



Equipment for Ground Ambulances in Federal EMS Response

Approved by FEMA and HHS – Revised 1/28/2015

American Medical Response (AMR) is under contract with the Federal government to provide EMS in response to Federally-declared events as approved by FEMA. For incidents in which Federal assistance is provided under the Stafford Act, FEMA coordinates the assistance. For non-Stafford Act incidents, Federal response or assistance may be led or coordinated by various Federal departments and agencies consistent with their authorities. Pursuant to the National Response Framework, the primary Federal agency responsible for coordinating mass care is DHS/FEMA. These key response core capabilities include: mass care services, public and private services and resources, public health and medical services and critical transportation¹. Another Federal agency responsible for coordinating public health and medical services is the U.S. Department of Health and Human Services (HHS). These services include coordination of patient movement, patient care, providing pharmaceuticals to include the distribution and delivery of medical countermeasures, equipment and supplies².

The following list represents recommendations for the equipment and supplies that will facilitate patient care activities in the out-of-hospital setting during these events. Unless otherwise regulated by applicable state law, all ambulances that deploy in response to activation of the AMR/FEMA Federal EMS Contract shall be equipped in accordance with the Joint Policy Statement – Equipment for Ground Ambulances, published jointly by the *National Association of EMS Physicians, the American Academy of Pediatrics, Emergency Medical Services for Children, Emergency Nurses Association, the American College of Emergency Physicians, and the American College of Surgeons Committee on Trauma*³, with the modifications set forth herein. The equipment and supplies in this document pertain specifically to basic life support (BLS) and advanced life support (ALS) ground ambulances.

For purposes of this document, the following standard age-based definitions have been used. Length-based systems have been developed to more accurately estimate the

¹ National Response Framework, Emergency Support Function #6 – Mass Care, Emergency Assistance, Temporary Housing, and Human Services Annex. NFR Second Edition, May 2013.

² National Response Framework, Emergency Support Function #8 – Public Health and Medical Services Annex. NFR Second Edition, May 2013.

³ Joint Policy Statement - Equipment for Ambulances. *Prehospital Emergency Care*; January/March 2014; Volume 18, Number 1. Official Journal of the National Association of EMS Physicians. ISSN 1090-3127.

weight of children and predict appropriate equipment sizes, medications doses, and guidelines for fluid volume administration.

- Neonate (0-28 days old)
- Infant (29 days to 1 year old)
- Child (> 1 year through 11 years old)
 - Toddlers (1-3 years old)
 - Preschoolers (3-5 years old)
 - Middle childhood (6-11 years old)
- Adolescents (12-18 years old)

The contractor may choose to establish caches of reserve ambulances to be used exclusively for Federal EMS deployments. They may not be used for routine non-Federal events. Since they are not used for routine patient transport, they need not be licensed or permitted by the State EMS Authority in the state(s) where they are stored, and are not subject to the ambulance equipment minimum standards of the state(s). These reserve ambulances, when used for Federal deployment, will be stocked with the minimum equipment established herein. These vehicles will be marked with special placards identifying them as Federal EMS Ambulances. They may be deployed within the state(s) where the disaster has occurred or in adjacent states if needed.

Some ambulances responding to Federal events pursuant to the AMR/FEMA Contract may be from states that require additional equipment, which exceeds these minimum guidelines. Use of this additional equipment must be approved by medical control authorities having jurisdiction at the deployment site(s). Under no circumstances will EMS responders be allowed to use equipment and perform skills that exceed their formal training and certified scope of practice. For EMS deployments pursuant to the AMR/FEMA Federal EMS Contract, the *National EMS Core Content*⁴ defines the domain of out-of-hospital care. The scope of practice for the AMR/FEMA National EMS Contract shall be the *National EMS Scope of Practice Model*⁵, which divides the core content into levels of practice, defining the minimum corresponding skills and knowledge for each level. The *National Model EMS Clinical Guidelines*⁶ were approved by the National Association of State EMS Officials (NASEMSO) to provide a resource to prehospital clinical practice, maximize patient care, safety and outcomes. They are a set of clinical guidelines that can be used “as is” or adapted for use on a state or regional level to ensure a more standardized approach to the practice of patient care. In the absence of local, state, and regional EMS protocols the *DHS-Wide EMS Basic Life Support (BLS) & Advanced Life Support (ALS) Protocols*⁷ produced by the Department of Homeland Security’s (DHS) Office of Health Affairs (OHA) may be used if authorized by the AMR Office of Emergency Management (OEM) medical control authorities. Under remote, austere, or hostile conditions, local, state, and regional prehospital protocols and medical direction may be inaccessible or impractical, in these situations

