
MODEL STATE GUIDELINES



First edition



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SECTION 1—INTRODUCTION

Background

In 2007, the Air Medical Task Force was formed of representatives from the National Association of State EMS Officials (NASEMSO), the National Association of EMS Physicians (NAEMSP), and the Association of Air Medical Services (AAMS), and published a paper in the journal **Pre-Hospital Emergency Care**. This paper, entitled “*Air Medical Services: Future Development as an Integrated Component of the Emergency Medical Services (EMS) System*,” (Initial Air Medical Task Force Paper) was intended to be a guidance/resource document for state EMS leaders, planners and regulators to help in understanding and appreciating the development, integration and regulation of air medical services, as well as the similarities/differences between the ground and air components of most EMS systems.

This paper provided a look at the way air ambulances are regulated at the state and federal levels. It also outlined some of the core components of current state regulation, identified outstanding licensing issues, and discussed different approaches to integrating air medical services into a state EMS system.

Model Air Medical State Guidelines Industry Task Force (MASGIT)

At the time of publication, the members of the task force discussed the need for a second effort based around the development of model state guidelines or regulations for air medical services. To fulfill that vision, the Model Air Medical State Guidelines Task Force or MASGIT was born.

There were four core organizing groups representing special market segments of the air medical and critical care transport field that encouraged the development of the MASGIT. They were:

- Association of Air Medical Services (AAMS)
- American Ambulance Association (AAA)
- International Association of Fire Chiefs (IAFC)
- Airborne Law Enforcement Association (ALEA)

The National Association of State EMS Officials (NASEMSO) was asked to participate as an Organizer as well. NASEMSO agreed to participate in the process but as an observing organization only.

Other organizations that were invited were:

- Air and Surface Transport Nurses Association (ASTNA)
- Air Medical Operators Association (AMOA)
- Air Medical Physician Association (AMPA)
- Association for Critical Care Transport (ACCT)
- Commission on Accreditation of Medical Transport Systems (CAMTS)
- International Association of Flight & Critical Care Paramedics (IAFCCP)
- National Association of Air Medical Communication Specialists (NAACS)
- National EMS Pilots Association (NEMSPA)
- National Association of State EMS Officials (NASEMSO)—Observing role
- National Association of EMS Physicians (NAEMSP)
- National Association of EMT’s (NAEMT)
- American College of Emergency Physicians (ACEP)

Objective

The objective of the MASGIT group was to create a consensus document outlining the core components and potential language of model regulation that could be shared with State EMS officials and others interested in State-level oversight of air medical transport.

How the work was accomplished

A select task force of representatives from the above-named organizations met over the course of 9 months to develop a draft document. The task force started with the work of the Initial Air Medical Task Force Paper, and referred to other nationally-recognized patient care standards published by National Highway Traffic Safety Administration (NHTSA), NAEMSP, AMPA, AAMS, AAA, and others. When appropriate, the task force sought advice from key stakeholders in government and industry including the Federal Aviation Administration (FAA), National Transportation Safety Board (NTSB), and CAMTS. The task force also took into consideration the findings of the Government Accountability Office (GAO) in its study about state oversight of air medical services.

The task force began its work in January 2011 and completed its task in September 2012.

Purpose and Scope

The Model State Guidelines should be viewed as a tool in the collective effort to advance the level of clinical care for patients transported by air. They are intended to assist in the development of more comprehensive and consistent state standards governing licensing of the medical services provided to these patients and the continued oversight of those services.

The Guidelines are mindful of the preemptive role of the Federal government in regulating the aviation aspects of an air medical service. The operator of an air medical service is an air carrier for purpose of the federal preemption provisions in federal law. Those provisions prohibit a state from enacting or enforcing any requirement “related to the price, route, or service of an air carrier.” 49 U.S.C. §41713(b)(1). The

term “related to” has been interpreted broadly by the courts as extending to all state laws “having a connection with or reference to” airline prices, routes, or services. *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 384 (1992). Further, the courts have affirmed matters governing aviation safety, including aircraft, aircraft equipment, aircraft operation, and pilot qualifications are the exclusive jurisdiction of the FAA and also preempted by federal law. On the other hand, various courts and the DOT have clarified that state laws and regulations serving “primarily a patient care objective” are properly within a state’s regulatory authority. *Med-Trans Corp. v. Benton*, 581 F. Supp. 2d 721 (E.D.N.C.) (2008). Consequently, these Guidelines acknowledge specific aviation economic and safety issues regulated by the Federal government and focus on issues of patient clinical care properly the responsibility of states.

In several states, both private sector entities and government entities provide air medical services. Private sector air medical services are always regulated by the DOT and FAA on aviation matters and by state authorities on medical care matters; government entities, (federal, state, or local governments or other public services), on the other hand, may or may not be certificated by the FAA or licensed by the state in which they operate. These Guidelines are intended as a resource for state application of the same comprehensive clinical care standards to all air medical patient transport regardless of the status of the provider.

Throughout, these Guidelines recognize the importance of the state’s role not only in regulating but also facilitating patient medical care. To this end, the Guidelines highlight the need for communications capabilities among medical personnel involved in air and ground medical transport services and multistate license reciprocity.

SECTION 2—DEFINITIONS & ACRONYMS

AAA—American Ambulance Association

AAMS—Association of Air Medical Services

ACCT—Association of Critical Care Transport

ACEP—American College of Emergency Physicians

ACNP—Advanced Care Nurse Practitioner

Air medical services—ambulance services provided using aircraft such as helicopters and fixed wing (airplane) aircraft

ALEA—Airborne Law Enforcement Association

ALS (Advanced Life Support)—Medical transport that includes medical care procedures commensurate with the DOT minimum standard for EMT-Paramedic, including advanced airway management, parenteral fluids and medications, and cardiac monitoring.

AMOA—Air Medical Operators Association

AMPA—Air Medical Physician Association

AMTF—Air Medical Task Force

ASTNA—Air and Surface Transport Nurses Association

BLS (Basic Life Support)—Medical transport that includes medical care procedures consistent with the EMT-Basic skill set.

CAMTS—Commission on Accreditation of Medical Transport Systems

Climate control—ability to alter the ambient temperature in the patient compartment via heating or cooling.

CON—Certificate of Need

Critical Care—Medical transport that includes specialized medical interventions such as IV infusions including vasopressors, vasoactive compounds, antiarrhythmics, fibrinolytics, tocolytics, and/or

any other parenteral pharmaceutical unique to the patient's special health care needs or special monitors or procedures such as mechanical ventilation, multiple monitors, cardiac balloon pump, external cardiac support (Ventricular assist devices, etc.) or any other specialized device or procedure beyond the DOT minimum standard for EMT-Paramedic, certified by the referring physician as unique to the patient's health care needs, commensurate with the scope of practice of a clinician with specialty care or board certification.

Deemed Status—Recognition by a state licensing body that certification by a specific professional review organization is a sufficient basis for state licensure.

DOT—U.S. Department of Transportation

EMS—Emergency Medical Services

EMTALA—Emergency Medical Treatment and Active Labor Act

FAA—Federal Aviation Administration

FAR—Federal Aviation Regulations

FCC—Federal Communications Commission

Flight crew—includes the personnel responsible for aircraft operations during transport.

