

EMERGENCY MEDICAL HELICOPTERS

INTRODUCTION

Emergency medical helicopters are appropriate and necessary in a very small percentage of emergency medical calls in San Luis Obispo County (County). However, if you are one of the few people who have a major medical emergency or suffer major traumatic injury in a remote area, prompt dispatch and appropriate use of an emergency medical helicopter may be the difference between your life and death.

Over the last three years, the Grand Jury has investigated and reported on County policies and procedures that regulate use of this small, vitally important part of the larger County emergency medical response system.

This 2010-2011 Grand Jury report describes public agency responses to and the current status of past Grand Jury policy and procedure revision recommendations. It also describes the most recent Grand Jury investigation and makes additional findings and recommendations for further revisions to these policies and procedures.

The goal of these Grand Jury investigations and reports is to develop constructive recommendations that will make a good system better in those emergency situations where every minute counts.

ORIGIN/PURPOSES

This investigation and report were initiated by the Grand Jury as part of its follow-up on responses to the 2009-2010 Grand Jury report entitled "Emergency Medical Response". It is also the third in a series of Grand Jury investigations and reports relating to the use of emergency medical helicopters in the County. These are:

- A 2008-2009 Grand Jury investigation of the County policies and procedures relating to the use of emergency medical helicopters resulted in a report entitled "To Fly or Not to Fly." This report only discussed the expedited launch policies and procedures for emergency medical helicopters.
- The 2009-2010 Grand Jury initiated a more thorough investigation of emergency medical helicopter policies and procedures in response to a citizen complaint and issued its report.
- The 2010-2011 Grand Jury initiated an investigation of two ongoing issues with emergency medical helicopter policies and procedures that were confirmed by the responses to the 2009-2010 Grand Jury report. The current Grand Jury also identified another policy and procedure issue relating to cancellation of requests for emergency medical helicopters at the Oceano Dunes (Dunes) and initiated an investigation of this additional issue.

The purposes of the current investigation are to determine if policies and procedures relating to dispatch and cancellation of emergency medical helicopters are being followed and to determine if further revisions may be needed.

AUTHORITY

The authority for this Grand Jury investigation is in California Penal Code Section 925. Section 925 states in relevant part "The grand jury shall investigate and report on the operations, accounts and records of the officers, departments and functions of the county...." Emergency

medical services are a function of the County and are provided in accordance with policies developed by the County's Emergency Medical Services Agency (EMSA) and under contractual arrangements between the County and other emergency service providers.

One other comment concerning the authority of the Grand Jury is important with respect to this investigation and report. The Grand Jury has no authority and is not qualified to substitute its judgment for the judgment of qualified medical professionals authorized to make medical decisions concerning the treatment of injured persons needing emergency medical services.

Nothing in this report should be construed as commenting on or questioning any such medical decisions. The sole focus of this investigation and report is on implementation of EMSA policies and procedures and whether these policies and procedures are being implemented or should be revised in the best interest of patients requiring emergency medical services in the County.

METHOD

In conducting the investigation that resulted in this report, the Grand Jury:

- Interviewed representatives, toured facilities, inspected equipment and met with the flight crews of the two providers of emergency medical helicopter services in the County.
- Interviewed the County Director of Public Health and the Specialty Care Coordinator of EMSA.
- Interviewed representatives and observed operations of the County Medical Communications Center (Med-Com), operated by the dispatch center in the County Sheriff's Department.
- Interviewed three State Parks Rangers and two Supervising State Parks Rangers who were or are stationed at the Dunes.
- Interviewed representatives of CalFire.
- Interviewed two paramedics employed by the exclusive ground ambulance provider for most of the County, including the Dunes.

- Reviewed past and current policies of EMSA concerning the use of emergency medical helicopters and other current policies relating to the provision of emergency medical services in the County.
- Reviewed Med-Com dispatch recordings and logs, CalFire dispatch recordings and logs and paramedic patient care records for emergency medical calls involving requests for emergency medical helicopters.
- Reviewed EMSA statistical analyses, quality review notes and Quality Improvement Committee minutes relating to the use of emergency medical helicopters in the County.
- Reviewed air/ground transport time comparisons for the Dunes prepared jointly by CalStar and San Luis Ambulance, expedited launch maps for the County and a map of the Dunes.

