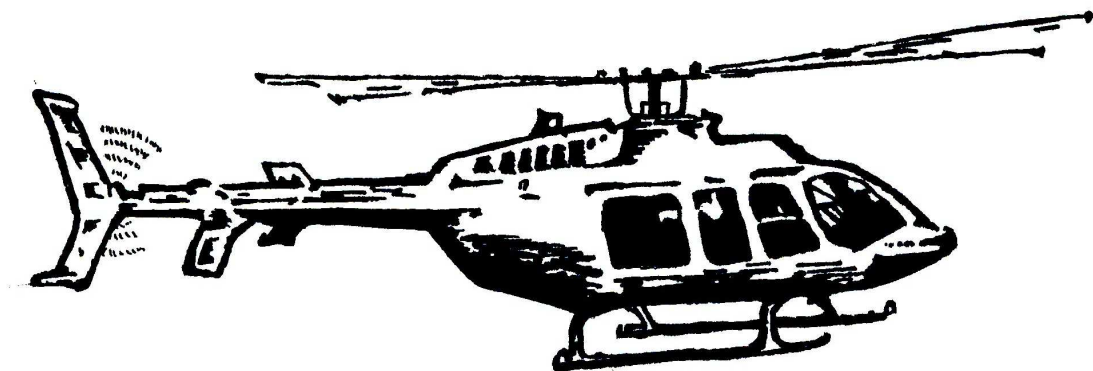


Emergency Medical Response



EMERGENCY MEDICAL RESPONSE

SUMMARY

First you hear the siren in the distance. As the sound gets closer, the flashing lights become visible. You pull to the side of the road and the emergency vehicle goes speeding by. Once the emergency vehicle has passed we seldom give it a second thought. But how are emergency services dispatched? Who handles the emergency telephone calls?

Prompted by a citizen complaint, the Grand Jury investigated how emergency (911) telephone calls are processed in the Sheriff's Dispatch Center and in the Cal Fire Dispatch Center. The Grand Jury concentrated on ambulance, helicopter and fire services dispatched through the county system as opposed to city dispatch. While the emergency response system in this county is generally excellent, the Grand Jury's research identified some aspects that could be improved.

BACKGROUND

The State of California requires each county to establish a Local Emergency Medical Services Agency to oversee medical services. In San Luis Obispo County this service is provided by a non-profit corporation entitled the San Luis Obispo County Emergency Medical Services Agency (SLOEMSA) which is overseen by the County Health Department. SLOEMSA's mission is to monitor patient care, assure appropriate use of EMS policy and provide training for pre-hospital personnel. In a letter to the Grand Jury, SLOEMSA confirmed the medical director and the county health officer are responsible for approving Policy 119 which sets forth pre-

hospital patient transport procedures for EMS aircraft. Policy 119 (effective date 10-15-09) can be reviewed in Appendix A.

METHOD

The following is a list of the interviews conducted, facilities that were toured and the numerous documents reviewed by the Grand Jury during our investigation:

- SLOEMSA officials were interviewed
- An official with the county health department was interviewed
- Officials from the non-profit Calstar helicopter service were interviewed
- Representatives from the sheriff's department were interviewed including dispatchers
- Cal Fire personnel were interviewed including dispatchers
- The Sheriff's Dispatch Center was toured
- The Cal Fire Dispatch Center was toured
- 911 dispatch recordings were reviewed
- Various revised revisions of the SLOEMSA Policy 119 were reviewed
- Numerous publications distributed by the state and federal governments were reviewed

NARRATIVE

When the San Luis Obispo County Sheriff's Dispatch Center receives a 911 medical emergency call, the dispatcher enters all the pertinent information electronically at which time an ambulance is sent to the scene. The computer data is then forwarded electronically to the Cal Fire Dispatch Center for fire engine response. It is worth noting that only the electronic data is forwarded to Cal Fire and not the actual 911 call. Cal Fire officials told the Grand Jury that this practice is sometimes a hindrance to their dispatchers. If additional information is needed, Cal Fire dispatchers have to telephone the reporting party to obtain the necessary input. All other police dispatch centers in the county must request ambulance service through the Sheriff's Dispatch Center. In the majority of California counties emergency medical calls are forwarded to the fire agency which then dispatches ambulance and fire.

