

**Before the Board of Supervisors in and for the  
County of Monterey, State of California**

Approve and authorize the Emergency )  
Medical Services Agency Director to )  
submit the revised Monterey County )  
Trauma Care System Plan to the California )  
Emergency Medical Services Authority..... )

Upon motion of Supervisor Salinas, seconded by Supervisor Armenta, and carried by those members present, the Board hereby;

Approved and authorized the Emergency Medical Services Agency Director to submit the revised Monterey County Trauma Care System Plan to the California Emergency Medical Services Authority

PASSED AND ADOPTED on this 14<sup>th</sup> day of June, 2011, by the following vote, to wit:

AYES: Supervisors Armenta, Calcagno, Salinas, Parker, and Potter

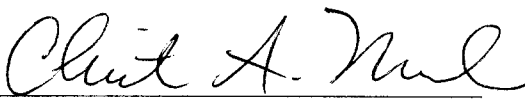
NOES: None

ABSENT: None

I, Gail T. Borkowski, Clerk of the Board of Supervisors of the County of Monterey, State of California, hereby certify that the foregoing is a true copy of an original order of said Board of Supervisors duly made and entered in the minutes thereof of Minute Book 75 for the meeting on June 14, 2011.

Dated: June 17, 2011

Gail T. Borkowski, Clerk of the Board of Supervisors  
County of Monterey, State of California

By   
Deputy



**Monterey County**  
**Emergency Medical Services Agency**

**TRAUMA CARE SYSTEM PLAN**

Revised April 2011

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## **AUTHORITY AND PURPOSE**

The Monterey County Emergency Medical Services (EMS) Trauma Care System Plan was developed in 2007 and revised in 2011 in compliance with the State of California Health and Safety Code Division 2.5 Sections 1797.257 and 1797.258 (Trauma Statutes) and the California Code of Regulations Title 22 Social Security Division 9 Prehospital Emergency Medical Services Chapter 7 Trauma Care Systems (Trauma Regulations) and the Monterey County Emergency Medical Services Plan. The revised Monterey County Trauma Care System Plan outlines the structure and operations of the proposed trauma care system within Monterey County. This revision incorporates a design change from no Trauma Centers in Monterey County to the designation of a Level II Trauma Center.

Specifically, the plan incorporates policies and procedures for system operations, which meet the minimum standards in the regulations. Finally, it establishes a timeframe for implementation of system changes.

*The Monterey County Emergency Medical Services Agency, would like to thank all of the individuals, organizations, and institutions that assisted in the development of this Plan.*

## **I. SUMMARY OF THE PLAN**

The Monterey County EMS Trauma Care System Plan was developed in compliance with Trauma Statute and Regulations.

### **A. Organizational structure:**

Monterey County EMS Agency is a local emergency medical services agency designated by the Monterey County Board of Supervisors via resolution 79-202 dated April 24, 1979.

### **B. Needs assessment:**

Currently, the County system of care for trauma patients is to air transport the majority of trauma patients to Santa Clara County Trauma Centers. Mechanic-Anatomic-Physiologic (MAP) triage criteria (algorithm) are used within Monterey County to determine injury severity and when the patient meets MAP criteria, a helicopter is dispatched and patients are transported to Santa Clara County.

### **C. Trauma system design:**

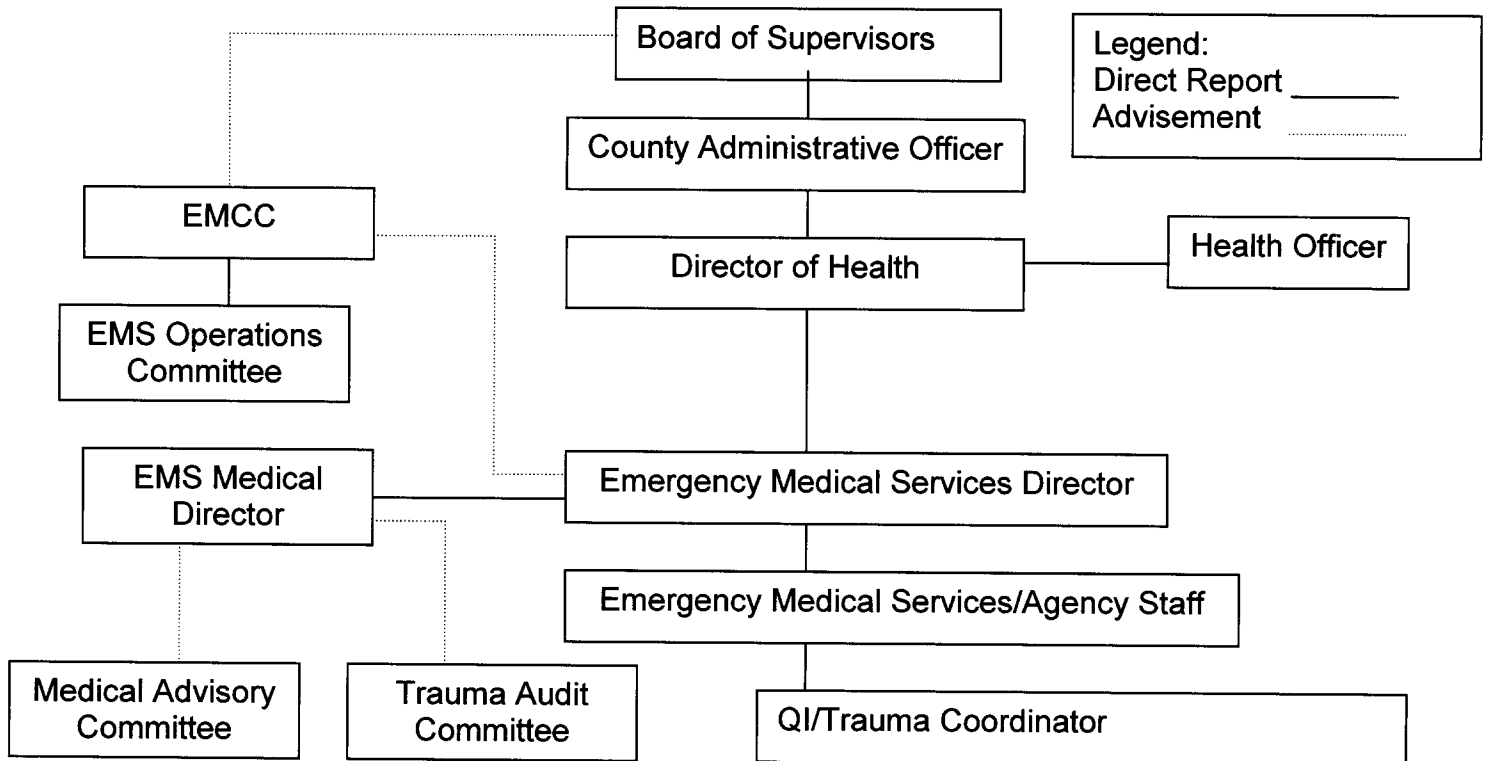
Monterey County EMS seeks to improve the care provided to trauma patients in its service area through an inclusive trauma care system. The proposed system design is:

