

Policy Title: **Use of Aeromedical Transport Vehicles**

No. A - 2

Board approval: 11/14/13

Effective: 1/1/14

Supersedes: 10/1/10

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**I. POLICY**

The NWC EMSS strongly encourages ground transport. The decision to transport a patient by Aeromedical transport is a medical decision that should be made by a physician after a risk benefit analysis.

Under select circumstances, it may be in the patient's best interest to be transported by an aeromedical service. After consultation with, and approval by, the OLMC physician at the system resource hospital (NCH) initial arrangements for aeromedical transport shall be made by OLMC personnel. Completion of these arrangements will be made by scene/ground personnel. The helicopter service should be selected based on response times, type of mission to be performed, desired medical credentials of the crew, and special drugs or equipment that may be needed.

**II. Circumstances potentially requiring helicopters**

- A. High acuity patients when time is critical for survival and/or distances are long, i.e., need for expeditious transport when helicopter response time to scene and flight time to tertiary center is faster than ground transport.
- B. Patients inaccessible due to weather, disasters, or mass-casualty situations, i.e., where there is a potential for delays, including road obstacles and traffic conditions which might allow patient deterioration. Examples: Following heavy rains, snow or other severe weather, a helicopter may be the only mode of transportation available.
- C. Patients requiring transport to a trauma center involving circumstances in which scene and ground transport time will be significantly greater than 40 minutes (e.g., acceptable 10 minute scene and 30 minute transport time).
- D. Special skills or equipment are needed at the scene (e.g., blood products, chest tubes, paralytics for RSI) that are not allowed or otherwise available.

**III. Indications for air transport per SOP:** Patients requiring direct transport to one of the following, when ground transport would take longer than air response plus transportation time.

- A. Level I Trauma Center (see criteria) after prolonged extrication in a patient who meets criteria for a Level I Trauma Center.
- B. Replantation center (LGH, ABMC) for amputations above the ankle and wrist.
- C. Hyperbaric center for a severely confused patient (GCS 13 or less) with suspected CO/smoke inhalation or a diver with nitrogen narcosis.
- D. Need for access to a more distant trauma center, i.e., disaster/mass casualty situation.

**IV. Scene personnel responsibilities**

- A. Scene survey: Rapidly analyze MOI; number of victims, nature and severity of injuries. Perform initial assessments and triage as necessary. Determine need for air transport.
- B. Initiate care per SOP.
- C. As soon as possible - contact OLMC physician at system resource hospital (NCH) for an order to utilize aeromedical transport. Obtain and document name of physician on PCR.

**V. System Resource Hospital (NCH) Responsibilities**

- A. Use of ACEP's "Appropriate Utilization of Air Medical transport in the Out-of-Hospital Setting" decision tree is encouraged (page 5).
- B. Questions to answer before calling a helicopter (use worksheet pg 6)
  - 1. What criteria does the pt have for transport to a Level I Trauma Center? Refer to SOP or worksheet for confirmation.
  - 2. What is ground transport time from scene to the specialty referral center? If 30 minutes or less, it is generally more appropriate to transport by land.
  - 3. What is the traffic like right now? Known to anticipated congestion may tip the scales in favor of air transport.
  - 4. Does the patient require extrication? What is anticipated extrication time?

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5. Call the helicopter early so it can be at the scene before the patient is packaged.  
How many critical patients are present?  
With multiple patients, the most critical may be better served by air transport while the less injured are transported by land.
6. What skill level, based on scope of practice, is available at the scene?  
Does the patient require care that cannot be provided by scene personnel?

C. **If aeromedical transport approved by OLMC physician:**

1. Obtain following information, to give to aeromedical service (worksheet):
  - a. Call back number (cell/radio frequency/PL) for ground contact person
  - b. Number of patients requiring air transport
  - c. Desired receiving hospital
  - d. Pt age, gender, weight
  - e. Type of incident; mechanism, and/or acuity of illness/injuries
  - f. Brief description of patient's condition; VS and pertinent medical history
  - g. Care already performed
  - h. Special devices and/or personnel required to transport patient
  - i. Ambulance transporting to and from landing site, if indicated
  - j. Interhospital transfer: Desired receiving hospital; referring and accepting physician's names
2. Advise scene personnel, aeromedical service will contact them to complete flight arrangements, and if they do not hear from them within 5-8 minutes to recontact Resource hospital (NCH OLMC) for follow-up.

