

# Clinical Advisory Subcommittee of the Emergency Medical Care Committee



## Meeting Agenda

**10:15 A.M. Thursday, August 15th, 2024**

**Location: SLOEMSA Conference Room**

2995 McMillan Ave, Ste 178

San Luis Obispo, CA 93401

### Members

CHAIR: Dr. Stefan Teitge, *County Medical Society*  
 Dr. Heidi Hutchinson, *ED Physician Adventist*  
 Dr. Kyle Kelson, *ED Physician Adventist*  
 Dr. Lucas Karaelias, *ED Physician Dignity*  
 Diane Burkey, *MICNs*  
 Rob Jenkins, *Fire Service Paramedics*  
 Nate Otter, *Ambulance Paramedics*  
 Paul Quinlan, *Fire Service EMTs*  
 Lisa Epps, *Air Ambulance*  
 Jeffrey Hagins, *Air Ambulance*  
 Arneil Rodriguez, *Ambulance EMTs*  
 Casey Hidle, *Lead Field Training Officer*  
 VACANT, *Medical Director Appointee*

### Staff

STAFF LIAISON: Ryan Rosander, *EMS Coordinator*  
 VACANT, *EMS Division Director*  
 Dr. William Mulkerin, *Medical Director*  
 Rachel Oakley, *EMS Coordinator*  
 VACANT, *EMS Coordinator*  
 Alyssa Vardas, *EMS Admin Assistant III*

AGENDA	ITEM	LEAD
Call to Order	Introductions	Dr. Teitge
	Public Comment	
Summary Notes	Review of Summary Notes June 20 <sup>th</sup> , 2024	
Discussion	<p><b>Protocol and Procedure Revisions:</b></p> <ul style="list-style-type: none"> <li>Protocol #619 Hypotension/Sepsis</li> </ul> <p><b>Policy Revisions:</b></p> <ul style="list-style-type: none"> <li>Policy #155 Emergency Medical Service Helicopter Operations</li> <li>Policy #155 Emergency Medical Service Helicopter Operations Attachments A &amp; C</li> </ul>	Ryan Rosander
Adjourn	<p><b>Declaration of Future Agenda Items</b></p> <ul style="list-style-type: none"> <li>Roundtable</li> </ul>	Dr. Teitge
	<p><b>Next meeting date – October 17<sup>th</sup>, 2024</b></p> <p>1015 hrs – <b>EMSA Conference Room</b>                      2995 McMillan Ave. Suite 178                      San Luis Obispo, CA 93401</p>	

# Clinical Advisory Subcommittee of the Emergency Medical Care Committee



## Meeting Minutes

**10:15 A.M. Friday, June 21st, 2024**

**Location: SLOEMSA Conference Room**

2995 McMillan Ave, Ste 178

San Luis Obispo, CA 93401

### Members

CHAIR: Dr. Stefan Teitge, *County Medical Society*  
 X Dr. Heidi Hutchinson, *ED Physician Tenet*  
 X Dr. Kyle Kelson, *ED Physician Tenet*  
 Dr. Lucas Karaelias, *ED Physician Dignity*  
 Diane Burkey, *MICNs*  
 X Rob Jenkins, *Fire Service Paramedics*  
 X Nate Otter, *Ambulance Paramedics*  
 Paul Quinlan, *Fire Service EMTs*  
 Lisa Epps, *Air Ambulance*  
 Jeffrey Hagins, *Air Ambulance*  
 Arneil Rodriguez, *Ambulance EMTs*  
 X Casey Hidle, *Lead Field Training Officer*  
 X Tim Nurge, *Medical Director Appointee*

### Staff

X STAFF LIAISON: Ryan Rosander, *EMS Coordinator*  
 VACANT, *EMS Division Director*  
 X Dr. William Mulkerin, *Medical Director*  
 VACANT, *EMS Coordinator*  
 X Rachel Oakley, *EMS Coordinator*  
 X Alyssa Vardas, *EMS Admin Assistant III*