GAO—Government Accountability Office

IAFC—International Association of Fire Chiefs

IAFCCP—International Association of Flight & Critical Care Paramedics

ICS—Incident Command System (as defined by the National Incident Management System)

IFR—Instrument Flight Rules

MASGIT—Model Air Medical State Guidelines Industry Task Force

MD—Medical Doctor

Medical crew—the personnel responsible for patient care with sufficient training as applicable to the scope of service required during transport via ground, rotor or fixed wing ambulance.

NAACS—National Association of Air Medical Communication Specialists

NAEMSP—National Association of EMS Physicians

NAEMT—National Association of Emergency Medical Technicians

NAEMSO—National Association of State EMS Officials

NEMSPA—National EMS Pilots Association

NHTSA—National Highway Traffic Safety Administration

NNP—Neonatal Nurse Practitioner

NTSB—National Transportation Safety Board

Part 135 Operator—A direct air carrier certified by the FAA and operating under the requirements of 14 CFR 135

PNP—Pediatric Nurse Practitioner

RN—Registered Nurse

RT—Respiratory Therapist

Scope of service—The number, type, and intensity or complexity of patient care services being provided.

Sterile cockpit—requirement for flight crew to refrain from non-essential communications during critical phases of flight

VFR—Visual Flight Rules

SECTION 3—ADMINISTRATION & MANAGEMENT

1. Identification of Air Medical Service

State regulations should require the following information at the time of application for EMS licensure as an air medical service within the State:

- a. Corporate entity and headquarters information including contact information, lead contact for organization, CEO/Board names.
- b. Part 135 Operator information including a copy of the FAA-issued operating certificate.
- c. Information on any additional bases/locations of operations to be covered under the license.
- d. Service area designation.
- e. Scope of Service (BLS, ALS, Critical Care/ Specialty Care, etc.) consistent with State licensure requirements.
- f. Identification of the air medical service's medical director(s).

2. Insurance

The US Department of Transportation (DOT) requires direct air carriers, like Part 135 Operators, to have hull and liability insurance for aviation aspects of the air medical operation. Those requirements are found in 14 CFR Part 205 (reference Attachment A). The State regulations should dictate the amount of professional liability insurance that needs to be carried by the air medical service concerning medical malpractice, medical liability and worker's compensation. These amounts should be comparable to what is required of the ground services in the State.

Public safety operators should demonstrate hull and liability insurance coverage congruent with Part 205 requirements.

3. Advertising

The State guidelines should be congruent with each air medical service's mission profile. The State should confirm that the applicant will have a license for all modes of transport being advertised within the State. In addition, the State should confirm:

- a. The identity of the Part 135 Operator providing the air transportation is evident to the public.
- b. Actual types of aircraft utilized by the Part 135 Operator are used in materials.
- c. Level of licensure being sought is congruent with advertised services.

4. Subscription & Membership Programs

The State guidelines should require the applicant to disclose the use of any subscription or membership programs. The State should ensure that the membership program is congruent with the DOT ruling. The State should confirm:

- a. The program is easy to understand for the general public.
- b. Disclosures are made concerning requirements to receive services.
- c. The applicant demonstrates a written plan of action should the applicant cease business.
- d. The applicant is able to provide services as described in the membership region.

5. Hiring & Credentialing

The State guidelines should require the applicant to provide/demonstrate the following:

- a. A job description for each clinical position including any fitness for duty requirements.
- b. A process that screens applicants to ensure they meet the qualifications and assessment of their knowledge, skills, and experience.
- c. An orientation process that meets the scope of service of the provider.
- d. A process for ongoing competency evaluations.

6. Program Administrative Oversight

State guidelines should require the following:

- a. A business plan that includes scope of service and service area.
- b. An organizational chart that demonstrates a clear line of authority and responsibility.
- c. A copy of all patient care protocols and policies be provided to the State at the time of licensure application and are made available to all of the air medical service's staff.

- d. A demonstration of the ability to provide an aircraft the majority of the time to respond to transport requests within the program's service area exclusive of automatic aid, mutual aid, weather, and maintenance.
- e. Policies addressing these subject areas:
 - i. Disciplinary process.
 - ii. Procedure for documenting meeting minutes.
 - iii. Marketing.
 - iv. QA process to include a review of appropriateness of transports.
 - v. Compliance with State reporting requirements.
 - vi. Corporate compliance.
 - vii. Ethical conduct and practices.

7. Data Reporting / Patient Reporting

The applicant should be required to demonstrate the ability to comply with all required State data reporting requirements that are currently in place. While much of this may mirror other EMS service requirements, additional mandatory reporting is within the ability of the State to require and may include but is not limited to:

- a. Number of patients flown.
- b. Hours flown.

8. Patient Privacy

The State should require the applicant to demonstrate compliance with patient privacy laws as in any other EMS service. Business Associate Agreements may be necessary between the applicant and the Part 135 Operator if not operated directly by the applicant.

9. Deemed Status

States may recognize an air medical service's accreditation from a national accrediting body as assurance of at least partial compliance with appropriate state rules. Additional requirements may be imposed if state standards exceed those set by the accrediting body.

10. Access to Services

States and local governments have been advised that limiting or restricting competition of air carriers, including by a certificate of need (CON) process, is prohibited due to the preemption clause of the Airline Deregulation Act (ADA). ADA (49 U.S.C. Section 41713) states in pertinent part:

"...a state, political subdivision of a state, or political authority of at least two states may not enact or enforce a law, regulation or other provision having the force and effect of law related to a price, route, or service of an air carrier that may provide air transportation under this subpart." 49 U.S.C. Section 41713(b).

However, should states or local governments wish to directly purchase services from an air carrier in the capacity of a "customer", rather than as a "regulator", they are free to contract directly with one or more air carriers.

States should work with air medical services within the state to provide coverage to underserved areas. This can be accomplished through agreements that allow shared costs/subsidies.

11. Notification of changes

The state should provide a process for notification of changes at the air medical service. This should be comparable to what is required of ground services and include changes in:

- a. Ownership.
- b. Base locations.
- c. Medical Director.
- d. FAA Part 135 Operator Certificate (including any suspensions, if applicable).
- e. Number of vehicles.
- f. Level or scope of service.

12. License Duration / Renewal

The duration of licensure should be commensurate to the requirement for ground EMS services in the state.

13. Frequency of review, air medical regulations

States should review their air medical licensure standards at least every 7 years.

14. Facilities standards

Buildings and facilities used by air medical services fall under state and local regulations related to building and fire codes, as well as federal regulations covering workplace safety requirements. Federal aviation safety regulations and guidance regarding airports, heliports, helipads, and other landing areas also may be relevant.

SECTION 4—MEDICAL PROGRAM OPERATIONS

The applicant's mission statement and scope of care should be defined by the applicant and the applicant should demonstrate that its aircraft are configured in such a way that the medical transport personnel can provide patient care consistent with that mission statement and scope of care of the medical transport service. The scope of care is commensurate with the qualifications and level of initial and ongoing education required for medical personnel.