As part of the Grand Jury's investigation, four 911 recordings from the Sheriff's Dispatch Center were reviewed. These four calls were chosen as a result of recommendations from both Calstar and Cal Fire officials. All four calls occurred in 2009 from remote areas of the county. In all four recordings the sheriff's dispatcher refused the initial request by the incident commander for an EMS helicopter. An incident commander is the first public safety official to arrive on-scene, the incident commander will often change as higher ranking officials arrive. Although all four calls had issues that worried the Grand Jury, one call in particular was disturbing. On May 30, 2009, there was a motorcycle accident on Highway 58 which resulted in major injuries. First responders on the scene requested a helicopter for patient transport. Thirteen minutes elapsed from the time of the initial request for a helicopter to the time Calstar was dispatched; it takes Calstar another three to five minutes to get airborne. The sheriff claims the elapsed time was only nine minutes however; the transcript of the 911 call indicates thirteen minutes. There is no record on the recording of the dispatcher requesting the helicopter dispatch. What the recording and the transcript show is that nineteen minutes passed from the first request for a helicopter to the time of Calstar liftoff. There was confusion between sheriff and Cal Fire dispatchers as to whether a helicopter should be sent at all and which dispatcher would dispatch the helicopter.

Policy 119 allows the incident commander to request an EMS helicopter and assume the responsibility for meeting both time and medical criteria. In the May 2009 incident noted above the initial request from the incident commander for a helicopter was denied by the sheriff's dispatcher who felt the call did not meet Policy 119 criteria.

Prior to launching a helicopter, dispatchers are required to contact both the California Highway Patrol (CHP) helicopter located in Paso Robles and the Calstar helicopter located in Santa Maria. Dispatchers are required to get an estimated time of arrival (ETA) from both agencies and then the helicopter with the shortest ETA is launched. It was discovered in our review of the 911 recordings and from interviews that the CHP does not always immediately answer the phone. Dispatchers must then wait for a return call. This results in critical delays in dispatching emergency services that could result in loss of life.

During our review of the 911 emergency recordings, we heard confusion between sheriff and Cal Fire dispatchers who must contact each other by telephone. There was confusion about which emergency services would be sent to the scene and which of the agencies would do the dispatching. Many cities and counties in the state have combined their police and fire dispatch with reported improved communication. If sheriff and Cal Fire dispatch centers were combined in this county, police and fire could continue to dispatch their respective resources separately. In those instances when it was necessary for one agency to talk to the other, the personnel would be in the same room. This could eliminate critical time delays.

Another issue mentioned in the complaint is the possible under utilization of helicopters for emergency calls. There is currently much debate on the local and state levels regarding the frequency of helicopter operation. There are some who believe helicopters should be launched more frequently, especially in cases where the initial call could warrant a helicopter but before a first responder arrives on scene. The helicopter can always return to base if not needed. On the other side of the coin are those who see helicopter flights as a danger to the general public. They argue that helicopters should only be used in clearly defined circumstances. There were 36 aero medical crash deaths in the United States last year. It is not the intention of the Grand Jury to weigh in on this issue but rather to present the facts.

San Luis Obispo County is fortunate to have two emergency medical services helicopters serving the county. The first, Calstar, which operates an air ambulance staffed with flight nurses, is based at the Santa Maria Airport. Calstar received 24 emergency calls which resulted in patient transport in San Luis Obispo County in 2007, decreasing to 11 in 2008 and 12 in 2009. From August of 2009 through April of 2010, Calstar completed only four emergency transports. As a comparison, Calstar responded to 22 emergency calls in Santa Barbara County in 2007, 43 calls in 2008 and 33 in 2009. The second emergency service, based in Paso Robles, is provided by the California Highway Patrol which operates a helicopter (H70) staffed with a paramedic. This service transported 24 patients in 2007, 8 in 2008 and 9 in 2009.