- The designation of a Level II Trauma Center.
- Patients meeting field triage criteria will be transported to a Level II Trauma Center in county when possible;
- Appropriate patients will be transported to a designated pediatric Trauma Center in another county;
- A quality improvement process will be established which includes appropriate stakeholders;
- Training will be provided for prehospital and hospital personnel regarding the changes to system policies including field trauma triage and hospital destination;
- Appropriate policies will be adopted for implementation and operation of the system; and,
- Trauma patients within 45 minutes (via ground or air) of the Monterey County Level II Trauma Center will be transported directly to that facility. All other patients will be transported to the destination determined by the Level II Trauma Center.

## II. ORGANIZATIONAL STRUCTURE

The Monterey County Emergency Medical Service Agency (EMS) is an agency created and governed by the Monterey County Board of Supervisors via resolution 79-202 dated April 24, 1979. A map of Monterey County is provided in Appendix A – California County Map.

### Current Organizational Structure



Monterey County Emergency Medical Care Committee (EMCC), created by the Board of Supervisors in 2002, acts in an advisory capacity to the Board of Supervisors and the EMS Director in regards to operational and medical issues. Per the April 6, 2010, the EMCC bylaws (BOS Resolution #10-069), the EMCC shall advise the Board of Supervisors and EMS Director on EMS system issues, including CSA74 funding, the EMS Agency budget, and training; ensure that all EMS constituents will be actively engaged in decisions regarding EMS system resources; and provide input on the development and implementation of County EMS policies, protocols, and procedures.

The Monterey County EMS Agency utilized the Medical Advisory Committee with expanded participation (see Appendix I – Medical Advisory Committee Membership) to provide leadership in the development of the Monterey County Trauma Care System Plan and to provide a mechanism for input from system stakeholders and constituents.

### III. NEEDS ASSESSMENT

Currently, many trauma victims are transported to Santa Clara County via helicopter. Patient who are transported to Santa Clara County have data collected by Santa Clara County. Data is not collected regarding triage, transport, treatment or disposition of trauma patients who remain in Monterey County. For the purpose of the creation of the 2007 Trauma Care System Plan, significant research was done to identify trauma patients for 2003. However, since 2007 there data has been not been collected regarding trauma patients remaining in Monterey County.

A summary of the 2007 data collection is shown in **Appendix B – Trauma System Volume**. The population of Monterey County has increased by an estimated 7,300 since the 2007 Trauma Care System Plan was created; the population increase will not significantly change the anticipated trauma volume for the current revision.

**Appendix C – Trauma System Resource Assessment** identifies the resources available for trauma care within Monterey County. The closest tertiary level services, other than cardiac care, are in San Francisco and Santa Clara Counties. While there are four acute care hospitals in the Monterey County, until recently none of the hospitals expressed an interest in being designated a trauma center. Salinas Valley Memorial Healthcare System has initiated discussions about Level II designation. Community Hospital of the Monterey Peninsula has several procedures in place for receiving trauma patients. Natividad Medical Center is interested in trauma but at this time is unable to commit resources to meet the standards for designation.

	Beds	ED	ICU	OR
Community Hospital of the Monterey Peninsula (City of Monterey)	201	24	20	8 rooms (anesthesia and RNs on call after 2330 hours)
Mee Memorial Hospital (City of King)	119	6	4	3 (on call after hours)
Natividad Medical Center (City of Salinas)	172	19	10	4 (OR crew on call after 1800 hours)
Salinas Valley Memorial Healthcare Systems (City of Salinas)	269	20	13	7 (on call after 2300 hours)

#### **IV. TRAUMA SYSTEM DESIGN**

Monterey County EMS seeks to improve the care provided to trauma patients in its service areas through designating a Level II Trauma Center. The proposed system design is:

- Designating a Level II trauma center;
- Patients meeting field trauma triage criteria will be transported to the Level II Trauma Center when appropriate;
- Appropriate patients will be transported to a pediatric Trauma Center in another county;
- A quality improvement process will be established which includes stakeholders;
- Training will be provided for prehospital and hospital personnel regarding field trauma triage policies, trauma patient destination, and other system policies;
- Appropriate policies will be adopted for implementation and operation of the system; and,
- Trauma victims within 45 minutes (via ground or air) of the Monterey County Level II Trauma Center will be transported directly to that facility. All other patients will be transported to the destination determined by the Level II Trauma Center.

##### **A. Revised system design**

Level II Trauma Center: Monterey County EMS intends to designate a Level II Trauma Center.

Patient flow: Trauma victims within 45 minutes of the Level II trauma center will be transported directly to that facility. All other patients will be transported to the destination determined by the Level II Trauma Center.

