POSITION STATEMENT

The National Association of EMS Physicians believes that:

- Tested knowledge and demonstrated skills in the area of basic telecommunications should be requisite for all emergency telecommunications. Further training to the level of emergency medical dispatcher should be required for all personnel who receive calls for medical assistance and/or dispatch those resources. Governments should approve statutes or regulations that require Emergency Medical Dispatchers (EMDs) to be certified/licensed in accordance with nationally accepted standards for emergency medical dispatch.
- The use of formal, medically approved EMD protocols should be required for the practice of emergency medical dispatching. In all EMS systems, prioritization of calls to be dispatched should be an essential element.
- The provision of prearrival instructions should be a mandatory function of every EMD in a center that interrogates callers and prioritizes medical calls. Prearrival instructions should take into account the dispatch-specific (i.e., nonvisual, nonpretrained caller) circumstances of providing standard basic life support and/or advanced life support procedures and care to callers, known as dispatch life support.
- The "medical service" in EMS begins when a public call is received at a public safety answering point or other agency that provides prehospital emergency care in response to requests for unscheduled medical assistance. All centers servicing requests for medical assistance should have medical oversight by a physician medical director, with knowledge at least to the level of a certified EMD, who is responsible for all medical aspects of the EMD program by which these calls are processed.
- Quality improvement and risk management activities should include oversight of call-taker compliance with protocols, including levels of protocol use reliability and consistency. These are essential for effective, safe, and risk-averse medical dispatch operations.
- EMD medical directors should participate in the design, operation, and data analysis of medical dispatch, and data-based programs for community injury and disease surveillance, wherever these programs are possible to implement.
- Investigation of the need for, and the safety and potential effectiveness of, expanded service options as an alternative to dispatching resources to the scene should be a medical director responsibility.
- Research designed to improve EMD should focus on the specific components of the process (e.g., interrogation questions, dispatch prioritization descriptors, postdispatch instructions, prearrival instructions, and safety element advisories) and/or their relationships.


MeSH Search Terms:
Emergency medical services
Emergency medical service communication systems
Emergency medical technicians
Quality assurance, health care
Risk management
GUIDELINES FOR AIR MEDICAL DISPATCH

David P. Thomson, MD, MS, Stephen H. Thomas, MD, MPH, for the 2002-2003 Air Medical Services Committee of the National Association of EMS Physicians

INTRODUCTION
Air medical transport has become a well-established part of the emergency medical services (EMS) system. Through the use of aircraft, patients are moved swiftly and safely throughout the world. However, for a number of reasons, the use of air medical transport remains somewhat controversial. One reason for this controversy is that debate continues to surround appropriate utilization of air medical transport. Since the topics of triage to air transport were last addressed by the National Association of EMS Physicians' (NAEMSP's) Air Medical Task Force (hereafter abbreviated as "the Task Force"), there has been significant evolution of thought concerning appropriateness of air medical dispatch. Therefore, the goal of this position paper is to outline current recommendations guiding utilization of air medical transport.

This position statement builds on earlier work by the Task Force and replaces two previous position statements.1 2 The first NAEMSP position statement on the subject was published in Prehospital and Disaster Medicine in January-March 1992 as a contribution of the 1992 Task Force.1 The 1994 Task Force published a follow-up paper addressing non-trauma and pediatric considerations.2 The current Task Force members gratefully acknowledge the work of the previous documents' authors: Drs. Nicholas Benson, Catherine Carruba, Dan Hankins, Richard Hunt, and David Wilcox. The current authors have also drawn upon the work of other organizations, including the Association of Air Medical Services (AAMS)3 and the American Academy of Pediatrics (AAP)4 which have produced similar documents.

This position statement has also been endorsed by the Air Medical Physician Association (AMPA), by approval of its Board of Directors.

