing must include at least one paramedic.

BLS Ambulance – Any Santa Clara County approved basic life support ambulance staffed with at least two EMT's.

BLS Unit (Non-Transport) – Any unit charged with emergency medical response at the basic life support level that is not designed for the transport of a patient including fire engines, trucks, supervisors units, etc. Staffing must include at least one EMT.

CCT Ambulance – Any Santa Clara County approved ambulance permitted to provide critical care interfacility transportation. Categories include:

CCT-Paramedic Units must be staffed with at least one CCT-Paramedic, who is responsible for providing critical care, and at least one additional EMT or Paramedic.

CCT-Nurse Units must be staffed with at least one nurse meeting policy requirements, and two additional crewmembers at no less than the EMT level. Additional equipment not identified in this policy may be carried as authorized by the provider's medical director for use by the nurse.

If a critical care transport unit nurse has completed a system orientation and is trained to the same operational level as Santa Clara County EMT's; the unit may be alternately staffed by one EMT or paramedic, and one nurse who is responsible for all patient care.

EMS Field Supervisor – A non-transport unit utilized for filling command and control responsibilities. This unit may or may not be utilized for the provision of patient care. Only permitted EMS Supervisor Vehicles, staffed with accredited personnel, may fill ICS positions and/or serve as an Ambulance Strike Team Unit Leader.

III. Requirements

The quantities identified in Schedule A represent the minimum amounts that must be carried at all times in order for the unit to be in service. The EMS Agency may authorize exceptions to the minimum requirements in times of disaster, during multi-casualty incidents, etc.

Schedule A – Key	
S-	Strike Team Go-Bag – May be stored in regional locations rather than on the unit.



Policy 302 – Schedule A Minimum Inventory List

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
2A, 10BC Fire Extinguisher (air unit equivalent acceptable, fire service apparatus exempt)	1	1	1	1	1	1	1	1
AC Power Inverter	0	0	0	0	0	0	1	1
Activated Charcoal Slush 25mg bottle or tube	0	0	0	50mg	50mg	0	50mg	50mg
Adenosine	0	0	0	30mg	30mg	18mg	30mg	30mg
Adhesive Tape Rolls (1 inch and 2 inch)	3	1	3	1	3	2	3	3
Adult Nasal Cannula	1	2	2	2	2	0	2	2
Albuterol 2.5 mg/3 cc Saline	0	0	0	4	6	4	6	6
Alcohol Preparation Pads	10	5	5	10	10	10	10	10
Armboard (adult size, may be cut for smaller needs)	0	0	0	1	1	0	1	1
Atropine 1mg/cc (20 mg total)	0	0	0	20mg	20mg	20mg	20mg	20mg
Automatic External Defibrillator (AED) <u>(Must be compliant with AHA 2010 Guidelines for CPR & Emergency Cardiovascular Care)</u>	1	1	1	0	0	0	0	0
Automatic External Defibrillation Pads (Adult / Peds)	1/1	1/1	2 / 1	0	0	0	0	0



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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Backboard Straps (Spider or Webbed Belt set) (Each set must properly immobilize the torso, pelvis, and legs)	0	1 sets	2 sets	1 sets	2 sets	1 sets	2 sets	2 sets
Bactericidal / Virucidal Hand Wipes or equivalent (box of 25 or equivalent) (Air Ambulance Providers box of 6)	1	1	1	1	1	1	1	1
Bag Valve Mask Resuscitator (suitable for pediatrics, children, adults with connection tubing)	1	1	2	1	2	2	2	2
Benzoin Preparation Pads (optional)	0	0	0	0	0	0	0	0
Blankets (Disposable Acceptable)	2	1	2	1	2	1	2	2
Blood Pressure Cuff (must provide for infants, children, and adult reg and large)	1	1	1	1	1	1	1	1
Blue Helmets (Fire/Public Safety exempt)	1	2	2	2	2	0	2	2
Boussignac or other County Approved Continuous Positive Airway Pressure	0	0	0	1	1	1	0	1
Calcium Chloride 1 gm	0	0	0	3 gm	3 gm	3 gm	3 gm	3 mg
Capnography Device (colormetric or waveform sensors)	0	0	0	1	2	1	2	2
Chemical Activated Cold Packs	0	2	3	2	3	1	3	3
Chemical Activated Heat Packs (exempt if electric warming blanket used)	0	0	2	0	2	2	2	2



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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Chewable Aspirin (bottle)	0	0	0	648 mg	648 mg	648mg	648mg	648mg
Collapsible gurney with straps to secure the patient to the gurney and fastening device to secure to the aircraft or ambulance.	0	0	1	0	1	0	1	1
Conductive Gel or Pads (moist 4" X 4" pads not acceptable, not required if using multifunction pads)	0	0	0	2	2	2	2	2
County Approved Mechanical Infusion Pump	0	0	0	0	0	0	1	1
County Approved Mechanical Ventilator	0	0	0	0	0	0	1	1
County Approved 800 MHz Mobile Radio (private ambulance services only)	1	1	1	1	1	1	1	1
County Approved 800 MHz Portable Radio (private ambulance services only - includes a spare battery per portable, no spare required for air units) *EOA Contractor ambulances must be equipped with 2	6	1	1	1	1	1	1	1
County Approved UHF Radio Pager (Private ground ambulance services only)– (*EOA Contractor ambulances must be equipped with 2)	1	0	1	0	1	0	1	1
County Approved UHF Mobile Radio *EOA Contractor Requirement Only	1	0	0	0	1	0	0	0
County Approved VHF Mobile Radio *EOA Contractor Requirement Only	1	0	0	0	1	0	0	0



