



DEPARTMENT OF PUBLIC HEALTH
Emergency Medical Services Agency

POLICY # 431.00
TITLE: **EQUIPMENT STANDARDS - EMS UNITS**

APPROVED: ON-FILE
EMS Administration: James Clark, EMS Administrator

ON-FILE
EMS Medical Director: Ajinder Singh, MD CPE

EFFECTIVE DATE: 09/1993
REVISION DATE: 12/2020
REVIEW DATE: 12/2023
PAGE(S): 1-13

I. POLICY

Authorized EMS units in Merced County shall maintain an inventory of equipment, which includes all items within these equipment standards established by the Merced County EMS Agency.

This policy is divided into five (5) sections (Appendix A). Each section lists the description of inventory, minimum amounts of inventory, and inventory requirements for each EMS unit classification. Appendix A includes specific inventory requirements for FRU/AED, BLSU, ALSU, Special Event and SUPV VEH.

II. DEFINITIONS

- ALSU: Advanced Life Support Unit - An ambulance or ALS First Responder unit (including EMS helicopters) which is equipped and staffed to provide Paramedic level patient care.
- BLSU: Basic Life Support Unit - An ambulance unit which is equipped and staffed to provide EMT level patient care. A BLSU shall be capable of providing patient transport.
- FRU: First Responder Unit – A non-transport emergency vehicle that is equipped and staffed to provide Basic First Responder (EMT or Public Safety First Aid) level patient care.
- MIN: Minimum - The minimum amount of equipment required for an EMS unit to be in service.
- Special Event: ALS modified unit used to support community events. (Example: bike medics, ALS golf carts, etc.) (See Section H of this policy.)
- SUPV VEH: Advanced Life Support or BLS First Responder Vehicle – EMS vehicles operated by supervisors or managers from ambulance providers that respond to emergency medical incidents.

III. PROCEDURES

- A. These standards are based upon medical protocols as developed by the EMS community, as well as the operational experience of Merced County EMS providers.
- B. Each EMS unit equipment inventory shall be maintained by the provider agency at or exceeding the standards established by the Merced County EMS Agency. The equipment shall be clean, not expired, in good condition and tested regularly.
- C. As a minimum, equipment inventories shall be checked prior to or at the beginning of each shift. Included in the equipment inventory check, each provider agency shall develop a mechanism for checking the response unit's fluid levels, electrical system, and mechanical equipment to ensure that the unit is clean, in good condition and is safe for operation. When shifts are greater than 24 hours in length, daily checks are required.

- D. EMS units shall not be placed into service with equipment inventories below minimum levels. If during a shift, inventory was utilized on the previous incident and the unit is unable to restock prior to being dispatched to another incident, the unit may respond. However, in this situation, the responding unit shall advise dispatch of their deficiencies and request that a fully stocked backup unit be simultaneously dispatched. Once the primary unit arrives on scene and determines the missing inventory is needed, the backup unit will have already been dispatched. If the unit determines it can handle the incident without the missing inventory, the backup unit should be canceled.

EMS units with inventory deficiencies shall be removed from service until required inventories can be replaced.

- E. If an ALSU is used as a BLSU, during this time, all ALS medications, and the EKG monitor, which is not approved for a BLSU shall be secured in a locked cabinet (without EMT access) or removed from the unit.

- F. Annual and random inspections by EMS Agency personnel will be made to verify that EMS units are maintained in compliance with these requirements.

- G. Testing of new equipment - Prehospital care equipment is constantly being developed or redesigned. EMS provider agencies wishing to utilize equipment, which does not meet the standards, described in this policy or is not addressed in this policy, may do so through a field-testing process. Field-testing will progress as follows:

1. Submit a written request to the EMS Agency including manufacturer's description of equipment.
2. Receive written approval from the EMS Agency prior to conducting the field test.
3. The field-testing shall be for a period of time agreed upon by the provider agency and the EMS Agency.
4. If the equipment is a substitute for a piece of equipment described in this policy, the provider agency shall carry the approved piece of equipment as a backup during the field test.
5. The EMS Agency and the provider agency shall develop criteria for evaluating the medical and operational effectiveness of the equipment. The provider agency shall provide the EMS Agency with a written evaluation of the equipment at the conclusion of the field test addressing each of the evaluation criteria.
6. The EMS Agency may disallow the use of the equipment, approve the use of the equipment for the provider, or amend this policy to allow for system-wide use.
7. The EMS Agency may waive any or all steps in the field-testing process for cause.