D. **HELICOPTER CONTACT: Hospital personnel initiate flight arrangements**

An ECRN shall contact the Aeromedical service closest to the incident site (see map pg 7) or the one that best meets patient care needs to make initial arrangements.

a. <b>Flight for Life</b>	McHenry	1 RN, 1 EMT-P	815- 344- 1000
b. <b>Air Med</b>	DuPage	1 RN, 1 EMT-P	800- 832- 2000
c. <b>Life Star</b>	Joliet	1 RN, 1 EMT-P	866- 480- 6030
d. <b>Lifeline</b>	Rockford	1 RN, 1 EMT-P	<u>309- 624- 2386</u>
e. <b>REACT</b>	Rockford	2 RN's	800- 637- 3228
f. <b>UCAN</b>	Chicago	1 MD, 1 RN	800- 621- 7827

1. Determine their ability to take the flight. If aircraft is available, ask them to initiate flight response. If aircraft is not available, call an alternate service.
2. Provide the dispatcher with department name and contact numbers and information listed in section V.C.
3. Once the authorization for lift-off has been given by the hospital, all further communication will take place directly between scene and helicopter personnel to coordinate a landing zone and communicate updated patient information.
4. If a later decision is made not to use the helicopter, cancel the request ASAP.
5. Call patient report to the receiving hospital based on scene report.

VI. **Scene Personnel Responsibilities - Information Needed by OLMC and Helicopter Dispatcher to Complete Flight Arrangements (See helicopter request worksheet)**

- A. Name of requesting agency, your name, ground contact person, and call back number or radio frequency (PL number) and call sign.
- B. Number of patients requiring air transport. Name and age, if available.
- C. Type of incident; mechanism, and/or acuity of illness/injuries.
- D. Brief description of patient's condition; VS and pertinent medical history, pt weight

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- E. Care already performed
- F. Landing site location: Describe the landing zone. Use highways or road names (not streets), major landmarks (water towers, lakes, cities or towns) and/or GPS coordinates (latitude/longitude) and identify hazards
- G. When the patient is to be picked up
- H. Special devices and/or personnel required to transport patient
- I. Ambulance transporting to and from landing site, if indicated
- J. Weather conditions at scene, if adverse
- K. Interhospital Transfer: Desired receiving hospital; referring and accepting physician's names

#### VII. **Landing zone safety**

- A. Site should have a 100 sq. ft. perimeter. (150 sq. ft. at night or in high winds).
- B. Site should be clear of trees, wires, debris, emergency vehicles, signs, other obstacles, or presence of any hazards i.e., fires.
- C. Should be far enough away from patients to provide safety from rotor winds.
- D. Site should be as smooth and flat as possible, no more than a nominal (8°) slope.
- E. **Mark landing zone for helicopter pilot**
  - 1. DAY: Hand signal. When signaling, stand with your back to the wind. Depart when the helicopter is on final approach.
  - 2. NIGHT: One light (anchored flare) or headlight at each corner; 5th light upwind. Helpful to place a vehicle at two of the corners with their headlights crossing in the center of the area. Keep lights out of pilot's eyes.
- F. Emergency vehicle(s) present with overhead revolving lights flashing.
- G. If roadway is used, have traffic stopped in both directions.
- H. Security: Use rope, barricades or vehicles to secure area. Keep bystanders at least 150 ft. from landing area. Request police assistance for crowd control if necessary. Pilot may refuse to land if too many people in landing zone.
- I. If two or more rescuers are at the landing site, one should be toward the front and the other to the side, within the pilot's view. If you can see the pilot, he can see you.
- J. Fire department personnel to stand by during landings/take-offs, if possible. At minimum, provide one dry chemical and one CO<sub>2</sub> fire extinguisher.
- K. Protect yourself and the patient from dust and debris whipped up by rotor wash. The highest winds and the greatest amount of flying debris are produced just before the helicopter touches the ground. Wear protective eye covering.
- L. No vehicles, smoking or running within 50 feet of aircraft.
- M. Departments are strongly encourage to assess for, and establish, predetermined safe landing zones.