CONCLUSION

Despite the problems noted above, the Grand Jury found the people who provide the emergency medical services in our county to be competent, capable and dedicated. The directors at SLOEMSA have taken steps to fix some of the problems identified, but more action is needed. Policies must be revised or new procedures implemented to reduce excessive time delays and confusion in dispatching. The Grand Jury agrees with SLOEMSA'S Policy 119 that incident commanders should have the authority to request EMS helicopters. The Grand Jury also believes many of these problems could be corrected if the dispatch centers for the sheriff and Cal Fire were combined.

FINDINGS

1. In this county the Local Emergency Medical Services Agency is the non-profit San Luis Obispo County Emergency Medical Services Agency (SLOEMSA).
2. The Sheriff's Dispatch Center is responsible for dispatching all ambulance and EMS helicopter service in the county.
3. The Grand Jury found confusion between the sheriff and Cal Fire dispatchers in the 911 calls reviewed. On the four 911 calls reviewed dispatchers refused incident commanders requests for a helicopter.
4. Policy 119 allows incident commanders to request an EMS helicopter and assume responsibility for meeting the time and medical criteria.
5. There are two EMS helicopters operating in the county.

6. Dispatchers are required to get an estimated time of arrival from both helicopter services before launching either helicopter. Sometimes the CHP does not answer the phone creating delays in helicopter dispatch.
7. Other counties in California have combined police and fire dispatch with reported improved communication.

RECOMMENDATIONS

1. SLOEMSA should revise their procedures so dispatchers are able to launch the helicopter with the shortest ETA. If one service cannot be immediately contacted the first available should be sent.
2. Dispatchers must follow Policy 119 and not overrule an incident commander's request for an EMS helicopter.
3. The San Luis Obispo County Sheriff, SLOEMSA and the County Board of Supervisors should pursue combining sheriff and Cal Fire dispatch operation centers.

REQUIRED RESPONSES

The County Board of Supervisors is required to respond to Findings 2, 3 and 7 as well as Recommendation 3. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **September 23, 2010**. Please provide a copy of all responses to the Grand Jury as well.

The San Luis Obispo County Sheriff is required to respond to Findings 2, 3 and 7 as well as Recommendations 2 & 3. The responses shall be submitted to the Presiding Judge of the San

Luis Obispo Superior Court by **August 23, 2010**. Please provide a copy of all responses to the Grand Jury as well.

The San Luis Obispo County Emergency Medical Services Agency is required to respond to Findings 1, 4, 5 and 6 as well as Recommendations 1 and 2. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **August 23, 2010**. Please provide a copy of all responses to the Grand Jury as well.

The Cal Fire - San Luis Obispo Unit is required to respond to Findings 3 and 7 as well as Recommendations 2 and 3. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by **August 23, 2010**. Please provide a copy of all responses to the Grand Jury as well.

The mailing addresses for delivery are:

Presiding Judge	Grand Jury
Presiding Judge Charles S. Crandall Superior Court of California 1050 Monterey Street San Luis Obispo, CA 93408	San Luis Obispo County Grand Jury P.O. Box 4910 San Luis Obispo, CA 93402

APPENDIX A

SAN LUIS OBISPO COUNTY EMERGENCY MEDICAL SERVICES AGENCY APPROVED LANDING SITES 10/15/2009

CALTRANS APPROVED AND PERMITTED HOSPITAL HELIPORTS

San Luis Obispo County

- **Twin Cities Community Hospital** (Templeton)

Santa Barbara County

- **Marian Medical Center** (Santa Maria)
- **Goleta Valley Cottage Hospital** (Goleta)

Monterey County

- **Mee Memorial Hospital** (King City)
- **Natividad Medical Center** (Salinas)

Kern County

- **Kern Medical Center** (Bakersfield) **Trauma Center Level II**
- **Memorial Hospital** (Bakersfield)
- **San Joaquin Community Hospital** (Bakersfield)

Fresno County

- **Community Regional Medical Trauma Center** (Fresno) **Trauma Center Level I**
- **St Agnes Medical Center** (Fresno)
- **Clovis Community Medical Center** (Clovis)

Madera County

- **Children's Hospital Central California** (Madera)

