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SECTION I: PLAN SUMMARY

A. PURPOSE

The Trauma Plan for San Joaquin County is first and foremost a patient advocacy document. Its purpose is to provide a framework for the establishment of a comprehensive trauma injury management strategy for San Joaquin County that addresses the needs of the acutely injured patient. This trauma plan acknowledges the inherent challenges posed by San Joaquin County’s urban, suburban, and rural environments; provides an organized process to ensure quality trauma services; and is sensitive to resource and financial constraints of the system participants. The trauma plan recognizes that the partnership of organizations, institutions, and individuals form the nucleus of a quality trauma system. The goals of this plan will be achieved through this partnership and adherence to established trauma care standards.

B. PLAN SUMMARY

Numerous scientific peer review studies have demonstrated that an organized, systematic approach to trauma care decreases patient morbidity and mortality. Trauma is the leading cause of death for persons 0 to 44 years of age in San Joaquin County, and resulted in 206 trauma related deaths in 2009, according to San Joaquin County Public Health Services.

The intent of this plan is to build on the strengths of the current Emergency Medical Services (EMS) System and formalize San Joaquin County’s trauma care system by defining roles and responsibilities for hospitals and other system participants. The system will be based on an inclusive model, encouraging all hospitals to participate at some level, dependent upon their resources and interest. According to the American College of Surgeons Committee on Trauma Resources for the Optimal Patient: 2006:

“As opposed to an exclusive system that incorporates only specialized centers as the providers of acute trauma care, the inclusive system, conceptualized in 1990, acts to match patient care needs to the capability of the receiving centers. Using this approach makes the best use of available resources, matches patient needs to level of care, engages all acute care facilities in the management of acutely injured patients, avoids overburdening the specialized trauma centers with large numbers of patients with more minor injuries, and helps improve surge capacity in the event of mass casualty events.”

The standards defined in this plan for trauma center designation are based on the requirements of the California Code of Regulations, Title 22, Division 9, Chapter 7, Trauma Care Systems. The plan anticipates the continued use and recognition of trauma centers located outside of San Joaquin County.
The San Joaquin County EMS Agency shall rigorously monitor and evaluate the trauma system through trauma registry analysis, multi-disciplinary peer review of selected trauma cases, facility site visits and patient outcome studies. In addition to the EMS agency’s quality improvement activities each trauma center is responsible for conducting an internal quality improvement program that includes trauma audits, trauma team peer review, trauma registry data collection, and evaluation of patient feedback.

This plan defines and establishes programs to:

1. Develop and operate a countywide, inclusive trauma system.
2. Develop prehospital triage, treatment, and transport protocols that reflect the urban and rural nature of the county.
3. Provide for ground and air ambulance transport of injured patients to designated trauma centers within and outside of San Joaquin County.
4. Define operational requirements for various levels of trauma centers.
5. Designate and enter into agreements with hospitals to provide trauma care services.
6. Develop and maintain a trauma quality improvement program including the use of a standardized trauma registry.
7. Evaluate trauma system effectiveness.

The trauma plan anticipates the development of level III trauma center in San Joaquin County with the commitment of the designated facility to progress to level II designation, and the incorporation of level I, level II, and pediatric trauma centers located in neighboring counties into the San Joaquin County EMS System.

C. BACKGROUND

In 1966, the National Academy of Sciences white paper entitled *Accidental Death and Disability: The Neglected Disease of Modern Society*, identified deficiencies in providing emergency medical care in the United States. This paper served as the catalyst prompting federal leadership toward an organized approach to EMS and trauma care. The authority for states to set standards, regulate EMS, and implement programs designed to reduce injury were reinforced and encouraged by the enactment of the 1966 Highway Safety Act. A variety of subsequent federal and state initiatives, including California’s 1973 Wedworth-Townsend Act, were responsible for improving and refining EMS systems of care in the years following the landmark 1966 white paper.

In 1981, the State of California took a significant step to ensure the availability of EMS statewide with the passage of the “Emergency Medical Services System and Pre-hospital Emergency
Section I

Medical Care Personnel Act” (Division 2.5 of the Health Safety Code). This law established the California EMS Authority and authorized counties to form local EMS agencies to “...plan, implement and evaluate emergency medical services systems ... consisting of an organized pattern of readiness and response services.” The EMS Act specifically authorized local EMS agencies to plan, implement, and evaluate an emergency medical services system, and was amended in 1983 to specifically authorize local EMS agencies to create trauma care systems and to designate trauma centers.

San Joaquin County has struggled to implement an organized trauma care system, as evidenced by three previous failed attempts to implement trauma plans in 1989, 1991, and 2004. These past failures are stark reminders that the difficulties inherent in balancing the needs of system design and limited resources can overwhelm even the strongest desire by the County and the EMS system participants to successfully implement a trauma care system. In 2011, the San Joaquin County Board of Supervisors authorized the EMS Agency to develop a trauma system plan. Unlike previous planning efforts this plan will focus on achieving the proper balance needed to ensure the success of this critically needed project.

