

Subject: Ambulance Services: Air and Water

Guideline #: CG-ANC-04

Status: Revised

Publish Date: 01/03/2024

Last Review Date: 11/09/2023

Description

This document addresses the use of air or water ambulance services. An ambulance is a specially equipped vehicle designed and supplied with materials and devices to provide life-saving and supportive treatments or interventions. Wheelchair vans or other such vehicles are not equipped as ambulances and are not addressed in this document.

Note: Please see the following related documents for additional information:

- [CG-ANC-05 Ambulance Services: Ground: Emergent](#)
- [CG-ANC-06 Ambulance Services: Ground: Non-Emergent](#)
- [CG-ANC-07 Inpatient Interfacility Transfers](#)

Clinical Indications

Medically Necessary:

The use of air and water ambulance services is considered **medically necessary** when **all** the following criteria are met:

- A. The ambulance must have the necessary equipment and supplies to address the needs of the individual; **and**
- B. The individual's condition must be such that any form of transportation other than by ambulance would be medically contraindicated; **and**
- C. The individual's condition is such that the time needed to transport by land poses a threat to the individual's survival or seriously endangers the individual's health*; or the individual's location is such that accessibility is only feasible by air or water transportation; **and**
- D. There is a medical condition that is life threatening or first responders deem to be life threatening, including, but not limited to, the following:
 1. Intracranial bleeding; **or**
 2. Cardiogenic shock; **or**
 3. Major burns requiring immediate treatment in a Burn Center; **or**
 4. Conditions requiring immediate treatment in a Hyperbaric Oxygen Unit; **or**
 5. Multiple severe injuries; **or**
 6. Transplants; **or**
 7. Limb-threatening trauma; **or**
 8. High risk pregnancy; **or**
 9. Acute myocardial infarction; if this would enable the individual to receive a more timely medically necessary intervention (such as percutaneous transluminal coronary angioplasty [PTCA] or fibrinolytic therapy).

*Air transportation may be appropriate if the time between identification of the need for transportation until arrival at the intended destination for ground ambulance would be at least 30 minutes longer than air transport.

Mileage associated with an air or water ambulance service is considered **medically necessary** up to the distance required for transport to the nearest appropriate facility.

The use of air and water ambulance services to transport an individual from one hospital to another requires that:

- A. The above criteria must be met, **and**
- B. The first hospital does not have the required services and facilities to treat the individual.

The use of air and water ambulance services for *deceased* individuals is considered **medically necessary** when the above criteria are met and when either of the following is present:

- A. The individual was pronounced dead while in route or upon arrival at the hospital or final destination; **or**
- B. The individual was pronounced dead by a legally authorized individual (physician or medical examiner) after the ambulance call was made, but prior to pick-up. In these circumstances the response to call is considered **medically necessary**.

Not Medically Necessary:

All other uses of air and water ambulance services are considered **not medically necessary**, including, but not limited to, the following:

- A. Transfers from one hospital to another if above criteria not met; **or**
- B. Transfers from a hospital capable of treating an individual to another hospital primarily for the convenience of the individual or the individual's family or physician; **or**
- C. When land transportation is available and the time required to transport the individual by land does not endanger the individual's life or health; **or**
- D. Transportation to a facility that is not an acute care hospital, such as a nursing facility, physician's office or the individual's home; **or**
- E. The services are for a transfer of a deceased individual to a funeral home, morgue, or hospital, when the individual was pronounced dead at the scene.

Mileage in excess of the distance from the trip origin to the nearest appropriate facility is considered **not medically necessary**.

Coding

The following codes for treatments and procedures applicable to this document are included below for informational purposes. Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement policy. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

When services may be Medically Necessary when criteria are met:

HCPCS

A0430	Ambulance service, conventional air services, transport, one way (fixed wing)
A0431	Ambulance service, conventional air services, transport, one way (rotary wing)
A0435	Fixed wing air mileage, per statute mile
A0436	Rotary wing air mileage, per statute mile
A0999	Unlisted ambulance service [when specified as ambulance service, water transport]
S9960	Ambulance service, conventional air services, nonemergency transport, one way (fixed wing)
S9961	Ambulance service, conventional air service, nonemergency transport, one way (rotary wing)

ICD-10 Diagnosis

All diagnoses

When services are Not Medically Necessary: For the procedure codes listed above when criteria are not met or for situations designated in the Clinical Indications section as not medically necessary.