Santa Clara County

- **Santa Clara Valley Medical Center** (Santa Clara) **Trauma Center Level I**
- **Stanford University Medical Center** (Palo Alto) **Trauma Center Level I**
- **St. Louise Regional Hospital** (Gilroy)
- **Regional Medical Center San Jose** (San Jose) **Trauma Center Level II**
- **Kaiser Permanente Medical Center** (Santa Clara)

King County

- **Hanford Community Medical Center** (Hanford)

SLO COUNTY DESIGNATED EMS LANDING SITES

French Hospital Medical Center (San Luis Obispo)

- Daylight hours only; *as of 10/15/2009 awaiting Public Health Department approval*

Sierra Vista Regional Medical Center (San Luis Obispo)

- SLO Airport (transfer to ground ambulance)

Arroyo Grande Community Hospital (Arroyo Grande)

- Oceano Airport (transfer to ground ambulance)

APPENDIX A

SAN LUIS OBISPO COUNTY EMERGENCY MEDICAL SERVICES AGENCY
PREHOSPITAL POLICY
APPROVED 10-15-2009

Policy Reference No: 119
Effective Date: 11/01/2009
Supersedes: 10/18/2007
Review Date: 11/01/2011

SUBJECT: EMS AIRCRAFT (HELICOPTER) OPERATIONS

I. PURPOSE

To establish a standardized procedure for the prehospital utilization and evaluation of EMS Aircraft (Helicopters) operating in San Luis Obispo County as a specialized resource providing emergency medical care and prehospital patient transport. This policy **EXCLUDES** EMS Aircraft (Helicopter) operations limited to search and rescue, and interfacility transfers.

II. AUTHORITY

- A. California Health and Safety Code, Division 2.5, Section 1798.169.
- B. California Code of Regulations, Title 22, Division 9, Chapter 8; Section 100300(c)(3) authorizes local EMS agencies to classify EMS Aircraft in their jurisdiction, except for aircraft operated by the California Highway Patrol, the California Department of Forestry and Fire Protection (CAL FIRE) or the California National Guard, which are classified by the EMS Authority.

III. DEFINITIONS

- A. **Advanced Life Support (ALS) Rescue Aircraft:** Rescue aircraft whose medical flight crew has at a minimum one attendant certified or licensed in Advanced Life Support (ALS).
- B. **Air Ambulance:** Any aircraft specially constructed, modified or equipped, and used for the primary purposes 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 (ALS).
- C. **Approved Landing Site:** A permitted hospital heliport or designated EMS Landing Site. A listing of Approved Landing Sites is retained and regularly updated by EMS Agency.

APPENDIX A

- D. Auxiliary Rescue Aircraft: A rescue aircraft that does not have a medical flight crew, or whose medical flight crew does not meet the minimum requirements established in Section 100283 of California Code of Regulations, Title 22.
- E. Basic Life Support (BLS) Rescue Aircraft: A rescue aircraft whose medical flight crew has at a minimum one attendant certified as an EMT-IA, or an EMT-I-NA with at least eight (8) hours of hospital clinical training and whose field/clinical experience specified in Section 100074 (c) of California Code of Regulations, Title 22, is in the aeromedical transport of patients.
- F. EMS Aircraft: Any aircraft utilized for the purpose of prehospital emergency patient response and transport. EMS Aircraft includes air ambulances and all categories of rescue aircraft. **In this policy, EMS Aircraft is limited to Helicopters.**
- G. EMS Landing Site: A site used for the landing and taking off of EMS Aircraft (Helicopters) that is located at or as near as practical to a medical emergency or at or near a medical facility and:
1. has been designated an EMS Landing Site by an officer authorized by a public safety agency, as defined in PUC Section 21662.1, using criteria that the public safety agency has determined is reasonable and prudent for the safe operation of EMS Aircraft (Helicopters);
 2. is used, over any 12 month period, for no more than an average of six landings per month with a patient or patients on the helicopter, except to allow for adequate medical response to a mass casualty event even if that response causes the site to be used beyond these limits;
 3. is not marked as a permitted heliport as described in PUC Section 3554; and
 4. is used only for emergency medical purposes.
- H. Estimated Time of Arrival (ETA): The amount of time, including all pre-flight, take-off, and flight time, the EMS Aircraft is expected over scene.
- I. Expedited Launch Zone: areas of historically remote and/or difficult access. A listing of Expedited Launch Zones is retained and regularly updated by EMS Agency.
- J. First Responders: Public safety personnel trained in first aid and CPR, such as firefighters, peace officers, lifeguards and park rangers; EMTs; Paramedics; Flight Nurses and Critical Care Nurses trained in EMS.
- K. Heliport: 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.
- L. Incident Commander (IC): The highest-ranking representative (or designee) on scene of the public safety agency statutorily responsible for incident/scene management.
- M. Landing Zone: A prepared or unprepared area used for an emergency Helicopter landing.