D. TRAUMA PLAN PHILOSOPHY

The goal of San Joaquin County’s Trauma Plan is to ensure high quality trauma care to all residents and visitors of the County. To this end, trauma centers will be designated to optimize both care and access. A priority consideration in this plan’s development will be given to system design and resource allocation, which provides a high quality of trauma services to the population served while remaining cognizant of the available resources. Hospitals will be integrated into a total system of care that includes comprehensive treatment and prevention programs. The spectrum of this system integration encompasses all aspects of patient care from the pre-hospital setting through to patient rehabilitation and repatriation. The role of air ambulance shall be evaluated and revised as needed. The trauma care system will be carefully implemented and thoroughly monitored by the EMS Agency and the Trauma Advisory Committee.

San Joaquin County’s Trauma Plan philosophy is exemplified by these elements:

1. Regional Trauma Center: Designating a level III trauma center in San Joaquin County with a commitment from the designated facility to progress to level II designation.

2. Quality Improvement: Orientation towards a continuous quality improvement process and an emphasis on patient outcomes will be the primary focus of program and system evaluation.
3. Prevention: An emphasis on injury control as a priority at all levels of trauma care will be established.

4. Continuum of Services: The trauma care system will be developed to integrate all components from pre-hospital, hospital, rehabilitation and repatriation.

5. Financial Impact: Efforts will be made to evaluate system design, process, and outcomes to assist with evaluating the financial impact of the trauma system and to allow integration of the trauma system with the ever changing healthcare environment.

E. PLAN APPROACH AND EMPHASIS

Designation of trauma centers in San Joaquin County shall be based on the standards required in California Code of Regulations, Title 22, Division 9, Chapter 7 and the American College of Surgeons Committee of Trauma Resources for Optimal Care of the Injured Patient: 2006. All designated trauma centers will be required to enter into written transfer agreements to accept injured patients from non-designated hospitals and lower level trauma centers and to transfer injured patients to higher level trauma centers and pediatric trauma centers. All hospitals in San Joaquin County will be encouraged to participate in the trauma system according to their resources and capabilities.

Sacramento County and Stanislaus County have formal trauma systems in place with a mix of designated level I, level II, and pediatric trauma centers. San Joaquin County has an existing agreement for level I and pediatric trauma center services with the U.C. Davis Medical Center. The San Joaquin County EMS Agency shall seek an update to the U.C. Davis Medical Center agreement and coordinate the development of inter-county agreements with Sacramento and Stanislaus counties to ensure the integration of adjacent trauma systems to optimize the use of available trauma center resources.

F. AUTHORITY

The San Joaquin County Trauma Plan was developed under the authority of Health and Safety Code, Division 2.5, Section 1797.200 et seq., in accordance with sections 1798.160 through 1798.169, and the California Code of Regulations, Title 22, Division 9, Chapter 7. This plan outlines the structure and operations of the proposed trauma care system for San Joaquin County and its relationship with neighboring trauma systems. Responsibility for the plan’s development, implementation, and evaluation rests with the San Joaquin County Emergency Medical Services Agency.
SECTION II: OVERVIEW OF SAN JOAQUIN COUNTY

A. GEOGRAPHY

The County of San Joaquin is the northernmost county in California’s Central Valley bridging northern and central California. San Joaquin County was established in 1850 as one of California’s original 27 counties. It has since become the 15th largest county in California, covering more than 1,400 square miles. San Joaquin County stretches over 75 miles from north to south, and nearly 65 miles from east to west, between the San Francisco Bay Area and the Sierra Nevada Mountains. It is bordered on the north by Sacramento County, on the east by Amador and Calaveras Counties, on the South by Stanislaus County, and on the west by Alameda, Contra Costa, and Solano Counties. The San Joaquin Valley is crisscrossed with rivers and sloughs, forming the San Joaquin Delta System.

B. TRANSPORTATION

The automobile is the predominant form of transportation in San Joaquin County. San Joaquin County hosts several major transportation corridors including Interstate Freeways 5 and 580; the Golden State Highway 99; multiple major railroad lines traveling north/south and east/west; and the inland Port of Stockton providing San Joaquin County, its people, industry, and agricultural products with direct access to the Pacific Rim and the rest of the world.

Of the numerous small transportation arteries that traverse San Joaquin County, the portion of State Highway 12 that stretches between Interstate Highway 5 and the Sacramento County border is one of the most dangerous sections of roadway in the State of California.

Scheduled commercial air service and private air travel is provided at the County operated Stockton Metropolitan Airport. Passenger rail services are available through Amtrak and the Altamont Commuter Express.

C. DEMOGRAPHICS

According to statistics from the U.S. Census Bureau, San Joaquin County’s 2010 population of 685,306 represents an increase of 21.6% since 2000. San Joaquin County’s demographic makeup is diverse.