AGENDA	ITEM	LEAD
Call to Order 1021	Introductions	Dr. Teitge
	Public Comment	
Summary Notes	No additions – R. Jenkins motions, N. Otter 2nds, Approved	
Discussion	<p><b>Revised Protocols #602, 661, Revised Procedures #705, 710 711, Revised Policy #200, 217:</b></p> <ul style="list-style-type: none"> <li>- SLOEMSA and the trauma team at Sierra Vista have been collaborating to enhance trauma care within the county.</li> <li>- SLOEMSA is taking the traumatic cardiac arrest and needle thoracostomy protocol/procedure through the committee process for a recommendation for adoption.</li> <li>- Possibility of placing the midaxillary 4<sup>th</sup> intercostal space decompression site as a standing order.</li> <li>- Proposes adding the humeral head and medial malleolus IO sites as standing orders.</li> <li>- Adding no handcuffs behind a patient's back to the restraint policy.</li> <li>- Incorporating a communications piece into the scene management policy to improve coordination, especially in complex scenes.</li> <li>- Added a separate physician-on-scene policy with three specific options that are given to physicians.</li> </ul>	Ryan

	<p>Discussion:</p> <ul style="list-style-type: none"> <li>- N. Otter mentions how many protocols could be gone through and see if there are procedures that could be taken out of them.</li> <li>- N. Otter says how he does not like the words the possibility of and shall and would like to see it changed to something more indicative.</li> <li>- H. Hutchinson says that suspicion of could be better because a medic would be more inclined to do it if they suspected it.</li> <li>- N. Otter agrees.</li> <li>- T. Nurge mentions how it is still medic discretion.</li> <li>- H. Hutchinson asks what the reason needle thoracostomy was a base hospital order was.</li> <li>- N. Otter mentions how it is worth doing some follow-up regarding the use of restraints because it is normal practice for the police to just follow in the chase vehicle.</li> <li>- Everyone discusses how the county is due for a 51/50 policy.</li> <li>- N. Otter says that he wants to make sure we are promoting that all the medics who have arrived on the scene have a say in the treatment of the patient.</li> <li>- H. Hutchinson says that ultimately when there are disagreements there needs to be someone taking charge of the patient, and that when logistically possible, the medic will report to the incoming team.</li> <li>- R. Jenkins mentions how this is all out of Title 22.</li> </ul> <p>Note that this was supported by members present:</p>	
<p>Adjourn - 1147</p>	<p><b>Future Agenda Items:</b></p> <ul style="list-style-type: none"> <li>- Upgrade/Downgrade Policy</li> <li>- PSFA Policy</li> </ul> <p><b>Next meeting date – Thursday, August 15th, 2024</b></p> <p>1015 hrs – <b>EMSA Conference Room</b>  2995 McMillan Ave. Suite 178  San Luis Obispo, CA 93401</p>	<p>Dr. Teitge</p>



**COUNTY OF SAN LUIS OBISPO HEALTH AGENCY**

**PUBLIC HEALTH DEPARTMENT**

**Nicholas Drews** *Health Agency Director*

**Penny Borenstein, MD, MPH** *Health Officer/Public Health Director*

<b>MEETING DATE</b>	August 15 <sup>th</sup> 2024
<b>STAFF CONTACT</b>	Ryan Rosander, EMS Coordinator 805.788.2513 rrosander@co.slo.ca.us
<b>SUBJECT</b>	Push Dose Epi for Shock/Hypotension/Sepsis, EMS Helicopter Operations.
<b>SUMMARY</b>	<p>Since its implementation in 2019, the request to move Push Dose Epi from Base Hospital Orders to Standing Orders has been a recurring theme among stakeholders. This change, which will empower our paramedics in San Luis Obispo County, is a direct result of their familiarity with the mixing process over the years. It will allow them to treat septic/hypovolemic/shock (medical) patients at their discretion.</p> <p>In San Luis Obispo County, EMS helicopters are often neglected to be utilized due to conservative and outdated guidelines outlined in the current policy. Over the past year, several stakeholders have approached SLOEMSA with suggestions for reworking the EMS Helicopter policy, particularly regarding broadening the expedited launch zones and the launch criteria. This revision to this policy will allow an EMS helicopter to be launched overhead and ready for utilization if needed during critical calls, significantly impacting the community's access to swift emergency medical care and transport. The revision to policy will also incorporate a more significant portion of the county where drive time to a STEMI Receiving Center or Trauma Center is prolonged, further highlighting the importance of ensuring timely access to emergency medical care. EMS helicopters are a vital resource, and the alterations to the policy will ensure that they are incorporated more seamlessly into the EMS system.</p>
<b>REVIEWED BY</b>	Dr. William Mulkerin, SLOEMSA Staff, Operations subcommittee
<b>RECOMMENDED ACTION(S)</b>	Protocol #619 Shock (Medical) Hypotension/Sepsis, Policy #155 EMS Helicopter Operations, Policy #155 Attachment A and Attachment C approval and moved to EMCC agenda.
<b>ATTACHMENT(S)</b>	Protocol #619 Shock (Medical) Hypotension/Sepsis, Policy #155 EMS Helicopter Operations, Policy #155 Attachment A and Attachment C.