Quality management: Monterey County's Level II Trauma Center will maintain internal quality assurance programs meeting state and county standards. Monterey County EMS will have a Trauma Coordinator who, along with the EMS Medical Director, will be responsible for evaluating the trauma system's protocols, policies and procedures for appropriateness; reviewing, analyzing, and evaluating trauma case reports for system effectiveness; serving on and participating in the Trauma Audit Committee in Monterey County; and otherwise provide leadership related to trauma care. See the Trauma Quality Improvement and System Evaluation Policy for additional information.



**B. Rationale for trauma system design and for number and location of trauma centers**

The number of Trauma Centers needed in the system is based on four criteria:

- **MINIMUM PATIENT LOAD:** Each designated trauma center must receive a sufficient number of major trauma patients to maintain a high skill level. California's Trauma Care System Regulations require a minimum population of 350,000 for each Level I or Level II trauma center to be designated. An exception can be granted for the 350,000 population per Level I or II Trauma Center designation by the EMS Commission.
- **PATIENT TRANSPORT TIMES:** If an area of the County is not within a reasonable distance from a designated Trauma Center, and if patient load permits, an additional Trauma Center should be considered. Both ground and air transport times must be considered.
- **RESOURCE AVAILABILITY:** Within each potential trauma service area, there must be a hospital or hospitals with the interest in and capability of meeting the minimum standards for Trauma Center designation, as provided for in the trauma regulations.
- **RESOURCE REQUIREMENTS:** Each trauma care system should have the total number of trauma teams, including personnel and facilities, necessary to care for the projected patient load.

These criteria have been applied to the Monterey County EMS trauma system as follows:

Patient load: According to the California Department of Finance, the Monterey County EMS region has an estimated 2010 permanent population of 435,878. A population density map is provided as **Appendix D – Population Density Map of Monterey County**. Due to the geography and population center, it is not anticipated that counties surrounding Monterey County would contribute any significant volume of trauma victims. Monterey County might receive a few patients from San Benito County when helicopters are unable to fly and it is possible that a few patients might be routed from southern Santa Cruz County. The “rule of thumb” of one trauma patient for every 1,000 population suggests an estimate patient load of 436 per year. Based on the data reviewed in 2006, the number of trauma patients is expected to support the 436 per year estimate.

Some patients from within the Monterey Region are closer to Trauma Centers in other systems. Patients from the southeast portion of the County may be closer to a Trauma Center located in Fresno County.

The current population would allow for designation of one Level II Trauma Center.

**Transport times:** The Monterey County EMS Trauma Care System includes 3,325 square miles. The majority of the population for the County is located in the northwestern portion of the county with the largest city, Salinas, located approximately ten (10) miles east of Monterey Bay. Other population centers are found along the coast in the cities of Monterey, Pacific Grove, Seaside, Marina and Carmel. In addition, some residents and tourists/visitors to the Monterey County are located in rural, remote, or wilderness areas; and are distant from healthcare facilities and medical resources (See Tables 1 and 2 below):

**Table 1: Travel Times from Monterey County Communities to Out-Of-County Trauma Centers**

<b>Community</b>	<b>Trauma Center Destination</b>	<b>Ground (miles/minutes)<sup>a</sup></b>	<b>Air (Surface miles/minutes)<sup>b</sup></b>
Big Sur	Regional Medical Center (RMC) of Santa Clara	100/105 minutes	76/33 minutes
King City	RMC	106/105 minutes	89/38 minutes
Lake San Antonio Recreation Area (Lockwood)	RMC	128/143 minutes	103/44 minutes
Lucia	RMC	125/134 minutes	94/40 minutes
Monterey Peninsula Airport	RMC	71/73 minutes	52/23 minutes
Pinnacles	RMC	76/99 minutes	75/33 minutes
Parkfield	University Medical Center Fresno	100/138 minutes	86/37 minutes
Salinas (Natividad)	RMC	60/64 minutes	47/21 minutes
Tassajara Hot Springs	RMC	108/149 minutes	61/26 minutes

<sup>a</sup>. Source: Mapquest

<sup>b</sup>. CALSTAR – Google Earth

**Table 2: Travel Times from Monterey County Communities to In-County Trauma Center**

<b>Community</b>	<b>Trauma Center Destination</b>	<b>Ground (miles/minutes)<sup>a</sup></b>
Big Sur	CHOMP <sup>c</sup>	29/42 minutes
	SVMHS <sup>d</sup>	49/68 minutes
King City	CHOMP	67/76 minutes
	SVMHS	47/52 minutes
Lake San Antonio Recreation Area	CHOMP	110/131 minutes
	SVMHS	90/107 minutes
Lucia	CHOMP	52/71 minutes
	SVMHS	73/97 minutes
Monterey (downtown)	CHOMP	3/6 minutes
	SVMHS	19/29 minutes
Pinnacles	CHOMP	70/83 minutes
	SVMHS	58/77 minutes
Parkfield	CHOMP	132/159 minutes
	SVMHS	112/135 minutes

Salinas (Natividad)	CHOMP SVMHS	26/29 minutes 2/8 minutes
Tassajara Hot Springs	CHOMP SVMHS	42/110 minutes 46/112 minutes

- a. Source: Google
- b. CALSTAR – Google Earth
- c. CHOMP = Community Hospital of the Monterey Peninsula
- d. SVMHS = Salinas Valley Memorial Healthcare System

Resource availability: Monterey County has four acute care hospitals. Two of these are located in the City of Salinas, one is located in the City of Monterey, and the fourth hospital is in King City (south/central portion of the county). Only Natividad Medical Center in the City of Salinas and Mee Memorial in King City have functional helipads.

Resource requirements: The Monterey County EMS designation process would assess and ensure that the designated Level II Trauma Center has a sufficient number of trauma teams; including personnel and facilities to care for the projected patient load as per Trauma Regulations. Without a designation site visit to ascertain this information, it is not clear that either Salinas Valley Memorial Healthcare System (SVMHS) or Community Hospital of the Monterey Peninsula (CHOMP) have enough dedicated trauma surgeons and other specialties to meet resource requirements of the Trauma Regulations.