The number of foreign-born residents in the County rose 23.3% between 2006 and 2010, and more than 38% of residents speak a language other than English at home. The ethnic
composition of the County is expected to shift, resulting in a Hispanic majority of the total population by 2020. The population in the unincorporated areas is decreasing annually in proportion to the incorporated areas of the County representing a shift in growth from unincorporated areas to the cities.¹

San Joaquin County’s educational attainment is low compared to statewide levels. Although approximately 75% of the County’s population has at least a high school diploma, only 16% of the population has a bachelor’s degree or higher. Educational attainment is trending downward with more higher education residents leaving rather than entering the County. Additionally, over 60% of incoming international migrants do not have a high school diploma.²

San Joaquin County’s median household income in 2010 was $54,341 with 16% of the population living at or below the poverty line. In 2010, the distribution of the County’s population by age was: persons under 5 years of age 7.9%; persons 5-18 years of age 29.3%; persons 19-64 years of age 52.4%; and persons 65 years of age and older 10.4% ³

D. INDUSTRY AND EMPLOYMENT

San Joaquin County’s economic base has greater service-producing employment rate than the rest of the San Joaquin Valley. The total goods-producing (e.g. mining, construction, manufacturing) employment represents 18% of the total nonfarm employment. San Joaquin County’s goods-producing industries are mostly associated with trade, transportation, and utilities, such as warehousing and distribution jobs associated with the Port of Stockton and along the major interstates and highways in the County. San Joaquin County farm employment represents 6.5% of total countywide employment. San Joaquin County continues to be one of California’s leading counties in gross value for agricultural products. San Joaquin County’s service-providing sectors are also well represented with Education, Health Services, and Government.

E. ORGANIZATIONAL STRUCTURE

The San Joaquin County EMS Agency is a single county local EMS agency established as a division of the County’s Health Care Services Agency. The EMS Administrator reports to the Director of Health Care Services. The San Joaquin County EMS Agency has eight fulltime equivalent positions and a contract physician medical director.

¹ Source: San Joaquin County General Plan, Background Report, Public Review Draft, July 2, 2009
² San Joaquin County General Plan, Background Report, Public Review Draft, July 2, 2009
³ http://quickfacts.census.gov
SECTION III: NEEDS ASSESSMENT

A. OVERVIEW

Acute injury is a major public health concern in San Joaquin County. Trauma is the leading cause of death for persons 0 to 44 years of age in San Joaquin County, and resulted in 206 trauma related deaths in 2009, according to San Joaquin County Public Health Services. Deaths from motor vehicle trauma account for 29% of all trauma related deaths, in persons 0 to 44 years of age, followed closely by homicide at 25%.

In 2011, there were 41,373 requests for emergency medical services, 7,762 (18.8%) of these requests resulted in the transport of an injured patient to a hospital. Although exact figures are unknown, the EMS Agency estimates there were approximately 622 trauma patients in 2011 that would have met criteria for transport directly to a trauma center.

B. KEY PROBLEMS

The most glaring deficiency in the delivery of trauma care in San Joaquin County is the lack of a coordinated and documented systems approach for the care of the acutely injured patient. The delivery of trauma care in San Joaquin County has essentially remained unchanged since the late 1980’s. Currently, adult trauma patients are identified by paramedics without the guidance of formal triage criteria; transported almost exclusively by ground ambulance to local community hospitals; treated by emergency department physicians and surgeons not specialized in trauma care; and admitted to intensive care units that are ill-equipped and unprepared to manage complex trauma cases.

An evaluation of the delivery of trauma care in the San Joaquin County EMS system identified the following:

1. Comprehensive policies do not exist to guide prehospital and base hospital personnel in classifying trauma patients and directing trauma patient transport to an appropriate facility.

2. Lack of a designated trauma center in San Joaquin County.

3. Limited coordination with neighboring trauma systems.

4. Absence of a trauma registry, trauma care review process, and formal trauma system evaluation.

5. No coordinated injury prevention programs and strategies.
SECTION IV: TRAUMA SYSTEM DESIGN

With the adoption of this plan San Joaquin County endeavors to improve the delivery of medical care to injured patients by developing an inclusive trauma care system. This system shall build upon the availability of local hospital resources by: designating a level III trauma center in San Joaquin County with a commitment to progress to level II designation; establishing formal relationships with neighboring trauma systems for access to level I, level II, and pediatric trauma resources; providing for the evaluation and oversight of the trauma care system; and creating coordinated injury prevention programs.

A. PROPOSED SYSTEM DESIGN

San Joaquin County shall conduct a competitive process to designate one level III trauma center in San Joaquin County with a commitment from the selected hospital to attain level II trauma center standards within a specified timeframe. The selected hospital will optimally be located in the central portion of San Joaquin County along the Interstate 5 transportation corridor to provide trauma patients throughout the county with rapid access to definitive trauma care.

Once the designated level III trauma center has fully achieved its commitment to level II designation and other verification requirements, the EMS Agency will re-evaluate the desirability of designating additional level III trauma centers in the county.

San Joaquin County EMS Agency shall endeavor to establish formal relationships with neighboring trauma systems to ensure patient access to level I, level II, and pediatric trauma resources.