⁴ National EMS Core Content. National Highway Traffic Safety Administration. DOT HS 809 898. July 2005.

⁵ National EMS Scope of Practice Model. National Highway Traffic Safety Administration. DOT HS 810 657. February 2007.

⁶ National Model EMS Clinical Guidelines. National Association of State EMS Officials (NASEMSO). October 2014.

⁷ DHS-Wide EMS Basic Life Support (BLS) & Advanced Live Support (ALS) Protocols. U.S. Dept. of Homeland Security, Office of Health Affairs. Created 12/2/2011, modified 9/9/2013.

the DHS OHA *Austere Emergency Medical Support (AEMS) Field Guide*⁸ may be used if authorized by the AMR Office of Emergency Management (OEM) medical control authorities.

The *National EMS Scope of Practice Model* defines and describes four certification or licensure levels of EMS provider: emergency medical responder (EMR), emergency medical technician (EMT), advanced EMT (AEMT), and paramedic. Each level represents a unique role, set of skills, and knowledge base. *The National EMS Scope of Practice Model* establishes a framework that ultimately determines the range of skills and roles that an individual possessing a state EMS license is authorized to do in a given EMS system. Individual state EMS rules or regulations that limit provider scope of practice may impact the need for availability of certain pieces of equipment.

Except for controlled substances, the Contractor shall be responsible for stocking and/or re-supplying the ambulances such that all of the equipment and supplies listed in the *Joint Statement* (as modified) are on board during patient care and transport.

The following list is divided into equipment for basic life support (BLS) and advanced life support (ALS) emergency ground ambulances. ALS ambulances must have all of the equipment on the required BLS list as well as equipment on the required ALS list. This list represents a consensus of recommendations for equipment and supplies that will facilitate patient care in the out-of-hospital setting.

⁸ Austere Emergency Medical Support (AEMS) Field Guide. U.S. Dept. of Homeland Security, Office of Health Affairs. Created 12/2/2011, modified 4/24/2014.

BASIC LIFE SUPPORT (BLS) GROUND AMBULANCE REQUIRED EQUIPMENT

A. Ventilation and Airway Equipment

1. Portable and fixed suction apparatus with a regulator, per federal specifications
 - Wide-bore tubing, rigid pharyngeal curved suction tip; tonsil and flexible suction catheters, 6F–16F, are commercially available (have one between 6F and 10F and one between 12F and 16F)
2. Portable oxygen apparatus, capable of metered flow with adequate tubing
3. Portable and fixed oxygen supply equipment
 - Variable flowmeter
4. Oxygen administration equipment
 - Adequate-length tubing; transparent mask (adult and child sizes), both non-rebreathing and valveless; nasal cannulas (adult, child)
5. Bag-valve mask (manual resuscitator)
 - Hand-operated, self-expanding bag; adult (>1000 mL) and child (450–750 mL) sizes, with oxygen reservoir/accumulator, valve (clear, operable in cold weather), and mask (adult, child, infant, and neonate sizes)
6. Airways
 - Nasopharyngeal (16F–34F; adult and child sizes)
 - Oropharyngeal (sizes 0–5; adult, child, and infant sizes)
7. Pulse oximeter with pediatric and adult probes
8. Saline drops and bulb suction for infants