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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Cuffed Endotracheal Tubes with Stylet (each size: 6.0, 7.0, 8.0, 9.0 mm - .5 sizes also recommended/not required)	0	0	0	1	2	2	2	2
Dextrose 50% 25gm	0	0	0	50gm	50gm	50gm	50gm	50gm
Diphenhydramine 50mg	0	0	0	50mg	100mg	50mg	100mg	100mg
Disposable Sheets	0	0	4	0	4	0	4	4
Dopamine 400 mg (premix bag in D5W or NS; or preload to mix)	0	0	0	400mg	400mg	400mg	400mg	400mg
“DOT” Approved Child Safety Restraint (may or may not be a child seat)	0	0	1	0	1	0	1	1
“DOT” Emergency Response Guidebook (must be current edition, may be electronic)	1	1	1	1	1	1	1	1
Drinking Water in 8-12oz Individual Containers or equivalent (for patient use and secondary rehab functions)	20S 5	2	5	2	5	0	5	5
Peri-Laryngeal Airway Device (County Approved) (each size)	0	0	0	1	2	1	2	2
ECG Electrodes (must include adult & pediatric sizes / total # listed is per unit, combined) A= Adult Electrodes C= Pediatric Electrodes	0	0	0	A-10 C-10	A-15 C-15	A-6 C-6	A-15 C-15	A-15 C-15
Endotracheal Tube Enducer (County Approved)	0	0	0	1	2	1	0	2



Policy 302 – Schedule A Minimum Inventory List

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Epinephrine 1:1,000 1cc ampules (or equivalent packaging)	0	0	0	2	3	2	3	3
Epinephrine 1:10,000, 1mg /preload	0	0	0	3 mg	5 mg	3 mg	5 mg	5mg
Fire Scope Field Operations Guide (FOG) (must be hardcopy of current edition)	1	1	1	1	1	0	1	1
Flat Stretcher (includes Redibed, flats, scoops)	0	0	1	0	1	0	1	1
French Suction Catheters (assorted sizes) Qty 1 of any size 6-10 Qty 1 of any size 12-18	0	0	2	2	2	1	2	2
Furosemide	0	0	0	40 mg	80 mg	40mg	80mg	80mg
Glucagon 1 mg or equivalent	0	0	0	1mg	2mg	1mg	2mg	2mg
Glucose Test Strips (bottle) (electronic meter & strips permissible, venous/capillary samples)	0	0	0	1	1	1	1	1
Handheld GPS (must include spare batteries)	1	0	0	0	0	0	0	0
Handheld Nebulizer (inspiratory-activation style recommended)	0	0	0	1	3	1	3	3
ICS 219 Resources Status Cards (T-Cards) (Color matched to the type of asset per FIRESCOPE)	2	2	2	2	2	3	2	2



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Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Infection Control Kit (must include one N95 mask plus one P100 per OSHA standard. Sized per fit testing.) (Gown, shoe covers, cap, surgical mask, eye protection) Sufficient for each crewmember.	0	1	1	1	1	1	1	1
Infectious Waste Bags	2	2	5	2	5	2	5	5
Injection Needles (size 21 G and 25 G)	0	0	0	2	2	2	2	2
Intranasal Atomizer (manufactured by MAD®)	0	0	0	1	2	2	0	2
Intraosseous (IO) Needle Insertion Device (FDA Approved)	0	0	0	1	1	1	0	1
Intraosseous (IO) Needle (for FDA Approved Device) A-Adult C-Child L-Large Large IO needle is Optional for 2012, mandatory starting in 2013.	0	0	0	1-A 1-C 1-L	1-A 1-C 1-L	1-A 1-C 1-L	0	1-A 1-C 1-L
IV Catheters (sizes 14,16, 18, 20, 22, 24 G – each)	0	0	0	2	3	3	3	3
IV Fluid Chilling System (capable of chilling 2 One liter IV bags to 39 Degrees Fahrenheit) Effective January 1, 2012	0	0	0	0	1	0	0	0
IV Tubing Sets (each of micro and macro, with extension tubing)	0	0	0	1	2	2	2	2



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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Lancets (must auto secure lancet after use)	0	0	0	2	5	5	5	5
Laryngoscope (assorted straight/curved blades for infants, children, and adults with a spare set of batteries/bulb)	0	0	0	1	1	1	1	1
Lateral Head Support Devices	0	1	2	1	2	1	2	2
Nitrile Gloves, box (assorted sizes to fit all crew members)	1each	1each	1each	1each	1 each	1each	1each	1each
Leather Work Gloves (pair - recommend one pair provided to each employee to ensure sizing)	1	0	2	0	2	0	2	2
Length Base Resuscitation Tape	0	0	0	1	1	1	1	1
Lidocaine 1 gm or Premixed bag	0	0	0	1gm	1gm	1gm	1gm	1gm
Lidocaine 100 mg	0	0	0	300mg	500mg	200mg	500mg	500mg
Long Plastic Radio-Lucent Spine Board (see Schedule B)	0	1	2	1	2	1	2	2
Magill Forceps (adult & peds sizes, one each)	0	0	0	1	1	1	1	1
Map covering all of Santa Clara County that utilizes the same grid coordinate system used by County Communications (air unit exempt) (Current edition)	1	1	1	1	1	0	1	1
Mark I Auto-injector or DuoDote (patient use primary)	20	0	0	6	6	6	6	6
Meals that are ready to eat (commercially prepackaged such as MREs or similar product).	36-S 3	0	0	0	0	0	0	0