B. RATIONALE FOR TRAUMA SYSTEM DESIGN AND THE NUMBER AND LOCATION OF TRAUMA CENTERS

In determining the number and location of trauma centers included in the trauma system, the EMS Agency considered each of the following nine (9) criteria: patient loading, resource availability, transport times, resource requirements, distinct service areas, coordinating with neighboring trauma systems, air ambulance utilization, EMS personnel education, communication equipment and trauma center notification.

San Joaquin County’s 2010 population of 685,306 is more than sufficient to satisfy the minimum requirement of 350,000 population per level II trauma center specified in California Code of
Regulations, Title 22, Section 100254(a)(1). In fact population and the number of major trauma cases have never been barriers to trauma center designation in San Joaquin County.

1. Patient Loading:

According to the U.S. Census Bureau, San Joaquin County’s 2010 population is 685,306. Based on a “rule of thumb” of one major trauma patient per thousand population San Joaquin County’s estimated patient load would be 685 major trauma patients per year.

However, an analysis of EMS data for San Joaquin County suggests that the actual number of major trauma patients may be slightly lower based on the number of trauma patients transported with lights and siren to the emergency department and the number of patients transported by air ambulance. Regardless the patient load for major trauma patients is more than sufficient to support the designation of one level II trauma center within San Joaquin County.

2. Resource Availability:

Many of the hospitals in San Joaquin County have the capability and resources to achieve level III trauma center designation. However, only San Joaquin General Hospital has expressed an interest publically in seeking level III trauma center designation with an interest in eventually achieving level II trauma center standards. Additionally, the San Joaquin County Board of Supervisors and the Interim Hospital Board of Trustees took taken action to support San Joaquin General Hospital’s efforts to be designated as a trauma center.

3. Transport Times:

The presence of major transportation corridors within San Joaquin County such as Interstate 5, Interstate 580, State Route 99, State Route 120, and other state highways ensures ready access to local hospitals and neighboring trauma centers by ground ambulance. The difficulty of landing air ambulance in the urban center of the county limits air ambulance use primarily to the rural outlying areas and to the inter-facility transfer of major trauma patients to higher level trauma centers. The table below lists ground ambulance transport times and distances from a sampling of locations in San Joaquin County to San Joaquin General Hospital as compared to nearby trauma centers in Sacramento and Stanislaus counties.

<table>
<thead>
<tr>
<th>Ground Ambulance Transport (times/distance)</th>
</tr>
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<tbody>
<tr>
<td>SJGH</td>
</tr>
<tr>
<td>DMC</td>
</tr>
<tr>
<td>MMC</td>
</tr>
<tr>
<td>Kaiser South Sacramento</td>
</tr>
<tr>
<td>UCDMC</td>
</tr>
<tr>
<td>Chrisman Road and Hwy 132, SW San Joaquin Co.</td>
</tr>
<tr>
<td></td>
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<tr>
<td>142 S. Stockton St, Ripon</td>
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<td></td>
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</tbody>
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San Joaquin County EMS Agency

Trauma Plan

Draft July 1, 2012
4. Distinct Service Areas:

a. The planned level III trauma center in San Joaquin County shall serve as the primary receiving facility for adult major trauma patients for the vast majority of San Joaquin County.

b. The level II trauma centers operating in Stanislaus County (Doctors Medical Center and Memorial Medical Center) shall serve as the primary receiving facilities for adult major trauma patients in the southeastern portion of San Joaquin County in Ambulance Zone E and that portion of Ambulance Zone F south of State Route 120. The final transport rational and distribution of trauma patients into Stanislaus County shall be developed as part of an inter-county agreement with the Mountain Valley EMS Agency for the coordination of neighboring trauma systems.

c. The level I adult and pediatric trauma center at the U.C. Davis Medical Center in Sacramento County shall serve as the primary receiving facility for pediatric major trauma patients, major burn patients, and trauma patients with acute spinal cord injury. The level II trauma center operated at Kaiser Hospital South Sacramento shall serve as the primary receiving facility for adult major trauma patients with neurologic injuries without comorbid trauma located in the northern portion of San Joaquin County. The final transport rational and distribution of trauma patients into Sacramento County shall be developed as part of an inter-county agreement with the Sacramento County EMS Agency for the coordination of neighboring trauma systems.

d. Non-designated hospitals in San Joaquin County shall receive trauma patients based on a variety of factors including but not limited to: patient acuity, multi-casualty incidents, and patient self-transport. Non-designated hospitals shall be encouraged to enter into written transfer agreement with designated trauma centers, to implement the county trauma registry, and actively participate in trauma quality improvement activities.

e. The EMS Agency anticipates that the designated level III trauma center will provide for neurosurgical trauma services through the use of written transfer agreements with higher level trauma centers. In an effort to eliminate unnecessary transfers, the EMS Agency will develop triage criteria to assist EMS personnel in identifying pediatric and adult major trauma patients.
trauma patients with neurologic injuries, allowing such patients to be transported directly to a
level I or level II trauma center with in-house neurosurgical trauma services.

5. Coordination with Neighboring Trauma Systems:

Level I, II, and pediatric trauma centers located within neighboring trauma systems serve as
both primary and secondary destinations for adult and pediatric major trauma patients in the
San Joaquin County Trauma Care System. Agreements defining San Joaquin County’s
relationship with neighboring trauma systems shall be developed with the Mountain-Valley EMS
Agency and the Sacramento County EMS Agency.