- H. Special Event Units - An ALS (Paramedic) bicycle or mobile unit shall consist of a Paramedic and one EMT partner.

8. Event Coordinator should be aware of use of bicycle or mobile unit as standby.
9. Bicycle or mobile units must function in compliance with the policies and procedures of the Merced County EMS Agency.
10. The members of a bicycle or mobile unit must respond and function as a team at all times.
11. Bicycle or mobile units will be designated as AC1, AC2, AC3, etc. (Advanced Cycle 1, 2, 3).

12. Simultaneous dispatch of an ALS transport unit is required for all Priority One and Priority Two responses, or crew should dispatch a unit if advised of Priority One or Two call.
13. Bicycle or mobile units will be classified as out-of-service until restocked in compliance with EMS Policy #291. Units may restock from the ALS transportation unit if time allows or from extra supplies stored at the event site to facilitate restocking.
14. Controlled substances must be with a Paramedic at all times during the event.
15. Bicycle or mobile units must be checked out and used only with the permission of the management of the provider agency, and EMS dispatch must have the incident documented.

I. Personal Protection Equipment

1. Every person working on an ambulance or supervisor vehicle in Merced County (public or private, emergency or non-emergency) should have available, as a minimum, the listed personal protective equipment (PPE) for each responder to ensure appropriate safety and readiness.
2. Every responder utilizing respiratory equipment will be fit-tested and trained for proficiency and core competencies prior to provision.
3. Ambulance personnel should not enter any incident requiring PPE beyond their level of provision and training.

J. Requests for exception to this policy shall be made in writing to the EMS Agency.

APPENDIX A

AIRWAY AND BREATHING ADJUNCTS

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Bite Block/Bite Stick	1	x	x	x	x	x
2. Bulb Syringe (2 oz.)	1		x	x		x
3. Bag-Valve Mask (BVM)						
• Adult	1	x	x	x	x	x
• Pediatric	1	x	x	x	x	x
• Infant	1	x	x	x	x	x
4. Endotracheal Tubes 5.0 – 8.0 with cuff	1			x	x	x
5. End Tidal CO ₂ Detector (Optional if cardiac monitoring equipment is equipped with wave capnography)						
• Adult	1			x	x	x
• Pediatric	1			x	x	x
6. Endotracheal Tube Immobilizer	1			x	x	x
7. Supraglottic Airway (SGA)	1			x	x	x
8. Laryngoscope						
• #3 and #4 Curved Blades	1			x	x	x
• #0 #1, #2, #3, and #4 Straight Blades	1			x	x	x
• Handle With Batteries	1			x	x	x
• Extra set of batteries	1			x	x	x
9. Lubricant						
• Individual Packages - Sterile - Water Soluble	2	x	x	x	x	x
10. Magill Forceps						
• Adult	1			x	x	x
• Pediatric	1				x	x
11. Nebulizer Set	2			x	1	x
• Hand held						
• Face mask (adult/pediatric)						
(May use non-rebreathing mask)						
12. Oxygen Delivery Unit - Portable	1	x	x	x	x	x
• Liter flow capable of delivering 1-15 L/min. flow rate.						
NOTE: Backup tanks for a portable unit shall provide for a minimum of 30 minutes of use.						

AIRWAY AND BREATHING ADJUNCTS -CONTINUED

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
13. Oxygen - Connecting Tubing (separate O2 connecting tube not needed if included with bag-valve mask)	2	x	x	x	1	x
14. Oxygen - Nasal Cannula - Adult	2	x	x	x	1	x
15. Oxygen - Non-Rebreathing Mask <ul style="list-style-type: none"> • Adult • Pediatric (Shall be a mask with a reservoir bag and one-way valve, which prevents exhaled air from entering the bag.)	2 2	x x	x x	x x	1 1	x x
16. Nasopharyngeal Airway (Soft Plastic) <ul style="list-style-type: none"> • Small, Medium and Large 	1	x	x	x	x	x
17. Continuous Positive Airway Pressure (CPAP) (Optional for ALS First Responder)	1			x		
18. Pulse Oximeter	1		x	x	x	x
19. Oropharyngeal Airway <ul style="list-style-type: none"> • 6 Assorted Sizes (Adult, Child, Infant) 	1	x	x	x	x	x
20. Stylet / Bougie - Endotracheal Tube Adult	1			x	x	x
21. Suction Unit – Portable <ul style="list-style-type: none"> • Battery, Manual or Oxygen Powered. 	1	x	x	x	x	x
22. Suction Catheters Fr. style, assorted sizes (Small, Medium, Large) Rigid Pharyngeal Suction Tip <ul style="list-style-type: none"> • Sterile packaging. • Suction control port. 	1 1	x x	x x	x x	x x	x x
NOTE: FRU shall have suction catheters consistent with the type of suction unit utilized (battery/oxygen powered) and capable of rapidly removing emesis and blood.						
23. Transtracheal Jet Insufflation Kit <ul style="list-style-type: none"> • Intravenous catheter (radiopaque) over needle, 10 gauge x 3 inch. • Pediatric Anesthesia Adapter, 15 mm to 3 mm. 	1			x	x	x