#### VIII. **Approaching/Loading the aircraft**

- A. Do not approach a helicopter until it has settled firmly on the landing site and the rotor blades have completely stopped, unless the pilot signals you to approach.
- B. Approach aircraft within a 30°-45° angle from front. One assertive team member should be assigned to ensure responders stay clear of tail rotor - may be invisible when rotating.
- C. Approach and depart helicopter from the downhill side if a sloped terrain.
- D. When approaching aircraft with patient while engines are running: secure straps on cot over top of blanket covering the patient. Secure all loose objects such as long hair, hats, stethoscopes, clothing and equipment.
- E. Carry all equipment below waist and walk in a crouched position. Never raise anything above head near helicopter, since main rotor dips lowest at the very front of the aircraft.
- F. Allow flight crew to open and close helicopter doors.
- G. Flight personnel will direct loading and unloading of patients. Do not assist unless asked

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to do so. Do not assist crew members with opening or closing doors.

**IX. Time savers**

- A. Request authorization to transport by helicopter early in the incident.
- B. Direct the helicopter to land as close as is safely possible to the scene. If impossible, get the patient to the landing site as soon as possible.
- C. Perform full spine immobilization on those patients who require it. The patient must be immobilized before moving to the aircraft.
- D. Leave the patient's arms free and chest exposed if possible. This makes it easier for the flight crew to attach monitors and assess the patient enroute.
- E. Explain to the conscious patient that he or she will be transported by air and the reasons why. Help reduce flight anxiety.
- F. Search patients for possible weapons.
- G. Total ground scene time for helicopter should be no more than 10 minutes, including the load time if the ground crew is ready to assist the flight crew, no critical interventions are necessary, and the aircraft is able to land at the scene.
- H. If weather appears to be poor, call for the helicopter if needed, but have a back-up plan of ground transportation available. Helicopters cannot safely operate in fog, hail storms, heavy snow, zero visibility or strong, gusty winds over 40 miles per hour.

**X. Special patient considerations**

- A. Femur or lower extremity fractures: Most medical helicopters have a limited amount of interior space and access to lower extremities may be limited. Traction splints should not extend beyond the end of the backboard in most instances.
- B. Obese patients: Most medical helicopters have a weight limit, especially when transporting more than one patient. If presented with a morbidly obese patient, contact the helicopter with the patient's estimated weight ASAP.
- C. Combative patients: Most medical helicopters will transport combative patients but they may need to be adequately restrained and/or sedated before flight.
- D. Patients contaminated with hazardous materials: These patients cannot be transported by air if there is any possibility that the flight crew may become contaminated.
- E. Patients in cardiac arrest: Can be transported by air and given ALS care in flight but a risk/benefit analysis should be done by medical control.

**XI. Transfer of care:** Give patient report to the helicopter crew upon their arrival. Complete a PCR to the extent of your involvement as soon as possible after the call indicating your participation as treat, transferred care. Fax a copy of your report to the receiving hospital ASAP.

**XII. Quality improvement monitoring:** All EMS runs using helicopters shall be reviewed to measure compliance with system standards and seek opportunities for improvement. Forward "NWC EMSS Helicopter Request Worksheet" (page 6) to EMSS office within 24 hours of all requests (both approved and denied).