6. Air Ambulance Utilization:

The difficulty of landing air ambulance in the urban center of the county limits air ambulance use
primarily to the rural outlying areas and to the inter-facility transfer of major trauma patients to
higher level trauma centers. The EMS Agency shall work with the City of Stockton and other
jurisdictions to establish emergency landing sites for air ambulances in the urban center of the
county to assist in the transport of specified patients (e.g. pediatric, isolated neurologic, spinal
cord injury, multi-casualty) to trauma centers outside of San Joaquin County.

7. EMS Personnel Education:

The San Joaquin County EMS Agency shall implement a trauma system orientation program to
educate current and future EMS personnel regarding trauma patient triage, destination decision
making, medical control, and other pertinent aspects of the San Joaquin County Trauma Care
System.

8. Communication Equipment:

All patient transport vehicles in the San Joaquin County EMS System are required by EMS
Policy No. 4102, Advanced Life Support Medication and Equipment Inventory to be equipped
with two-way telecommunications equipment capable of accessing designated hospitals.

9. Trauma Center Notification:

The San Joaquin County Base Hospital and Disaster Control Facility (DCF) at San Joaquin
General Hospital serves as the designated notification point for major trauma patients being
distributed to trauma centers located outside of San Joaquin County.

Pre-hospital providers are required to conduct trauma center notifications in accordance with
EMS Policy No. 5215, Trauma Center Notification.
C. SUMMARY OF TRAUMA SYSTEM POLICIES

1. System Organization and Management:

The San Joaquin County EMS Agency is responsible for planning, implementing and evaluating the trauma care system including:

   a. Assessing needs and resource requirements;

   b. Developing the system design, including the number of trauma center(s) and determining patient flow patterns;

   c. Assigning roles to system participants, including designation of the trauma center(s);

   d. Coordinating outreach and mutual aid service with and between designated trauma centers, neighboring EMS systems and other system participants;

   e. Development of a trauma data collection system, including trauma registries at designated trauma centers, data collection from participating non-trauma centers, and pre-hospital data collection;

   f. Monitoring the trauma system to determine compliance with appropriate state laws and regulations, local EMS agency policies and procedures, and contracts, and taking corrective action as needed;

   g. Evaluating the impact of the system and revising the system design as needed.

2. Trauma Care Coordination within the Trauma System:

The San Joaquin County EMS Agency follows a standard practice for policy adoption whereby draft policies are posted on the EMS Agency website for a minimum of 45 days to solicit public comment. In addition the EMS Agency uses advisory bodies including the EMS Liaison Committee and the EMS Transportation Committee to plan for and evaluate system delivery.

The San Joaquin County EMS Agency proposes to create a Trauma Audit Committee to evaluate the care provided to trauma patients, make recommendations for improving trauma care, and to assist the EMS Agency with trauma system coordination.

3. Trauma Care Coordination with Neighboring Jurisdictions:

Agreements defining San Joaquin County’s relationship with neighboring trauma systems shall be developed with the Mountain-Valley EMS Agency and the Sacramento County EMS Agency. The agreements should address the direct transport of trauma patients to the closest appropriate trauma center, provisions allowing representatives of each jurisdiction to participate in trauma quality improvement activities, and the sharing of trauma patient care data.
4. Data Collection and Management:

The San Joaquin County EMS Agency in cooperation with the designated level III trauma center shall select a trauma registry database for use by the EMS Agency and the designated trauma center. EMS Policy No. 6720, Trauma Data Management establishes the collection and reporting requirements for trauma centers in the San Joaquin County Trauma Care System. This policy establishes a minimum data set to be collected for each major trauma patient entered into a trauma registry maintained by each trauma center. This policy also specifies the requirements for trauma centers to submit trauma data and reports to the San Joaquin County EMS Agency.

5. Trauma System Fees:

The San Joaquin County EMS Agency shall develop and recommend to the San Joaquin County Board of Supervisors trauma system fees which cover trauma center selection, annual cost of trauma center designation, the annual cost of monitoring trauma center compliance, and evaluation of the trauma care system.

6. Trauma Center Service Areas:

Distinct trauma center services areas are established in EMS Policy No. 4709 Trauma Center Service Area. The following is a brief summary:

a. The planned level III trauma center in San Joaquin County shall serve as the primary receiving facility for adult major trauma patients for the vast majority of San Joaquin County.

b. The level II trauma centers operating in Stanislaus County (Doctors Medical Center and Memorial Medical) shall serve as the primary receiving facility for adult major trauma patients in the southeastern portion of San Joaquin County in Ambulance Zone E and that portion of Ambulance Zone F south of State Route 120. The transport rational and distribution of trauma patients into Stanislaus County shall be developed as part of an inter-county agreement with the Mountain Valley EMS Agency for the coordination of neighboring trauma systems.

c. The level I adult and pediatric trauma center at the U.C. Davis Medical Center in Sacramento County shall serve as the primary receiving facility for pediatric major trauma patients transported by air ambulance. The transport rational and distribution of trauma patients into Sacramento County shall be developed as part of an inter-county agreement with the Sacramento County EMS Agency for the coordination of neighboring trauma systems.

d. Non-designated hospitals in San Joaquin County shall receive trauma patients based on a variety of factors including but not limited to: patient acuity, multi-casualty incidents, and patient self-transport.
e. It is unlikely that the designated level III trauma center will have in-house neurosurgical trauma services. The EMS Agency will develop triage criteria to assist EMS personnel in identifying adult major trauma patients with neurologic injuries that should be transported directly to a level I or level II trauma centers with in-house neurosurgical services outside of San Joaquin County.