BACKGROUND

The County has two providers of emergency medical helicopter services. One is the California Highway Patrol (“CHP”). The CHP Coastal Division operates a helicopter that provides both emergency medical services along with other law enforcement and search and rescue functions. It is the only emergency medical helicopter in the County with hoist capability. It is based in Paso Robles, can transport one patient and is staffed with a pilot and a paramedic, both of whom are also CHP officers.

The second is CalStar, which operates air ambulances at several locations in California, including Santa Maria airport. CalStar is a nonprofit corporation and has a contract with the County that authorizes emergency medical helicopter services. No compensation is paid to CalStar by the County under this contract; however, CalStar does bill patients to whom it provides services. The CalStar air ambulance can transport two patients, is staffed with a pilot and two flight nurses and is able to provide some types of emergency medical services unavailable with the CHP helicopter. CalStar also provides inter-facility patient transport between hospitals in the County and larger hospitals or medical centers outside the County.

Utilization and evaluation of County emergency medical helicopters is governed by EMSA Policy 119 (Appendix A).^{*} Med-Com coordinates all emergency medical helicopter responses to the scene of medical and trauma emergencies through direct communication with CHP dispatch for the CHP helicopter, and through the CalFire Emergency Command Center for the CalStar helicopter.

Policy 119 requires Med-Com to dispatch a paramedic ground ambulance and appropriate first responders such as CalFire with the emergency medical helicopter. The policy prohibits termination of the ground ambulance until the emergency medical helicopter departs with the patient.

NARRATIVE

Overruling Incident Commander Requests

2009 – 2010 Grand Jury Report and Responses

The 2009-2010 Grand Jury report was released on June 23, 2010 and identified four 2009 emergency medical calls in which Med-Com refused requests for an emergency medical helicopter by the on-scene Incident Commander. The report found that such refusals by Med-Com were contrary to Policy 119. The report recommended that Med-Com dispatchers must follow Policy 119 and not overrule an Incident Commander's request for an emergency medical helicopter.

While the Grand Jury was conducting its investigation and writing the report, EMSA was concurrently revising Policy 119. Effective November 1, 2009 and effective May 15, 2010,

^{*} The reader should refer to Policy 119 for the definitions of various terms used in this report. These defined terms include "Incident Commander", "Estimated Time of Arrival (ETA)", "First Responder" and "Med-Com."

EMSA adopted revisions to Policy 119. The current version of Policy 119 states: "Responding or on-scene first responders may request an EMS Aircraft (Helicopter) and assume the responsibility of meeting both the Time and Need Criteria."** This current version and the earlier November 1, 2009 revision were both consistent with and implemented the Grand Jury recommendation that Med-Com dispatchers not overrule an Incident Commander's request for an emergency medical helicopter.

In their responses to the Findings and Recommendations in the report, public agencies, except Med-Com, acknowledged that incidents in which Med-Com questioned or canceled requests for an emergency medical helicopter had occurred. The CalFire response described two incidents over the July 4th weekend of 2010 involving automobile accidents on Highway 166 East with major injuries. In each incident, the CalFire Incident Commander requested an emergency medical helicopter and the need was either questioned or overlooked by Med-Com in direct violation of the recently revised Policy 119 and the Grand Jury recommendation in its 2009-2010 report.

CalFire requested a meeting of all involved public agencies to discuss whether these incidents were handled in accordance with Policy 119. EMSA initially suggested the meeting be scheduled in late July. However, CalFire insisted it be scheduled sooner, particularly in light of the 2009-2010 Grand Jury report. CalFire coordinated the meeting, which was held July 8, 2010. At the conclusion of this meeting all parties confirmed their understanding that the recently revised Policy 119 meant what it said and that Med-Com dispatchers would initiate dispatch of an emergency medical helicopter whenever requested by an Incident Commander, without questioning need or canceling the request.

** A request for an emergency medical helicopter must meet both the Time Criteria and the Need Criteria that are listed in Policy 119.

2010-2011 Grand Jury Investigation

The current Grand Jury initiated an investigation to determine the extent to which the understandings reached during the July 8, 2010 meeting by Med-Com and other agencies that respond to medical emergency calls were being consistently implemented. Grand Jury interviews and meetings with the involved agencies confirmed that Med-Com no longer questions or cancels an Incident Commander request for an emergency medical helicopter and promptly initiates dispatch. Med-Com representatives confirmed that it complies with Incident Commander requests for an emergency medical helicopter without further question or subsequent cancellation.