DRESSINGS AND BANDAGES

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Adhesive Bandage 1" x 3" (i.e. "Band-Aid")	2	x	x	x	10	x
2. Conforming Gauze 3" or 4" (i.e. "Kling")	4	x	x	x	2	x
3. Elastic Bandage 4" (i.e. "Ace or Kerlix or equivalent")	1	x	x	x	x	x
4. Combat Tourniquet	2	x	x	x	x	x
5. Triangular Bandage	4	x	x	x	2	x
6. Bandage Shears	1	x	x	x	x	x
7. Combine Dressing 5" x 9" - Sterile	4	x	x	x	2	x
8. Dressing Sponge 4" x 4" - Sterile Package of 2	10	x	x	x	1	x
9. Dressing Sponge 2" x 2" - Sterile Package of 2	2		x	x	x	x
10. Petroleum Jelly Gauze - Sterile • Approx. 3" x 9"	2	x	x	x	1	x
11. Sheet (Burn) - Sterile	1	x	x	x	x	x
12. Multi-Trauma Dressing - Sterile Approx. 10" x 30"	1	x	x	x	x	x

COMMUNICATIONS EQUIPMENT

In accordance with the recommendations set forth by the California Statewide Interoperability Executive Committee – Central Planning Area, all public safety vehicles (law, fire, EMS) must have access to both UHF and VHF radio systems. The table below lists requirements and recommendations for the UHF and VHF radios within the Merced County EMS Agency. The EMS Agency maintains a minimum listing of channels and frequencies that are required to be programmed into each radio. The radio frequencies will be available from the EMS Agency upon request.

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Hand-Held/Portable Radio - UHF Hand-Held/Portable UHF radio communications equipment and communications frequencies are currently required for BLSU, ALSU, Stand-by, and SUPV VEH. All UHF radios shall have the following: <ul style="list-style-type: none"> • DTMF keypad for hospital radio activation • 512 channel capability (recommended) • Ability to be “toned out” or be alerted • P25 compliant 	1		x	x	x	x

COMMUNICATIONS EQUIPMENT – CONTINUED

<p>2. Vehicular Mounted Radio - UHF (For All Units Capable of Providing Transport)</p> <p>Vehicular mounted UHF radio communications equipment and communication frequencies are currently required for all BLSU, ALSU, and SUPV VEH. All UHF radios shall have the following:</p> <ul style="list-style-type: none"> • DTMF keypad for hospital radio activation • 512 channel capability (recommended) • Ability to be “toned out” or be alerted • P25 compliant 	1		x	x		x
<p>3. Vehicular Mounted Radio - VHF</p> <p>Vehicular mounted VHF radio communications equipment and communications frequencies are required for BLSU, ALSU, and SUPV VEH. All VHF radios shall have the following:</p> <ul style="list-style-type: none"> • 512 channel capability (recommended) • P25 compliant 	1	x	x	x		x

ELECTROCARDIOGRAPHY EQUIPMENT

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. EKG Monitor/Recorder/Defibrillator/CPR Feedback – Portable with patient cable	1			x	x	x
2. Adult multifunction hands free defibrillation pads	2			x	x	x
3. Pediatric multifunction hands free defibrillation pads	2			x	x	x
<p>4. ECG Electrodes</p> <p>Adult</p> <p>Pediatric</p> <ul style="list-style-type: none"> • Self-adhesive (diaphoretic type preferred). • Inventory for several 12-lead applications 	2			x	x	x
	2			x	x	x
5. Automated External Defibrillator (portable) – with patient cable	1	x	x		x	x
6. ECG/Defibrillation Electrodes – Multifunction hands free pads (AUTHORIZED AED UNITS ONLY)	2	x	x			x