7. Trauma Center Designation Process:

As described in this plan, the San Joaquin County EMS Agency proposes to designate one level III trauma center with a commitment from the selected hospital to attain level II standards within a specified timeframe. The timeframe for the selected hospital to achieve level II trauma center designation shall be negotiated as part of the level III designation agreement in accordance with the standards specified in the competitive selection process. All acute care hospitals in San Joaquin County are eligible to apply for designation as the single level III trauma center for San Joaquin County. EMS Policy No. 4710 Trauma Center Designation establishes the process to be followed in designating the level III trauma center.

8. Coordination with Health Maintenance and Other Health Care Organizations within the Trauma System to Facilitate the Transfer of Member Patients:

The trauma triage and patient destination policies of the San Joaquin County EMS Agency shall not consider a patient's insurance status when determining the destination of major trauma patients. Trauma centers are encouraged to cooperate with health maintenance organization in the transfer of trauma patients to member hospitals when medically appropriate.

9. Coordination of EMS and Trauma System for Patient Transportation and Transfer:

The San Joaquin County Trauma Care System is an inclusive system and all hospitals in San Joaquin County have a role in providing trauma care to injured patients. The proposed level III trauma center in San Joaquin County shall be required, as a condition of designation, to establish and maintain transfer agreements with the level I trauma center and pediatric trauma center at the U.C. Davis Medical Center, the level II trauma center at Kaiser South Sacramento, the level II trauma centers in Stanislaus County, and the non-designated trauma hospitals in San Joaquin County.

Transferring physicians in cooperation with the higher level facility shall be responsible for arranging the appropriate level and type of patient transportation when transferring patients to a trauma center.

10. Integration of Pediatric Trauma Centers:

As a condition of designation the proposed level III trauma center shall meet specific pediatric standards and must have a transfer agreement with the pediatric trauma center at the U.C. Davis Medical Center to facilitate the rapid transfer of pediatric patients. The proposed level III trauma center shall be required to establish policies and procedures for identifying pediatric trauma patients who may benefit from transfer to or a consultation with specialist at a pediatric trauma center e.g. all pediatric trauma patients requiring admission to an intensive care unit.
The pediatric trauma center at the U.C. Davis Medical Center in Sacramento County shall serve as the primary trauma center destination for pediatric major trauma patients. Refer to EMS Policy No. 4709, Trauma Center Service Areas.

11. Trauma Center Standards:

EMS Policy No. 4712, Level II Trauma Center Standards and EMS Policy No. 4713, Level III Trauma Center Standards establish the minimum criteria necessary for designation based upon the following categories:

a. Equipment and service capabilities;

b. Availability of trauma team personnel;

c. Criteria for trauma team activation and response requirements;

d. Mechanism to ensure the prompt availability of specialists;

e. Injury prevention and community outreach;

f. Trauma service organization and management.

12. Trauma System Quality Improvement and Trauma System Evaluation:

EMS Policy No. 6710, Trauma System Quality Improvement establishes the process for conducting trauma system quality improvement (QI) and system evaluation including internal trauma center QI requirements and the creation and function of the Trauma Audit Committee.

13. Criteria for Pediatric and Adult Trauma Triage:

EMS Policy No. 5210, Trauma Triage and Patient Destination establishes the criteria and process to be used by EMS personnel in identifying major trauma patients and determining appropriate destinations.

14. Training of Pre-hospital EMS Personnel:

The San Joaquin County EMS Agency shall incorporate into existing training programs (such as the Paramedic Accreditation Orientation, Paramedic Skills Review, and Paramedic Preceptor courses) trauma system orientation that includes information on patient triage, destination decision making, medical control, and other pertinent aspects of the trauma care system.

The EMS Agency shall make trauma system orientation information available on its website and offer classes in trauma system orientation to EMS providers and non-designated trauma hospitals.

The designated level III trauma center shall be responsible for ensuring that all of their trauma program, emergency department, surgery, administration, nursing, and medical staff are properly oriented to the trauma system and have demonstrable knowledge of the EMS Agency’s policies and procedures.
15. Public Information and Education and Coordination of Injury Prevention:

The San Joaquin County EMS Agency is committed to the support and promotion of injury prevention education and shall endeavor to coordinate injury prevention with public and private organizations and groups. The proposed level III trauma center shall be required as a condition of designation to provide outreach programs to the public including injury prevention education.