When services are also Not Medically Necessary: For the following procedure code; or when the code describes a procedure designated in the Clinical Indications section as not medically necessary.

HCPCS

A0888	Noncovered ambulance mileage, per mile (e.g., for miles traveled beyond closest appropriate facility)
-------	---

ICD-10 Diagnosis

All diagnoses

Discussion/General Information

An ambulance is a specially equipped vehicle designed and supplied with equipment and supplies to provide life-saving and supportive treatments or interventions. Ambulance transport may involve the movement of an individual to the nearest hospital for treatment of the individual's illness or injury, non-emergency medical transport of an individual to obtain medically necessary care not available in the individual's current location, or non-emergency medical transport to a health care facility or to an individual's home.

Although wheelchair vans are specially equipped to accommodate physically challenged individuals, they do not have the proper equipment to qualify as an ambulance. Proper equipment may include ventilation and airway management equipment, cardiac equipment (monitoring and defibrillation), immobilization devices, bandages, communication equipment, obstetrical kits, infection control, injury prevention equipment, vascular access equipment, and medications.

An ambulance may be a ground transportation vehicle, such as a specially equipped truck or van, but may also be a properly equipped helicopter or airplane, or it may be a specially equipped water craft. This document specifically addresses only air and water transportation-type ambulances.

In general, an emergency medical condition is defined as a medical condition characterized by acute symptoms of sufficient severity (including severe pain) such that a prudent layperson possessing an average knowledge of health and medicine, could reasonably expect the absence of immediate medical attention to result in:

- Placing the physical or mental health of the individual afflicted with such condition or, with respect to a pregnant person, the health of the individual or the unborn child, in serious jeopardy; or
- Serious impairment to such individual's bodily functions; or
- Serious dysfunction of any bodily organ or part of such individual.

Examples of medical emergencies may include illness or injury such as chest pains that might indicate an acute coronary syndrome, slurred speech or weakness that might indicate a stroke, fracture, hemorrhaging, poisoning, major burns, loss of consciousness or respiratory accidents, convulsions, shock and other acute conditions.

The Medicare Benefit Policy Manual (2018) section addressing time needed for ground transportation (10.4.3) states the following:

Differing Statewide Emergency Medical Services (EMS) systems determine the amount and level of basic and advanced life support ground transportation available. However, there are very limited emergency cases where ground transportation is available but the time required to transport the patient by ground as opposed to air endangers the beneficiary's life or health. As a general guideline, when it would take a ground ambulance 30-60 minutes or more to transport a beneficiary whose medical condition at the time of pick-up required immediate and rapid transport due to the nature and/or severity of the beneficiary's illness/injury, A/B MACs (A) and (B) should consider air transportation to be appropriate.

Time can be a key consideration to distinguish the need for ground transportation from the need for air transportation. Air transportation may be considered medically necessary if the total time between identification of the need for medical transportation and arrival at the treatment facility would be 30 or more minutes longer for ground transportation than for air transportation.

In mathematical terms:

If X = total time (in minutes) for transfer by ground
And Y = total time (in minutes) for transfer by air
Then if $X > (Y + 30)$, air transportation may be considered necessary.

An important time consideration is the fact that it may take a significant amount of time to assemble an air transport team and to transport the individual from an emergency department to an airport or heliport to begin travel to the destination.