FORMS

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. CEMSIS ePCR Compliance Platform Device	1	x	x	x	x	x
2. Emergency Response Guidebook (HazMat) <ul style="list-style-type: none"> • Most current edition available. • Published by D.O.T. or equivalent. 	1	x	x	x		x
3. Medical Transportation Information Log (MCI)	5		x	x	x	x
4. Locally Approved Disaster Triage Tag	20	x	x	x	10	50
5. Multi-Casualty Checklists (Set of 4)	1	x	x	x		x
6. Treatment Protocols – Electronic version	1	x	x	x	x	x
7. Physician Information Card	1	x	x	x	x	x
8. Physician Information Letter	1			x	x	x
9. Maps of Service Area, Area of Mutual Aid	1	x	x	x		x

MEDICATION ADMINISTRATION

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. IV Administration Sets – Primary <ul style="list-style-type: none"> • Standard Sets = Adult 10 drops/ml • Pediatric Sets = 60 drops/ml 	4 2			x x	2 1	2 1
2. Measured Volume Solution Administration Set <ul style="list-style-type: none"> • Minimum 100 ml control chamber (McGaw V2905 or equivalent). • Flow rate - 60 drops/ml - if tubing/drip chamber included. 	1			x	x	x
3. Medication Labels	2			x		
4. Needles Intravenous catheter (radiopaque) over needle (recommend safety needles). <ul style="list-style-type: none"> • 14, 16, 18 and 20 gauge. • 22, 24 gauge. 	4 2			x x	2	x x
5. IO Device <ul style="list-style-type: none"> • Adult • Pediatric 	1			x	x	x
6. Preps Alcohol Povidone-Iodine	3 3			x x	x x	x x
7. Safety Razor	1	x	x	x	x	x

MEDICATION ADMINISTRATION – CONTINUED

8. PRN Adaptor (Saline Locks)	2			x		x
9. Syringes						
• 60 ml Regular Tip	1			x		x
• 10 ml Regular Tip	1			x		x
• 3 ml Regular tip with Needle	2			x		x
• 1 ml Regular Tip with Needle	2			x	x	x
10. Transfer Needles - Assorted Sizes	4			x		x
11. Commercial IV Start Kit	2			x	x	x
• Including: Tourniquet, preps and dressing						
12. Blood Glucose Test Lancets or Other Finger Prick Device	1		x	x	x	x
13. Glucometer/CHEM STRIP BG - Blood Glucose Test Strip	1		x	x	x	x
14. Mucosal Atomizer Device (MAD)	2			x	1	x
• MAD is not required for agencies that carry a Narcan injector that do not require MAD.						
15. Drug Compartment	1			x	x	x
• Door with key lock.						
• Hidden hinges recommended.						

MISCELLANEOUS EQUIPMENT

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Benzoin (Tincture of)						
• Aerosol can; or	1			x	x	x
• Individual snap vials or swabs.	3			x	2	x
2. Length Based Assessment Tape	1			x	x	x
3. Cold Packs (Instant)	4	1	x	x		
4. Flashlight/Penlight	1	x	x	x	x	x
5. Irrigation Solution						
• Normal Saline (Sterile) 1000 ml	2	1	x	x		1
• Administration Sets	2	1	x	x		1

MISCELLANEOUS EQUIPMENT - CONTINUED

6. Obstetrical Kit (Sterile) Minimum contents: <ul style="list-style-type: none"> • Exam gloves. • OB pad. • Scalpel/Scissors. • 2 Cord clamps or nylon tie-offs. • Bulb syringe. • Receiving blanket. 	1	x	x	x	x	x
7. Sphygmomanometer <ul style="list-style-type: none"> • Adult • Pediatric • Infant • Thigh 	2 1 1 1	1 x x x	x x x x	x x x x	1 x	1 x
8. Stethoscope <ul style="list-style-type: none"> • Adult • Pediatric 	1 1	x x	x x	x x	x x	x x
9. Tape - Medical <ul style="list-style-type: none"> • 1" Plastic/Cloth/Adhesive • 2" Cloth/Adhesive (No Plastic) 	1 1	x x	x x	x x	x	x x
10. Vest - Multi-Casualty I.D. <ul style="list-style-type: none"> • ANSI/ISEA 107: 2004 Hi-visibility vest with clear pockets on chest and back for insertion of placard designating ICS position. Fed law effective 11/24/2008. 	3		x	x		4
11. Contagious Disease Decontamination Solution <ul style="list-style-type: none"> • 1:10 bleach solution (5.25% household bleach); • Any disinfectant proven effective against community acquired pathogens. 	1	x	x	x		x
12. Garbage Bags <ul style="list-style-type: none"> • Plain • Red (for contaminated material) 	2 2	x x	x x	x x	1 1	x x
13. Portable “Sharps” Container	1	Reco mme nded	x	x	x	x