16. Marketing and Advertising:

In accordance with Health and Safety Code §1798.165 (c) no healthcare provider shall use the terms “trauma facility,” “trauma hospital,” “trauma center,” “trauma care provider,” “trauma vehicle,” or similar terminology in its signs or advertisements, or in printed material and information it furnishes to the general public unless its use is specifically authorized by the San Joaquin County EMS Agency.

All marketing and promotional plans with respect to trauma center designation shall be submitted to the San Joaquin County EMS Agency for review and approval, prior to implementation. The San Joaquin County EMS Agency shall review plans using the following guidelines:

   a. Provides accurate information;
   b. Makes no false claims;
   c. Not critical of other providers;
   d. Does not include financial inducements to providers or third parties.

D. HOSPITAL SERVICE DELIVERY

1. Critical Care Capability

   a. Surgical response: The proposed level III trauma center shall maintain a surgical response to trauma patients in keeping with the standards established by EMS Policy No. 4712, Level II Trauma Center Standards and EMS Policy No. 4713, Level III Trauma Center Standards.

   b. Burns, spinal cord injury, and rehabilitation: All designated trauma centers are required, as part of designation, to have appropriate transfer agreements with facilities providing these services.

   c. Pediatrics: As a condition of designation the proposed level III trauma center shall meet specific pediatric standards and must have a transfer agreement with the pediatric trauma center at the U.C. Davis Medical Center to facilitate the rapid transfer of pediatric
patients. The proposed level III trauma center shall be required to establish policies and procedures for identifying pediatric trauma patients who may benefit from transfer to or a consultation with specialist at a pediatric trauma center, e.g. all pediatric trauma patients requiring admission to an intensive care unit.

2. Medical Organization:

The proposed level III trauma center shall maintain a trauma service consistent with the standards established by EMS Policy No. 4712, Level II Trauma Center Standards and EMS Policy No. 4713, Level III Trauma Center Standards.

3. Trauma System Quality Improvement

The designated trauma centers shall establish and maintain a trauma service quality improvement program to include structure, process and outcome evaluations which focus on improvement efforts to identify root causes of problems; intervene to reduce or eliminate these causes and take steps to correct the process. In addition the program shall include:

a. A detailed audit of all trauma related deaths, major complications, patient transfers and all in-house ICU pediatric admissions;

b. A multi-disciplinary trauma peer review committee that includes all members of the trauma team;

c. Participation in the San Joaquin County EMS Agency trauma audit committee;

d. A written policy establishing a system for patients, parents/legal guardians of minor children who are patients, and immediate family members to provide input and feedback to hospital staff regarding the care provided to the patient;

e. Compliance with American College of Surgeons Committee on Trauma recommendations for Performance Improvement and Patient Safety (PIPS).
SECTION V: INTER-COUNTY TRAUMA CENTER AGREEMENTS

The trauma care system developed by this plan is designed to integrate the trauma resources available in San Joaquin County with the resources available in neighboring trauma systems to achieve the goal of providing expeditious, efficient, quality, and cost effective trauma care. The trauma care system is designed to make maximum use of trauma care resources in neighboring EMS systems based on factors including geography, hospital resources, transport capabilities, and transport times and distances.

The transport rational and distribution of trauma patients into neighboring trauma systems shall be developed as part of inter-county agreements with the Mountain Valley EMS Agency and the Sacramento County EMS Agency.
SECTION VI: OBJECTIVES AND IMPLEMENTATION SCHEDULE

A. Complete public review of draft trauma plan and related policies. Submit trauma plan to Board of Supervisors for approval.

   Estimated completion date September 2012

B. Submit trauma plan for approval to the EMS Authority.

   Estimated completion date September 2012

C. Conduct a competitive process for designating one level III trauma center in San Joaquin County with a commitment to attain level II standards within a specified timeframe.

   1. Develop RFP Instrument September 2012
   2. Conduct RFP Process December 2012
   3. Review Proposals January 2013
   4. Conduct Site Reviews January 2013
   5. Submit Recommendation to BOS February 2013
   6. Negotiate Designation Agreement April 2013
   7. Approve Designation Agreement May 2013
   8. Implement Trauma System July 2013

D. Establish inter-county trauma center agreements with the Mountain Valley EMS Agency and the Sacramento County EMS Agency.

   Estimated completion date July 2013

E. Conduct trauma system orientation for EMS personnel including patient triage, destination decision making, medical control, and other pertinent aspects of the trauma care system.

   Estimated completion date July 2013

F. Select, purchase, and implement a trauma registry database in cooperation with the selected level II trauma center.

   Estimated completion date July 2013

G. Implement remaining components of the trauma care system including patient triage, destination, data collection, and system evaluation.

   Estimated completion date July 2013
SECTION VII: FISCAL IMPACT

It is difficult to predict the fiscal impact of the development of the trauma care system designed by this plan. It is anticipated that all system participants will incur increased costs for additional staff and the implementation of the trauma registry.