It is difficult to understand why Med-Com dispatchers questioned and/or failed to respond to Incident Commander requests for emergency medical helicopters over the July 4th weekend of 2010, in spite of the Policy 119 revisions of November 1, 2009 and May 15, 2010. One possible explanation is found in the August 19, 2010 response from the former Sheriff to Finding No.3 in the 2009-2010 Grand Jury report: "The Sheriff is not aware of any refusal to provide EMS aircraft to any incident commander." This response failed to acknowledge the same incidents acknowledged by all other responding public agencies. It also ignored the two incidents over the July 4th weekend of 2010 that the Grand Jury understands were brought to the attention of Med-Com and the Sheriff's Department in the meeting of July 8, 2010.

The former Sheriff's response suggests Med-Com's failure to comply with the revised Policy 119 prior to July 8, 2010 may have occurred because the former Sheriff was unwilling or unable to recognize and acknowledge these failures and to correct them. The actual reasons for this failure will probably never be known or understood, but the Grand Jury believes the failure has now been recognized and resolved by Med-Com.

Timely Dispatch of an Emergency Medical Helicopter

2009-2010 Grand Jury Report and Responses

The 2009-2010 Grand Jury report also identified one or more emergency medical calls in which the dispatch of an emergency medical helicopter with a reported ETA to the scene was delayed while Med-Com waited for a reported ETA from the other emergency medical helicopter provider. Policy 119 currently requires this practice. The report recommended that Policy 119 be revised to permit Med-Com to dispatch the emergency medical helicopter that has provided an ETA if the other emergency medical helicopter provider cannot be immediately contacted. A CalFire dispatcher requested this same revision in a request to resolve the difficulties encountered in dispatching an emergency medical helicopter to the July 4th, 2010 weekend accidents described above. The current Policy 119 requirement may result in an extended and unnecessary dispatch delay, with potentially adverse results for a patient. This requirement also seems unnecessary when Policy 119 permits an earlier dispatched emergency medical helicopter to be canceled if the other emergency medical helicopter later responds with a shorter ETA.

EMSA responded to this recommended revision in Policy 119 on July 15, 2010 by stating a need to discuss the recommendation with Med-Com and other involved parties and said that its Operations Subcommittee would discuss the issue and provide a response to the Grand Jury by January 27, 2011. The promised EMSA response was not received by that date. The Grand Jury made a follow-up request and was advised by the Health Agency on February 3, 2011 that this matter has not yet been taken up by the appropriate EMSA Committees, but that they will be asked to do so in the next two months. No reason was given for this delay.

The EMSA Operations Subcommittee met March 3, 2011 to discuss this recommended revision. With regard to the amount of time Med-Com waits for an ETA response from an emergency medical helicopter, the Operations Subcommittee recommended no change in the current language of Policy 119. Instead, the committee suggested developing a Memorandum of

Understanding among Med-Com, CalFire and the emergency medical helicopter providers to document the procedure.

This recommendation and its related finding also resulted in a response from CHP proposing use of a pager system as a solution to the problem. CHP indicated this solution had been discussed with and was agreeable to Med-Com.

2010 – 2011 Grand Jury Investigation

The current Grand Jury also initiated an investigation into implementation of the recommendation in the 2009-2010 report that if one emergency medical helicopter provider cannot be immediately contacted by Med-Com for an ETA, the other emergency medical helicopter that has responded with an ETA to the scene should be dispatched without further delay.

Grand Jury interviews and meetings with CHP representatives confirmed the proposed pager system has been implemented and that Med-Com has delivered pagers to CHP for ground personnel and flight crew use. The Grand Jury interview with CalFire confirmed that it now has a system in place to promptly request and receive ETAs directly from the CalStar flight crew. A follow-up inquiry with CalFire in January 2011 again confirmed that the CalFire procedure for obtaining an ETA directly from flight crews is in place and has been documented in a written procedure approved by the then Interim CalFire Chief and the Sheriff.

These interviews confirm that County emergency medical helicopter providers now have equipment and procedures in place that enable them to request and receive an ETA directly from flight crews within three minutes. There is no longer any barrier to implementing recommendations made by the 2009-2010 Grand Jury that an emergency medical helicopter with an ETA be dispatched by Med-Com if the other emergency medical helicopter cannot be immediately contacted. The Grand Jury believes it would avoid possible confusion and delay if

this recommendation were implemented in a revision to Policy 119 rather than in a separate Memorandum of Understanding as proposed by EMSA.