Policy 302 – Schedule A Minimum Inventory List

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Mechanical Tourniquet Device (County Approved Commercial Vendor) *Optional for January 1, 2012 **Mandatory January 1, 2013	2	2	2	2	2	2	2	2
Midazolam	0	0	0	10mg	15mg	15mg	15mg	15mg
Mobile Cellular Phone (current requirement of system/for base hospital contact; not previously in policy)	1	0	0	1	1	0	0	1
Morphine Sulfate	0	0	0	20mg	20mg	10mg	20mg	20mg
N95 Masks (Sized per fit testing)	2	2	2	2	2	3	2	2
Naloxone 2mg	0	0	0	4mg	8mg	8mg	8mg	8mg
Nasopharyngeal Airways Kit 1 size 24-28 1 size 30-34	0	1	1	1	2	1	2	2
Nitroglycerine Oral Spray or Oral Dissolving Tablets (Total of two containers: spray &/or bottle)	0	0	0	2	2	2	2	2
Nitroglycerine Paste, Tube or Individual Packets Plus paper applicators	0	0	0	1 Or 4	1 Or 4	1 Or 4	1 Or 4	1 Or 4
Non-Rebreather Oxygen Masks (A=adult and C=child)	A-1 C-1	A-1 C-1	A-3 C-1	A-1 C-1	A-3 C-1	A-2 C-1	A-3 C-1	A-3 C-1
Normal Saline 0.9% - 1000 cc IV bags (warmer recommended/not required)	1	0	0	2	3	2	3	3
Normal Saline 0.9% - 1000 cc IV bags (Chilled to 39 Degrees Fahrenheit and maintained)	0	0	0	0	4	0	0	0



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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Normal Saline 0.9% - 250 cc IV bags	0	0	0	1	2	1	2	2
OB Kit	0	1	1	1	1	1	1	1
Occlusive Dressings (May be an Asherman or similar device)	4	2	2	2	2	2	2	2
Odansetron (Oral Dissolving Tablets and IV/IO/IM) 8mg of each form	0	0	0	16 mg	16 mg	16 mg	16 mg	16mg
Oral Glucose (25 gram tube)	2	2	2	2	2	0	2	2
Oropharyngeal Airways Kit	1	1	1	1	1	1	1	1
Oxygen Regulator (capable of delivering oxygen at flow rates from <u>2-25 LPM</u> to support use of the Boussignac Continuous Positive Airway Pressure (CPAP) device.	1	1	1	1	1	1	1	1
Peripheral Vascular Locks (Optional)	0	0	0	0	0	0	0	0
Pillows (must be disposable or have disposable covers)	0	0	2	0	2	0	2	2
Portable Battery Operated Light or Rechargeable Light (includes at least one set of spare batteries)	2	2	2	2	2	1	2	2
Portable Cardiac Monitor / Defibrillator with one spare battery & paper	0	0	0	1	1	1	1	1
Portable Oxygen Cylinder (D or E size with at least 500 PSI of Oxygen)	1	1	1	1	1	1	1	1



Policy 302 – Schedule A Minimum Inventory List

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Portable Suction Device (a bulb syringe is not sufficient for this requirement)	0	1	1	1	1	1	1	1
Pulse Oximeter (ALS & CCT assets may use a device that is included in the cardiac monitor) 1- Adult 1- Pedi	0	0	0	Device – 1 Sensors: 1 each size.	Device – 1 Sensors: 1 each size	Device – 1 Sensors: 1 each size	Device – 1 Sensors: 1 each size	Device – 1 Sensors: 1 each size
Quick Reference Guide – Fire Service Officers	1	1	1	1	1	NA	NA	NA
Quick Reference Guide – Private EMS Service Providers	1	1	1	1	1	1	1	1
Refrigerator or approved cooling device able to chill at least 4, 1000cc Bags of Normal Saline, 39 degrees Fahrenheit	0	0	0	0	1	0	0	0
Rigid Cervical Collars (each: infant, child and adult / *if unisized, a total of 4 required)	0	2*	2*	2*	2*	1	2*	2*
Santa Clara County Approved Patient Care Report (PCR) (Hardcopy for disaster / MCI response)	100	5	20	5	20	0	20	20
Santa Clara County Prehospital Care Manual (may be electronic or kept in quarters, except for a hardcopy of Multiple Patient Management Plan (EMS#811) which is required on every apparatus)	1	1	1	1	1	1	1	1
Set of Ankle and Wrist Restraints (Hard leather or Velcro – not Posey restraints)	0	0	1	0	1	0	1	1
Sharps Container	0	0	0	1	1	1	1	1