This trauma plan includes an open competitive process for designation of one level III trauma center. The competitive process will involve contracting with an organization or individuals to form a trauma center review team. The San Joaquin County EMS Agency shall develop and recommend to the San Joaquin County Board of Supervisors trauma system fees, which shall cover trauma center selection, annual cost of trauma center designation, the annual cost of monitoring trauma center compliance, and evaluation of the trauma care system. The EMS Agency is projecting an annual trauma center monitoring fee of $150,000 to offset the cost of a FTE trauma nurse coordinator.

The San Joaquin County EMS Agency acknowledges the need to monitor the financial impact of the trauma care system including the delivery of the services provided and the benefits received. The following is a list of key financial objectives for the EMS Agency relating to the trauma care system:

A. Assisting participating hospitals in identifying and maximizing current reimbursement sources.

B. Advocating for increased reimbursement through State and National legislative efforts.

C. Committing to and supporting an ongoing program for injury prevention.

D. Modifying the trauma care system to accommodate future changes to the healthcare system.
SECTION VIII: POLICY AND PLAN DEVELOPMENT

The San Joaquin County Trauma Plan was developed by the San Joaquin EMS Agency and released for public comment on July 1, 2012.

The San Joaquin County EMS Agency follows a standard practice for policy adoption whereby draft policies are posted on the EMS Agency website for a minimum of 45 days to solicit public comment. During the 45 day public comment process the EMS Agency shall present the draft trauma plan to the EMS Liaison Committee, the EMS Transportation Committee, and the San Joaquin County Fire Chief’s Association.

The San Joaquin County EMS Agency shall summarize and respond to the comments received during the 45 day public comment period. The comments and the EMS Agency’s response to those comments will be made available on the EMS Agency’s website.

The San Joaquin County EMS Agency shall make changes to the draft trauma plan following the 45 day public comment period and then submit the updated draft trauma plan to the San Joaquin County Board of Supervisors for their consideration. As required by the Emergency Medical Services System and Prehospital Care Act, Division 2.5 of the Health and Safety Code, Section 1798.162(a), the San Joaquin County EMS Agency shall place the Trauma Plan on the Board of Supervisor’s agenda as a “public hearing and shall give adequate notice of the public hearing to all hospitals and other interested parties in the area proposed to be included in the [trauma] system”.

This section of the trauma plan shall be updated by the San Joaquin County EMS Agency following approval by the Board of Supervisors and the EMS Authority to reflect the action taken by each entity.
SECTION IX: WRITTEN LOCAL APPROVAL

A copy of the resolution of the San Joaquin County Board of Supervisors approving the San Joaquin County EMS Trauma System Plan shall be included as Appendix A of this plan.
SECTION X: DATA COLLECTION AND SYSTEM EVALUATION

A. Trauma Data Collection and Reporting:

A San Joaquin County trauma registry shall be established and shall include pre-hospital and hospital trauma data as required by California Code of Regulations § 100257. Data will be entered into the trauma registry by each participating hospital in San Joaquin County and then electronically transferred (in a format specified by the county) to the EMS Agency. The level III trauma center shall identify “red flags” for review by the Trauma Audit Committee and produce periodic and annual trauma reports.

Inter-county trauma center agreements shall address the collection of trauma data for patients transported to trauma centers located outside of San Joaquin County.

EMS Policy No. 6720, Trauma Data Management establishes the collection and reporting requirements for trauma centers in San Joaquin County. This policy also establishes the minimum data set to be collected for each major trauma patient.

B. Trauma System Quality Improvement and Evaluation:

The San Joaquin County EMS Agency is responsible for the development and ongoing evaluation of the trauma system, including the development of a process to receive information from system participants on the evaluation of the trauma plan, triage criteria, trauma team activation and notification of specialists. The EMS Agency shall conduct periodic performance evaluations of the trauma system and make these evaluations available to system participants.

The designated level III trauma center shall have a quality improvement process to include structure, process and outcome evaluations that focus on improvement efforts to identify root causes of problems, intervene to reduce or eliminate these causes, and take steps to correct the process. In addition the level III trauma center QI process shall include:

1. A detailed audit of all trauma related deaths, major complications and transfers.

2. A multi-disciplinary trauma peer review committee that includes all members of the trauma team.

3. Participation in the EMS agency trauma audit committee.

4. A written system for patients, parents of minor children who are patients, legal guardians of children who are patients, and primary caretakers of children who are patients to provide input and feedback to hospital staff regarding the care provided to the patient.

5. Compliance with American College of Surgeons Committee on Trauma recommendations for Performance Improvement and Patient Safety (PIPS).
APPENDIX

EMS Policy No. 4701, Trauma System Management and General Provisions
EMS Policy No. 4709, Trauma Center Service Areas
EMS Policy No. 4710, Trauma Center Designation
EMS Policy No. 4712, Level II Trauma Center Standards
EMS Policy No. 4713, Level III Trauma Center Standards
EMS Policy No. 4720, Trauma Center Team Activation
EMS Policy No. 5210, Trauma Triage and Patient Destination
EMS Policy No. 5215, Trauma Center Notification
EMS Policy No. 6710, Trauma Center Quality Improvement
EMS Policy No. 6720, Trauma Data Management