Cancellation of an Emergency Medical Helicopter Request

The Policy and Procedure for Cancellation

During interviews and meetings concerning the two ongoing issues raised by responses to the 2009-2010 Grand Jury report, the current Grand Jury was also advised of a new issue concerning the Policy 119 dispatch canceling procedure at the Dunes after dispatch has been requested by an Incident Commander. This issue was initially raised with the Grand Jury by one of the emergency medical helicopter providers and was further explored in multiple Grand Jury interviews with Dunes State Parks Rangers. The Rangers were concerned about Policy 119 cancellation procedure implementation with respect to their requests as Incident Commanders.

The Policy 119 cancellation provision relating to an emergency medical helicopter response states: "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." The issue raised in all Grand Jury interviews concerning this procedure was whether or not the final decision to cancel was being made by the Incident Commander or was, in fact, being made by the most medically-qualified first responder on scene.

In some cases, it was stated that the most medically-qualified first responder made the decision without any consultation with the Incident Commander, sometimes even before arriving on scene. In other cases, the most medically-qualified first responder may have advised the Incident Commander of his or her decision to cancel the requested emergency medical helicopter and the Incident Commander expressly or tacitly agreed with that decision.

As long as the decision to cancel the requested emergency medical helicopter is agreed to by the Incident Commander and the most medically-qualified first responder, the order of who initiates

the decision and who agrees with it may make no difference. However, the language of the Policy 119 cancellation procedure quoted above, together with the commonly understood meaning of the word "Commander", seems to make it quite clear who is supposed to recommend and who is supposed to decide that the request will be canceled.

In one Grand Jury interview it was implied that the final decision might be made by a ground ambulance paramedic or an emergency medical helicopter flight nurse based on economic benefits to their respective employers from transporting an injured patient, rather than the best medical interests of the patient. It should be emphatically noted that in the course of this investigation the Grand Jury found absolutely no evidence to suggest that any emergency personnel involved in any of the cases it reviewed made any patient transport decisions based on any consideration other than applicable policy and the best medical interests of the patient.

A Possible Failure to Follow the Cancellation Procedure

The Grand Jury obtained and reviewed the dispatch logs and tapes and the patient care records for six medical emergency calls on the Dunes in 2010 where a State Parks Ranger, as Incident Commander, requested dispatch of an emergency medical helicopter. The Grand Jury interviewed five State Parks Rangers from the Dunes who had some knowledge of these six calls and during their interviews questioned the appropriateness of the decision by the ground ambulance paramedic to cancel the request. The Grand Jury also interviewed two ground ambulance paramedics who responded to two of these calls, as well as to multiple other medical emergency calls on the Dunes.

The call of greatest concern occurred September 5, 2010. At least two State Parks Rangers and other Dunes personnel responded to a call involving a sixteen-year-old male injured in an ATV accident. The patient had suffered a severe spinal injury and neurological compromise as evidenced by his lack of any feeling below the nipple line. This medical assessment and the remote location of the accident met Policy 119 criteria for requesting an emergency medical helicopter. The State Parks Ranger who was the Incident Commander made this request and

Med-Com promptly dispatched CalStar and a ground ambulance in accordance with Policy 119. While waiting for these units, Dunes personnel completed all appropriate spinal injury precautions and treatment so the patient was ready for transport when the ground and air ambulances arrived.

The ground ambulance paramedic arrived and assessed the patient while CalStar was overhead preparing to land. According to the dispatch logs and tapes and the patient care record, the assessment was completed, the paramedic decided to ground transport the patient, a State Parks Ranger was advised of this decision, and advised Med-Com to cancel CalStar in accordance with the paramedic's decision; the ground ambulance loaded and departed with the patient, all within six minutes. The patient was transported to Arroyo Grande Hospital and arrived approximately twenty-one minutes after departure from the Dunes.

The State Parks Ranger Incident Commander, who requested the emergency medical helicopter stated she was not consulted by the paramedic or asked if she agreed to cancel CalStar. However, the Ranger was also engaged in other public safety activities away from the patient when the paramedic arrived. The Incident Commander was not pointed out to the paramedic or sought by him. The paramedic told the Grand Jury that it is not their practice to make any notes in the patient care record or elsewhere to describe how they complied with the Policy 119 cancellation procedure. As a result, there is no contemporaneous written record that confirms or refutes any version of the events as later recalled by the participants.