Medical Team make-up and number of practitioners shall be defined by each applicant and included in the business plan. Staffing should be commensurate with the mission statement and scope of care of the air medical service. It can be defined as, but not limited to the following, RN/RN, RN/RT, RN/MD, RN/Paramedic, NNP/RT, ACNP/RN, PNP/RT, Paramedic/Paramedic or alternative team composition in accordance with the scope of service of the program. The air medical service's Medical Director, in conjunction with clinical management, will be responsible for the determination of the appropriate medical team configuration.

On an emergency/unanticipated/infrequent basis, non-scheduled personnel can be added as a team member according to the protocols of the air medical transport service as long as orientation/training includes in-transport treatment protocols, general aircraft and ambulance safety, emergency procedures, operational policies and infection control. The aircraft, by virtue of medical staffing and retrofitting of medical equipment becomes a patient care unit specific to the needs of the patient.

Under certain conditions, the weight of a second medical person or equipment could potentially impact the performance of the aircraft and safety of the mission. This situation and the pilot's authority and responsibility to make this determination are governed by applicable federal aviation safety requirements and the program should have a policy making that clear. Under these conditions, if only one medical person can accompany the patient, the following should occur:

- a. A single medical attendant should have knowledge and medical equipment to adequately care for the patient. The decision to transport with only one medical attendant should require medical control physician approval.
- b. Quality management activities are in place that regularly review the patient care provided by only one medical attendant and the patient's status at the time of arrival at the arranged destination facility.
- c. Given the medical condition of the patient, no other more suitable transport team is available at the time of transport that would be more appropriate for delivering the level of care the patient requires.
- d. A mechanism should be in place to require reporting these events to appropriate State regulators for review.

Medical equipment & patient compartment

Medical supplies and equipment must be consistent with the air medical service's mission statement and scope of care. The medical supply and equipment list is a direct responsibility of the air medical service's Medical Director and a minimum equipment list should be provided to the State at time of application. All medical supplies and equipment should be covered for utilization in the patient care protocols. Additionally, the applicant must demonstrate that the aircraft is configured for CPR and the following equipment is on the aircraft and available for all Critical Care or ALS Providers.

1. Cardiac monitoring capabilities:
 - a. Cardiac monitor, defibrillator, and external pacemaker are secured and positioned so that displays are visible.
 - b. Extra batteries or power source are available for cardiac monitor/defibrillator or external pacemaker.

2. Defibrillator:
 - a. Defibrillator is secured and positioned for easy access.
 - b. Semiautomatic or automatic external defibrillator may be required for some BLS Providers (where permitted as scope of care for EMT-B).
 - c. Pediatric paddles/pads available if applicable to the scope of care of the medical transport service.
3. External pacemaker on-board or immediately available as a carry-on item
4. Advanced airway and ventilatory support equipment:
 - a. Laryngoscope and tracheal intubation supplies, including laryngoscope blades, bag-valve-mask and oxygen supplies, including PEEP valves; appropriate for ages and potential needs of patients transported.
 - b. A mechanical ventilator and circuit appropriate to age and scope of care should be on board for critical care transports as pertinent to the scope of care of the medical transport service.
 - c. Equipment for alternative air and protocol for management of missed airway attempts.
 - d. Two suction units, one of which is portable and both of which must be required to deliver adequate suction.
 - e. Pulse oximetry on-board for critical care missions or immediately available for ALS.
 - f. End-tidal CO₂ continuous wave-form monitoring capabilities available.
 - g. If inhaled nitric oxide or other inhaled gases are used, policies address the following:
 - Monitoring, Cylinder safety, Transportation regulations, Occupational exposure, Equipment issues, Weight, Mounting in the vehicle, Delivery of the drug, Emergency procedures (for example troubleshooting for battery failure, delivery fault, system failure).
5. Automatic blood pressure device, sphygmomanometer, doppler or arterial line monitoring capability on-board or immediately available

6. Devices for decompressing a pneumothorax and performing an emergency cricothyroidotomy available if applicable to scope of care of the air medical transport service

Aircraft Standards

Operational standards such as aircraft configuration should be consistent with the air medical service's scope of service and shall not compromise patient stability in loading, unloading, or in-flight operations. Medical transport personnel must have access to the patient in order to begin and maintain basic and advanced life support treatment. The applicant must demonstrate:

1. The aircraft has an entry that allows loading and unloading without excessive maneuvering (e.g., no more than approximately 45 degrees about the lateral axis and 30 degrees about the longitudinal axis) of the patient, and does not compromise functioning of monitoring systems, intravenous lines, and manual or mechanical ventilation
2. The provision of a minimum of one stretcher that can be carried to the patient
 - a. Aircraft stretchers, including issues of maximum gross weight and the means of securing in-flight, are regulated by the FAA and required to meet federal aviation safety requirements.
 - b. The stretcher should be large enough to carry at least the 95th percentile adult patient, full length in the supine position. (Estimated 95th percentile adult American male is 6 ft. and 232 lbs.).
 - c. The stretcher should be sturdy and rigid enough that it can support cardiopulmonary resuscitation. If a backboard or equivalent device is required to achieve this, such device will be readily available. The head of the stretcher is capable of being elevated at least 30 degrees for patient care and comfort.
 - d. If the stretcher is floor-supported by its own wheels, there is a mechanism to secure it in position under all conditions, consistent with the FAA's requirements. The restraints should permit quick attachment and detachment for patient transfer.

3. The ability to properly secure the patient
 - a. Patient restraints are regulated by the FAA and must meet federal aviation safety requirements.
 - b. Patients transported by air are restrained with a minimum of three cross straps. Cross straps are expected to restrain the patient at the chest, hips and knees.
 - c. Patients that are loaded head forward must also be restrained with a shoulder harness restraint.
 - d. Patients under 40 pounds (18kg.) should be provided with an appropriately sized restraining device (for patient's height and weight), which is further secured by a locking device.
 - i. All patients less than 40 pounds must be secured in a five-point safety strap device that allows good access to the patient from all sides and permits the patient's head to be raised at least 30 degrees. Velcro straps are not encouraged for use on pediatric devices.
 - ii. Any car seat used on board an aircraft is required by the FAA to comply with federal aviation safety requirements and by the DOT to carry a certification sticker identifying it as safe for aircraft use.
 - e. Isolette: There must be some type of restraining device within the isolette to protect the infant in the event of air turbulence. Isolette must be capable of being opened from its secured position to provide full access to the infant in the event of complicated airway problems or extrication from the isolette becomes necessary.
4. Supplemental lighting system will be installed in the aircraft in which standard lighting is insufficient for patient care. Any supplemental lighting system or source installed or transported in an aircraft must meet applicable federal aviation safety requirements
 - a. A self-contained lighting system powered by a battery pack or a portable light with a battery source must be available.
 - b. There must be adequate lighting for patient care: Use of red lighting or low intensity lighting in the patient care area is acceptable if not able to isolate the patient care area from effects on the cockpit or on a driver.
5. Electric power outlet will be provided with an inverter or appropriate power source of sufficient output to meet the requirements of the complete specialized equipment package without compromising the operation of any electrical aircraft/ambulance equipment. Extra batteries are required for critical patient care equipment. Any supplemental power source or amplified power source installed or transported in an aircraft must meet applicable federal aviation safety requirements.
6. Medical transport personnel will ensure that all medical equipment is in working order and all equipment/supplies are validated through documented checklists for both the primary and backup aircraft/ambulance.
 - a. Equipment must be periodically tested and inspected by a certified clinical engineer.
 - b. Equipment inspections and records of inspections are maintained according to the program's guidelines.
7. The floor, sides and ceiling in the patient cabin of the aircraft or ambulance are of a surface capable of being cleaned and disinfected in accordance with national health and safety regulations with the appropriate disinfectant.