Coordination with neighboring trauma systems: Santa Clara County allows patients from Monterey County to routinely be transported to their Level I and Level II Trauma Centers. Monterey County EMS will work with Santa Clara County to clarify policies for tertiary services at their Level I and pediatric facilities to support patients from Monterey County. Patients in southeastern Monterey County may be transported to the University Medical Center of Fresno.

Monterey County abides by policies set by the region designating these centers.

Pre-hospital provider training: Monterey County EMS will conduct training for pre-hospital providers to ensure that they are appropriately trained in all trauma system related policies, including field trauma triage and hospital destination. The Monterey County EMS Agency will develop trauma care system training for all emergency medical responders, emergency medical technicians, paramedics, and hospital personnel.

Communication equipment: Monterey County EMS requires that all ambulances be equipped with two-way radios with appropriate frequencies for medical control and hospital notification. (See **Appendix E – Excerpts from Ambulance Ordinance No. 5138; dated 9/22/2009**)

Hospital notification: The Monterey County EMS field trauma triage criteria states “a member of the prehospital transport crew MUST notify the receiving facility IMMEDIATELY when a major trauma victim is being transported.”

C. Policies being developed pursuant to Section 100255, Title 22, CCR and will support the Monterey County Trauma Care System Plan.

<b><u>Required area</u></b>	<b><u>Monterey County EMS Policies and Procedures Manual</u></b>
<ul style="list-style-type: none"> <li>• System organization and management:</li> </ul>	<p><b><i>Trauma Care System Organization and Management Policy</i></b></p> <p>This policy outlines the responsibilities Monterey County EMS has as a lead agency in planning, implementing and managing the trauma system. This policy identifies the relationship with the Level II trauma center and the participation of Monterey County receiving facilities.</p>
<ul style="list-style-type: none"> <li>• Data collection and management</li> </ul>	<p><b><i>Trauma Data Collection and Management Policy</i></b></p> <p>The purpose of this policy is to standardize the reporting of trauma care and system information gathered from the Trauma Center and other receiving facilities in Monterey County.</p>
<ul style="list-style-type: none"> <li>• Establishment of service areas for trauma centers</li> </ul>	<p><b><i>Trauma Service Area Policy</i></b></p> <p>This policy defines the trauma service area of Monterey County as the whole county.</p>
<ul style="list-style-type: none"> <li>• Coordination of EMS and trauma system for transportation including inter-Trauma Center transfer and transfers from a receiving hospital to a Trauma Center</li> </ul>	<p><b><i>Trauma Patient Interfacility Transfer and Transportation Policy</i></b></p> <p>The purpose of this policy is to facilitate transfer of trauma patients to the most appropriate facility. The policy recommends receiving facilities have agreements to facilitate transfers.</p> <p>In addition this policy requires a designated Trauma Center have agreements for pediatric patients, burn and spinal cord victims transfer.</p> <p><b><i>EMS Aircraft Operations Policy</i></b></p> <p>The purpose of this policy is to set guidelines for the field transport of major trauma victims (MTV). The policy recommends all patients considered MTVs</p>

who are further than 45 minutes by ground transport be flown to a Trauma Center if a helicopter is available and travel time requirements are met.

- Quality improvement and system evaluation to include responsibilities of the multidisciplinary trauma peer review committee

### ***Trauma Quality Improvement and System Evaluation***

This policy establishes and outlines in detail Monterey County EMS Trauma Quality Improvement program. It defines and outlines the various responsibilities and processes for internal quality improvement and external quality improvement.

- Trauma care coordination with neighboring jurisdictions, including EMS agency/system agreements

### ***Mutual Aid and Coordination with Neighboring Systems Policy***

This section of the policy ensures that patients are transported to the nearest appropriate trauma center despite geopolitical boundaries. Monterey County EMS will have written mutual aid agreements with neighboring EMS systems. Monterey County EMS will maintain contact with neighboring EMS agencies to monitor their status, contact these systems if patients are to be transported outside the EMS system, and will attempt to seek patient information.

- Fees, including those for application, designation and redesignation, monitoring and evaluation

### ***Trauma System Fees***

This policy describes fee setting process for the application, designation and redesignation of a Level II Trauma Center

- Trauma Center designation/ redesignation process to include a written agreement between the local EMS agency and the Trauma Center

### ***Trauma Center Designation and Redesignation Policy***

This policy describes the application, designation and redesignation processes for a Level II Trauma Center.

- Coordination with health maintenance and other managed health care organizations within the trauma system to facilitate the transfer of an organization member

### ***Trauma Center Coordination with Health Systems***

This policy sets guidelines for trauma center coordination with health maintenance and other managed health care organizations within the trauma service area.

- Integration of pediatric hospitals, including pediatric triage criteria if applicable

### ***Trauma Patient Interfacility Transfer and Transportation Policy***

The purpose of this policy is to facilitate transfer of trauma patients to the most appropriate facility. The policy recommends receiving facilities have agreements to facilitate transfers.

In addition this policy requires a designated trauma center have agreements for pediatric patients, burn and spinal cord victims transfer.

- Trauma Center equipment

### ***Trauma Center Standards***

This policy outlines the equipment capabilities needed for designation of a Level II Trauma Center.

- Assuring the availability of trauma team personnel
- Criteria for activation of trauma team
- Mechanism for prompt availability of specialists

### ***Trauma Team Availability And Activation***

This policy outlines which trauma team members need to be immediately available and their required response times after prehospital notification. Trauma Centers must have response policies and procedures that include which position is responsible for notification and procedures for notifying the trauma surgeon, activating the trauma team, mobilizing backup trauma teams and personnel, and documentation of compliance with this policy.

- Field criteria for pediatric and adult trauma triage

### ***Field Trauma Triage Policy***

This policy sets field triage criteria including physiologic factors, anatomic factors, mechanism of injury and age and co-morbid factors. Specific pediatric factors are also defined.