The paramedic also advised the Grand Jury that his decision to cancel CalStar was based solely on the Time Criteria of Policy 119. The Grand Jury concluded that this decision was consistent with Policy 119 because the records and other available information confirmed that CalStar could not have landed and transported the patient to Marian Medical Center ten minutes or more before the ground ambulance could transport him to Arroyo Grande Hospital.

Retrospective Reviews of the Cancellation Procedure

EMSA staff and its Quality Improvement Committee retrospectively review all emergency medical helicopter dispatches in the County. After reviewing the September 5, 2010 dispatch and cancellation, EMSA concluded they were handled in accordance with Policy 119. EMSA also advised the Grand Jury that its review would have concluded that transport of the September 5, 2010 patient by CalStar to Marian Medical Center would have been appropriate if it had occurred.

This was obviously a difficult case and the Grand Jury agrees it was handled in strict accordance with Policy 119. However, the Grand Jury is concerned about the apparent lack of any discretion for the paramedic to have CalStar land and consult with the more medically qualified flight nurses or to consult with a base station physician to determine if transport by CalStar would still be more appropriate for a particular case. Such discretion seems to be desirable because it appears from Grand Jury interviews that the possible variety of all circumstances and conditions encountered at the Dunes cannot be anticipated by written policies. It also appears possible that additional medical resources required in a particular case may only be available at the emergency medical helicopter destination.

While the emergency medical helicopter cancellation procedure in Policy 119 seems clear, the interaction between ground ambulance paramedics and State Parks Rangers in the cases reviewed by the Grand Jury varied significantly from the cancellation procedure in Policy 119. Among the factors contributing to these variations were circumstances of the particular case, the styles and personalities of the respective emergency personnel and the extent to which their relative experience or inexperience affected the hierarchical relationship between them. Uniform application of Policy 119 cancellation procedure should eliminate the differences in these interactions, but in reality uniform application may not occur.

The training of State Parks Rangers and the medical emergency procedures of the Department of State Parks appear to be the reason that the language of the Policy 119 procedure for the

cancellation of an emergency medical helicopter request and the actual procedure for cancellation at the Dunes will not be the same. All of the State Parks Rangers interviewed by the Grand Jury confirmed that their training and medical emergency procedures of the Department of State Parks require Rangers to defer decisions concerning transport of patients to the most medically-qualified first responder. The role conferred on State Parks Rangers as Incident Commanders under Policy 119 with respect to cancellation of an emergency request is the direct opposite of the role they are required to play based on their training and the medical emergency procedures of the Department of State Parks.

As long as the operation of off-road vehicles is permitted at the Dunes, there will be serious accidents resulting in significant risk to life or limb. The only questions are how many accidents will occur and how severe they will be. Given these circumstances, the Grand Jury review of Dunes medical emergency calls has identified a need for clarification and/or revision of Policy 119 and the possible development of separate policies and procedures applicable to the Dunes. Such clarification or revision also appears to require increased communication and cooperation between EMSA and the Department of State Parks.

Grand Jury interviews confirmed that State Parks Rangers do not regularly attend, and do not have membership status on EMSA Committees that develop and review policies governing responses to medical emergency calls. This lack of membership and attendance may be due in part to time and budget constraints applicable to State Parks Rangers. Rangers interviewed by the Grand Jury were generally unaware of the formal or informal procedures available to them for requesting review of medical emergency cases by the appropriate EMSA Committees.

Need Criteria for EMSA Helicopter Requests

One final issue identified by the current Grand Jury is the need criteria that justify a request for and dispatch of an emergency medical helicopter to remote areas, including the Dunes. The 2008-2009 Grand Jury report first raised the issue of whether these need criteria should be revised to include chest pain, heart attack or stroke. In response to a recommendation of the

2008-2009 Grand Jury, EMSA responded that they would be reviewed and updated as needed. However, it appears the need criteria have not been revised since that response. EMSA explains that one reason for not making revisions is the difficulty of defining need criteria that accurately distinguish a serious heart attack from far less serious conditions with similar symptoms. EMSA is understandably reluctant to permit emergency medical helicopter dispatches for cases ultimately found to be indigestion.