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John M. Ortinau, M.D., FACEP  
EMS Medical Director

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Connie J. Mattera, M.S., R.N., TNS  
EMS Administrative Director

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FIGURE 1

New strategies are emerging as guides for limiting HEMS utilization. The strategy detailed here is based upon ACEP's *Appropriate Utilization of Air Medical Transport in the Out-of-Hospital Setting*

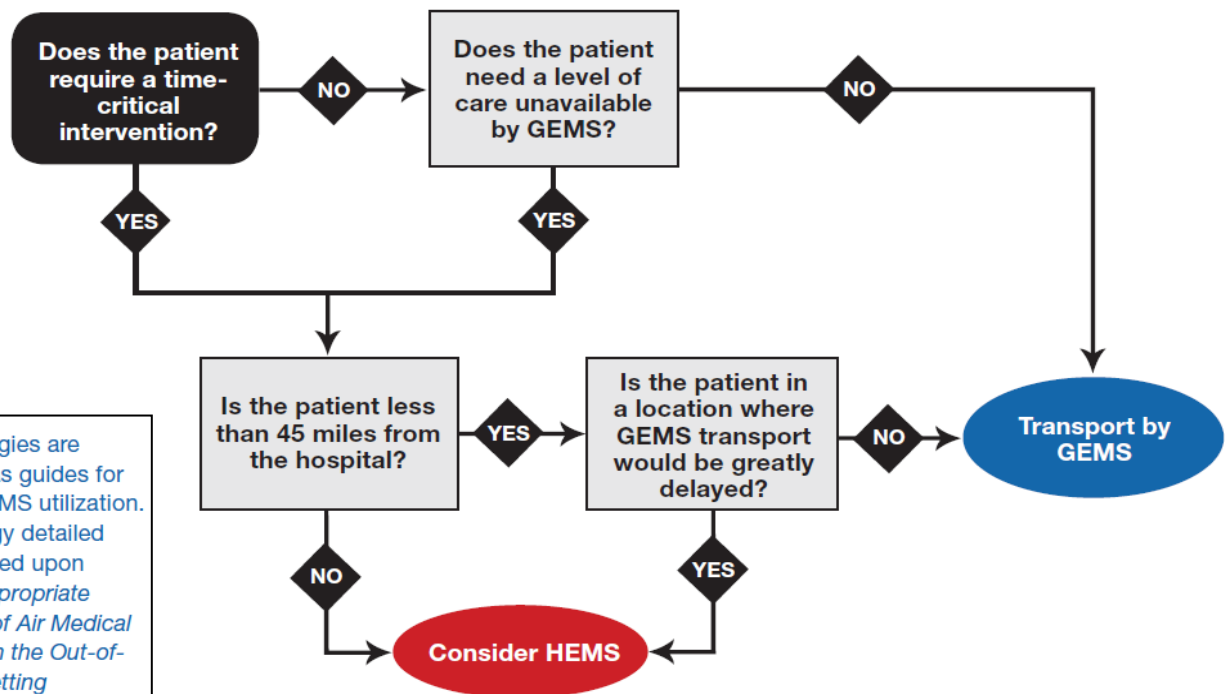
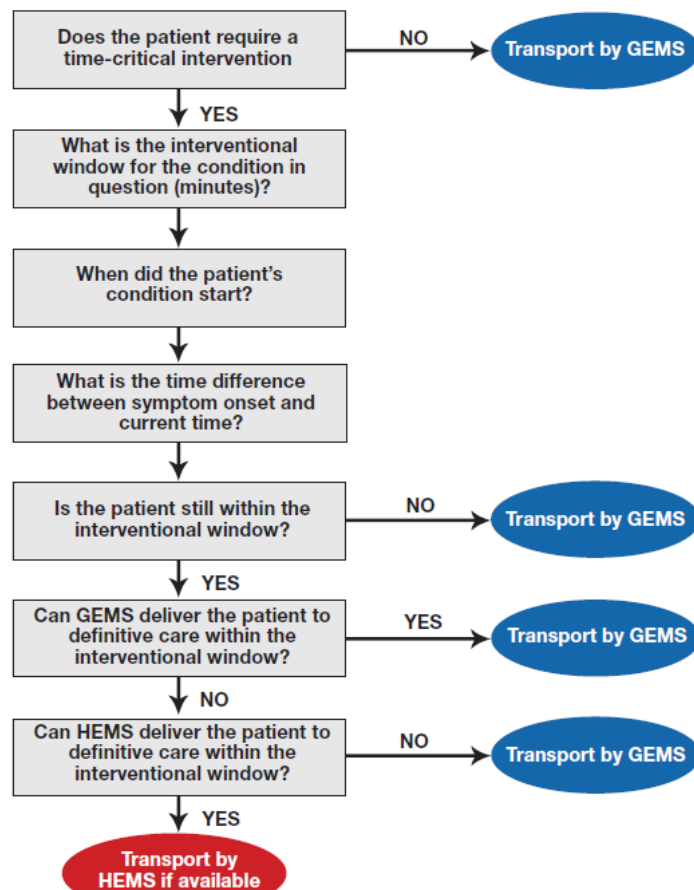