Scenes, inter-facility, ambulance intercept

There should be policies from Air Medical Service Providers to integrate with hospitals and ground EMS for emergency response, if the air medical service is involved in pre-hospital emergency responses (note: some air medical services may only provide inter-facility transportation).

State rules should not prohibit nor impede the ability of air medical crew members from providing patient care services in a ground ambulance when conditions preclude air medical transport.

States should ensure that their rules covering ground ambulance services and first responder agencies require a plan for integrating air medical transport into emergency operations, including protocols for intercept, scene flights, and the transport of air medical crews based, at least in part, on ICS principles.

Hazardous materials recognition

The DOT/FAA regulates the transportation of hazardous materials. The air medical service has and demonstrates a process to identify and manage hazardous materials and its risks as they pertain to the mission of the program. A written policy to address response to hazardous materials requests or unanticipated contact with hazardous materials should include the following elements:

1. There is an outlined plan of action according to pre-established policies with appropriate training of the medical transport team
2. A plan for patient decontamination procedures prior to transport, including removal of patient clothing and other decontamination procedures for saturation of gasoline or other hazardous chemicals
3. The medical transport team must be fully informed about the nature of the hazardous materials
4. A list of contaminated materials, which could pose a threat to the medical transport team or render transport inappropriate, must be readily available
5. The Landing Zone (LZ) or aircraft operational area must be a safe distance to avoid any downwind danger when approaching or departing
6. A policy addressing carry-on baggage of patient or passenger that must be physically inspected for hazardous materials that could endanger the medical transport team or compromise safety (such as weapons, sharp objects, chemicals, and obvious contaminated materials) before loading on the transport aircraft/ambulance
7. A policy addressing the presence of firearms on the transport vehicle

Medical documentation

Medical documentation ensures that patient care records and policies and procedures are stored according to hospital or agency policies, and HIPAA or privacy regulations are indicative of the individual medical transport service's sensitivity to patient confidentiality in accordance with local and national standards.

A record of patient care is completed, and a copy remains (electronic or other format) at the receiving facility for appropriate continuity of care.

1. A policy outlines minimal documentation requirements based on the transport service's scope of care and should include:
 - a. Purpose of the transport.
 - b. Treatments, medications, intake and output, vital signs and patient's response to treatments and medications.
 - c. Ventilator setting and change in ventilator settings are recorded.
 - d. Documentation of pertinent radiologic and laboratory findings on inter-facility transports.
 - e. Signature of each care provider and clarity about what care was performed by each provider (administering medications and performing procedures) and indicates who actually documented patient information.
 - f. Transport facilities (to and from) and to whom report was given to at the receiving facility.
 - g. Patient condition at certain predetermined altitudes.

Drugs and IV Fluids

Medications that are consistent with the service's scope of care are accessible for patient care.

1. The transport service has a method of assuring that all medications and intravenous fluids are appropriately calculated. Examples of effective methods include the use of drug calculation lists; internet based programs and pre-programmed drug delivery systems such as those found in medication pumps
2. Medications are easily accessible
3. The transport service has a procedure for confirmation of medication and dose between the medical crew members to reduce the risk of medical error

4. Controlled substances are in a locked system and kept in a manner consistent with local and national regulations. For services that transport medications between bases, a policy exists that assures safe and secure transport of medications between bases that is consistent with state and/or federal laws. In the U.S., there is a DEA license required for each base that stores and dispenses narcotics (for example, a hospital pharmacy that stocks controlled substances for various locations needs a terminal distribution license)
5. Storage of medications allows for protection from extreme temperature changes if environment deems it necessary
6. There is a method to check expiration dates of medications and supplies on a regular basis

Maintaining IV Fluids

1. Hangers/hooks are available that secure IV solutions in place or a mechanism to provide high flow fluids if needed
2. All IV hooks are padded, flush mounted, or so located to prevent head trauma to the medical transport personnel in the event of a hard landing in the aircraft or emergency maneuver of the aircraft
3. Glass IV containers are not used unless required by specific medications and are properly secured
4. A minimum of three IV infusion pumps or channels are on the aircraft or immediately available for critical care transports and, as appropriate, to the scope of care

Blood products

The air medical service has policies for utilization of blood products, storage, and disposal of blood product materials as pertinent to the scope of service.

1. Blood specimens or other potentially infectious materials should be placed in a leak proof, sealed container during transport
2. Disposal of contaminated materials from the aircraft or ambulance meets federal OSHA Guidelines

Bariatric patients

Air medical services should have strict policies addressing weight limitations consistent with federal aviation safety requirements. The policy will indicate the maximum gross weight allowed on the stretcher (inclusive of patient and equipment) as consistent with manufacturer's guidelines. In the event that the patient's weight exceeds the maximum gross weight guidelines, a policy should exist that addresses alternate modes of transportation/resources for patients who are too heavy to transport by the available assets. The program should have a policy that addresses transporting patients of unusual size, including their weight and size limitations.

Transporting Multiple Patients

If the air medical service's mission and statement of care includes the ability to transport two or more patients, it should also demonstrate that this transport will not compromise the airway, patient stabilization or the ability to perform emergency procedures on any on-board patient.

1. The aircraft should have access for simultaneous airway management if there is a two-patient configuration
2. For all transports, there are written guidelines describing types of patients that can be transported in a two patient stretcher configuration if the aircraft configuration does not allow for full access to the second patient
3. For all transports, strict policies will address weight limitations, patient condition based on anticipated needs, and patient position in the aircraft
4. Policies will be written and adhered to for one or more patient transports if the interior configuration of the aircraft does not allow for access to one or more patients while enroute. Policies will address under what circumstances two critical patients may or may not be transported, including staffing and equipment

Environmental controls (air conditioning or heating)

The interior of the aircraft should be able to maintain climate control in order to avoid adverse effects on patients and personnel on board. In the event that climate controls are not utilized, available, or adequate, the air medical service must have a policy to compensate for adverse effects on the patient (warming or cooling measures).