A 2020 retrospective study by Stewart and colleagues compared the outcomes of transport between helicopter transport and ground transport for inter-facility transfer of persons with trauma to tertiary trauma centers. Looking at the records of 9880 people who had been initially seen at a non-tertiary trauma center, but were then transferred to a tertiary trauma center, the authors reported on mortality at 72 hours and within the first 2 weeks after arriving at the tertiary trauma center. For those transferred by helicopter, the

mean distance between the facilities was 96.7 miles with a mean distance of 69.9 miles for those transferred by ground ambulance. The helicopter transport group showed a decreased 72-hour mortality only for the individuals transferred less than 90 miles. There were no significant differences in mortality for helicopter transport greater than 90 miles, and no significant differences in mortality at 2 weeks for either transport modality.

In 2021, Kunte and colleagues reported on whether air or ground transport led to faster delivery times in interhospital transfer and direct-from-scene transfer of individuals with ischemic stroke to a comprehensive stroke center. In this retrospective review, there were four cohorts: transfer air (n=47), transfer ground (n=68), scene air (n=40) and scene ground (n=50). Three time periods were looked at within the transport process: alarm to emergency medical services (EMS) arrival, EMS arrival to EMS departure, and EMS departure to comprehensive stroke center arrival. Median alarm to EMS arrival time was 27.5 minutes for transfer air, 15.5 minutes for transfer ground, 22 minutes for scene air, and 10 minutes for scene ground. Total on scene time was represented by EMS arrival to EMS departure. Median EMS arrival to EMS departure time was 13 minutes for transfer air, 14 minutes for transfer ground, 7.5 minutes for scene air, and 12 minutes for scene ground. In order to evaluate EMS transfer time not associated with actual travel time, the authors measured the amount of time it took EMS to respond to alarms and prepare the individual for transfer. Those in the transfer cohort had a median alarm to EMS departure of 39 minutes versus 31 minutes for those in the scene cohort. Also in the transfer cohort, transfer air had a median alarm to EMS departure of 44 minutes versus 36 minutes for transfer ground. For those being transported from the scene, scene air median alarm to EMS departure time was 37.5 minutes compared to 25 minutes for scene ground noting air transport had longer EMS time before departure compared to ground transport. Modified Rankin score was used at 90 days after treatment to quantify functional outcomes. There were no significant differences in scores between the groups. The authors did not report whether outcomes were improved. In transporting individuals either between facilities or from scenes, some variables cannot be accounted for such as weather and traffic at the time of transfer.

A 2022 retrospective study by Joseph and colleagues reported outcomes of critically ill children who were transferred from one facility to a specialized pediatric hospital. The outcomes were compared for those who traveled via helicopter to those who traveled via ground ambulance. In order to limit indication bias, the analysis was limited to only those for whom a helicopter was initially requested by the receiving facility. Primary outcome was in-hospital mortality. Secondary outcomes included hospital length of stay, mode of transport, and transport times. The cohort included 1186 children, 1044 who ultimately traveled by helicopter and 142 who ultimately traveled by ground ambulance (not related to clinical factors). The mean total travel time for helicopter transport was 143 minutes and the ground ambulance time was 289 minutes. In-hospital mortality was 63 individuals (6.0%) for those transferred by helicopter and 10 individuals (7.%) for those transferred by ground ambulance. Hospital length of stay was 4 days for those transferred by helicopter and 5 days for those who traveled by ground ambulance. In this retrospective cohort study the travel times were shorter for those who traveled via helicopter compared to ground ambulance, but the shorter travel times were not associated with statistically significant differences in mortality or hospital length of stay.