- All pre-hospital providers shall have a policy approved by the local EMS agency for the early notification of Trauma Centers of the impending arrival of a trauma patient.

### ***Field Trauma Triage Policy***

This policy states that a member of the pre-hospital crew must notify the hospital from the scene immediately when a trauma alert is suspected. This policy outlines the physiologic factors, anatomic factors, mechanism of injury and age and co-morbid factors that are the criteria for a trauma alert.

- Training of pre-hospital EMS personnel to include trauma triage

***Provider Agreement: Required Training***

Monterey County EMS provider agreement requires that the provider training to their personnel on all Monterey County EMS policies and protocols. (Per AMR Agreement Section 7.2.2)

- Public information and education about the trauma system

***Trauma Center Standards***

This policy describes the Trauma Center standard for providing public information and education about the trauma system

- Marketing and advertising by Trauma Centers and prehospital providers as it relates to the trauma care system

***Trauma Marketing and Advertising***

This policy describes the advertising a designated a Trauma Center can do and the approval process.

- Coordination with public and private agencies and Trauma Centers in injury prevention programs

***Trauma Center Standards***

This policy describes the Trauma Center standard for coordination with public and private agencies and trauma center injury prevention programs.

- All trauma patient transport vehicles shall be equipped with II-way telecommunications equipment capable of accessing hospitals, in accordance with local EMS agency policies regarding communication.

***Ambulance Ordinance*** -- Appendix E; Monterey County Ordinance No. 5138.

## **V. INTERCOUNTY TRAUMA CENTER AGREEMENTS**

Currently the majority of trauma patients in Monterey County are air transported to Santa Clara County trauma centers. Monterey County EMS works with Santa Clara County EMS to ensure trauma patients receive appropriate care including participating on the Santa Clara County Trauma Audit Committee. While both counties have an on-going dialogue regarding trauma, the development/approval of a Memorandum of Understanding (MOU) remains outstanding.

At this time the volume of patients going to Fresno County is less than five (5) per year and no agreement will be sought with Central California EMS Agency. In the future, if the volume to these counties exceeds ten (10) patients per year, Monterey County EMS will initiate communications with the Central California EMS Agency.



## **VI. OBJECTIVES FOR IMPLEMENTATION**

### **Objective #1: Approve the revised Trauma Care System Plan**

By June 2011, Monterey County will revise the current Trauma Care System Plan with the expanded Medical Advisory Committee; hold public hearings on the revised Trauma Care System Plan; receive the endorsement from the Monterey County Emergency Medical Care Committee; forward the revised plan to the Board of Supervisors for approval; and submit to the California Emergency Medical Services Authority.

### **Objective #2: Adopt Trauma Policies**

By September 2011, in concert with the Medical Advisory Committee, correct and/or develop policies as required to support the revised Monterey County Trauma Care System Plan; obtain the approval for implementing subject policies from the EMS Medical Director; and forward subject policies to the EMS Authority.

### **Objective #3: Trauma Center Designation**

A Level II Trauma Center designation process will begin in the Fall of 2011 with the intent to designate one Level II Trauma Center. The start-up date for the revised Trauma Care System Plan implementation will be based upon trauma center designation.

### **Objective #4: Training Plan**

Prior to the implementation of the revised Trauma Care System Plan, all system components will require training in the new and revised policies and procedures. It is anticipated that training will begin upon trauma center designation. A mechanism for training incoming employees for each of EMS component affected by the Trauma Care System Plan and policies will be accomplished through Trauma Center personnel, field training officers (FTOs), and/or interactive CD ROM.

### **Objective #5: Trauma Data Collection**

- A. Trauma data will be collected for all patients, including victims transported to the Coroner, Monterey County Trauma Centers or hospitals, or out-of-county Trauma Centers.
- B. Monterey County will have a trauma registry consistent with the Santa Clara County EMS registry. Appropriate Monterey County EMS Agency staff will be trained in the use of the registry.
- C. The EMS Medical Director will have participated in a trauma registry introduction.
- D. A truncated data abstract form designed by the trauma registry vendor will be used for trauma patients transported to non-Trauma Center hospitals or the Monterey County Coroner.

This objective will begin upon trauma center designation and be continuous.

**Objective #6: Trauma Quality Improvement Process**

Trauma quality improvement will consist of in-county monitoring and conducting bimonthly case reviews by the EMS Agency Staff, EMS Medical Director, and the Medical Advisory Committee.

This objective will begin upon trauma center designation and be continuous.

**VII. IMPLEMENTATION SCHEDULE**

<b>Objective</b>	<b>Completion Date</b>
Objective #1: Approve the revised Trauma Plan	June 2011
Objective #2: Adopt Trauma Policies	September 2011
Objective #3: Trauma Center Designation	Upon trauma center designation
Objective #4: Training Plan	Upon trauma center designation
Objective #5: Trauma Data Collection	Continuous
Objective #6: Trauma Quality Improvement Process	Continuous

### **VIII. FISCAL IMPACT OF THE SYSTEM**

The fiscal impact of the system is based on the marginal changes that would be required to implement the system. These include the costs of meeting identified trauma system requirements but do not include the costs of actual care provided to trauma patients.

In order to monitor trauma patient care, data must be collected. The Level II Trauma Center would be required to submit trauma data and reports via an approved registry.

Non trauma center hospitals will provide ED patient disposition on patients identified as meeting trauma triage criteria or for those trauma patients admitted to the OR, ICU or kept more than 24 hours on the floor. Minimal data collection will be requested. Monterey County will collect this information quarterly.

<b>On-going Expense</b>	<b>Frequency</b>	<b>Annual Cost</b>
Trauma Coordinator (CN Coordinator)	0.5 FTE with benefits	\$60,043.60
EMS Analyst	0.5 FTE with benefits	\$60,043.60
EMS Medical Director	0.1 FTE	\$34,000.00
<b>Total</b>		<b>\$154,086.40</b>

No data is currently available on the fiscal benefits from implementing a local Trauma Care System, however, benefits seen in similar systems include decreased morbidity and mortality; decreased length of hospital stay; and early return of patients to a productive life.

