Clinical Policy Title: Air Ambulance Transport

Clinical Policy Number: 18.02.02

Effective Date: September 1, 2014
Initial Review Date: April 16, 2014
Most Recent Review Date: May 20, 2015
Next Review Date: May 2016

ABOUT THIS POLICY: Arbor Health Plan has developed clinical policies to assist with making coverage determinations. Arbor Health Plan clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of “medically necessary,” and the specific facts of the particular situation are considered by Arbor Health Plan when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Arbor Health Plan clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Arbor Health Plan clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Arbor Health Plan will update its clinical policies as necessary. Arbor Health Plan clinical policies are not guarantees of payment.

Coverage policy

Arbor Health Plan considers the use of air ambulance transport to be clinically proven. Air ambulance transport is covered under the following conditions:

Emergency transport from the scene of sudden illness or injury:
  • Trauma or injury — Destination is nearest appropriate trauma center more than 50 kilometers (km) away.
  • Cardiovascular/other medical — Ground transport cannot arrive within 20 minutes.

AND

Traffic or geography precludes timely arrival of ground ambulance.

AND

The use of air transport is more likely to prevent worsening of the illness or condition and/or more likely to result in achievement of maximal functional capacity than the use of ground transport.
A collaboration of the Air Medical Physician Association (AMPA), the American College of Emergency Physicians (ACEP), the National Association of EMS Physicians (NAEMSP), and the American Academy of Emergency Medicine (AAEM) produced a guideline for air ambulance use. The group’s major finding was that patients benefit from the appropriate utilization of helicopter emergency medical services (HEMS). It also recommended a National HEMS Agenda for the Future to address HEMS utilization and availability and to support a research strategy for ongoing, evidence-based refinement of utilization guidelines. (Floccare)

Limitations:
Coverage is limited to medical necessity as defined in the Coverage Policy and Health Plan Benefits

Alternative covered services:
Ground ambulance.

Background

Air ambulance transport — While helicopters and other types of air ambulance are integral parts of trauma systems in many developed countries, questions remain about optimal patient selection and staffing of ambulance crews, as well as any improvement to outcomes (Galvagno, 2013; Taylor, 2010).

Methods

Searches (March 2014):
Arbor Health Plan searched PubMed and the databases of:
• UK National Health Services Centre for Reviews and Dissemination. Agency for Healthcare Research and Quality guideline clearinghouse and evidence-based practice centers.
• The Centers for Medicare & Medicaid Services (CMS).

Searches were conducted using the term “air ambulance.”

Included were:
• Systematic reviews, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
• Guidelines based on systematic reviews.
• Economic analyses, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

Findings:

The experience with HEMS has produced some studies about their need and efficacy. One 10-year review of 14,440 patients transported to a trauma center concluded that those transferred by helicopter (vs. ground) were more severely injured, needed more interventions and had a higher survival rate. (Hannay) Another 10-year study of emergency transport (42,788 patients, of which 33.4% were transported by helicopter) in Germany showed declining utilization over time, and a recommendation that HEMS should be used more frequently. (Andruszkow) Some reports have not upheld the efficacy of transporting patients by
helicopter; one 10-year study of 14,405 traumatically injured children found that transport type was not associated with survival, intensive care unit (ICU) length of stay, or discharge disposition, and 22.3% of HEMS transfers were not significantly injured. (Stewart)

**Glossary**

**Advanced life support** — An advanced level of care provided by pre-hospital emergency personnel. It includes cardiac monitoring, intravenous therapy, advanced airway management and drug therapy.

**Basic life support** — Medically accepted non-invasive procedures, including external hemorrhage control, extrication, protection of the spine, artificial respiration and circulation, and supplemental oxygen therapy.

**Major incident** — Any incident where the location, number, severity or type of casualties requires extraordinary resources.

**Levels of trauma care** — While designation and verification requirements are generally state-specific, the American Trauma Society provides overall guidelines found below.

<table>
<thead>
<tr>
<th>Level</th>
<th>Characteristics of center</th>
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| I     | • A comprehensive, tertiary care regional resource.  
       | • 24-hour in-house coverage for general surgeons.  
       | • Prompt availability of orthopedic surgery, neurosurgery, oral and maxillofacial surgery, plastic surgery anesthesiologists, emergency medicine, radiology, pediatric and critical care. |
| II    | • Initiates definitive care for injured patients.  
       | • Some tertiary care services may be available. |
| III   | • Ability to provide prompt assessment, resuscitation, stabilization, surgery and intensive care.  
       | • Transfer agreements for Levels I and II in place. |
| IV    | • Provides advanced trauma life support prior to transfer to higher levels of care. |
| V     | • Initial stabilization, diagnosis and preparation for transfer to higher levels. |

**Overview of the literature** — Systematic reviews/guidelines for air ambulance transport; reverse chronological order and then alphabetically by first author.