FIGURE 2



GEMS = Ground EMS  
HEMS = Helicopter EMS

# NWC EMSS Helicopter Request - Worksheet

## Information Needed by OLMC & Helicopter Dispatcher

**Completed by OLMC at NWC EMSS Resource Hospital (NCH):**

Date		Time		Requesting Agency	
Type of Incident Mechanism				# patients requiring air transport	
Criteria for Transport to Level I Trauma Center		<input type="checkbox"/> GCS 13 or less w/ head injury		<input type="checkbox"/> Flail chest	
		<input type="checkbox"/> SBP < 90		<input type="checkbox"/> 2 or more proximal long bone fx	
		<input type="checkbox"/> R <10 or > 29 (<20 in infant <1y)		<input type="checkbox"/> Crushed, degloved, mangled extremity	
		<input type="checkbox"/> Open or depressed skull fx		<input type="checkbox"/> Amputation proximal to wrist or ankle	
		<input type="checkbox"/> Penetrating injury head, neck, torso, extremity proximal to elbow/knee		<input type="checkbox"/> Pelvic fx	
		<input type="checkbox"/> Paralysis			
What is the estimated ground transport time to Level I Trauma Center?					
Is extrication required? <input type="checkbox"/> NO <input type="checkbox"/> YES   What is anticipated extrication time?					
Is there a need for specialized skill/equipment - not available on scene? <input type="checkbox"/> NO <input type="checkbox"/> YES					
Age		Gender		Weight	
Patient condition Acuity/Injuries					
BP	P	R	PMH if known		
Treatment					
Desired receiving hospital					
<b>Order for Aeromedical Transport:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Denied   Physician (signature) <b>X</b>					
Scene/Ground contact person			Call back # - cell, radio frequency/PL		
Aeromedical Service Contacted Time  _____;	<input type="checkbox"/> <b>Flight for Life</b>	McHenry	1 RN, 1 EMT-P	815- 344- 1000	ETA (minutes):
	<input type="checkbox"/> <b>Air Med</b>	DuPage	1 RN, 1 EMT-P	800- 832- 2000	
	<input type="checkbox"/> <b>Life Star</b>	Joliet	1 RN, 1 EMT-P	866- 480- 6030	
	<input type="checkbox"/> <b>Lifeline</b>	Rockford	1 RN, 1 EMT-P	309- 624- 2386	
	<input type="checkbox"/> <b>REACT</b>	Rockford	2 RN's	800- 637- 3228	
	<input type="checkbox"/> <b>UCAN</b>	Chicago	1 MD, 1 RN	800- 621- 7827	