## **IX. POLICY AND PLAN DEVELOPMENT PROCESS SYSTEM**

The **Monterey County EMS Trauma Care System Plan** was reviewed and revised with participation from many interested parties. Since January 2011, the progress of the planning process has been reported and discussed at the Medical Advisory Committee and Emergency Medical Care Committee. After approval of the draft plan by the Medical Advisory Committee with expanded participation, the plan was widely distributed for a review period. The draft was placed on the Monterey County EMS web site and a notice that it was available for review was sent to:

- County Board of Supervisors
- Hospital administrators and councils
- Ambulance providers (ground and air)
- Emergency Communications Center (PSAP)
- Sheriff-Coroner
- Fire agencies
- Law enforcement agencies
- Medical society/Medical groups

A public hearing was held on April 13, 2011 at the Emergency Medical Care Committee meeting. The Monterey County Trauma Care System Plan was endorsed and forwarded to the Board of Supervisors for consideration.

On June 14, 2011, the Monterey County Board of Supervisors approved the revised Trauma Care System Plan and directed submission to the California Emergency Medical Services Authority. (**See Attachment H – Board Resolution**)

**X. WRITTEN DOCUMENTATION OF LOCAL APPROVAL**

Monterey County Board of Supervisors Resolution approving the revised Trauma Care System Plan (2011) and directing the submission to the California EMS Authority (**See Appendix H – Board of Supervisors Resolution**)

## **XI. LOCATIONS OF TITLE 22 REQUIRED INFORMATION**

<b>100254 Trauma system criteria</b>	<b>Page and Identifier Location</b>
(a) System design criteria	Page 6 – Section IV.B
• Projected patient volume and projected number and level of trauma centers necessary	Page 6 – Section IV.B and Appendix B (Trauma System Volume)
• Transport times	Page 7 – Section IV.B
• Resource availability	Page 8 – Section IV.B
• Distinct service areas	
• Coordination with neighboring trauma systems	Page 8 – Section IV.B – QI & System Evaluation Policy
(d) Pre-hospital provider training	Page 8
(e) Communication equipment	Page 8 and Appendix E – Ambulance Ordinance Excerpt
(f) Hospital notification	Page 8 – EMS Aircraft Policy
<b>100255 Policy development</b>	Pages 9 through 12
<b>100256 Trauma plan development</b>	
(a) Plan contents	Page 2 – Section I
(1) Summary of the plan	Page 2 – Section I
(2) Organizational structure	Page 3 – Section II
(3) Needs assessment	Page 4 – Section III and Appendix B (Trauma System Volume)
(4) Inclusive system design	Page 5 – Section IV
(5) Inter-county agreements	Page 13 – Section V and Trauma Mutual Aid and Coordination Policy
(6) Objectives	Page 14 – Section VI
(7) Implementation schedule	Page 15 – Section VII
(8) Fiscal impact of the system	Page 16 – Section VIII
(9) Policy and plan development process	Page 17 – Section IX
(10) Documentation of local approval	Page 18 – Section X
(b) System design	Page 1 and Page 5 – Section IV.A
(1) Critical care capability	Page 8 “Resource Availability”
(2) Medical organization and management	Page 9 – Trauma System Organization and Management Policy
(3) Quality improvement	Page 10 – Trauma QI and System Evaluation Policy
<b>100257 Data collection</b>	
(a) Standardized data collection instrument and data management system	Page 9 – Trauma Data Collection and Management Policy
(b) Pre-hospital data elements	Page 9 – Trauma Data Collection and Management Policy
(c) Hospital data elements	Page 9 – Trauma Data Collection and Management Policy

## **XII. APPENDICES**

**Appendix A – California County Map**

**Appendix B -- Trauma System Volume**

**Appendix C -- Trauma System Resource Assessment**

**Appendix D -- Population Density Map of Monterey County**

**Appendix E -- Excerpts From Ambulance Ordinance - Communications**

**Appendix F – Medical Advisory Committee Membership**

**Appendix G – Notice of Public Hearing**

**Appendix H -- Board of Supervisors Resolution**



Appendix A

# California Map



# **Trauma System Volume Projections and 2003 Data**

Annual Critical Trauma Patient Volume Estimates:  
(Based on 2003 population of 421,355)

Estimate of one critical trauma patient per 1,000 population annually	421
Common over triage rate estimate of 50%	<u>210</u>
<b>Total patients estimated as trauma victims from Monterey County</b>	<b>631</b>

## **Monterey County 2003 Actual Critical Trauma Patient Volume**

<b>Total Patients:</b>	<b>418</b>
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Community Hospital of the Monterey Peninsula	65 (15.6%)
Mee Memorial Hospital, King City	2 (00.3%)
Natividad Medical Center, Salinas (Note *)	22 (05.2%)
Salinas Valley Memorial Healthcare System, Salinas	118 (28.3%)
Coroners, no transport	80 (19.1%)

Santa Clara County Trauma Centers	8 (28.3%)
Unable to Locate – Helicopter Transport Out-of-County	7 (1.7%)
Fresno Trauma Centers	6 (1.5%)

<b>Penetrating trauma:</b>	<b>87 (20.8%)</b>
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<b>Pediatric Patients (less than 15 years old):</b>	<b>30 (7.1%)</b>
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**Transports:**

Helicopter	116 (27.7%)
Ground	222 (53.1%)
Coroners	80 (19.2%)

<b>Local Hospital Patient:</b>	<b>207 (49.4%)</b>
Died	40 (19.3%)
Penetrating trauma	44 (21.2%)

Note \*: Missing data

## Trauma System Resource Assessment

### County Population: (Note \*)

- 2003: 421,355 (estimate)
- 2010: 453,636 (projection)
- 2020: 505,359 (projection)

Note \*: State of California, Department of Finance; (<http://www.dof.ca.gov/>)

