

Anthon Lemon, MD, R3  
OCT2014

Thomas SH, Brown KM, Oliver ZJ, Spaitte DW, Lawner BJ, et al. **An Evidence-based Guideline for the Air Medical Transportation of Prehospital Trauma Patients.** Prehospital Emergency Care. Jan/Mar 2014; 18(1): 35-44.

**Clinical Question:** When is helicopter EMS (HEMS) transport in the prehospital setting indicated?

**Background:** Helicopter transport for patients has been widely used since the Korean War. Patient transport by helicopter has become increasingly more common since the late 1960s in the civilian sector. Currently there are 970 helicopters in the US providing patient transport bringing in \$2.5 billion while transporting 400,000 pts annually. This industry has come under increased scrutiny as of late due to safety concerns and appropriate usage. The objective of this study was to construct an evidence-based guideline for the selection of prehospital trauma patients who would benefit most from HEMS.

**Methods:** A multidisciplinary panel was recruited consisting of experts in the field of trauma, EBG development, EMS outcomes research, Federal Interagency Committee on EMS (FICEMS), National Highway Traffic Safety Administration (NHTSA) and Children's National Medical Center. This panel used the Grading of Recommendation Assessment, Development and Evaluation (GRADE) methodology. The process was followed by the National EBG Model process, which was approved by FICEMS. The panel conducted research to formulate guideline recommendations by forming PICO formatted research questions. Patients of all ages were included. Excluded secondary transfers, drowning and burn victims. Two searches were conducted by panelist in a similar manner roughly 2 years apart (2010 and 2012).

**Results:** No high quality studies were used in creating recommendations (no high quality systematic reviews or RCTs). However, panelists agreed that guidelines based on the available evidence would have a significant impact on prehospital care. Overall, two strong and three weak recommendations regarding the use of online medical direction and the activation of HEMS vs GEMS were created.

**Recommendation #1 (strong rec, low quality evidence):** field triage criteria for all trauma pts should include anatomic, physiologic, and situational components in order to risk-stratify injury severity and guide decisions as to destination and transport modality.

**Recommendation #2a (strong rec, low quality of evidence):** EMS providers should not be required to consult with online medical direction (OLMD) before activating HEMS for trauma patients meeting appropriate physiologic and anatomic criteria for serious injury.

**Recommendation #2b (weak rec, very low quality of evidence):** all other trauma pts, OLMD may be used to determine transportation method as long as it does not result in a significant delay.

**Recommendation #3a (weak rec, very low quality of evidence):** HEMS should be used to transport pts meeting criteria for serious injury to an appropriate trauma center if there will be significant time-savings over GEMS.

**Recommendation #3b (weak rec, very low quality of evidence):** GEMS should be used to transport all other patients to an appropriate hospital, so long as system factors do not preclude safe and timely transportation.

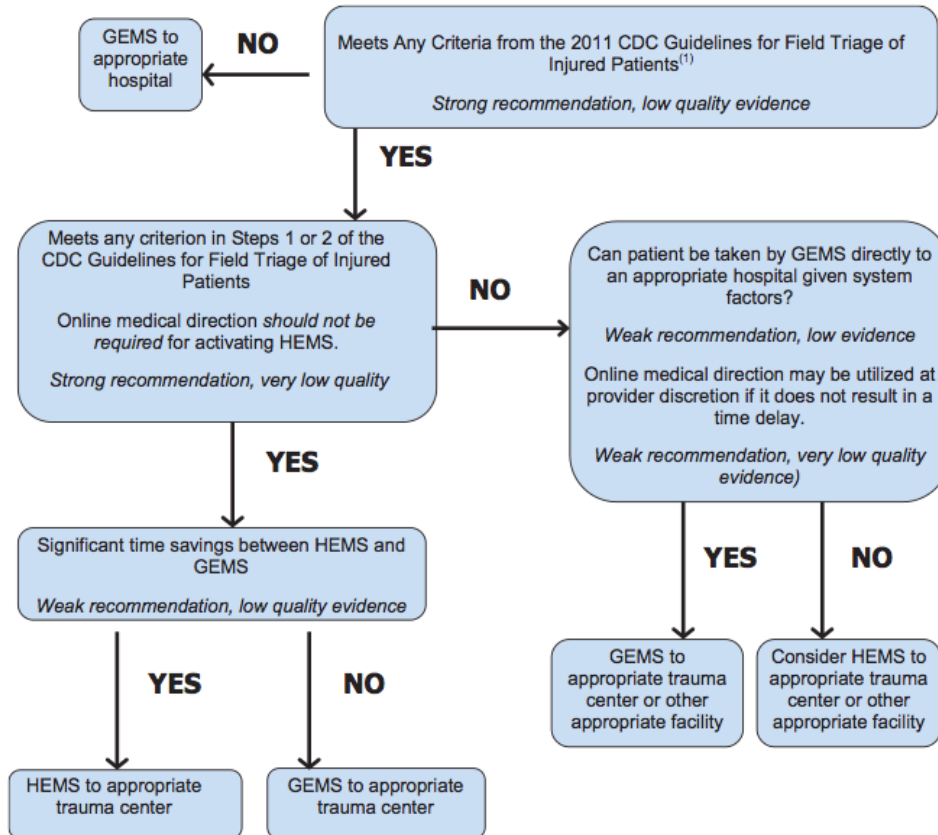


FIGURE 2. HEMS Evidence-based Guideline (with Trauma Center Designated).

**Discussion:**

HEMS clearly has the capability to save lives. However, over-usage can decrease the cost-effectiveness of this service, unnecessarily place the patient and care providers at safety risk, and place a significant financial burden onto the patient and family members receiving this service. It is important to consider these factors and have a standardized approach with a good understanding of the capabilities and indications for HEMS in your practicing area. This study did as good as could be expected given the limited quality of evidence available. The panelist used the 2011 CDC criteria for risk-stratification of injury severity as a springboard towards developing a flowsheet algorithm. This is the first synthesis of available evidence to formulate a protocol and will surely be revisited in the future as more evidence becomes available. Overall, despite the lack of high quality evidence, I give the authors kudos for developing a reasonable, simple and standardized approach to HEMS.

---