Policy 302 – Schedule A Minimum Inventory List

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Sleeping Bags	250	0	0	0	0	0	0	0
Sodium Bicarbonate 8.4%	0	0	0	50mEq	100mEq	100mEq	100mEq	100mEq
Sodium Chloride 0.9% flush for injection, 10-25 cc (Optional)	0	0	0	0	0	0	0	0
Sodium Thiosulfate 25%, 50ml vial	0	0	0	50ml	50ml	50ml	0	50ml
Splints (Pneumatic or rigid extremity) (Assorted sizes)	0	2	4	2	4	2	4	4
State of California Thomas Brothers Map (hardcopy required) (Current edition)	6	0	1	0	1	0	1	1
Sterile 4 Inch Gauze Rolls	6	2	6	2	6	2	6	6
Sterile 4 X 4 Inch Gauze Pads	12	6	12	6	12	4	12	12
Stethoscope (Latex Free)	1	1	1	1	1	1	1	1
Stop Cock (three-way)	0	0	0	1	1	0	1	1
Suction Wands	0	1	2	1	2	2	2	2
Syringes with Luer-Lock (1, 3, 10, and 30ccm – air units may carry one 16 cc syringe)	0	0	0	2	2	2	2	2
Thermometer – Digital Oral or Tympanic	0	0	0	1	1	1	1	1
Tourniquets Band Elastic (for use with IV insertion)	0	0	0	1	1	1	1	1
Towels	0	0	2	0	2	0	2	2



Policy 302 – Schedule A Minimum Inventory List

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
Minimum Inventory Requirements	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Traction Splint (Adult & Peds required – may be one device)	0	0	1	0	1	1	1	1
Trauma Dressings (10 x 30 inches in dimension or larger)	2	2	2	2	2	2	2	2
Trauma Shears	1	1	2	1	2	1	2	2
Triage Tags (DMS version) (County Approved)	50	20	20	20	20	5	20	20
Triangular Bandages	2	2	4	2	4	1	4	4
Uncuffed Endotracheal Tubes with Stylet (each size: 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5 mm)	0	0	0	1	1	1	1	1
Urinal	0	0	1	0	1	0	1	1
Vehicle mounted oxygen delivery system, Must carry at least 500 PSI of Oxygen in an M or H size oxygen cylinder or an onboard liquid oxygen system (LOX)	0	0	1	0	1	1	1	1



County of Santa Clara Emergency Medical Services System

Policy #302 – Prehospital Care Assets Schedule B – Spine Board Requirements

SPINE BOARD REQUIREMENTS

I. Purpose

To establish minimum replacement levels for radio translucent spine boards requirements for prehospital care assets in the County of Santa Clara.

II. Requirements

- A. For the purpose of this schedule, the prehospital care assets identified in Policy 302, Section II have been included in this program.
- B. Each provider agency shall supply and maintain radio translucent spine boards that have been approved by the Santa Clara County Emergency Medical Services Agency.
- C. Replacement requirements are determined by the County.
- D. The following replenishment schedule specifies the minimum number of radio translucent spine boards that each provider shall place into service annually.

Number of Assets	Annual Replenishment Requirement
1 to 10	2
11 to 20	4
21 to 30	6
31 to 40	8
41 to 50	10
51 to 60	12
61 to 70	14
71 to 80	16
81 to 90	18
91 to 100	20
101 and Greater	25

- E. Each provider agency shall demonstrate annually by submitting evidence to the County, that the provider has placed the minimum required radio translucent spine boards into service.



County of Santa Clara Emergency Medical Services System

Policy #302 – Prehospital Care Assets Minimum Inventory Requirements

PREHOSPITAL CARE ASSETS MINIMUM INVENTORY REQUIREMENTS

Effective Date ~~September 31, 2011~~ February 2, 2012
Replaces ~~September 31, 2011~~ January 22, 2008
Review Date February 2015

Resources
None

I. Purpose

To establish minimum inventory requirements for all prehospital care assets in the County of Santa Clara.

II. Definitions (Assets)

Air Ambulance – Any Santa Clara County permitted air ambulance, either basic or advanced life support in accordance with Title 22 Regulations. Staffed with one nurse and one additional nurse or paramedic.

ALS Ambulance – Any Santa Clara County approved advanced life support ambulance staffed by at least one paramedic and one EMT or paramedic.

ALS Unit (Non-Transport) – Any unit charged with emergency medical response at the advanced life support level that is not designed for the transport of a patient including fire engines, trucks, Quick Response Vehicles, etc. Staffing must include at least one paramedic.

BLS Ambulance – Any Santa Clara County approved basic life support ambulance staffed with at least two EMT's.

BLS Unit (Non-Transport) – Any unit charged with emergency medical response at the basic life support level that is not designed for the transport of a patient including fire engines, trucks, supervisors units, etc. Staffing must include at least one EMT.

CCT Ambulance – Any Santa Clara County approved ambulance permitted to provide critical care interfacility transportation. Categories include:

CCT-Paramedic Units must be staffed with at least one CCT-Paramedic, who is responsible for providing critical care, and at least one additional EMT or Paramedic.

CCT-Nurse Units must be staffed with at least one nurse meeting policy requirements, and two additional crewmembers at no less than the EMT level. Additional equipment not identified in this policy may be carried as authorized by the provider's medical director for use by the nurse.

If a critical care transport unit nurse has completed a system orientation and is trained to the same operational level as Santa Clara County EMT's; the unit may be alternately staffed by one EMT or paramedic, and one nurse who is responsible for all patient care.

EMS Field Supervisor – A non-transport unit utilized for filling command and control responsibilities. This unit may or may not be utilized for the provision of patient care. Only permitted EMS Supervisor Vehicles, staffed with accredited personnel, may fill ICS positions and/or serve as an Ambulance Strike Team Unit Leader.

III. Requirements

The quantities identified in Schedule A represent the minimum amounts that must be carried at all times in order for the unit to be in service. The EMS Agency may authorize exceptions to the minimum requirements in times of disaster, during multi-casualty incidents, etc.