B. Monitoring and Defibrillation

BLS ground ambulances should be equipped with an automated external defibrillator (AED) unless staffed by advanced life support personnel who are carrying a monitor/defibrillator. The AED should have pediatric capabilities, including child-sized pads and cables OR dose attenuator with adult pads.⁹

C. Immobilization Devices

1. Cervical collars
 - Rigid for children ages 2 years or older, infant, child, and adult sizes (small, medium, large, and other available sizes) OR pediatric and adult adjustable cervical collars
2. Head immobilization device (not sandbags)
 - Firm padding or commercial device
3. Upper and lower extremity immobilization devices

⁹ AEDs were not required in original contract and not all states require them on BLS ambulances. BLS ambulances will be equipped with AEDs if their home-state EMS authority requires it or if the government provides them.

- Joint-above and joint-below fracture (adult and child sizes), rigid-support appropriate material (cardboard, metal, pneumatic, vacuum, wood, or plastic)
- 4. Impervious backboards (long, short, radiolucent preferred) and extrication device
 - Short extrication/immobilization device
 - Long transport (head-to-foot length) with at least 3 appropriate restraint straps (chin strap alone should not be used for head immobilization) and with padding for children and handholds for moving patients

D. Bandages/Hemorrhage Control

1. Commercially packaged or sterile burn sheets
2. Bandages
 - Triangular bandages
3. Dressings
 - Sterile dressings, including gauze sponges of suitable size
 - Abdominal dressing
4. Gauze rolls
 - Various sizes
5. Occlusive dressing or equivalent
6. Adhesive tape
 - Various sizes (including 1" and 2") hypoallergenic
 - Various sizes (including 1" and 2") adhesive
7. Arterial tourniquet (commercial preferred)

E. Communication

In disaster areas where the communications infrastructure is intact, the Contractor must provide two-way communications to enable ambulances to communicate with medical control and dispatch. Incident Management Team (IMT) leaders should also be able to communicate. FEMA will assist in providing communications devices that are considered government furnished equipment (GFE).

F. Protocols

Each ambulance should contain a printed copy of clinical and operational protocols that are used in their home jurisdiction. The authorized medical director at the disaster site will determine what protocols are to be used. If the approved protocols used for the disaster contain procedures for which the healthcare provider has not been trained and certified, s/he shall not perform any procedures that exceed their licensed scope of practice. Additional "just-in-time" training may be provided to certify EMS responders to perform these procedures if approved by the medical director.

Department of Homeland Security – Office of Health Affairs (DHS-OHA) BLS and ALS protocols may be used if approved by appropriate regulatory agencies.

G. Obstetrical

1. OB Kit (separate sterile kit)
 - Towels, 4" × 4" dressing, umbilical tape, sterile scissors or other cutting utensil, bulb suction, clamps for cord, sterile gloves, blanket
2. Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)

H. Miscellaneous

1. Access to pediatric and adult patient care protocols
2. A length-based resuscitation tape OR a reference material that provides appropriate guidance for pediatric drug dosing and equipment sizing based on length OR age
3. Sphygmomanometer (pediatric and adult regular size and large cuffs)
4. Adult stethoscope
5. Thermometer with low-temperature capability
6. Heavy bandage or paramedic scissors for cutting clothing, belts, and boots
7. Cold packs
8. Sterile saline solution for irrigation
9. Two functional flashlights
10. Blankets
11. Sheets (at least one change per cot)
12. Pillows
13. Towels
14. Triage tags
15. Emesis bags or basins
16. Urinal
17. Wheeled cot
18. Stair chair or carry chair
19. Patient care charts/forms or electronic capability
20. Lubricating jelly (water soluble)

I. Infection Control

(When applicable, latex-free equipment should be available)

1. Eye protection (full peripheral glasses or goggles, face shield)
2. Face protection (e.g., surgical masks per applicable local or state guidance)
3. Gloves, nonsterile
4. Fluid-resistant overalls or gowns
5. Waterless hand cleanser, commercial antimicrobial (towelette, spray, or liquid)
6. Disinfectant solution for cleaning equipment
7. Standard sharps containers, fixed and portable
8. Biohazard trash bags (color coded or with biohazard emblem to distinguish from other trash)