**Emergency Medical Services**

2995 McMillan Ave Ste 178 | San Luis Obispo, CA 93401 | (P) 805-781-2519

[www.slocounty.gov/emsa](http://www.slocounty.gov/emsa)

<b>SHOCK (MEDICAL) - HYPOTENSION/SEPSIS</b>	
<b>ADULT</b>	<b>PEDIATRIC (≤34 KG)</b>
<b>BLS</b>	
<ul style="list-style-type: none"> <li>• Universal Algorithm #601</li> <li>• Pulse Oximetry</li> <li>• O2 administration per Airway Management Protocol #602</li> <li>• Place in supine position if tolerated</li> </ul>	<p>Same As Adult</p>
<b>BLS Optional Scope</b>	
Pulse Oximetry - O2 administration per Airway Management Policy # 602	
<b>ALS Standing Orders</b>	
<p><b>SBP &lt; 100 mmHg or other signs of hypotension</b></p> <ul style="list-style-type: none"> <li>• Normal Saline up to 500 mL IV/IO                             <ul style="list-style-type: none"> <li>- Repeat x1 if hypotension persists</li> </ul> </li> <li>• Consider establishing secondary IV access</li> <li>• Consider 12-lead ECG</li> <li>• If shock is due to trauma refer to General Trauma Protocol #660</li> </ul> <p style="text-align: center;"><b>Non-Hypovolemic Shock</b></p> <ul style="list-style-type: none"> <li>• Push-Dose Epinephrine 10mcg/mL 1 mL IV/IO every 1-3 minutes                             <ul style="list-style-type: none"> <li>- Repeat as needed titrated to SBP &gt;90mmHg</li> <li>- See notes for mixing instructions</li> </ul> </li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• Epinephrine Drip starting at 10mcg/min IV/IO infusion                             <ul style="list-style-type: none"> <li>- Consider for extended transport</li> <li>- See formulary for mixing instructions</li> </ul> </li> </ul>	<p><b>Signs of hypotension specific to age - see Universal Protocol #601 Attachment A</b></p> <ul style="list-style-type: none"> <li>• Normal Saline 20 mL/kg IV/IO not to exceed 500 mL                             <ul style="list-style-type: none"> <li>- Repeat x1 if hypotension persists</li> </ul> </li> <li>• Consider establishing secondary IV access</li> <li>• If shock is due to trauma refer to General Trauma Protocol #660</li> </ul>
<b>Base Hospital Orders Only</b>	
<p style="text-align: center;"><b>Non-Hypovolemic Shock</b></p> <ul style="list-style-type: none"> <li>• <del>Push-Dose Epinephrine 10mcg/mL 1 mL IV/IO every 1-3 minutes</del> <ul style="list-style-type: none"> <li><del>Repeat as needed titrated to SBP &gt;90mmHg</del></li> <li><del>See notes for mixing instructions</del></li> </ul> </li> </ul> <p style="text-align: center;"><b>OR</b></p> <ul style="list-style-type: none"> <li>• <del>Epinephrine Drip starting at 10mcg/min IV/IO infusion</del> <ul style="list-style-type: none"> <li><del>Consider for extended transport</del></li> <li><del>See formulary for mixing instructions</del></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• As needed</li> </ul>

• As needed	
Notes	
<ul style="list-style-type: none"><li>• <b><u>Mixing Push-Dose Epinephrine 10 mcg/mL (1:100,000): Mix 9mL of Normal Saline with 1mL of Epinephrine 1:10,000, mix well</u></b></li><li>• Consider the underlying causes of shock</li><li>• Use caution with fluid challenges if signs of CHF of liver or renal failure</li><li>• Keep patient warm</li><li>• Treatable/Reversible considerations:<ul style="list-style-type: none"><li>- Hypoxemia</li><li>- Tachycardia/Bradycardia</li><li>- Hyper/Hypothermia</li><li>- Hypovolemia</li><li>- Altered Mental Status</li><li>- Fractures/Bleeding/Tension Pneumothorax</li><li>- Anaphylaxis</li><li>- Chest pain</li><li>- Overdose</li></ul></li></ul>	