1. Cabin temperatures must be measured and documented every 15 minutes during a patient transport until temperatures are maintained within the range of 50-95 degrees F (10-35 C) for aircraft
2. The program has written policies that address measures to be taken to avoid adverse effects of temperature extremes on patients and personnel on board
3. In the event cabin temperatures are less than 50 degrees (F) or greater than 95 degrees (F), the program will require documentation be flagged for the QM process to evaluate what measures were taken to mitigate adverse effects on the patient and personnel and what outcomes resulted

Incident command

Air medical services should be integrated with and be able to communicate with other public safety agencies, including ground emergency service providers. This may include participation in regional quality improvement reviews, regional disaster planning and mass casualty incident drills that include an integrated response to terrorist events. Air medical services should have, within their scope of serve:

1. A response plan to all types of disaster, including weapons of mass destruction, terrorist events, and natural disasters
2. A policy that prohibits “freelance responses” (responding without being specifically requested) to disasters
3. Programs to ensure their personnel are familiar with the plan to respond to disasters
4. Training with FEMA or other Emergency Management classes for scene and disaster response
5. Interface of the medical team with other regional resources
 - a. For air medical services that respond to incident scenes and support disaster response, staff has completed the Federal Emergency Management Agency Independent Study Courses on Incident Command. (IS-100, IS-200).
 - b. For air medical services that are involved in national disaster response, management staff should also have completed IS-800.—National Response Framework, An Introduction.

SECTION 5—MEDICAL CONTROL

Medical Control shall include:

1. Medical Director—An air medical service should have the medical components of the service directed by a physician, licensed and authorized to practice in the location in which the medical transport service is based, and who is responsible and accountable for supervising and evaluating the quality of medical care provided by the medical personnel. Further the medical director should:
 - a. Practice and have expertise in emergency, critical care and/or critical care transport and education and expertise for specific populations identified by scope of service (i.e. pediatric, neonatal, trauma, etc.) or designate and ensure availability of specialty specific consultants for these populations.
 - b. Maintain a leadership role in the service's Quality Management Program.
 - c. Set and review written guidelines for current accepted medical practice for all service medical personnel.
 - d. Be actively involved in the hiring, training and continuing education of all medical personnel.
 - e. Orient and provide additional quality management for any additional physicians providing on-line/ in-transport medical direction as to the policies, procedures and patient care protocols of the service.
 - f. Establish protocols and practices for medical care under standard operating procedures and define circumstances requiring on-line medical control.
 - g. Ensure that any ancillary ground transport is safe and appropriate for specific patient medical needs.
 - h. Set and maintain policies that insure compliance with federal EMTALA regulations and other relevant federal, state, and local laws.
 - i. Maintain communications with referring and accepting physicians and service medical personnel and be accessible for any concerns regarding patient management.
 - j. Is considered to be a part of the high-level management team for the service, even for non-medical operations.
2. Utilization Review—The medical director shall supervise a process for prospective, concurrent and/or retrospective trending and tracking of requesting and receiving providers for evaluating appropriate use of air medical resources and personnel (see Utilization section)
3. Destination protocols—The air medical service will develop and maintain guidelines for transport of patients to the most appropriate receiving institutions, with consideration of Federal EMTALA regulations, timeliness, distance and capabilities and by the most appropriate means (i.e. fixed wing, rotor wing, or ground) with appropriate crew configuration for patient specific needs regardless of transport modality. Protocols will include mechanisms for real time communication with sending and receiving destinations
4. Protocol administration & oversight—The air medical service, under the supervision of the medical director and other service leadership, will set, review and update medical program protocol
 - a. Protocol revisions will be evaluated to determine relative benefit.
 - b. Protocol compliance will be monitored and documented.
 - c. A process for remediation or dismissal for service personnel not in compliance with protocols will be established and maintained.
5. Professional development program—Continuing education and staff development must be provided and documented for all air medical service medical care providers. These should:
 - a. Be specific and appropriate for the mission statement and scope of care of the medical transport service.
 - b. Include maintained currency in required credentialing as defined by federal, state, and service regulation.

- c. Be based on quality improvement and focus on reinforcement and expansion of skills of individual providers.
 - d. Include a focus on Safety and Risk Management including but not limited to:
 - i. Human Factors—Crew Resource Management.
 - ii. Infection control and Hazardous Materials.
 - iii. Emergency Safety Procedures.
 - iv. Stress and fatigue recognition.
 - e. Be regularly repeated by service designated schedule.
- 6. Transfer of care—The air medical service, under the supervision of the medical director, should establish and be in compliance with medical care protocols for receiving patients from sending institutions, first responders, or ground units and for transfer of care to any additional transport units or receiving institutions
 - a. Medical director and service personnel will communicate protocols with associated institutions.
 - b. Protocols will be in compliance with federal EMTALA and HIPAA laws.
 - 7. Online medical control—The air medical service, under the supervision of the medical director, will establish and maintain protocols for on-line medical direction by the medical director or appropriately trained and designated physicians
 - a. Medical director will ensure defined schedule and ensure availability for on-line medical control via the communication center or other appropriate means.

SECTION 6—UTILIZATION

States should develop evidence-based medical protocols to define parameters for the request of air medical resources. Organizations can request, not dispatch, air medical services. The Part 135 Operator providing the air transportation has the exclusive authority to dispatch aircraft after careful consideration of the conditions of each flight.

States should develop regional care plans based on the capacity of facilities and patient care needs regardless of political boundaries and sub-divisions.

Some of the situations where utilization of air medical transport or evacuation would be appropriate include:

1. A patient has a significant need of equipment or medical personnel for critical care (i.e., to prevent or manage ongoing deterioration that is an imminent threat to life, limb, or organ) available from an air medical transport and which cannot be provided via ground transport
2. A patient has significant potential to require a time-critical intervention and an air medical transport will deliver the patient to an appropriate facility so much faster than ground transport that improved outcome could be reasonably expected
3. A patient is located in a geographically isolated area that would make ground transport impossible or greatly delayed
4. Local EMS resources are exceeded or are unavailable to transport to the closest appropriate facility without compromising response to the primary service area
5. Organ and/or organ recipient requires air transport to the transplant center in order to maintain viability of time-critical transplant

SECTION 7—QUALITY MANAGEMENT

Quality Management programs should fall under tort protection for medical quality improvement programs as specified under state law.

1. An air medical service shall have a written quality management (QM) plan that includes:
 - a. Business plan including service area and scope of care.
 - b. Diagram or similar charting of QM organizational structure with clear assignments of accountability and links to safety organizational tools.
 - c. A process to identify, record, and evaluate sentinel events, adverse medical events, or potentially adverse events with specific goals to improve the quality of patient care.
 - d. Identified thresholds for performance of the clinical care, ideally based on published standards or established best practices.
 - e. Methodology of data collection and employment of the QM process.
 - f. Continuous evaluation of the QM process.
2. The Quality Management program shall:
 - a. Monitor and attempt to identify improvements in all important clinical care outcomes, including but not limited to, medical operations, medical control, clinical care, utilization, communications, and safety.
 - i. Objective measures are utilized where achievable.
 - ii. Communications and clinical documentation should allow structured review of important aspects of service and clinical care.
 - b. Assemble representatives from all aspects of the service to identify any areas for improvement in clinical care in a continuous manner.
 - c. Record and maintain evidence of actions taken in problem areas.
 - d. Monitor and be able to demonstrate effectiveness of actions taken in the QM program with finite timelines to achieve loop closure.
 - e. Be integrated with risk management and utilization review.
 - f. Encourage reporting of clinical care adverse events, including sole source events, without punitive actions beyond what is proscribed for licensing, credentialing, or legal requirements.
 - g. Include regularly scheduled meetings to provide personnel, from all service aspects, the opportunity to participate continuously in QM.
 - h. Generate a regular report, an annual summary at a minimum, that is available to all air medical service personnel.
 - i. Drive education and training needs to maintain an instructional, non-punitive purpose to action plans.
3. As part of a Quality Management Program, clinical and operational data shall be collected and available for review to analyze service performance and establish benchmarks. Examples of possible data collected in such a program could include but would not be limited to:
 - a. Accurate time of request, dispatch, and arrival to patient; transport times; and times for conclusion of care and service re-entry.
 - b. Referring and receiving locations.
 - c. Reason for transport (integrated with utilization review).
 - d. Mechanism of patient injury or illness.
 - e. Medical interventions instituted or maintained with accurate times and patient responses.
 - f. Change in patient condition during transport.
 - g. Patient condition at time of arrival.
 - h. Issues of integration with referring or receiving institutions.
 - i. Number of completed transports.
 - j. Number and type of aborted and cancelled transport requests, with times, reasons (i.e. weather, maintenance, patient condition, etc.) and disposition of patients as applicable.