DISCUSSION
Air medical transport has grown to the point where we commonly speak of people being "life-flighted." As of this writing, the AAMS, which represents the vast majority of U.S. air medical providers, reports 271 air medical program members, 193 of which have a helicopter EMS component.5 The growth of air medical transport is, at least in part, due to a perception that provision of such a service results in benefits to the patients and/or regions where air transport exists. In some cases, the benefit results from the increased level of care provided by the air medical crew; these individuals are generally trained to a higher level of care than available ground EMS providers. In other cases, the putative explanation for improved outcome is the increment in speed afforded by the air transport vehicle. However, there is continued debate surrounding use of air transport.

One source of debate is cost. Economic analyses have suggested that helicopters are cost-effective,6 and that utilization of helicopters is no more expensive than deployment of similarly configured ground ambulances with comparable staffing levels and response times.7 However, acceptance of these premises is far from universal, and acquisition and maintenance of aircraft undoubtedly represent a significant expense in an era of limited health care dollars. Within this economic envelope, payers for health care including commercial insurance, managed care organizations, and public payers, including Medicare and Medicaid in the
port crew may best serve the patient by assisting ground EMS during surface transport to the nearest facility or by following local protocols for patient death).

Ground EMS services, air medical services, hospitals, and third-party payers should understand that in order to make the air transport resource available to those who need it, a certain level of overtriage is unavoidable. Also, decision making about patient transport should take into account the capabilities of local and regional EMS and hospitals. Given the inherent uncertainty surrounding prehospital diagnosis and triage, an EMS system with zero air transport overtriage is almost certainly underutilizing its helicopter resource. On the other hand, while this position statement is intended to address air medical dispatch (as considered prospectively), it must be emphasized that an ongoing process of utilization review is critical to optimizing utilization of the air transport resource. Such utilization review can be focused upon both triage characteristics (e.g., mechanism of injury) and retrospective review of patient course at the receiving hospital (e.g., early discharge without diagnostic or therapeutic intervention).

Just as it is important to appropriately incorporate air transport into the scene and interfacility transport needs of a region, utilization review should be aimed at both mission types. As for interfacility transports, the historical prerogative of referring hospital treating physicians to determine transport mode is subject to increasing scrutiny. Because of understandable concerns about Consolidated Omnibus Reconciliation Act/Emergency Medical Treatment and Labor Act (COBRA/EMTALA)-related liability for intratransport deterioration, referring physicians may occasionally overtriage patients to helicopter transport. It is hoped that these guidelines may help frame the transport decision-making process in such fashion as to optimize transport mode appropriateness, maximize resource utilization, and serve as a foundation to support case-by-case triage decisions made by referring physicians.

The increasing complexity of transport decision making has emphasized the importance of air transport services' medical directors being available for real-time consultation as to transport mode. Research has shown that regions may benefit from detailed assessment of their specific geographic/logistical situations, with generation of maps serving as guides to assist in air vs. ground triage.8

Prior to creating this position paper, the literature concerning the transport of trauma and nontrauma patients was reviewed and summarized by a subcommittee of the NAEMSP Air Medical Services Task Force. The reader is referred to these annotated bibliographies, published previously in Prehospital Emergency Care.9,10 For an overview of studies addressing air transport and patient outcomes. The literature reviews are not comprehensive, and the literature has continued to grow even in the short interval between researching of the bibliographies and publication of the reviews. For example, recent studies have reinforced arguments in favor of helicopter transport of blunt trauma patients11,12 and strongly suggested outcomes benefit for interfacility air transport for a subset of patients with acute myocardial infarction.13 Additionally, the Task Force recognizes that air transport modalities should play a cooperative role in systemwide responses to disasters and mass casualty incidents; the potential contributions of air transport services in these situations are not discussed in this paper since they have been outlined in Prehospital Emergency Care.14

In summary, the guidelines that follow are offered as a noncomprehensive overview of clinical and logistical situations in which air medical dispatch may be appropriate. The Task Force offers these guidelines as an aid to EMS systems' operational planning, with the earlier mentioned caveats—most importantly, that no set of guidelines should be interpreted as dogma and that the judgment of those at the patient's side should always count foremost in decision making.