I. Schedule A – Key
SS Strike Team Go-Bag – May be stored in regional locations rather than on the unit.

Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
2A, 10BC Fire Extinguisher (air unit equivalent acceptable, fire service apparatus exempt)	1	1	1	1	1	1	1	1
AC Power Inverter	0	0	0	0	0	0	1	1
Activated Charcoal Slush 25mg bottle or tube	0	0	0	50mg	50mg	0	50mg	50mg
Adenosine	0	0	0	30mg	30mg	18mg	30mg	30mg
Adhesive Tape Rolls (1 inch and 2 inch)	3	1	3	1	3	2	3	3
Adult Nasal Cannula	1	2	2	2	2	0	2	2
Albuterol 2.5 mg/3 cc Saline	0	0	0	4	6	4	6	6
Alcohol Preparation Pads	10	5	5	10	10	10	10	10
Armboard (adult size, may be cut for smaller needs)	0	0	0	1	1	0	1	1
Atropine 1 mg preload	0	0	0	3mg	6mg	4mg	6mg	6mg
Atropine 1mg/cc (20 mg total)	0	0	0	20mg	20mg	20mg	20mg	20mg
Automatic External Defibrillator (AED) (Must be compliant with AHA 2010 Guidelines for CPR & Emergency Cardiovascular Care)	1	1	1	0	0	0	0	0
Automatic External Defibrillation Pads (Adult / Peds)	1/1	1/1	2 / 1	0	0	0	0	0
Backboard Straps (Spider or Webbed Belt set) (Each set must properly immobilize the torso, pelvis, and legs)	0	1 sets	2 sets	1 sets	2 sets	1 sets	2 sets	2 sets

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Bactericidal / Virucidal Hand Wipes or equivalent (box of 25 or equivalent) (Air Ambulance Providers box of 6)	1	1	1	1	1	1	1	1
Bag Valve Mask Resuscitator (suitable for pediatrics, children, adults with connection tubing)	1	1	2	1	2	2	2	2
Benzoin Preparation Pads (optional)	0	0	0	0	0	0	0	0
Blankets (Disposable Acceptable)	2	1	2	1	2	1	2	2
Blood Pressure Cuff (must provide for infants, children, and adult reg and large)	1	1	1	1	1	1	1	1
Blue Helmets (Fire/Public Safety exempt)	1	2	2	2	2	0	2	2
Boussignac or other County Approved Continuous Positive Airway Pressure (CPAP) Device (O2 regulator must match delivery requirements of the CPAP device used)	0	0	0	1*	1*	1*	0	1*
Calcium Chloride 1 gm	0	0	0	3 gm	3 gm	3 gm	3 gm	3 gm
Capnography Device (colormetric or waveform sensors)	0	0	0	1	2	1	2	2
Chemical Activated Cold Packs	0	2	3	2	3	1	3	3
Chemical Activated Heat Packs (exempt if electric warming blanket used)	0	0	2	0	2	2	2	2
Chewable Aspirin (bottle) (0	0	0	648 mg	648 mg	648mg	648mg	648mg
Collapsible gurney with straps to secure the patient to the gurney and fastening device to secure to the aircraft or ambulance.	0	0	1	0	1	0	1	1

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Conductive Gel or Pads (moist 4" X 4" pads not acceptable, not required if using multifunction pads)	0	0	0	2	2	2	2	2
County Approved Mechanical Infusion Pump	0	0	0	0	0	0	1	1
County Approved Mechanical Ventilator	0	0	0	0	0	0	1	1
County Approved 800 mHz Mobile Radio (private ambulance services only)	1	1	1	1	1	1	1	1
County Approved 800 mHz Portable Radio (private ambulance services only - includes a spare battery per portable, no spare required for air units) *EOA Contractor ambulances must be equipped with 2	6	1	1	1	1	1	1	1
County Approved UHF Radio Pager (Private ground ambulance services only)– (*EOA Contractor ambulances must be equipped with 2)	1	0	1	0	1	0	1	1
County Approved UHF Mobile Radio	1	0	0	0	1	0	0	0
*EOA Contractor Requirement Only								
County Approved VHF Mobile Radio	1	0	0	0	1	0	0	0
*EOA Contractor Requirement Only								
Cuffed Endotracheal Tubes with Stylet (each size: 6.0, 7.0, 8.0, 9.0 mm - .5 sizes also recommended/not required)	0	0	0	1	2	2	2	2
Dextrose 50% 25gm	0	0	0	50gm	50gm	50gm	50gm	50gm
Diphenhydramine 50mg	0	0	0	50mg	100mg	50mg	100mg	100mg
Disposable Sheets	0	0	4	0	4	0	4	4