4. If the service has a sponsoring institution or agency, then the Quality Management and Utilization Review programs shall:
 - a. Report results through an established organizational structure to the service's sponsoring institution or agency.
 - b. Directly integrate transport service activities with the sponsoring institution or agency.
5. The medical director and other relevant management shall ensure a utilization process through trending and tracking requests which shall contain at least the following:
 - a. Regular, documented, structured review to determine:
 - i. Appropriateness of transfer from a scene or requesting institution to a receiving institution; and
 - ii. That the mode of transport enhances medical outcome or cost effectiveness over other modes of transport.
 - b. Structured, confidential feedback between the air medical service and requesting agents and receiving facilities.
 - c. Utilization review may be prospective, concurrent or retrospective.
 - d. Reviews of appropriateness of transport and mode of transport may consider but are not limited to:
 - i. Specialized equipment and expertise available during transport that is not otherwise available to the sending institution.
 - ii. Utilization of regional resources.
 - iii. EMTALA obligations of sending and receiving institution.
 - iv. Time dependency of medical condition.
 - v. Cost of transport.
 - Emergency transports do not require guaranteed payment.
 - Agents calling for non-emergent transports should be assisted with alternative, appropriate modes of transport.
 - Requests that are outsourced or subcontracted shall be reviewed for appropriateness.
 - e. Where appropriate, the air medical service should promote a timely feedback to referring agency, facility or physician about patient outcome and treatment rendered before, during and after transport.
 - f. Patients transferred from air to ground transport units (at sending and receiving destination) shall have the same or higher level ground personnel as that provided by air transport personnel.

SECTION 8—SAFETY

Air medical services operate at the junction of the aviation and medical industries. Because of that, aviation, workplace, and clinical/medical safety programs should not operate in isolation. With the development of model state guidelines, states should encourage Part 135 Operators and Medical Directors to review their programs, jointly, to enhance the industry's overall safety effort.

1. Helicopter/weather “shopping.” The State guidelines should require that the applicant utilizes a methodology to inform other surrounding helicopter programs of when they have declined a flight. The sharing of this information will assist in mitigating a helicopter requestor from “shopping” for a helicopter to complete a transport when they have already been informed that weather will not allow for safe flight. Further, the State guidelines should require that the applicant provides education to their service areas on the dangers of Helicopter/weather “shopping”
2. Pre-established landing areas. The State guidelines should require the applicant to report to the state any pre-established landing areas (improved or unimproved) which may be used as intercept points with ground ambulances. State guidelines should encourage the use of such pre-established areas for helicopter patient transports. The goal of these actions is to decrease the time to definitive care for patients by facilitating rendezvous between ground and air ambulances
3. Hot refueling. The State guidelines should require the applicant to provide information about its procedures for maintaining the safety of the medical personnel and patients, in accordance with applicable federal aviation safety requirements; in the event that the applicant will be conducting hot (engine(s) remain running) refueling operations
4. Patient Loading and Unloading. The State guidelines should require the applicant to provide information about its procedures for maintaining the safety of the medical personnel and patients during loading & unloading operations (whether or not the aircraft engine is running), in accordance with applicable federal aviation requirements. Further, the State should require all applicants to have policies and procedures used to assure the safety of non-air medical service personnel assisting in loading/unloading of the aircraft if such personnel are utilized in this capacity. These policies and procedures should contain, at a minimum, the safe approach zones for the aircraft, the known danger areas of the aircraft and direction to never approach the aircraft until directed to do so by a member of the crew
5. Medical Personnel rest requirements. The State guidelines should require the applicant to have a defined policy outlining the minimum hours of uninterrupted rest required of medical personnel before reporting for a regularly scheduled shift
6. Shift length requirements. The State guidelines should require the applicant to have a defined policy outlining the maximum hours of scheduled shift length for the medical personnel. For shifts of 24 hours or greater, the applicant must provide adequate facilities for medical personnel rest

7. Workplace safety.
 - a. The State guidelines should require the applicant to have a defined policy outlining the minimum required immunizations and post-exposure prophylaxis that should be made available to the applicant's clinical care employees.
 - b. The State guidelines should require the applicant to have a policy defining the use of personal protective equipment to include at a minimum, fire-resistant or natural fiber uniforms, sturdy over the ankle footwear, and the use of helmets for helicopter operations. The State should require the applicant to provide and have a policy governing the use of disposable exam gloves, eye protection and other body fluid barriers as necessary for the mission profile.
 - c. The State guidelines should require the applicant to have a policy defining what medical conditions may limit the medical crew member's ability to perform the required job tasks. This includes but is not limited to height and weight considerations, acute/chronic illness and pregnancy.
8. Sterile cockpit. Federal Aviation Regulations require the maintenance of a sterile cockpit in certain conditions so that the pilot is able to transmit and receive vital information and to minimize distractions during any critical phase of flight. No external communications are permitted by the medical team and no patient information is transmitted at this time unless radios for medical report are isolated

Public education and prevention

To facilitate public awareness, the air medical service shall provide information about its safety program to public safety/law enforcement agencies and hospital personnel who interface with the medical service. Many of these safety program areas are governed by federal aviation safety requirements. The information should include:

1. Identifying, designating and preparing an appropriate LZ
2. Personal safety in and around the aircraft for all ground personnel
3. Procedures for day/night operations, conducted by the medical team, specific to the aircraft:
 - a. High and low reconnaissance.
 - b. Two-way communications between the aircraft and ground personnel to identify approach and departure obstacles and wind direction.
 - c. Approach and departure path selection.
 - d. Procedures for the pilot to ensure safety during ground operations in a LZ with or without engines running.
4. Crash recovery procedures specific to the aircraft make and model should minimally include:
 - a. Location of fuel tanks.
 - b. Oxygen shut-offs in cockpit and cabin.
 - c. Emergency egress procedures.
 - d. Aircraft battery—stay away from it., and
 - e. Emergency shut-down procedures.
5. Education regarding weather-based helicopter "shopping" should be included
6. Education regarding the appropriate utilization of the air medical asset in the context of the regional EMS system
7. Records are kept of initial and recurrent safety training of pre-hospital, referring and receiving ground support personnel