GUIDELINES

1. General
   a. Patients requiring critical interventions should be provided those interventions in the most expeditious manner possible.
   b. Patients who are stable should be transported in a manner that best addresses the needs of the patient and the system.
   c. Patients with critical injuries or illnesses resulting in unstable vital signs require transport by the fastest available modality, and with a transport team that has the appropriate level of care capabilities, to a center capable of providing definitive care.
   d. Patients with critical injuries or illnesses should be transported by a team that can provide intra-transport critical care services.
   e. Patients who require high-level care during transport, but do not have time-critical illness or injury, may be candidates for ground critical care transport (i.e., by a specialized ground critical care transport vehicle with level of care exceeding that of local EMS) if such service is available and logistically feasible.

2. Comparative considerations for air transport modes
   a. Rotor-wing
      i. Advantages
         (a) In general, decreased response time to the patient (up to approximately 100 miles distance depending on logistics such as duration of ground transfer leg)
         (b) Decreased out-of-hospital transport time
         (c) Availability of highly trained medical crews
5. Clinical situations for air transport in interfacility transfers are best summarized as being present when: 1) patients have diagnostic and/or therapeutic needs which cannot be met at the referring hospital, and 2) factors such as time, distance, and/or intra transport level of care requirements render ground transport unfeasible.

a. Trauma: Injured patients constitute the diagnostic group for which there is best evidence to support outcome improvements from air transport.

i. Depending on local hospital capabilities and regional practices, any diagnostic consideration (suspected, or confirmed as with referring hospital radiography) listed above under "scene" guidelines may be sufficient indication for air transport from a community hospital to a regional trauma center.

ii. Additionally, air transport (short- or long-distance) may be appropriate when initial evaluation at the community hospital reveals injuries (e.g., intra-abdominal hemorrhage on abdominal computed tomography) or potential injuries (e.g., aortic trauma suggested by widened mediastinum on chest x-ray; spinal column injury with potential for spinal cord involvement) requiring further evaluation and management beyond the capabilities of the referring hospital.

b. Cardiac: Due to regionalization of cardiac care and the time-criticality of the disease process, patients with cardiac diagnoses often undergo interfacility air transport. Patients with the following cardiac conditions may be candidates for air transport:

i. Acute coronary syndromes with time-critical need for urgent intervention therapy (e.g., cardiac catheterization, intra-aortic balloon pump placement, emergent cardiac surgery) unavailable at the referring center

ii. Cardiogenic shock (especially in presence of, or need for, ventricular assist devices or intra-aortic balloon pumps)

iii. Cardiac tamponade with impending hemodynamic compromise

iv. Mechanical cardiac disease (e.g., acute cardiac rupture, decompensating valvular heart disease)

c. Critically ill medical or surgical patients: These patients generally require a high level of care during transport, may benefit from minimization of out-of-hospital transport time, and may also have time-critical need for diagnostic or therapeutic intervention at the receiving facility. Ground critical care transport is frequently a viable transfer option for these patients, but air transport may be considered in circumstances such as the following examples:

i. Peri-transport cardiac/respiratory arrest

ii. Requirement for continuous intravenous vasoactive medications or mechanical ventilator assist to maintain stable cardiac output

iii. Risk for airway deterioration (e.g., angioedema, epiglottitis)

iv. Acute pulmonary failure and/or requirement for sophisticated pulmonary intensive care (e.g., inverse ratio ventilation) during transport

v. Severe poisoning or overdose requiring specialized toxicology services

vi. Urgent need for hyperbaric oxygen therapy (e.g., vascular gas embolism, necrotizing infectious process, carbon monoxide toxicity)

vii. Requirement for emergent dialysis

viii. Gastrointestinal hemorrhages with hemodynamic compromise

ix. Surgical emergencies such as fasciitis, aortic dissection or aneurysm, or extremity ischemia

x. Pediatric patients for whom referring facilities cannot provide required evaluation and/or therapy

d. Obstetric: In gravid patients, air transport's advantage of minimized out-of-hospital time must be balanced against the risks inherent to intratransport delivery. If transport is necessary in a patient in whom delivery is thought to be imminent, then a
Member Services Coordinator, Association of Air Medical Services, March 13, 2002.