9. Respiratory protection (e.g., N95 or N100 mask—per applicable local or state guidance)

J. Injury Prevention

1. Availability of necessary age/size-appropriate restraint systems for all passengers and patients transported in ground ambulances. For children, this should be according to the National Highway Traffic Administration's document: Safe Transport of Children in Emergency Ground Ambulances
2. Fire extinguisher
3. Department of Transportation Emergency Response Guide
4. Reflective safety wear for each crewmember (must meet American National Standard for High Visibility Public Safety Vests if working within the right of way of any federal-aid highway. Visit www.reflectivevest.com/federalhighwayruling.html for more information)

K. Optional Medications for BLS Ground Ambulances

These medications may be used if authorized by applicable medical control authorities and only if BLS provider has been trained to administer them.

1. Albuterol
2. Epi-pen
3. Oral glucose
4. Nitroglycerine (sublingual tablet or paste)
5. Aspirin

L. Optional Equipment for BLS Ground Ambulances

The equipment in this section is not mandated or required. Use should be based on local needs and resources.

1. Glucometer or blood glucose test strips (per state protocol and/or local medical control approval)
2. Infant oxygen mask
3. Infant self-inflating resuscitation bag
4. Airways
 - a. Nasopharyngeal (12F, 14F)
 - b. Oropharyngeal (size 00)
5. CPAP/BiPAP capability
6. Neonatal blood pressure cuff
7. Infant blood pressure cuff
8. Pediatric stethoscope
9. Infant cervical immobilization device
10. Pediatric backboard and extremity splints
11. Femur traction device (adult and child sizes)
12. Pelvic immobilization device

13. Elastic wraps
 14. Ocular irrigation device
 15. Hot packs
 16. Warming blanket
 17. Cooling device
 18. Soft patient restraints
 19. Folding stretcher
 20. Bedpan
 21. Topical hemostatic agent/bandage
 22. Appropriate CBRNE PPE (chemical, biological, radiological, nuclear, explosive personal protective equipment), including respiratory and body protection; protective helmet/ jackets or coats/pants/boots
 23. Applicable chemical antidote auto-injectors (at a minimum for crew members' protection; additional for victim treatment based on local or regional protocol; appropriate for adults and children)
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ADVANCED LIFE SUPPORT (ALS) GROUND AMBULANCE REQUIRED EQUIPMENT

For paramedic services, include all of the required equipment listed above, plus the following additional equipment and supplies. For advanced EMT services (and other non-paramedic advanced levels), include all of the equipment from the BLS list and selected equipment and supplies from the following list, based on scope of practice, local need, and consideration of out-of-hospital characteristics and budget.

A. Airway and Ventilation Equipment

1. Laryngoscope handle with extra batteries and bulbs
2. Laryngoscope blades, sizes:
 - a. 0–4, straight (Miller), and
 - b. 2–4, curved
3. Endotracheal tubes (if ALS service scope of practice includes tracheal intubation), sizes:
 - a. 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, and 5.5 mm cuffed and/or uncuffed, and
 - b. 6.0, 6.5, 7.0, 7.5, and 8.0 mm cuffed (1 each), other sizes optional
4. 10-mL non-Luer Lock syringes
5. Stylettes for endotracheal tubes, adult and pediatric
6. Magill forceps, adult and pediatric
7. End-tidal CO₂ detection capability (adult and pediatric) rescue airway device, such as the ETDLA (esophageal–tracheal double-lumen airway), laryngeal tube, disposable supraglottic airway, or laryngeal mask airway (as approved by local medical direction)