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## **POLICY #155: EMERGENCY MEDICAL SERVICE HELICOPTER OPERATIONS**

### I. PURPOSE

- A. To establish standardized procedures for prehospital utilization and evaluation of Emergency Medical Service (EMS) Helicopters operating in the County of San Luis Obispo (SLO) as a specialized resource providing EMS and prehospital patient transport.

### II. SCOPE

- A. This policy excludes EMS helicopter operations limited to search and rescue, and interfacility transfers.

### III. DEFINITIONS

- Emergency Medical Services Aircraft - "Emergency Medical Services Aircraft" or "EMS Aircraft" or "EMS Helicopter" as used in this policy means any aircraft utilized for the purpose of prehospital emergency patient response and transport. EMS aircraft includes air ambulances and all categories of rescue aircraft (Title 22, Division 9, Chapter 8, Article 1, §100279)
- Air Ambulance - An "Air Ambulance" as used in this policy means any aircraft specially constructed, modified or equipped, and used for the primary purpose of responding to emergency calls and transporting critically ill or injured patients whose medical flight crew has, at a minimum, two (2) attendants certified or licensed in advanced life support (Title 22, Division 9, Chapter 8, Article 1, §100280).
- Rescue Aircraft - "Rescue aircraft" as used in this policy means an aircraft whose usual function is not prehospital emergency patient transport, but which may be utilized, in compliance with EMS policies, for prehospital emergency patient transport when use of an air or ground ambulance is inappropriate or unavailable. Rescue aircraft includes ALS rescue aircraft, BLS rescue aircraft and Auxiliary rescue aircraft. (Title 22, Division 9, Chapter 8, Article 1, §100281).
- Advanced Life Support Rescue Aircraft - An "Advanced Life Support Rescue Aircraft" or "ALS Rescue Aircraft" as used in this policy means a rescue aircraft whose medical flight crew has, at a minimum, one attendant certified or licensed in advanced life support (Title 22, Division 9, Chapter 8, Article 1, §100282).
- Basic Life Support Rescue Aircraft - A "Basic Life Support Rescue Aircraft" or "BLS Rescue Aircraft" as used in this policy means a rescue aircraft whose medical flight crew has, at a minimum, one attendant certified as an Emergency Medical Technician-IA (EMT-IA) with at least eight hours of hospital clinical training and whose field/clinical experience specified in Section 100074(c) of Title 22, California Code of Regulations, is in the aeromedical transport of patients (Title 22, Division 9, Chapter 8, Article 1, §100283).

- Auxiliary Rescue Aircraft - An "Auxiliary Rescue Aircraft" as used in this policy means a rescue aircraft which does not have a medical flight crew, or whose medical flight crew do not meet the minimum requirements established for BLS rescue aircraft (Title 22, Division 9, Chapter 8, Article 1, §100284).
- Expedited Launch Zone: Areas identified as having a 30-minute or greater ground transportation time to a Specialty Care Center with a heliport/helistop, where transportation by EMS helicopter would result in a timesaving of at least ten (10) minutes over the ground transport. SLU ECC and the County of SLO EMS Agency (EMS Agency) retain and regularly update the County of SLO Expedited Launch Zone (Attachment A and B).
- ~~Heliport/Helistop~~ **Helipad**: An area of land, water, or structure used or intended to be used for the landings and takeoffs of helicopters and includes its buildings and facilities, if any, as approved by the State of California, Department of Transportation, Division of Aeronautics.
- **Emergency Landing Zone: the term used to designate an "emergency landing site" of an EMS aircraft by a public safety official.**
- Incident Commander (IC): The highest-ranking representative or designee, on scene, of the public safety agency statutorily responsible for incident or scene management.
- SLU ECC: The San Luis Obispo Unit Emergency Command Center which coordinates the response of all EMS helicopters to the scene of all medical and trauma emergencies within the County of SLO where the patient's location is known and a nearby emergency landing zone can be reasonably assured.
- Specialty Care Center: A hospital designated and/or approved by the EMS Agency that provides specialized medical services.
- Time and Need: Considerations defined for quality improvement purposes in EMS Agency Policy #100: Continuous Quality Improvement.