### EMS Scene/Ground Personnel to communicate to HEMS service:

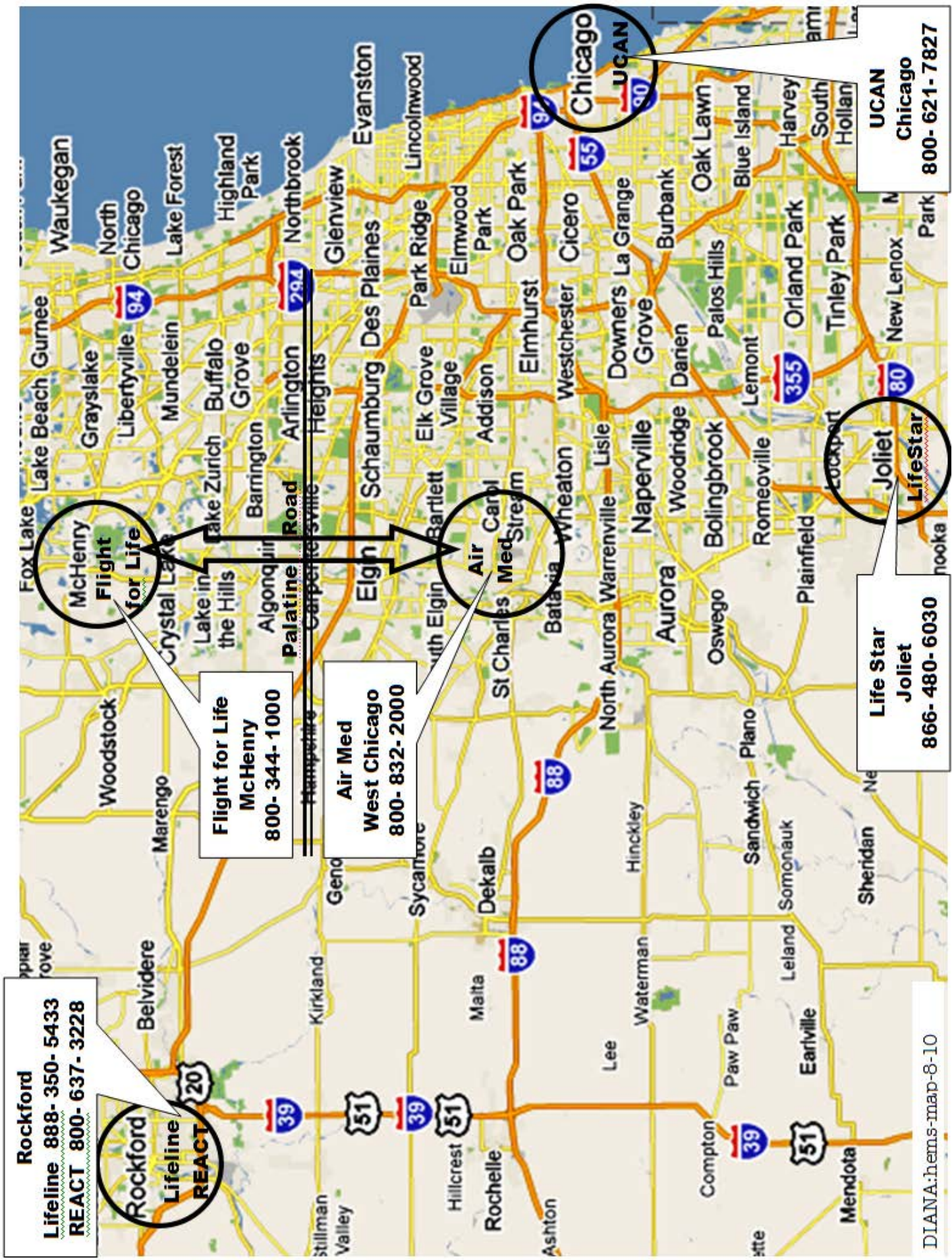
Landing description & site location (highways, road names, major landmarks, GPS coordinates, hazards):

Special needs or personnel requirements

Weather conditions at site if adverse

**NCH OLMC – Fax worksheet to EMS office (x4489) within 24 hrs**





**Rockford**  
Lifeline 888-350-5433  
REACT 800-637-3228

**Rockford**  
Lifeline  
REACT

**Flight for Life**  
McHenry  
800-344-1000

**Air Med**  
West Chicago  
800-832-2000

**Air Med**  
Chicago  
800-832-2000

**Chicago**  
UCAN  
800-621-7827

**Life Star**  
Joliet  
866-480-6030

**UCAN**  
Chicago  
800-621-7827