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Dopamine 400 mg (premix bag in D5W or NS; or preload to mix)	0	0	0	400mg	400mg	400mg	400mg	400mg
“DOT” Approved Child Safety Restraint (may or may not be a child seat)	0	0	1	0	1	0	1	1
“DOT” Emergency Response Guidebook (must be current edition, may be electronic)	1	1	1	1	1	1	1	1
Drinking Water in 8-12oz Individual Containers or equivalent (for patient use and secondary rehab functions)	20 - SS 5	2	5	2	5	0	5	5
Peri-Laryngeal Airway Device (County Approved) (each size)	0	0	0	1	2	1	2	2
ECG Electrodes (must include adult & pediatric sizes / total # listed is per unit, combined) A= Adult Electrodes C= Pediatric Electrodes	0	0	0	A-10 C-10	A-15 C-15	A-6 C-6	A-15 C-15	A-15 C-15
Endotracheal Tube Enducer (County Approved)	0	0	0	1	2	1	0	2
Epinephrine 1:1,000 1cc ampules (or equivalent packaging)	0	0	0	2	3	2	3	3
Epinephrine 1:10,000, 1mg /preload	0	0	0	3 mg	5 mg	3 mg	5 mg	5mg
Fire Scope Field Operations Guide (FOG) (must be hardcopy of current edition)	1	1	1	1	1	0	1	1
Flat Stretcher (includes Redibed, flats, scoops)	0	0	1	0	1	0	1	1
French Suction Catheters (assorted sizes) Qty 1 of any size 6-10 Qty 1 of any size 12-18	0	0	2	2	2	1	2	2

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Furosemide	0	0	0	40 mg	80 mg	40mg	80mg	80mg
Glucagon 1 mg or equivalent	0	0	0	1mg	2mg	1mg	2mg	2mg
Glucose Test Strips (bottle) (electronic meter & strips permissible, venous/capillary samples)	0	0	0	1	1	1	1	1
Handheld GPS (must include spare batteries)	1	0	0	0	0	0	0	0
Handheld Nebulizer (inspiratory-activation style recommended)	0	0	0	1	3	1	3	3
ICS 219 Resources Status Cards (T-Cards) (Color matched to the type of asset per FIREScope)	2	2	2	2	2	3	2	2
Infection Control Kit (must include one N95 mask plus one P100 per OSHA standard. Sized per fit testing.) (Gown, shoe covers, cap, surgical mask, eye protection) Sufficient for each crewmember.	0	1	1	1	1	1	1	1
Infectious Waste Bags	2	2	5	2	5	2	5	5
Injection Needles (size 21 G and 25 G)	0	0	0	2	2	2	2	2
Intranasal Atomizer (manufactured by MAD®)	0	0	0	1	2	2	0	2
Intraosseous (IO) Needle Insertion Device (FDA Approved)	0	0	0	1	1	1	0	1

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Intraosseous (IO) Needle (for FDA Approved Device) A-Adult C-Child L-Large <u>Large IO needle is Optional for 2012, mandatory starting in 2013.</u>	0	0	0	1-A 1-C 1-L	1-A 1-C 1-L	1-A 1-C 1-L	0	1-A 1-C 1-L
<u>Large IO needle is Optional for 2012, mandatory starting in 2013.</u>								
IV Catheters (sizes 14,16, 18, 20, 22, 24 G – each)	0	0	0	2	3	3	3	3
IV Fluid Chilling System (capable of chilling 2 One liter IV bags to 39 Degrees Fahrenheit) Effective January 1, 2012	0	0	0	0	1	0	0	0
IV Tubing Sets (each of micro and macro) (with extension tubing)	0	0	0	1	2	2	2	2
Lancets (must auto secure lancet after use)	0	0	0	2	5	5	5	5
Laryngoscope (assorted straight/curved blades for infants, children, and adults with a spare set of batteries/bulb)	0	0	0	1	1	1	1	1
Lateral Head Support Devices	0	1	2	1	2	1	2	2
Nitrile Gloves, box (assorted sizes to fit all crew members)	1each	1each	1each	1each	1 each	1each	1each	1each
Leather Work Gloves (pair - recommend one pair provided to each employee to ensure sizing)	1	0	2	0	2	0	2	2
Length Base Resuscitation Tape	0	0	0	1	1	1	1	1
Lidocaine 1 gm or Premixed bag	0	0	0	1gm	1gm	1gm	1gm	1gm
Lidocaine 100 mg	0	0	0	300mg	500mg	200mg	500mg	500mg
Long Plastic Radio-Lucent Spine Board (see Schedule B)	0	1	2	1	2	1	2	2

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Magill Forceps (adult & peds sizes, one each)	0	0	0	1	1	1	1	1
Map covering all of Santa Clara County that utilizes the same grid coordinate system used by County Communications (air unit exempt) (Current edition)	1	1	1	1	1	0	1	1
Mark I Auto-injector or DuoDote (patient use primary)	20	0	0	6	6	6	6	6
Meals that are ready to eat (commercially prepackaged such as MREs or similar product).	36- S 3	0	0	0	0	0	0	0
Mechanical Tourniquet Device (County Approved Commercial Vendor) *Optional for January 1, 2012 **Mandatory January 1, 2013	2	2	2	2	2	2	2	2
Midazolam 5-mg/4-ml	0	0	0	10mg	15mg	15mg	15mg	15mg
Mobile Cellular Phone (current requirement of system/for base hospital contact; not previously in policy)	1	0	0	1	1	0	0	1
Morphine Sulfate 10-mg	0	0	0	20mg	20mg	10mg	20mg	20mg
N95 Masks (Sized per fit testing)	2	2	2	2	2	3	2	2
Naloxone 2mg/2-mg	0	0	0	4mg	8mg	8mg	8mg	8mg
Nasopharyngeal Airways Kit 1 size 24-28 1 size 30-34	0	1	1	1	2	1	2	2
Nitroglycerine Oral Spray or Oral Dissolving Tablets (Total of two containers: spray &/or bottle)	0	0	0	2	2	2	2	2
Nitroglycerine Paste, Tube or Individual Packets Plus paper applicators	0	0	0	1 Or 4	1 Or 4	1 Or 4	1 Or 4	1 Or 4