PERSONEL PROTECTION EQUIPMENT

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Rescue Helmet (Work Helmet)	2		x	x		x
2. Garment (single use) “Tyvek”	2		x	x		x
3. Protective Glasses or goggles, as appropriate	2	x	x	x	1	x
4. Gowns	2	x	x	x	1	x
5. Surgical masks (May be substituted with N95 etc.)	2	x	x	x	1	x
6. Gloves (pair) – Work (Multiple use, Leather)	2		x	x		x
7. Gloves – (pair) Assigned to Unit Non-Sterile Exam Gloves	2	x	x	x	x	x
8. Footwear covers, (pair) (single use) chemical resistant	2		x	x		x
9. N-95 Masks (May carry higher rated such as a P-100) <ul style="list-style-type: none"> Mask Utilization should be consistent with the provider’s aerosol transmissible diseases (ATD) Policy 	2	x	x	x	x	25

SPLINT/IMMOBILIZATION

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Cervical Immobilization Collars Infant Small Medium Large	1	x	x	x	x	x
2. Extrication Device for Spinal Immobilization <ul style="list-style-type: none"> Kendrick Extrication Device or equivalent. 	1	Optional	x	x		x
3. Head Stabilizer Device	2 sets	1 set	x	x		x
4. Spineboard / Scoop Stretcher <ul style="list-style-type: none"> Long (consider break-away flat or vacuum splint) Pedi Board 	1	x	x	x		x

SPLINT/IMMOBILIZATION - CONTINUED

5. Spineboard Straps <ul style="list-style-type: none"> Minimum of 3 straps, 2 inches in width and of adequate length to allow for immobilization of a patient to the spineboard. 	1 set	x	x	x		x
6. Splints <ul style="list-style-type: none"> Arm (Min. 18") Leg (Min. 24") 	2 2	x x	x x	x x		x x
7. Traction Splint <ul style="list-style-type: none"> Adult Pediatric Hare Traction, Sager Splint or equivalent. 	1 1		x x	x x		x x
NOTE: Pediatric Traction Splint not required if adult splint adjusts to size to fit pediatric patients.						

TRANSPORT UNIT EQUIPMENT

Only Required for Ambulances and Transport Capable First Responder Units

DESCRIPTION	MIN	FRU	BLSU	ALSU	Special Event	SUPV VEH
1. Wheeled Stretcher with Elevating Head <ul style="list-style-type: none"> Adjustable - 3 levels minimum. Mattress. Patient Restraint: <ul style="list-style-type: none"> 2 per stretcher (3 suggested). 2" wide. Nylon or other durable material. Two piece quick release buckle system. 	1		x	x		
2. Hospital Type Piped Oxygen Supply System <ul style="list-style-type: none"> Capable of storing and supplying 3000L minimum "M" tank). Reducing valve/pressure regulator preset at 50 ± 10 psi line pressure. Minimum of 500 psi. 	1		x	x		
3. Liter Flow Meter - capable of 1-15 L/min. with Humidifier available	1		x	x		
4. Suction Unit - In Vehicle	1		x	x		
5. Fire Extinguisher <ul style="list-style-type: none"> Multipurpose dry chemical. 	1		x	x		x
6. Padded Ankle/Wrist Restraints Set <ul style="list-style-type: none"> If a soft tie, 3" wide so as to be 2' wide when tied. 	1		x	x		

TRANSPORT UNIT EQUIPMENT - CONTINUED

Only Required for Ambulances and Transport Capable First Responder Units

7. Linen <ul style="list-style-type: none"> • Launderable or disposable. • Complete set includes one (1) pillow case and two (2) sheets. 	4		x	x		
8. Pillows	2		x	x		
9. Blankets	2		x	x		
10. Urinal	1		x	x		
11. Bedpan/Fracture Pan	1		x	x		
12. Emesis Basin/Bags	1		x	x		