Effective August 1, 2010, EMSA approved a STEMI (ST-segment Elevation Myocardial Infarction) Policy defining a specific type of heart attack, which justifies transporting a patient directly to a STEMI Receiving Center (SRC) instead of the nearest hospital emergency room. French Hospital has been designated as the County SRC. Under these circumstances, it seems appropriate for EMSA to consider including the STEMI triage criteria in the need criteria justifying a request for, and dispatch of, an emergency medical helicopter.

The criteria define a condition serious enough to warrant patient transport directly to an SRC. If this condition is assessed for a patient in the Dunes or some other remote area, the Grand Jury was advised that an emergency medical helicopter can transport the patient to an SRC with a time savings of more than ten minutes over ground transport. This is particularly true at the Dunes because ground ambulances leaving the Dunes cannot reinflate their tires after deflating them to drive on the sand dunes, and therefore cannot travel at high speeds on Highway 101 to either French Hospital or Marian Medical Center.

CONCLUSIONS

Med-Com failed to promptly implement revisions to Policy 119 that require immediate and unquestioned dispatch of an emergency medical helicopter requested by an Incident Commander. A 2009-2010 Grand Jury recommendation and pressure from CalFire resulted in the implementation of these revisions to the apparent satisfaction of all emergency responders and to the benefit of injured victims.

A recommended 2009-2010 Grand Jury revision to Policy 119 that would require dispatch of an emergency medical helicopter with an ETA, if the second emergency medical helicopter cannot be immediately contacted, will not be made. The equipment and procedures are in place to make this revision to benefit injured victims requiring an emergency medical helicopter. There is no apparent justification for not making this recommended revision and instead developing a separate Memorandum of Understanding to document a procedure for the amount of time Med-Com waits for an ETA response.

Policy 119 procedures for cancellation of emergency medical helicopter requests by Incident Commanders are not consistently followed and require further review and possible revision. This is particularly true at the Dunes where training and procedures for State Parks Rangers are in direct conflict with the cancellation procedure 119. Need criteria for the use of emergency medical helicopters also require further review and possible revision in light of the new STEMI policy for transport and destination of patients who have a cardiac medical emergency defined in the STEMI policy.

FINDINGS

1. Current Med-Com policy and practice (i) immediately initiates the emergency medical helicopter dispatch process under Policy 119 whenever an Incident Commander requests an emergency medical helicopter and (ii) does not permit Med-Com dispatchers to question or cancel the request.
2. Both County emergency medical helicopter operators have equipment and procedures enabling them to contact flight crews for ETAs and provide Med-Com with ETAs within three (3) minutes of requests.
3. Policy 119 authorizes the Incident Commander, in consultation with the most medically-qualified first responder, to determine that a requested medical helicopter is not needed and to cancel the request.

4. A State Parks Ranger is usually the Incident Commander for a medical emergency at the Dunes and under Policy 119 is authorized to make the final determination of whether an emergency medical helicopter is needed.
5. State Parks training and procedures are the opposite of Policy 119 and require Rangers to defer to the determination of the most medically-qualified first responder on scene as to whether an emergency medical helicopter is needed.
6. In medical emergency calls at the Dunes, the Policy 119 procedure for canceling an emergency medical helicopter requested by the Incident Commander is often reversed and the most medically-qualified first responder (usually the ground ambulance paramedic) on scene, in consultation with the Incident Commander (usually a State Parks Ranger), determines whether or not the requested emergency medical helicopter is needed.
7. The ground ambulance paramedics responding to medical emergencies at the Dunes do not make any entries in their patient care records to confirm consultation with the Incident Commander or the determination by the Incident Commander that the emergency medical helicopter is not needed.
8. EMSA does not include a representative of the State Parks Rangers on its Operations or Quality Improvement Committees.
9. State Parks Rangers are generally not aware of the formal and informal processes available for them to request EMSA review of whether their requests for an emergency medical helicopter were cancelled in accordance with Policy 119.

10. Policy 119 does not incorporate the recently approved EMSA Policy 201.2 on STEMI triage and destination and therefore does not permit Incident Commanders to request an emergency medical helicopter for any medical emergency call involving a possible heart attack that meets STEMI criteria.
11. Transport of a heart attack patient on the Dunes who meets STEMI criteria to Marian Medical Center by emergency medical helicopter will result in a time savings of more than ten (10) minutes over ground ambulance transport to French Hospital.
12. Policy 119 does not give paramedics or flight nurses any discretion to consult with an available and more medically-qualified authority and to obtain their authorization to deviate from Policy 119 based on the particular circumstances of a case.