SECTION 9—COMMUNICATIONS

The FAA Part 135 Operator has the responsibility for dispatch, operational control, flight following, and all flight release decisions. The FAA and the FCC regulate the operation and capability of radios on board aircraft. An air medical service should provide information confirming it is in compliance with FAA and FCC regulations regarding communications and operational control. An air medical service must provide information confirming its ability to meet communications requirements, consistent with federal aviation safety requirements, either directly or through contracted services with regional communication centers, aviation operators, or others, including:

Communications Equipment—Rotary Wing and Emergent Fixed Wing

(Emergent Fixed Wing services operate in a manner similar to rotary wing services, responding immediately or on-demand to emergent transport requests from an emergency department or scene response using a ground ambulance intercept)

1. All communications equipment is in full operating condition and in good repair. Radios on aircraft (as range permits) are capable of transmitting and receiving the following:
 - a. Medical direction.
 - b. Communications center.
 - c. Air traffic control (aircraft), and
 - d. Emergency Services (EMS, law enforcement agencies, fire, etc.) where it meets the scope of service.
2. The pilot is able to control and override radio transmissions from the cockpit in the event of an emergency situation
3. The medical team is able to communicate with each other during flight. Helmets with communications capabilities are required on helicopters
4. The Communications Center contains at least one dedicated phone line for contacting the medical transport service

5. The Communications Center contains a system for recording all incoming and outgoing telephone and radio transmissions with time recording and immediate playback capabilities. Recordings must be kept for a minimum of 90 days
6. The Communications Center contains a capability to immediately notify the medical transport team and on-line medical direction (through radio, pager, telephone, etc.)
7. The Communications Center contains a status display with information about pre-scheduled flights/patient transports, the medical transport team on duty, weather and maintenance status as pertinent to the scope of service
8. Current local aircraft service area maps and navigation charts are readily available for aviation operations. Mapping software could supplement current charts

Communications Specialists

1. A Communication Specialist or other designee must be assigned to receive and coordinate all requests for the medical transport service
 - a. Scheduling and individual work schedules demonstrate strategies to minimize duty-time, fatigue, length of shift, number of shifts per week and day-to-night rotation.
 - b. Call volume and other required duties are considerations in the number of communication specialists on duty at any one time. (Programs should be able to demonstrate how they assign staffing levels, for example, number of Communication Specialists on duty per shift relevant to the number of vehicles and teams in service.).
 - c. There are relief personnel with the appropriate training available for periodic breaks.
 - d. Personnel must have at least eight hours of rest with no work-related interruptions prior to any scheduled shift of twelve hours or more. The intent is to preclude back-to-back shifts with other employment, commercial or military flying, or significant fatigue-causing activity prior to a shift.

- e. On-site shifts are routinely scheduled for a period not to exceed 18 hours. Twenty-four hour shifts are not acceptable. In addition:
 - i. Personnel must have the right to call “time out” and be granted a reasonable rest period if a team member determines that he or she is unfit or unsafe to continue duty, no matter what the shift length. There should be no adverse personnel action or undue pressure to continue in this circumstance.
 - ii. Management should monitor flight volumes and personnel’s use of the “time out” policy to ensure that communications personnel utilize the right to call “time-out” appropriately.
- 2. Training of the appropriate, designated communication specialist or other design should be commensurate with the air medical service’s scope of service and should include:
 - a. Medical terminology and obtaining patient information.
 - b. Knowledge of EMS—roles and responsibilities of the various levels of training –BLS/ALS, EMT/ EMT-Paramedic.
 - c. State and local regulations regarding EMS.
 - d. Familiarization with equipment used in the field and/or inter-facility setting, based on scope of service.
 - e. Knowledge of federal aviation regulations and FCC regulations or equivalent as pertinent to medical transport service.
 - f. General safety rules and emergency procedures pertinent to medical transportation and flight following procedures.
 - g. Navigation techniques/terminology, flight following and map skills. This should include an understanding of GPS navigation and approaches.
 - h. Understanding weather interpretation and how to retrieve current and forecasted weather to assist the pilot during a transport if other means are not in place within the organization.
 - i. Types of radio frequency bands used in medical and ground EMS.
 - j. Assistance with the hazardous materials response and recognition procedure using appropriate reference materials.
- k. Stress recognition and management to include resources for Critical Incident Stress Debriefing or other type of post critical incident counseling.
 - l. Customer service/public relations/phone etiquette.
 - m. Quality management.
 - n. Crew Resource Management (CRM) pertinent to communications.
 - o. Computer literacy and software training.
 - p. Emergency Incident Plan (also known as Post Accident/Incident Plan or PAIP).
- 3. There is evidence of recurrent training and of training as policies and equipment changes occur
- 4. Certifications (such as EMT-B, EMD, NAACS Certified Flight Communications Course or equivalent), if required by position description, must be current

Communications Policies

- 1. Must be in writing and include the following:
 - a. Communications policy and procedures manual.
 - b. A method to keep noise and other distractions (traffic) from the communications area while the communications specialist is involved with a medical transport mission.
 - c. An evacuation plan that provides for continuous communications with transport personnel in the event there is a need to evacuate the communications center.
 - d. There is a written policy that at the time of a request, the pilot is not informed of the patient condition or age unless there are operational considerations (for example: weight, extra equipment etc.).
 - e. Emergency incident plans (also known as post-accident/incident plans) are easily identified, readily available, and understood by all program personnel. For RW aircraft or FW aircraft on a VFR flight plan, appropriate search and rescue efforts should be initiated in the event the aircraft is overdue, radio communications cannot be established nor location verified. These plans should minimally include:

- i. List of personnel (with current phone numbers) to notify in order of priority (for communication specialist to activate) in the event of a program incident/accident (for air or ground). This list should minimally include sponsoring organization individuals where applicable, risk management attorney, family members of team members, family of patient, referring hospital, receiving hospital, security (as applicable), human resources (as applicable), media relations or pre-identified individual who will be responsible for communicating with the media, state health department and other team members.
- ii. Notification plans include appropriate family members and support services to family members following a tragic event. There must be timely notification of next of kin. Next of kin is no longer strictly defined at the federal level so the crew member determines this on a data sheet and reviews annually. It is strongly recommended that:
 - Family assistance includes coordination of family needs immediately after the event e.g. transportation, lodging, memorial/burial service, condolences, initial grief support services/referrals, (usually through appointment of a family liaison).
 - Continuity includes follow through with the family after the event (e.g. submission of crew to national EMS memorial service, the continuation of grief counseling and support referrals, the inclusion of families in decision-making on anniversaries/memorials, and check-ins following release of NTSB reports, or equivalent, etc.).
- iii. Consecutive guidelines to follow in attempts to:
 - Communicate with the aircraft.
 - Initiate search and rescue or ground support.
 - Have a back-up plan for transporting the ground ambulance patient in the event of an incident or accident and/or the ambulance is inoperable.
 - Have an individual identified from the Part 135 Operator as the scene coordinator to coordinate activities at the crash site.
- iv. Preplanned time frame to activate the emergency incident plan (also known as a post-accident/incident) for overdue aircraft or ambulance.
- v. A method to insure accurate information dissemination.
- vi. Coordination of transport of injured team members to higher level of care if needed and/or back to local area.
- vii. Procedure to document all notifications, calls, and communications and to secure all documents and tape recordings related to the particular incident/accident.
- viii. Procedure to deal with releasing information to the press.
- ix. Resources available for CISD or other counseling alternatives.
- x. Process to determine whether the program and/or component of the program will remain in service. If it is determined that the program or a component of the program will go out of service, other regional transport services, primary customers, EMS, public service groups and other applicable groups are advised.
- xi. An annual drill is conducted to exercise the emergency incident plan (also known as a post incident/accident plan). This drill should include pilots, medical personnel, communications personnel, mechanics and administrative personnel. Written debriefing and critique of PAIP drills should be shared with all staff members.