**Summary of findings**
- HEMS are used widely in developed countries despite a lack of supporting evidence and wide variations in effectiveness and costs.
- HEMS are generally more expensive than ground transport but economic evaluations found them to be cost-effective in some settings.
- Additional research is needed to define local system characteristics contributing to effectiveness.

<table>
<thead>
<tr>
<th>Citation</th>
<th>Content</th>
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</table>
| Cincinnati Children’s Hospital (2013) | Postpartum mother accompaniment during neonatal transport:  
• English-language studies, August 2012.  
• Insufficient evidence for recommendations. |
<table>
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<tr>
<th>Citation</th>
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<tr>
<td>CMS (Local Coverage Determination [LCD]-03201)</td>
<td>Institute of Medicine of the National Academies (IOM) Publication 100-08 <em>Program Integrity Manual</em> states: &quot;Per Section 415 of the Medicare Modernization Act of 2003, the reasonable and necessary requirement for rural air transport may be &quot;deemed&quot; to be met when the service is provided pursuant to an established state or regional emergency medical services (EMS) agency protocol. CMS defines &quot;established&quot; to mean those protocols which have been reviewed and approved by state EMS agencies or have been developed according to state EMS umbrella guidelines. Additionally, the protocol must be recognized or approved by the Secretary.&quot;</td>
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<tr>
<td>Galvagno (Cochrane; 2013)</td>
<td><strong>HEMS for adults with major trauma:</strong></td>
</tr>
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|                                              | • Randomized controlled trials (RCTs) and controlled clinical trials (CCTs) — January 2012.  
• 25 CCTs (163,748 subjects).  
• Heterogeneity precluded accurate estimate of overall effect.  
• Large multi-center studies warranted.                                                                                                                                                                                                                                                                                                  |
| Taylor (2012)                                | **Cost effectiveness of physician-staffed HEMS transport to a major trauma center in New South Wales, Australia:**                                                                                                                                                                                                                                                                                                                                       |
|                                              | • Cost and effectiveness estimates from trauma patients treated at one center during an 11-year period.  
• HEMS costly but effective at reducing in-hospital mortality.  
• Cost per life saved — $1,566,379 (all patients); $533,781 (serious injury); $519,787 (TBI).  
• Over a patient’s lifetime — $96,524/year saved; $50,035; and $49,159.  
• HEMS associated with improved mortality in trauma patients, especially those with serious injury and TBI.                                                                                                                                                                                                                                                                                         |
| Taylor (2010)                                | **English-language studies reporting costs and benefits of HEMS:**                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                              | • 15 studies — Annual costs (US$), $115,777 – $5,571,578.  
• $3,258/life saved; and $7,138 – $12,022/quality adjusted life year (QALY) gained.  
• Additional research on local system characteristics needed.                                                                                                                                                                                                                                                                                                        |
| Moga (2008)                                  | **Air ambulance with advanced life support capabilities:**                                                                                                                                                                                                                                                                                                                                                                                                               |
| Alberta Canada Institute for Health Economics | • All available comparative studies on air ambulance transportation (helicopter or fixed wing), 2001 – 2007 with onboard capabilities for advanced life support.  
• 16 studies/15 retrospective.  
• Trauma/injury patients — Helicopter transport improves survival at discharge and at 30 days for patients taken to a level I (tertiary care) trauma center versus ground transport to a regional hospital.  
• Medical patients — Earlier access to interventions and treatment within 50 km from destination.  
• Should be used when ground transport cannot move a patient with severe
cardiovascular disease within 20 minutes.

**Related policies**
Arbor Health Plan Utilization Management program description.

**References**

**Professional society guidelines/other:**


**Peer-reviewed references:**


Clinical trials:
Systematic reviews cover trials published through April 2015.

Centers for Medicare & Medicaid services (CMS) National Coverage Determination (NCDs):

Local Coverage Determinations (LCDs):
There are no local coverage determinations.

Commonly submitted codes
Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

HCPCS codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>A0430</td>
<td>Ambulance service, fixed-wing, one way.</td>
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<tr>
<td>A0431</td>
<td>Ambulance service, helicopter, one way.</td>
</tr>
<tr>
<td>A0435</td>
<td>Fixed-wing mileage/statute mile.</td>
</tr>
<tr>
<td>A0436</td>
<td>Helicopter mileage/statute mile.</td>
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