### Resources:

#### In-County Acute Care Hospitals:

- Community Hospital of the Monterey Peninsula, Monterey – Basic Emergency Service
- Mee Memorial Hospital, King City – Basic Emergency Service
- Natividad Medical Center, Salinas – Basic Emergency Service
- Salinas Valley Memorial Healthcare System, Salinas – Basic Emergency Service

#### Out-of-County Trauma Centers:

- Santa Clara Valley Medical Center, San Jose – Level I Trauma Center
- Stanford Medical Center, Palo Alto – Level I Trauma Center
- University Medical Center, Fresno – Level I Trauma Center
- Regional Medical Center of San Jose – Level II Trauma Center

#### Tertiary Services:

- STEMI Center: Salinas Valley Memorial Healthcare System; Community Hospital of the Monterey Peninsula
- Burn, spinal/neuro, peds and reimplantation services in San Francisco and Santa Clara counties

### Ground Transport:

#### ALS Emergency Transport – AMR

- Number of ALS units in county - 17
- Number of ALS units from Santa Cruz County – 2 (six total with 2 units in south county)
- Number of ALS units from San Benito County -- 2
- Number of BLS units in county - 0
- Number of CCT units in county -1

#### ALS Emergency Transport – Carmel Regional Fire Ambulance

- Number of ALS units in county – 1

#### ALS Emergency Transport-Carmel Valley Fire District

- Number of ALS units in county - 2

ALS Emergency Transport – Fort Hunter Liggett Fire Department

- Number of ALS units in county - 1

ALS Emergency Transport – San Luis Obispo Ambulance

- Number of ALS units out of county - 1

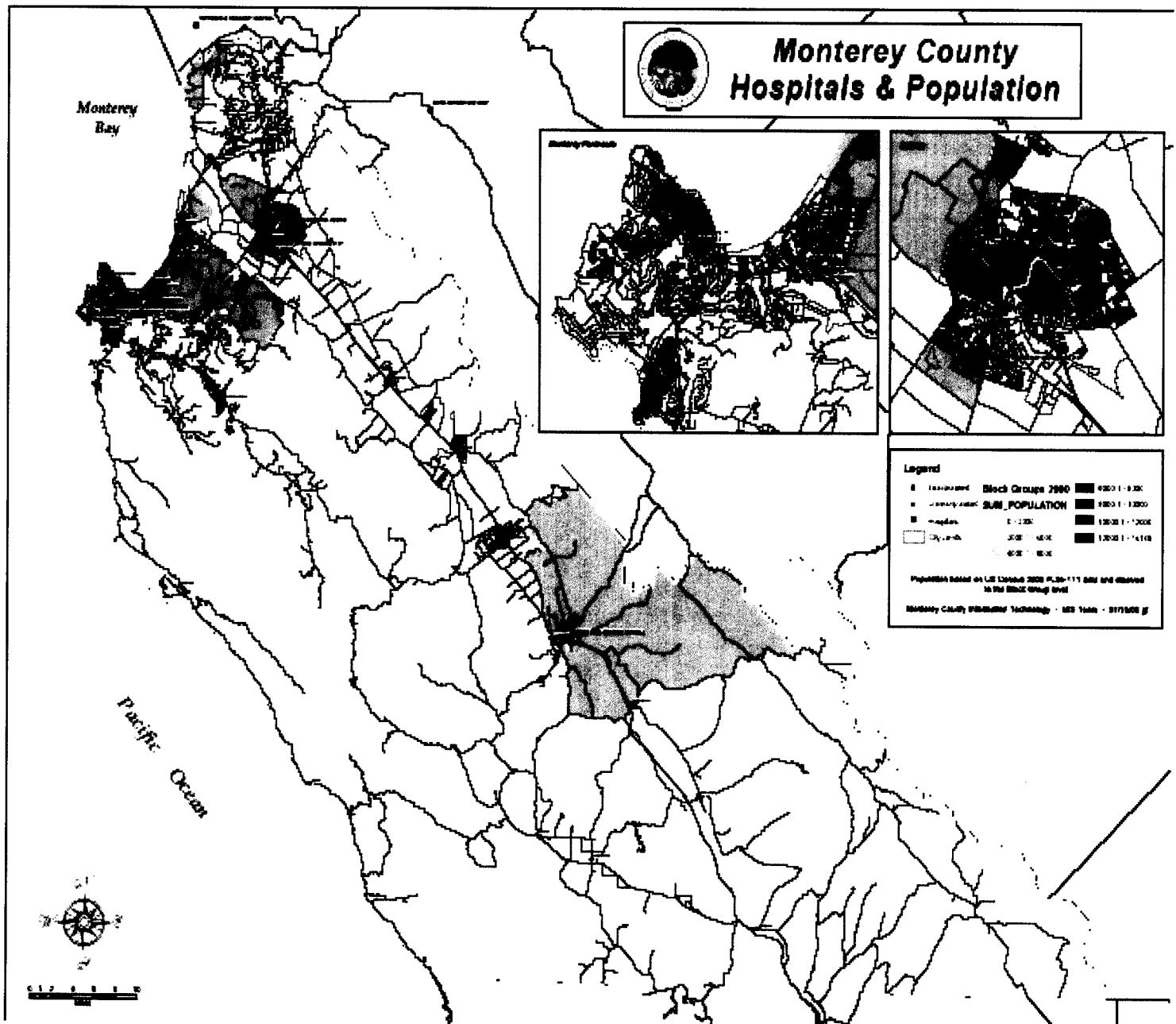
ALS Emergency Transport – Cambria Ambulance

- Number of BLS units out of county -1

Helicopter Transport Services:

- CALSTAR 5 (Salinas Airport)
- CALSTAR 2 (Gilroy)
- CALSTAR 1 (Hayward)
- CALSTAR 7 (Santa Maria)
- CHP H-70 (Paso Robles Airport)
- LifeFlight (Stanford Medical Center)
- Reach (Concord)
- Skylife (Fresno)
- Medi-Flight (Modesto)
- Mercy Air Ambulance (Fort Hunter Liggett)