- xii. A full drill must test each of the modes of transport (if the program has RW, FW and G or combination thereof) within a three year time frame.
 - xiii. An actual incident may be used, as appropriate, if documented and documentation includes loop closure. A table top drill—defined as a drill where there are position challenges between the pilot and the communications specialist only and not covering all the components and disciplines listed in the PAIP is not considered a full drill.
2. A general test of all emergency procedures to include fire drill, intruder on premises, catastrophic failure of the communications center, helipad mishaps, forces of nature etc. will also be conducted on an annual basis
 3. A disaster preparedness drill should be part of the general test of all emergency procedures or conducted separately as an annual drill

En Route Communications

The FAA Part 135 Operator has the responsibility for dispatch, operational control, flight following, and all flight release decisions. The Part 135 Operator may choose to enter into contractual arrangements for individuals not directly employed by the Part 135 Operator to provide these duties under the oversight and responsibility of the Part 135 Operator. Additional Information for clinical care needs may be requested, to include:

1. Initial coordination to include communication and documentation of:
 - a. The time of the request call (Time request/ inquiry received).
 - b. The name and phone number of requesting agency.
 - c. The age, diagnosis, or mechanism of injury.
 - d. The referring and receiving physician and facilities (for inter-facility requests) as per policy of the medical transport service.
 - e. Verification of the acceptance of the patient and verification of bed availability by referring physician and facility (for inter-facility requests).
 - f. Previous turn-downs of the mission (i.e. helicopter shopping).
- g. Ground transportation coordination at sending and receiving areas.
- h. The time medical personnel are notified flight is approved, post pilot's OK of flight).
- i. Time depart base (Time of lift-off from base or other site).
- j. Number and names of all personnel on board the aircraft.
- k. Number and names of patient(s) on board (for inter-facility requests).
- l. Estimated time of arrival (ETA).
- m. Time arrive location (Time aircraft/ambulance arrives at landing zone, helipad, airport or referring area).
- n. Time depart location (Time aircraft/ambulance lifts off from landing zone, helipad, or airport or leaves referring area).
- o. Time arrive destination (Time patient transferred to receiving clinical team; in unusual circumstances, this may not be at a health-care facility).
- p. Time depart destination (Time left patient destination. This will be recorded for transports not ending at base).
- q. Time arrive base (Time arrive base after call completed), and/or
- r. Time aborted (Time authorized transport is aborted/canceled after dispatch).

Criteria for non-emergent or pre-scheduled Fixed Wing

(Fixed wing services considered non-emergent or pre-scheduled transport between facilities typically under non-emergent situations (not from an emergency department) or as a transport that has been requested in advance at a specified date and time)

1. For a fixed wing service that flies only pre-scheduled flights, an answering service may serve as the receiving point for requests for service
 - a. Answering service personnel must be trained to obtain specific information when receiving a request to schedule fixed wing patient transportation.

- b. The items should include but not be limited to:
 - i. Name and telephone number of caller
 - ii. Patient type/condition
 - iii. Date and time call received
 - iv. Anticipated or scheduled date/time of departure
 - v. Location of patient and destination
2. Specific methods must be used by the answering service for contacting the medical service coordinator (or designee) to relay request information, i.e., pager numbers, telephone and/or cellular numbers
3. Destination airport, refueling stops (if necessary), location of transportation exchange and hours of operation (FW)
4. Guidelines of timely notification (less than thirty minutes) should be established. Alternate procedures for notification must be in place in case the coordinator is not available to receive the request/information
5. An on-call roster of the medical team must be provided to the answering service. The roster includes a priority phone list of personnel to notify in the event of an emergency

Coordination of Communications Capabilities

The FAA Part 135 Operator has the responsibility for dispatch, operational control, flight following, and all flight release decisions. With the development of the Model State Guidelines, states should work to facilitate medical communications capabilities between air and ground services. Air and ground medical transport services should provide direct communication capabilities for medical personnel and ground ambulance providers, to ensure rapid dissemination of information, coordination of efforts, and problem solving. Direct contact between the parties should be established whenever possible as follows:

1. There is a written policy that addresses direct or relayed communications to communications center (while in motion) specifying locations and ETAs, and deviations, if necessary
2. Time between each communication
 - a. Time between each communication should not exceed 10 minutes while in flight unless a system of continuous automatic position tracking is utilized.
 - b. There is a policy to address continuous automatic position tracking, if utilized; the policy should ensure there are also verbal communications at predetermined times.
 - c. Alternate agencies are used to relay communications when direct contact is not possible.
3. There is a written policy that while the aircraft is on a mission, a dedicated communicator assigned to flight follow will be present at all times. (RW)

SECTION 10—MULTIJURISDICTIONAL AIR PROVIDER

With the development of model state guidelines, states should work on compacts that offer license reciprocity for providers and medical crews, provided those providers and/or medical crew members are licensed in their home state. State EMS Officials

should seek to establish national-level guidelines for license reciprocity for long-range (i.e. fixed-wing) air medical services that could also provide a framework for inter-state compacts for local ground and air medical services.

SECTION 11—REFERENCES

- A. Air & Surface Patient Transport: Principles & Practice [Hardcover]
Renee S. Holleran RN PhD CEN CCRN
CFRN CTRN FAEN (Author), ASTNA (Author), 3rd edition
- B. Federal Aviation Administration. (2011). *Title 14 of the Code of Federal Regulations*. Retrieved from http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgFAR.nsf/MainFrame
- C. Commission on Accreditation of Medical Transport Systems. (2011). *8th Edition Standards*. Retrieved from http://www.camts.org/component?option=com_docman/task,catalog_view/gid,17/Itemid,44/
- D. National Association of EMS Physicians. (2011). *Guidelines for Air Medical Dispatch*. Retrieved from <http://www.aem.org/positionstatements/helicopterdispatch.pdf>

Additional Resources

- A. DOT insurance requirements for direct air carriers (<http://www.gpo.gov/fdsys/pkg/CFR-2012-title14-vol4/xml/CFR-2012-title14-vol4-chapII.xml>)
- B. Air Medical Task Force paper (http://www.aams.org/AAMS/PublicationsProducts/AMTF_Final_Paper1.aspx)
- C. Government Accountability Office (GAO) Report (<http://www.gao.gov/products/GAO-10-907>)
- D. Department of Transportation (DOT) opinion letters (available upon request)



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