RECOMMENDATIONS

1. EMSA should revise Policy 119 to require that Med-Com dispatch the emergency medical helicopter that has responded to Med-Com with an ETA, if no ETA has been received from the other emergency medical helicopter within three (3) minutes after it was simultaneously requested by Med-Com to provide an ETA. (Finding 2)
2. EMSA should consult with State Parks Rangers concerning application of the Policy 119 cancellation procedure at the Dunes and determine what, if any, revisions should be made in either State Parks procedures or Policy 119 so the cancellation procedure and actual cancellation practice are consistent. (Findings 3-6)
3. EMSA should require that ground ambulance paramedics include in patient care reports a confirmation that they consulted with the Incident Commander. The note should identify the Incident Commander and confirm that the Incident Commander decided the helicopter was not needed following consultation. (Finding 7)

4. EMSA should include a representative from State Parks Rangers on its Operations and Quality Improvement Subcommittees. (Finding 8)
5. EMSA should advise State Parks Rangers of the formal and informal procedures available to them for requesting that the appropriate EMSA Committee review cancellation of an emergency medical helicopter request the Rangers believe was in violation of Policy 119. (Finding 9)
6. EMSA should consider revising Policy 119 to include the existence of possible STEMI criteria as a medical need that justifies an Incident Commander request for an emergency medical helicopter. (Findings 10 and 11)
7. EMSA should consider revising Policy 119 to allow ground ambulance paramedics or flight nurses discretion to deviate from time and need criteria after consultation with, and approval of, the Base Station physician so that strict adherence to Policy 119 does not preclude appropriate patient care in unique situations. (Finding 12)

REQUIRED RESPONSES

The San Luis Obispo County Board of Supervisors is required to respond to Findings 3-4 and 8-12 and Recommendations 1-7. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by August 25, 2011. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The San Luis Obispo County Health Agency is required to respond to Findings 3-4 and 8-12 and Recommendations 1-7. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by July 25, 2011. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The San Luis Obispo County Sheriff is required to respond to Finding 1. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by July 25, 2011. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The CalFire San Luis Obispo Office is required to respond to Findings 3 and 10 and Recommendation 6. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by July 25, 2011. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The San Luis Ambulance Company is required to respond to Findings 3, 6, 7 and 12 and Recommendations 3 and 7. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by July 25, 2011. Please provide a paper copy and an electronic version of all responses to the Grand Jury, as well.

The CalStar Santa Maria Base is required to respond to Findings 2 and 12 and Recommendation 7. The responses shall be submitted to the Presiding Judge of the San Luis Obispo Superior Court by July 25, 2011. Please provide a paper copy and an electronic version 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

The email address for the Grand Jury is: GrandJury@co.slo.ca.us

State agencies are not subject to the jurisdiction of the Grand Jury and are not required to respond to any Grand Jury Findings or Recommendations. However, the two state agencies discussed in this report are important components of the County emergency medical response system, particularly at the Dunes. The Grand Jury wishes to thank representatives of these state agencies who voluntarily provided assistance to the Grand Jury during its investigation. The Grand Jury requests that these state agencies voluntarily respond to the Findings and Recommendations resulting from the Grand Jury investigation that are noted below.

Any such responses may be submitted to the Presiding Judge of the San Luis Obispo Superior Court by July 25, 2011. Please provide a paper copy and an electronic version of all responses to the Grand Jury. The addresses for these responses are listed above.

The California Highway Patrol is requested to respond to Finding 2.

The Oceano District Office of the California State Parks Department is requested to respond to Findings 4-6 and 9 and Recommendations 2 and 4-6.

APPENDIX A

SAN LUIS OBISPO COUNTY EMERGENCY MEDICAL SERVICES AGENCY
PREHOSPITAL POLICY

Policy Reference No: 119
Updated: 07/29/2010
Effective Date: 05/15/2010
Supersedes: 10/18/2007
Review Date: 06/01/2012

SUBJECT: EMS AIRCRAFT (HELICOPTER) OPERATIONS

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.

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.

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 the EMS Agency.