#### IV. POLICY

- A. The designated ordering point for all EMS helicopters is SLU ECC.
- B. SLU ECC will coordinate EMS helicopter requests and cancellations.
- C. EMS helicopters must have the capability to communicate and maintain communications with SLU ECC, EMS providers (responding and on-scene), base hospitals and other appropriate facilities or agencies.
- D. Patient transport by EMS helicopter must meet both the "time and need" criteria outlined in this policy.
- E. EMS helicopter service providers must develop and participate in a QI program in cooperation with the EMS Agency and other EMS system participants as outlined in the EMS Agency Policy # 100: Continuous Quality Improvement. This includes active participation in the EMS Agency Quality Improvement Work Group. All 9-1-1 EMS helicopter medical responses will be reviewed both clinically and operationally.



V. PROCEDURE

- A. The closest available EMS Helicopter that is fully staffed, fueled, supplied, and prepared to immediately respond to an EMS helicopter request shall be dispatched except in the following circumstances:
1. When there is known or high likelihood for need of an EMS Rescue Helicopter, or when a nearby emergency landing zone cannot be reasonably assured, then an EMS Rescue Helicopter should be dispatched.
  2. If more than one EMS Helicopter is located at the same location (e.g. Paso Robles Airport) and the response does not require an EMS Rescue Helicopter, then SLU ECC shall dispatch using the following priority:
    - a. Air Ambulance
    - b. ALS Rescue Helicopter
    - c. BLS Rescue Helicopter
    - d. Auxiliary Rescue Helicopter
- B. SLU ECC will initiate the dispatch process of EMS helicopters with other EMS responding agencies when an incident is located within an Expedited Launch Zone and there is a credible report of one (1) or more of the following conditions:
1. High-risk motor vehicle accidents.
    - a. Major damage to vehicle e.g. head-on/entrapment.
    - b. Patient ejection (partial or complete) from an automobile.
    - c. Greater than three (3) patients.
    - d. Motor vehicle rollover.
    - e. Deceased/1144 on scene
    - f. Auto vs. Pedestrian
    - g. Incident involving bus, train, or plane.
    - h. Child (age 0–9 years) unrestrained or in unsecured child safety seat.
  2. Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
  3. Pedestrian/bicycle rider thrown, run over, or with significant impact.
  4. Fall from height > 10 feet.
  5. GSW/Stabbing
  6. Burn patients.
  7. Industrial accident.
  8. Amputation or vascular compromise in a limb.

9. Active bleeding requiring a tourniquet or wound packing with continuous pressure.
  10. Pregnancy complications, including seizures/convulsions.
  11. Scuba diving accident.
  12. Drowning/submersion.
  13. Any injured or ill patients in an area inaccessible to, or with an extended ETA.
  14. Other situations that are not covered, but dispatcher believes condition of patient is critical.
- C. Cancellation of EMS helicopter response.
1. SLU ECC may cancel an EMS helicopter when:
    - a. The IC, in consultation with the most medically qualified first responder on scene, determines it is no longer needed.
    - b. Once an EMS helicopter has been dispatched, and a second EMS helicopter becomes available that reports an ETA at least five (5) minutes less than the ETA of the first EMS helicopter, SLU ECC may cancel the first EMS helicopter.
  2. SLU ECC will notify the transport provider(s) and/or responding personnel of any cancellation or situational updates.
- D. Responding or on-scene first responders may request an EMS helicopter when both "time and need" criteria are met.
1. Time Criteria must meet one (1) or more of the following:
    - a. Transport by EMS helicopter would result in savings of at least ten (10) minutes over ground transport. (Destination criteria for Specialty Care Centers should be taken into consideration.)
    - b. The scene location is difficult or inaccessible by ground transport, which could result in a prolonged response and transport.
  2. Need Criteria must meet one (1) or more of the following:
    - a. Responding first responders may request with a credible report of one (1) or more of the following conditions:
      - (1) Conditions as outlined under section V Procedures B, ~~1-3~~ 1-14 above.
    - b. On-scene responder's assessment determines one (1) or more of the following conditions (some conditions may require advanced life support level of training):
      - (1) Patient assessment meets the criteria of EMS Agency Policy #153: Trauma Patient Triage and Transport.
      - (2) Patient assessment meets the criteria of EMS Agency Policy #152: STEMI Patient Triage and Destination.
      - (3) Patient assessment identifies any of the following:

- Altered mental status with no response to prehospital treatment.
- Severe respiratory compromise or respiratory arrest.
- Complications of childbirth, e.g., breech, abnormal presentation, massive blood loss, neonatal distress.
- Signs and symptoms of medical hypotension unresponsive to treatment.