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Non-Rebreather Oxygen Masks (A=adult and C=child)	A-1 C-1	A- 1 C-1	A-3 C-1	A- 1 C-1	A-3 C-1	A-2 C-1	A-3 C-1	A-3 C-1
Normal Saline 0.9% - 1000 cc IV bags (warmer recommended/not required)	1	0	0	2	3	2	3	3
Normal Saline 0.9% - 1000 cc IV bags (Chilled to 39 Degrees Fahrenheit and maintained)	0	0	0	0	4	0	0	0
Normal Saline 0.9% - 250 cc IV bags	0	0	0	1	2	1	2	2
OB Kit	0	1	1	1	1	1	1	1
Occlusive Dressings (May be an Asherman or similar device)	4	2	2	2	2	2	2	2
Odansetron (Oral Dissolving Tablets and IV/IO/IM) 8mg of each form	0	0	0	16 mg	16 mg	16 mg	16 mg	16mg
Oral Glucose (25 gram tube)	2	2	2	2	2	0	2	2
Oropharyngeal Airways Kit	1	1	1	1	1	1	1	1
Oxygen Regulator (capable of delivering oxygen at flow rates from <u>2-25 LPM</u> to support use of the Boussignac Continuous Positive Airway Pressure (CPAP) device.	1	1	1	1	1	1	1	1
Peripheral Vascular Locks (Optional)	0	0	0	0	0	0	0	0
Pillows (must be disposable or have disposable covers)	0	0	2	0	2	0	2	2
Portable Battery Operated Light or Rechargeable Light (includes at least one set of spare batteries)	2	2	2	2	2	1	2	2
Portable Cardiac Monitor / Defibrillator with one spare battery & paper	0	0	0	1	1	1	1	1

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Portable Oxygen Cylinder (D or E size with at least 500 PSI of Oxygen)	1	1	1	1	1	1	1	1
Portable Suction Device (a bulb syringe is not sufficient for this requirement)	0	1	1	1	1	1	1	1
Pulse Oximeter (ALS & CCT assets may use a device that is included in the cardiac monitor) 1- Adult 1- Pedi	0	0	0	Device – 1 Sensors: 1 each size.	Device – 1 Sensors: 1 each size	Device – 1 Sensors: 1 each size	Device – 1 Sensors: 1 each size	Device – 1 Sensors: 1 each size
Quick Reference Guide – Fire Service Officers	1	1	1	1	1	NA	NA	NA
Quick Reference Guide – Private EMS Service Providers	1	1	1	1	1	1	1	1
<u>Refrigerator or County approved cooling device able to chill at least 4, 1000cc Bags of Normal Saline, 39 degrees Fahrenheit</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Rigid Cervical Collars (each: infant, child and adult / *if unisized, a total of 4 required)	0	2*	2*	2*	2*	1	2*	2*
Santa Clara County Approved Patient Care Report (PCR) (Hardcopy for disaster / MCI response)	100	5	20	5	20	0	20	20
Santa Clara County Prehospital Care Manual (may be electronic or kept in quarters, except for a hardcopy of Multiple Patient Management Plan (EMS#811) which is required on every apparatus)	1	1	1	1	1	1	1	1
Set of Ankle and Wrist Restraints (Hard leather or Velcro – not Posey restraints)	0	0	1	0	1	0	1	1
Sharps Container	0	0	0	1	1	1	1	1

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Sleeping Bags	2 - S 0	0	0	0	0	0	0	0
Sodium Bicarbonate 8.4%	0	0	0	50mEq	100mEq	100mEq	100mEq	100mEq

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Sodium Chloride 0.9% flush for injection, 10-25 cc (Optional)	0	0	0	0	0	0	0	0
Sodium Thiosulfate 25%, 50ml vial	0	0	0	50ml	50ml	50ml	0	50ml
Splints (Pneumatic or rigid extremity) (Assorted sizes)	0	2	4	2	4	2	4	4
State of California Thomas Brothers Map (hardcopy required) (Current edition)	6	0	1	0	1	0	1	1
Sterile 4 Inch Gauze Rolls	6	2	6	2	6	2	6	6
Sterile 4 X 4 Inch Gauze Pads	12	6	12	6	12	4	12	12
Stethoscope (Latex Free)	1	1	1	1	1	1	1	1
Stop Cock (three-way)	0	0	0	1	1	0	1	1
Suction Wands	0	1	2	1	2	2	2	2
Syringes with Luer-Lock (1, 3, 10, and 30ccm – air units may carry one 16 cc syringe)	0	0	0	2	2	2	2	2
Thermometer – Digital Oral or Tympanic	0	0	0	1	1	1	1	1
Tourniquets Band Elastic (for use with IV insertion)	0	0	0	1	1	1	1	1
Towels	0	0	2	0	2	0	2	2
Traction Splint (Adult & Peds required – may be one device)	0	0	1	0	1	1	1	1
Trauma Dressings (10 x 30 inches in dimension or larger)	2	2	2	2	2	2	2	2
Trauma Shears	1	1	2	1	2	1	2	2