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- N. Med-Com: The San Luis Obispo County Medical Communications Center, which coordinates all EMS Aircraft response to the scene of all medical and trauma emergencies within San Luis Obispo County.
- O. Rescue Aircraft: An aircraft whose usual function is not prehospital emergency patient transport but which may be utilized, in compliance with local EMS policy, 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.

IV. DISPATCH

- A. Med-Com shall initiate the dispatch of EMS Aircraft when an incident is located within an Expedited Launch Zone **AND** there is a report of one (1) or more of the following conditions:
 - 1. Falls > 20'
 - 2. Rollover with ejection
 - 3. High-speed MVA or head-on collision
 - 4. Fatalities in the same vehicle as the injured
 - 5. Vehicle v. pedestrian with significant injuries
 - 6. Automobile accidents with extrications/entrapments
 - 7. Unconscious person(s)
 - 8. Burns to face or major portions of the body
 - 9. Significant penetrating trauma to head, neck chest/back or abdomen
 - 10. Amputations and/or mangled limbs
 - 11. Multi-casualty incident
- B. The designated ordering point for all EMS Aircraft shall be Med-Com. Med-Com shall coordinate EMS Aircraft requests and cancellations.
- C. Med-Com shall obtain an ETA from each EMS Aircraft provider and dispatch the EMS Aircraft with the shortest ETA.
- D. An Air Ambulance shall receive dispatch priority over an ALS Rescue Aircraft when ETAs are equal.
- E. ALS ground ambulance and appropriate first responders shall be dispatched with the EMS Aircraft.
- F. EMS Aircraft shall have the capability to communicate and maintain communications with Med-Com, EMS providers (responding and on scene), Base Hospitals and other appropriate facilities or agencies.

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G. Cancellation of EMS Aircraft Response

1. Med-Com may cancel an EMS Aircraft when:
 - a. the Incident Commander, in consultation with the most medically-qualified first responder on scene, determines it is not needed.
 - b. one EMS Aircraft has been dispatched, and a second EMS Aircraft becomes available that reports an ETA at least five (5) minutes less than the ETA of the first EMS Aircraft (in which case Med-Com may cancel the first EMS Aircraft).
2. An EMS Aircraft has the authority to self-cancel when:
 - a. the pilot deems it is unsafe to proceed or land.
 - b. it is determined that there are no patients, or the patient is not appropriate for air transport.
3. Med-Com shall notify the transport provider(s) and/or responding personnel of any cancellation.

V. REQUEST OF EMS AIRCRAFT

- A. Responding or on-scene on-duty first responders may request an EMS Aircraft and assume the responsibility of meeting both Time and Need Criteria.
- B. A request for EMS Aircraft shall be based on information indicating that **BOTH** the following Time Criteria **AND** Need Criteria will be met.
 1. Time Criteria (one or more of the following):
 - a. Transport by EMS Aircraft would result in a time savings of at least ten (10) minutes over ground transport.
 - b. The scene location is difficult or inaccessible by ground ambulance which could result in a prolonged response and transport.
 2. Need Criteria:
 - a. There is a report of one (1) or more of the following conditions:
 - i. Falls > 20'
 - ii. Rollover with ejection
 - iii. High-speed MVA or head-on collision
 - iv. Fatalities in the same vehicle as the injured
 - v. Vehicle v. pedestrian with significant injuries
 - vi. Automobile accidents with extrications/entrapments
 - vii. Unconscious person(s)
 - viii. Burns to face or major portions of the body