Elkbuli and colleagues (2022) also reported on a retrospective cohort study in which they analyzed outcomes for children and adults transported by helicopter compared to those transported by ground ambulance. The primary outcome was the raw and adjusted mortality adjusted for potential demographic and comorbid variables. These variables included age, race, ethnicity, comorbid conditions, mechanism of injury (only blunt and penetrating injuries were included), injury severity score, Glasgow coma score, revised trauma score and transport time. There were 12,633 individuals transferred during the study period (10,656 [84.4%] via ground ambulance and 1977 [15.6%] via helicopter). In the ground ambulance cohort there were 307 (2.88%) deaths, the mean injury severity score was 9.29, and the mean revised trauma score was 7.6. There were 9969 participants (93.6%) with blunt trauma. Mean total transport time from the field to the trauma center was 39.45 minutes. Intensive care unit stay was 2.30 days and the mean Glasgow coma score was 14.30. In the helicopter transport there were 134 (6.78%) deaths, the mean injury severity score was 11.73, and the mean revised trauma score was 7.12. There were 1560 participants (78.9%) with blunt injury. The mean total transport time from the field to the trauma center was 47.29 minutes. Intensive care unit stay was 4.19 days and the mean Glasgow coma score was 13.24. After controlling for defined covariates, the odds of mortality were 16.4% greater for those transported by ground ambulance compared to those transported by helicopter (adjusted odds ratio [aOR] = 1.164, 95% confidence interval [CI]: .814-1.665). After adjusting for transit time in addition to the defined covariates, the individuals transported by ground ambulance had a 16.6% greater odds of mortality compared to the individuals transported by helicopter (aOR =1.166, 95% CI: .815-1.668). The data in this study was from one single trauma center. Factors such as topography and weather at the time of transport may have affected the choice of transportation mode. The authors acknowledge that they could not control for differences in prehospital care.

References

Peer Reviewed Publications:

1. Elkbuli A, Dowd B, Sanchez C, et al. Emergency medical service transport time and trauma outcomes at an urban level 1 trauma center: evaluation of prehospital emergency medical service response. *Am Surg*. 2022; 88(6):1090-1096.
2. Funder KS, Rasmussen LS, Lohse N, et al. The impact of a physician-staffed helicopter on outcome in patients admitted to a stroke unit: a prospective observational study. *Scand J Trauma Resusc Emerg Med*. 2017; 25(1):18.
3. Galvagno SM Jr, Haut ER, Zafar SN, et al. Association between helicopter vs ground emergency medical services and survival for adults with major trauma. *JAMA*. 2012; 307(15):1602-1610.
4. Kunte SA, Anderson D, Brown-Espallat K, Froehler MT. Total transfer time for ground vs. air transport for interhospital and scene transfers of acute stroke patients. *J Stroke Cerebrovasc Dis*. 2021; 30(6):105704.
5. Joseph AM, Horvat CM, Evans IV, et al. Helicopter versus ground ambulance transport for interfacility transfer of critically ill children. *Am J Emerg Med*. 2022; 61:44-51.
6. Nolan B, Haas B, Tien H, et al. Causes of delay during interfacility transports of injured patients transported by air ambulance. *Prehosp Emerg Care*. 2020; 24(5):625-633.
7. Stewart K, Garwe T, Oluborode B, et al. Association of interfacility helicopter versus ground ambulance transport and in-hospital mortality among trauma patients. *Prehosp Emerg Care*. 2021; 25(5):620-628.

Government Agency, Medical Society, and Other Authoritative Publications:

1. American College of Emergency Physicians. Policy Statements. Available at: <https://www.acep.org/patient-care/policy-statements>. Accessed on October 3, 2023.
 - Appropriate and Safe Utilization of Helicopter Emergency Medical Services (September 2018)
 - Emergency Medical Services Interfaces with Health Care Systems (February 2018)
2. American College of Surgeons; Committee on Trauma; American College of Emergency Physicians; National Association of EMS Physicians; Pediatric Equipment Guidelines Committee; American Academy of Pediatrics. Equipment for ambulances. *Bull Am Coll Surg*. 2009; 94(7):23-29.
3. Doucet J, Bulger E, Sanddal N, et al. Appropriate use of helicopter emergency medical services for transport of trauma patients: guidelines from the Emergency Medical System Subcommittee, Committee on Trauma, American College of Surgeons. *J Trauma Acute Care Surg*. 2013; 75(4):734-741.