B. Vascular Access

1. Isotonic crystalloid solutions, e.g. normal saline and Lactated Ringers
2. Antiseptic solution (alcohol wipes and povidone–iodine wipes preferred)
3. Intravenous fluid bag pole or roof hook
4. Intravenous catheters, 14G–24G
5. Intraosseous needles or devices appropriate for children and adults
6. Latex-free tourniquet
7. Syringes of various sizes
8. Needles, various sizes (including suitable sizes for intramuscular injections)
9. Intravenous administration sets (microdrip and macrodrip)
10. Intravenous arm boards, adult and pediatric

C. Cardiac

1. Portable, battery-operated cardiac monitor/defibrillator
 - With tape write-out/recorder, defibrillator pads, quick-look paddles or electrode, or hands-free patches, electrocardiogram leads, adult and pediatric chest attachment electrodes, adult and pediatric paddles
2. Transcutaneous cardiac pacemaker
 - Either stand-alone unit or integrated into monitor/defibrillator

D. Other Advanced Equipment

1. Nebulizer
2. Glucometer or blood glucose measuring device with reagent strips
3. Long large-bore needles or angiocatheters (should be at least 3.25” in length for needle chest decompression in large adults)

E. Optional Equipment for ALS Ground Ambulances

The equipment in this section is not mandated or required. Use should be based on local needs and resources.

1. Respirator, volume-cycled, on/off operation, 100% oxygen, 40–50 psi pressure (child/infant capabilities)
2. Blood sample tubes, adult and pediatric
3. Automatic blood pressure device
4. Nasogastric tubes, pediatric feeding tube sizes 5F and 8F, sump tube sizes 8F–16F
5. Size 1 curved laryngoscope blade
6. Gum elastic bougies
7. Needle cricothyrotomy capability and/or cricothyrotomy capability (surgical cricothyrotomy can be performed in older children in whom the cricothyroid membrane is easily palpable, usually by puberty)
8. Rescue airway devices for children
9. Atomizers for administration of intranasal medications

F. Medications

Drug dosing in children should use processes minimizing the need for calculations, preferably a length-based system. In general, medications may include:

1. Cardiovascular medications, such as
 - a. Epinephrine 1:10,000
 - b. Atropine
 - c. Antidysrhythmics
 - i. Adenosine (Adenocard)
 - ii. Amiodarone (Cordarone)
 - iii. Calcium Gluconate
 - iv. Lidocaine Hydrochloride
 - d. Calcium channel blockers, e.g. Diltiazem (Cardizem) or Verapamil (Isoptin)
 - e. Beta-blockers, e.g. propranolol (Inderal), metoprolol (Lopressor)
 - f. Nitroglycerin tablets or spray
 - g. Aspirin
 - h. Vasopressor for infusion, e.g. Dopamine Hydrochloride or Vasopressin (Pitressin)
 - i. Magnesium sulfate
2. Cardiopulmonary/respiratory medications, such as
 - a. Albuterol (or other inhaled beta agonist)
 - b. Epinephrine 1:1,000
 - c. Furosemide (Lasix)
3. 50% dextrose solution (and sterile diluent or 25% dextrose solution for pediatrics)
4. Analgesics, narcotic and nonnarcotic ¹⁰ (*recommended, not required*)
 - a. Morphine Sulfate Injection, 10 mg/ml, and
 - b. Fentanyl Injectable (Sublimaze), 0.05 mg/ml
5. Anticonvulsant medication⁵ (*recommended, not required*)
 - a. Lorazepam (Antivan), 2 mg/ml, and
 - b. Midazolam (Versed), 1 mg/ml
6. Sodium bicarbonate
7. Glucagon
8. Naloxone hydrochloride (Narcan)
9. Bacteriostatic water and sodium chloride for injection

Paralytics and other pharmaceutical adjuncts shall NOT be supplied to facilitate endotracheal intubation.

¹⁰ Situations beyond control of the contractor may prohibit them from providing controlled substances or narcotics during Federal deployments in which case the U.S. Dept. of Health and Human Services will supply these medications. Documentation of administration of controlled substances and narcotics will be on forms approved by the HHS Technical Representative.