(4) Patient assessment reveals unilateral weakness/paralysis, facial droop, or any signs/symptoms of CVA.

(5) Patient requires code 3 transport to the hospital.

(6) EMS provider judgment

- E. EMS helicopter transportation may not be suitable in the following situations:
- a. Medical or traumatic cardiac arrest not responding to prehospital therapy consistent with EMS Agency Policy # 125: Prehospital Determination of Death/Do Not Resuscitate (DNR) End of Life Care.
  - b. Patients contaminated by hazardous material
  - c. Patients who are violent or have behavioral emergencies
- F. Patient destination must be in accordance with the EMS Agency destination and triage policies including Policy # 151: Destination, Policy # 152: STEMI Triage and Destination, and Policy # 153: Trauma Patient Triage and Destination.

## VI. AUTHORITY

- California Health and Safety Code, Division 2.5, Section 1798.169.
- California Code of Regulations, Title 22, Division 9, Chapter 12 and 8; Sections 100300(c) (3) and 100291.
- California Emergency Medical Services Authority Prehospital Emergency Medical Service Aircraft Guidelines #144

## VII. ATTACHMENTS

- A. Expedited Launch Zones.
- B. Expedited Launch Zones Map/Currently in Process.
- C. Emergency Landing Zone Selection.
- ~~D. EMS Helicopter Request and Destination.~~
- ~~E. County Division Map for Paso Robles and Santa Maria Air Bases.~~

Approvals:

EMS Agency, Administrator	
EMS Agency, Medical Director	

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## **EXPEDITED LAUNCH ZONES**

### **NORTH COAST**

- North of Cambria proper
- East of Hwy 1 on the 46

### **CENTRAL COAST**

- The Morro Bay Sand Spit and the remote areas of Montana de Oro State Park

### **SOUTH COUNTY**

- Oceano Dunes
- East of Huasna Rd./School Rd. This would encompass all Huasna
- Anywhere past Lopez Dr/Orcutt Rd. This would encompass all Lopez Lake area
- Cuyama Hwy 166 corridor

### **NORTH COUNTY**

- North of Paso proper at 101/Wellsona Rd
- East of Paso proper at 46/Hunter Ranch Golf Course
- West of Paso proper on Lake Nacimiento Lake drive/San Marcos Rd
- East of Hwy 58/229 otherwise known as Calf Canyon/Webster Rd. This would encompass all of California Valley
- All Pozo

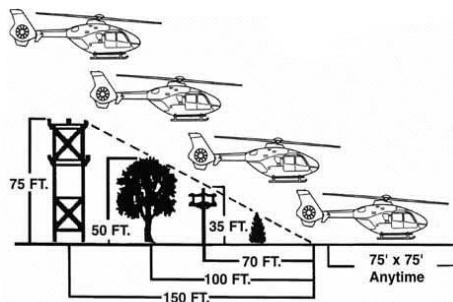
### Emergency Landing Zone Selection

1. Choose an area in which the surface is flat, firm, and free of loose debris. If dust is suspected, wet down the area with water and inform the flight crew of this potential hazard.
2. Follow these general guidelines for landing zone dimensions.

**Daytime:** 75 ft X 75 ft

**Nighttime:** 125 ft X 125 ft

3. The emergency landing zone should be free of people, animals, and vehicles. Special attention should be given to ensure that the zone is free of overhead obstructions such as wires, poles, and antennas. The surface of the zone should be free of stumps, irrigation equipment or any other obstruction that could interfere with the helicopter's landing gear. The landing zone official should delegate personnel as required for adequate crowd control.
4. During nighttime conditions, illuminate the emergency landing zone by positioning vehicle headlights toward the center of the zone. NEVER use flares or other items that can be easily blown by the helicopter downwash.



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