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Type of Asset	EMS Field Supervisor	BLS Non Transport	BLS Ambulance	ALS Non Transport	ALS Ambulance	Air Ambulance	CCT-Nurse Ambulance	CCT-Paramedic Ambulance
	Qty	Qty	Qty	Qty	Qty	Qty	Qty	Qty
Triage Tags (DMS version) (County Approved)	50	20	20	20	20	5	20	20
Triangular Bandages	2	2	4	2	4	1	4	4
Uncuffed Endotracheal Tubes with Stylet (each size: 2.5, 3.0,3.5, 4.0, 4.5, 5.0, 5.5 mm)	0	0	0	1	1	1	1	1
Urinal	0	0	1	0	1	0	1	1
Vehicle mounted oxygen delivery system, including regulators capable of dispensing oxygen at a flow rate of 2 to 25 liters per minute in support of the Boussignac Continuous Positive Airway Pressure (CPAP) device. Must carry at least 500 PSI of Oxygen in an M or H size oxygen cylinder or an onboard liquid oxygen system (LOX)	0	0	1	0	1	1	1	1

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Therapeutic Hypothermia (M16)

General

Introduction

Implementation of therapeutic hypothermia for comatose cardiac arrest patients with return of spontaneous circulation (ROSC) is a procedure endorsed by the American Heart Association and outlined in the 2003 Advisory Statement by the Advanced Life Support Taskforce of the International Liaison Committee (ILCOR). Hypothermia is thought to reduce cerebral oxygen demand post arrest, and reduce the damage caused by inflammatory responses that occur once cerebral perfusion is restored. Inducing Hypothermia in comatose patients following prehospital cardiac arrest has been shown to improve neurological function and decrease mortality. *It is important to evaluate the change of body temperature from time of initiation of induced hypothermia to the transition of care at the ED to accurately determine the effectiveness of the procedure. A drop of approximately 2°C is the desired outcome.*

Note:

Ground ALS ambulances are required to maintain an IV Fluid chilling system for use with this procedure. For ALS non-transport resources maintaining this capability is optional. Once the chilled IV solution is on-scene, ALS personnel from either resource may implement this procedure as appropriate.

Definition:

Therapeutic hypothermia is the controlled lowering of the patient's body temperature to 32-34 degrees Celsius. This lowers the metabolic rate and reduces the risk of ischemic injury to the brain tissue after a period of diminished blood flow.

Therapeutic Hypothermia

Indications

- For use in patients ages 18 years and older.
- Return of spontaneous circulation.
- Persistent coma following cardiac arrest (VF, pulseless VT, PEA, Asystole)
 - Unresponsive, not following verbal commands, not presenting with any purposeful movement, GCS<8
 - Brainstem reflexes and posturing movements may be present
- Blood pressure \geq 90mmHg systolic
- Blood Glucose $>$ 50mg/dl

Contraindications

- Trauma related cardiac arrest.
- Responsive post cardiac arrest with GCS \geq 8, and/or rapidly improving GCS
- Pregnancy
- Patients with known bleeding diathesis or with active ongoing bleeding
- Patients with significant known liver disease
- DNR
- Patient temperature \leq 32°C (90°F)

Equipment

- IV tubing
- IV fluid Normal Saline cooled to 4°C (39°F)
- Thermometer

Procedure

In conjunction with normal procedures for care of cardiac arrest patients:

- Consider cause for comatose state (for example hypoglycemia or hypoxemia)
- If patient has no obvious underlying cause for coma and meets the indication criteria and none of the contraindication criteria > **begin cooling procedure**
- Attain vascular access (Procedure S02) if not already established.
 - Substitute the chilled (4°C/39°F) solution for the regular solution.
 - Medications can be infused via the tubing containing the chilled solution.
- Infusion two liters of chilled Normal Saline solution (cooled to 4°C/39°F) at a “wide open” rate.
- During the infusion of the chilled solutions, administration of medications can be done via the same tubing.
- Once the chilled IV solution is fully infused, return to use of IV fluids as described in the Cardiac Arrest (A07) protocol, preferably at a TKO rate unless otherwise called for...
- **Assess and document patient temperature prior to and after** cooled normal saline infusion. (Desired temperature for therapeutic hypothermia is 32°-34°C/90°-93°F)
- **Label the chilled IV solution container with tape or a sticker which states this is a “Chilled IV Solution at 4°C/39°F”**
- Continue with standard of care per Cardiac Arrest protocol A07.
- Maintain O2 saturation >94%.
- Monitor for shivering and/or improved GCS.
 - If patient shows signs of shivering administer Morphine **1-2mg SIVP/IO** max dose of **6mg**. (*Morphine is used for shivering control, not for Pain control in this instance*)
- Obtain 12 lead EKG if feasible without delaying patient transport
- Transport patient to closest STEMI receiving center.
- Assess and document patient temperature upon transition of care at the STEMI receiving center. Use the same method as used to take the initial temperature, preferably in the same location on the patient.
- Advise receiving facility of initiation of Therapeutic Hypothermia protocol.

Base Hospital Order

If the patient receiving Therapeutic Hypothermia becomes bradycardic, contact the Base Hospital for a Dopamine infusion. (Transcutaneous Pacing is not effective for these patients.)

Documentation:

- Document time of ROSC
- Document patient’s initial temperature.
- Document time of start of cooling procedure
- Document total amount of chilled IV Fluid infused
- Document the patient’s temperature upon the transition of care at the STEMI receiving center
- Document the time of transition of care at the STEMI receiving center.
- Document notification of STEMI receiving center destination and alert
- Document receiving facility staff notification (MD/RN)
- Complete PCR.
- Fax/Email a copy of the PCR to EMS Agency no later than the next business day
- Each EMS Provider is to review 100% of all Therapeutic Hypothermia Procedures through their Quality Improvement process.