4. Lyng J, Adelgais K, Alter R, et al. Recommended essential equipment for basic life support and advanced life support ground ambulances 2020: A Joint Position Statement. *Prehosp Emerg Care*. 2021; 25(3):451-459.
5. Medicare Benefit Policy Manual. Chapter 10 - Ambulance Services. April 13, 2018. Available at: <https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/bp102c10.pdf>. Accessed on October 3, 2023.
6. Palmetto GBA. Local Coverage Determination for Ambulance Services (L34549). Revised 07/29/2021. Available at: <http://www.cms.gov/medicare-coverage-database/overview-and-quick-search.aspx>. Accessed on October 3, 2023.
7. Thomson DP, Thomas SH; 2002-2003 Air Medical Services Committee of the National Association of EMS Physicians. Guidelines for air medical dispatch. *Prehosp Emerg Care*. 2007 (2):265-271.

Index

Airplane
Boat
Emergency Transport
Helicopter
Plane

History

Status	Date	Action	
Revised	11/09/2023	Medical Policy & Technology Assessment Committee (MPTAC) review. Revised Clinical Indications section regarding timeframe difference for ground and air transport. Updated References section.	
Reviewed	11/10/2022	MPTAC review. Updated Description, Discussion/General Information and References sections.	
Reviewed	11/11/2021	MPTAC review. Updated Discussion/General Information and References sections.	
Reviewed	11/05/2020	MPTAC review. Updated Discussion/General Information and References sections. Reformatted coding section.	
Revised	11/07/2019	MPTAC review. Added note to Clinical Indications section regarding timeframe difference for ground and air transport. Updated Discussion/General Information and References sections.	
Reviewed	01/24/2019	MPTAC review. Updated References section.	
Revised	01/25/2018	MPTAC review. Clarifications to MN and NMN statements regarding mileage. Updated References section.	
Revised	11/02/2017	MPTAC review. Revisions made to NMN statements. Coding section updated. The document header wording updated from “Current Effective Date” to “Publish Date.”	
Reviewed	02/02/2017	MPTAC review. Updated formatting in Clinical Indications section.	
Reviewed	02/04/2016	MPTAC review. Updated Reference section. Removed ICD-9 codes from Coding section.	
Revised	02/05/2015	MPTAC review. Addition of “first responders deem to be life threatening” to Medically Necessary Statement. Updated Discussion/General Information and References.	
Reviewed	02/13/2014	MPTAC review. Updated References.	
	01/01/2014	Updated Coding section with 01/01/2014 HCPCS changes.	
Reviewed	02/14/2013	MPTAC review. Updated References.	
Reviewed	02/16/2012	MPTAC review. No changes to Clinical Indications.	
Reviewed	02/17/2011	MPTAC review. Updated Rationale and Reference sections.	
New	02/25/2010	MPTAC initial document development. Moved position statement regarding air and water ambulance from CG-ANC-01 to CG-ANC-04.	
Pre-Merger Organizations	Last Review Date	Document Number	Title
Anthem Midwest	02/11/2004	MA-034	Air Ambulance Services
Anthem Virginia	10/15/2004		Ambulance and Medical Transport
Anthem Maine	n/a		Ambulance Benefit Detail

Federal and State law, as well as contract language, and Medical Policy take precedence over Clinical UM Guidelines. We reserve the right to review and update Clinical UM Guidelines periodically. Clinical guidelines approved by the Medical Policy & Technology Assessment Committee are available for general adoption by plans or lines of business for consistent review of the medical necessity of services related to the clinical guideline when the plan performs utilization review for the subject. Due to variances in utilization patterns, each plan may choose whether to adopt a particular Clinical UM Guideline. To determine if review is required for this Clinical UM Guideline, please contact the customer service number on the member's card.

Alternatively, commercial or FEP plans or lines of business which determine there is not a need to adopt the guideline to review services generally across all providers delivering services to Plan's or line of business's members may instead use the clinical guideline for provider education and/or to review the medical necessity of services for any provider who has been notified that his/her/its claims will be reviewed for medical necessity due to billing practices or claims that are not consistent with other providers, in terms of frequency or in some other manner.

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without permission from the health plan.

© CPT Only - American Medical Association