# Population Density Map of Monterey County



**Excerpts from Ambulance Ordinance #5138 - Communications****15.40.048 Operational standards and requirements for ambulance and critical care transport services.**

- A. **Emergency Ambulance Drivers and Attendants.** Any emergency ambulance attendant or emergency ambulance driver utilized by an operator or provider shall be at least eighteen (18) years of age; shall be trained and competent in the proper use of all emergency ambulance equipment; shall hold current certification as an Emergency Medical Technician I-Ambulance (EMT-I) or Emergency Medical Technician-P (EMT-P); or be licensed as a physician or registered nurse in the State of California, and shall demonstrate compliance with all applicable State laws and regulations.
- B. **Uniform and Appearance.** Each person providing emergency ambulance transportation service subject to this Chapter shall staff each emergency ambulance with appropriate personnel who shall wear clean uniforms that identify the employer or sponsoring agency, have visible identification of name and certification level, and comply with the requirement of this Chapter.
- C. **Dispatchers.** Each person providing emergency ambulance transportation service subject to this Chapter shall assign at least one (1) person or an agency to be responsible for receiving calls and dispatching emergency ambulances. Such person or agency shall be located in Monterey County, unless otherwise specified by contract.
- D. **Inspection.** The emergency ambulance transport operator or provider shall allow the EMS Agency or its designee to inspect, on an announced or unannounced basis, all operational areas and equipment used to provide services in the County. The inspections should be held, whenever possible, during normal business hours; provided, however, that the inspection of an ambulance will be stopped should the ambulance be needed to respond to a request for immediate service. The purpose of such inspections may include, but need not be limited to, determining whether:
  - 1. The emergency ambulance is properly maintained and equipped for the provision of emergency ambulance service;
  - 2. The emergency ambulance and its equipment comply with the requirements of law for the level of service provided;
  - 3. The emergency ambulance contains two-way radios; the radios are in good working order and the radios are compatible with the County's Emergency Medical Communications and Dispatch System; and
  - 4. If the emergency ambulance is used for critical care transport, the communication system allows the emergency ambulance driver and emergency ambulance attendant to communicate with the medical staff at both the discharging and receiving facilities.

## Appendix F

**Medical Advisory Committee Membership -- Expanded**

<b>Name</b>	<b>Affiliation</b>
Dr. Michelle Kalinski	CHOMP -- Emergency Physician
Byron Merritt	CHOMP -- Base Hospital Coordinator
Vacant	Mee -- Emergency Physician
Cindy Banuelos	Mee -- Base Hospital Coordinator
Dr. Ruth Selvidge	Natividad -- Emergency Physician
Carlie Vigliotta	Natividad -- Base Hospital Coordinator
Dr. Rakesh Singh	SVMH -- Emergency Physician
Hal Rightmyer	SVMH -- Base Hospital Coordinator
Scott Houchin	Fire Chiefs Association
J. Michael Kline	Law Enforcement Chiefs Association
David Wiebe	Air Ambulance Provider
Cindy Williams	EMT and Paramedics
Vacant	EMT and Paramedics
Tammera "T" Badano	Primary Ambulance Contractor
Dr. James Stubblefield	EMS Medical Director -- Chair

Notice of Public Hearing

**MONTEREY COUNTY EMERGENCY MEDICAL CARE COMMITTEE**

**Meeting Announcement Agenda**

Wednesday, April 13, 2011 – 10:30 a.m.

Monterey County Health Department – Whitney Conference Room (Room 129 A&B)  
1270 Natividad Road, Salinas, CA 93906

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"The Emergency Medical Care Committee (EMCC) is appointed by the Board of Supervisors to advise the Board and the EMS Director on EMS issues, and to ensure all EMS constituents will be actively engaged in decisions regarding the use of County EMS funds and the development of County EMS policies." Monterey County Code Sec. 15.40.030F.

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1. CALL TO ORDER

- a. Introductions – welcome.
- b. New EMS Director's (Kirk Schmitt) comments/vision.
- c. Action: Approval of the 2/8/11 Meeting Minutes (See Attachment 1).

2. ORAL COMMUNICATIONS

Any member of the public may address the Committee for a period not to exceed three minutes on any issue not the Committee's agenda. The EMCC will listen to all communications but may not take any action.

3. CORRESPONDENCE – None

4. PUBLIC COMMENT – Monterey County Trauma Care System Plan (2011)

5. REPORTS

- a. Report: Emergency Medical Services (EMS) Agency
- b. Report: Medical Advisory Committee (MAC)
- c. Report: EMS Operations Committee

6. OLD BUSINESS

- a. Report: Update on the CSA74 MOU EMS Equipment and Training Progress Report; transition of EMS Training; and the AHA CPR Training Center.

7. NEW BUSINESS

- a. Presentation: Staff presentation on the CSA 74 Fund and EMS Agency's Budget.



- b. Report/Action: Staff will provide a progress report on the revised Monterey County Trauma Care System Plan (2011) and requests the endorsement of the EMCC to forward the Plan to Board of Supervisors for consideration.
- c. Presentation: Staff will provide a timeline for the revised ALS Provider Agreement.
- d. Discussion/Action: Staff will provide the proposed format for ambulance (AMR) performance monthly and quarterly reports and requests the endorsement of the EMCC to implement.
- e. Presentation/Action: Staff will request the review and endorsement of the revised exhibits (attachments) to 2010 EMS Plan (update to 2009 EMS Plan).

8. GOOD OF THE ORDER, ANNOUNCEMENTS, AND ADJOURNMENT

- a. Announcement: The EMCC will next meet on June 8, 2011 at 10:30 a.m.; meeting location – Health Department's Whitney Conference Room (129 A&B).
- b. EMCC elections of Chair and Vice-Chair at the June EMCC.
- c. Membership term expirations (6/30/11), nominations and Board appointments.
- d. EMS web page comment/recommendations
- e. Adjournment.

Attachments: EMCC Minutes 2/08/11