APPENDIX A

- ix. Significant penetrating trauma to head, neck chest/back or abdomen
 - x. Amputations and/or mangled limbs
 - xi. Multi-casualty incident
- b. On-scene assessment determines one (1) or more of the following conditions:
- i. Altered mental status with no response to prehospital treatment
 - ii. Respiratory arrest or severe respiratory compromise
 - iii. Complications of childbirth, e.g., breech, abnormal presentation, massive blood loss, neonatal distress
 - iv. Hypotension:
 - Systolic blood pressure < 90
 - Pulse rate >120 BPM
 - Cool, pale or diaphoretic skin
 - Life-threatening hemorrhage
 - v. Acute spinal injury or neurological compromise
 - vi. Serious burns
 - vii. Potential neurovascular compromise to a limb
 - viii. Significant penetrating trauma to the head, neck, chest/back, or abdomen
 - ix. Mechanism of injury with signs/symptoms of:
 - Unconscious or altered level of consciousness
 - Respiratory compromise
 - Systolic blood pressure < 90
 - Pulse rate >120 BPM
 - Cool, pale or diaphoretic skin

VI. SCENE MANAGEMENT

A. Scene management will be in accordance with State regulations, local agreements, and *SLO County EMS Agency Prehospital Policy 101: Scene Management*.

B. Landing Zone Safety

1. The pilot of the EMS Aircraft shall make the final decision as to the safe operation of the aircraft and the suitability of the Landing Zone.
2. EMS Aircraft landing zone and safety operations shall follow the guidelines outlined in EMS Authority Air Medical Guidelines.

APPENDIX A

VII. TRANSPORT

A. Criteria for Transport by EMS Aircraft:

1. Patient transport by EMS Aircraft shall meet **BOTH** the Time Criteria **AND** On-Scene Assessment Need Criteria outlined in Section V.B. of this policy.
 2. EMS Aircraft transportation may not be suitable in the following situations:
 - a. Medical or traumatic cardiac arrest not responding to prehospital therapy (consider terminating resuscitation consistent with *SLO County EMS Agency Prehospital Policy #116: Prehospital Determination of Death*)
 - b. Patients contaminated by hazardous material
 - c. Patients who are violent or have behavioral emergencies
- B. EMS Aircraft medical flight crew should consider turnover of patient transport to ground ambulance if criteria for transport is not indicated by patient condition.
- C. The pilot ultimately determines if it is safe to transport a patient and may turn over transport of a patient to an ALS ground ambulance.
- D. Ground ambulance response shall **NOT** be terminated until EMS Aircraft departs with patient.
- E. Patients shall be transported to the closest hospital with an Approved Landing Site.