- 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 (Helicopters): Any aircraft utilized for the purpose of prehospital emergency patient response and transport including air ambulances and all categories of rescue aircraft.
- 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.
 - 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 (Helicopter) 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: On-duty EMTs, Paramedics and nurses trained in local EMS policies, and Public Safety personnel trained in first aid and CPR such as firefighters, peace officers, park rangers and lifeguards.
- 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.

- N. Med-Com: The San Luis Obispo County Medical Communications Center, which coordinates all EMS Aircraft (Helicopter) 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.

DISPATCH

- A. Med-Com shall initiate the dispatch of EMS Aircraft (Helicopter) 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 (MCI)
- B. The designated ordering point for all EMS Aircraft shall be Med-Com. Med-Com shall coordinate EMS Aircraft (Helicopter) requests and cancellations.
- C. Med-Com shall **obtain simultaneously request [updated 07/29/2010]** an ETA from each EMS Aircraft (Helicopter) provider and dispatch the EMS Aircraft (Helicopter) 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 (Helicopter).
- F. EMS Aircraft (Helicopter) 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.
- G. Cancellation of EMS Aircraft (Helicopter) Response.

1. Med-Com may cancel an EMS Aircraft (Helicopter) 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 (Helicopter) has been dispatched, and a second EMS Aircraft (Helicopter) becomes available that reports an ETA at least five (5) minutes less than the ETA of the first EMS Aircraft (Helicopter) in which case Med-Com may cancel the first EMS Aircraft (Helicopter).
2. An EMS Aircraft (Helicopter) 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.

REQUEST OF EMS AIRCRAFT

- A. Responding or on-scene first responders may request an EMS Aircraft (Helicopter) and assume the responsibility of meeting both Time and Need Criteria.
- B. A request for EMS Aircraft (Helicopter) shall be based on information indicating that **BOTH** the following Time Criteria **AND** Need Criteria are met.
 1. Time Criteria (one or more of the following):
 - a. Transport by EMS Aircraft (Helicopter) 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
 - ix. Significant penetrating trauma to head, neck, chest/back or abdomen
 - x. Amputations and/or mangled limbs
 - xi. Multi-casualty incident (MCI)

- 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

SCENE MANAGEMENT

- A. Scene management will be in accordance with State regulations, local agreements, and *SLO County Emergency Medical Services Agency Prehospital Policy 101: Scene Management*.
- B. Landing Zone Safety
1. The pilot of the EMS Aircraft (Helicopter) shall make the final decision as to the safe operation of the aircraft and the suitability of the Landing Zone.
 2. EMS Aircraft (Helicopter) Landing Zone and safety operations shall follow the guidelines outlined in EMS Authority Air Medical Guidelines.

TRANSPORT

- A. Criteria for Transport by EMS Aircraft (Helicopter):
1. Patient transport by EMS Aircraft (Helicopter) shall meet **BOTH** the Time Criteria **AND** On-Scene Assessment Need Criteria outlined in this policy.
 2. EMS Aircraft (Helicopter) 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 Emergency Medical Services 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 (Helicopter) 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 (Helicopter) departs with patient.
- E. Patients shall be transported to the closest hospital with a permitted Heliport. In extreme circumstances, e.g. MCI, a hospital with an Approved Landing Site may also be utilized.

QUALITY IMPROVEMENT

Consistent with Chapter 12 of Title 22 of the California Code of Regulation, EMS Aircraft (Helicopter) 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 Emergency Medical Services Agency Prehospital Policy 109: Quality Improvement Program* and *SLO County Emergency Medical Services Agency Prehospital Policy 110: Quality Improvement Program Guidelines*.

SAN LUIS OBISPO COUNTY EMERGENCY MEDICAL SERVICES AGENCY

EXPEDITED LAUNCH ZONES

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 La Panza Road
- Nacimiento Lake Area
 - ♦ Those areas served by Nacimiento Lake Drive north and west of the Dam including Oak Shores and Running Deer Ranch
 - ♦ Those areas northwest of the intersection of Chimney Rock Road and Cypress Mountain Road

APPROVED LANDING SITES

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 HOSPITAL EMS LANDING SITES

French Hospital Medical Center (San Luis Obispo)

- Daylight hours only- emergency situations only

SLO COUNTY DESIGNATED EMS LANDING SITES (Other)

San Luis Obispo County Airport (San Luis Obispo)

- Transfers to and from ground ambulances

Oceano Airport (Oceano)

- Transfers to and from ground ambulances