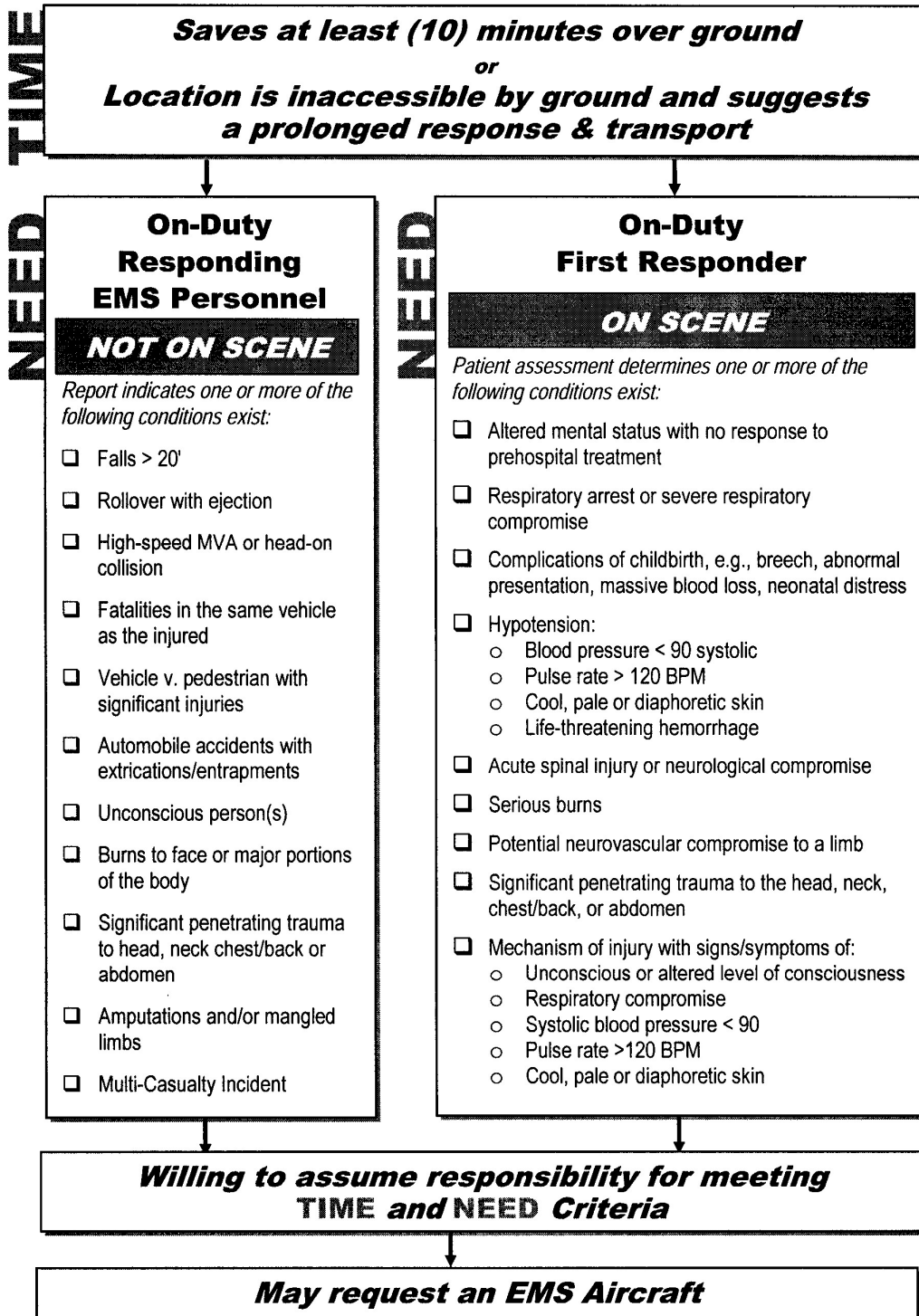
VIII. QUALITY IMPROVEMENT

Consistent with Chapter 12 of Title 22 of the California Code of Regulation, EMS Aircraft service providers are to develop and participate in a QI program in cooperation with the SLO County EMS Agency and other EMS system participants as outlined in *SLO County EMS Agency Prehospital Policy 109: Quality Improvement Program* and *SLO County EMS Agency Prehospital Policy 110: Quality Improvement Program Guidelines*.

APPENDIX A

THE DECISION TO REQUEST AN EMS AIRCRAFT

10/15/2009



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APPENDIX A

SAN LUIS OBISPO COUNTY EMERGENCY MEDICAL SERVICES AGENCY EXPEDITED LAUNCH ZONES

10/15/2009

NORTH COAST

- Areas on SR 1 north of the Piedras Blancas lighthouse
- Remote coastal mountain locations to the east of SR 1

CENTRAL COAST

- The Morro Bay sand spit and the remote areas of Montana de Oro State Park

SOUTH COUNTY

- Pismo Dunes past marker 10
- Areas on SR 166 east of Rock Front Ranch
- Remote mountain locations to the east of Lopez Lake

NORTH COUNTY

- Areas east of the SR 41/SR 46 “Y” intersection
- California Valley and areas east of LaPanza Road
- Nacimiento Lake Area:
 - Those areas served by Nacimiento Lake Dr. north and west of the Dam including Oak Shores and Running Deer Ranch
 - Those areas north west of the intersection of Chimney Rock Rd. and Cypress Mountain Rd.