A G E N D A

1. Call to Order
2. EMS Agency Administrator’s Report
3. System Organization and Management
   A. Maddy Fund
4. Staffing and Training
   A. EMS Enforcement
   B. Prehospital Care Symposium – March 17, 2016
5. Communications
   A. Planned Policy Revisions
6. Response and Transport
   A. Emergency Ambulance Performance Reports
   B. Revisions to Ambulance Agreements and Air Ambulance Agreements
   C. Zone X - Implementation
7. Facilities and Critical Care
   A. Trauma System
   B. STEMI Program
   C. Ambulance Patient Off-load Delays
8. Data Collection and System Evaluation
   A. Continuous Quality Improvement
9. Disaster Medical
   A. HAvBED Report
10. Hospital and Provider Reports
11. Next Meeting – Thursday, April 14, 2016

A full agenda packet will not be provided at the meeting. A full agenda packet may be viewed or downloaded from the EMS Agency’s website at www.sjgov.org/ems
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Matt Griffin, Accountant Technician I

SUBJECT: EMS Maddy Fund

RECOMMENDED ACTION:

Receive information on the EMS Maddy Fund.

FISCAL IMPACT:

The EMS Agency’s FY15-16 budget includes revenue of $54,215 for administering the EMS Maddy Fund. By statute administrative fees are capped at 10% of annual Maddy Fund revenue.

DISCUSSION:

EMS Maddy Fund

In 1987, legislature found that emergency medical service providers incurred higher costs for their services than providers of other medical services, but often received little to no payment from patients. In response, the Maddy Fund (SB 12) was established to provide revenue to compensate physicians and medical facilities for emergency services provided to medically indigent patients during the first 48 hours of continuous service.

The EMS Maddy Fund is derived from county penalty assessments for various criminal offenses and motor vehicle violations, traffic violator school fees and revenue from taxes on tobacco products deposited in the State’s Cigarette and Tobacco Products Surtax Fund. EMS Maddy Fund revenue, minus administrative costs, are proportioned as follow: 58% for eligible physicians and surgeons in a general acute care hospital providing basic or comprehensive emergency services; 25% to San Joaquin General Hospital for providing disproportionate trauma and emergency medical services; and 17% to the San Joaquin County EMS Agency for capital projects.
Complete accounting data is most recently available for fiscal year 2013/14, during which payment was disbursed to emergency physicians for a total of 34,965 claims, as shown below.

<table>
<thead>
<tr>
<th>FY 2013/14</th>
<th>Amount Disbursed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr. 1</td>
<td>$60,316.63</td>
</tr>
<tr>
<td>Qtr. 2</td>
<td>$50,074.22</td>
</tr>
<tr>
<td>Qtr. 3</td>
<td>$62,555.23</td>
</tr>
<tr>
<td>Qtr. 4</td>
<td>$76,360.60</td>
</tr>
<tr>
<td>Total</td>
<td>$249,306.68</td>
</tr>
</tbody>
</table>

FY 2014/15

Physician and surgeon claims are due from providers and payments are disbursed on a quarterly basis. A total of $149,392.56 has been disbursed to participating physicians through the 3rd quarter of 2014/15 for 7,906 claims. Claims for the 4th quarter of 2014/15 have been submitted by providers and are currently being processed with a target payment date of 1/31/16.

Total submitted claims for fiscal year 2014/15 are projected to be lower than the total for 2013/14, due to a reduction in the number of participating providers.

2015/16

As of December 2015, complete contracts have been received from six providers for fiscal year 2015/16. Claims for the first quarter of 2015/16 will be due in January 2016, with a target payment date of April 2016.
DATE: January 6, 2016
TO: EMS Liaison Committee
PREPARED BY: Christine Tualla, EMS Specialist
SUBJECT: EMS Enforcement Activities

RECOMMENDED ACTION:
Receive information on EMS Enforcement activities.

FISCAL IMPACT:
The EMS Agency’s FY15-16 budget includes funding for EMS staff, public safety investigative services, and services from the State of California Office of Administrative Hearings, and legal counsel.

DISCUSSION:

Active Probation:
- Emergency Medical Responder (EMR): 0
- Emergency Medical Technician (EMT): 7
- Emergency Medical Dispatcher (EMD): 3

Active Suspensions:
- Emergency Medical Responder (EMR): 0
- Emergency Medical Technician (EMT): 0
- Emergency Medical Dispatcher (EMD): 0

Revocation or denials taken since January 2015:
- Emergency Medical Responder (EMR): 1
- Emergency Medical Technician (EMT): 0
- Emergency Medical Dispatcher (EMD): 0

Pending Cases:
The EMS Agency is processing 10 applications requiring investigation for potential disqualifying actions. Four of the applications are pending the results of an examination by a California Society of Addiction Medicine (CSAM) Physician.
2016 Spring Prehospital Care Symposium

Thursday, March 17, 2016
Check-in: 8:30 am - 9:00 am
Course: 9:00 am - 12:00 pm

San Joaquin Agriculture Center
2101 E. Earhart Ave., Stockton

Intended audience: Paramedics, EMTs, MICNs, EMRs, base and receiving hospital physicians and nurses.

Cost: Free, prior registration required.

Register online at: http://www.sjgov.org/ems/events.aspx

Symposium Faculty:

Richard N. Buys, MD, EMS Medical Director
San Joaquin County EMS Agency

David Shatz, MD, Trauma Surgeon/Professor of Surgery
UC Davis Medical Center

Katherine Shafer, MD, Base Hospital Medical Director
San Joaquin General Hospital

Course Objective:

This course is designed to present information on the current standards of care for the assessment and treatment of prehospital patients. Attendees will learn through lectures, case studies, and discussion with the faculty regarding trauma patient management, patient resuscitation, pediatric patient management, and other topics.

Upon the successful completion, participants will receive a course completion certificate for 3 hours of EMS Continuing Education and/or BRN Contact hours. Provider is approved by the California Board of Registered Nursing, Provider Number 1524 for 3 contact hours. CA EMS CE provided by San Joaquin County EMS Agency CEP# 39-0001.
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Dan Burch, EMS Administrator

SUBJECT: EMS Communications

RECOMMENDED ACTION:

Receive information on upcoming revisions to EMS Communications Policies.

FISCAL IMPACT:

There will be an impact on SJCEMSA staffing assignments to revise policy and supervise implementation.

DISCUSSION:

The National Academies of Emergency Dispatch (NAED) has recently released version 13.0 of Medical Priority Dispatch (MPD). The Valley Regional Emergency Communications Center (VRECC) in order to maintain accreditation is required to implement version 13.0 in 2016. This upgrade will in turn require the San Joaquin County EMS Agency (SJCEMA) to revise EMS Policy No. 3202, Medical Priority Dispatch System Response and Mode Assignments for Cards 1-34. The expected implementation of MPD version 13.0 by VRECC is late spring 2016.

In addition the SJCEMSA plans to revise the following communications policies: EMS Policy No. 3101, Emergency Ambulance Service Provider Dispatch Requirements; EMS Policy No. 3109, City of Stockton EMD Center Requirements; EMS Policy No. 3410, ALS Field to Hospital Communication; EMS Policy No. 3411, ALS Radio Report Formats; and EMS Policy No. 3412, BLS Field to Hospital Communication.
DATE: January 6, 2016
TO: EMS Liaison Committee
PREPARED BY: Rick Jones, MPA, EMS Analyst
SUBJECT: Report on Emergency Ambulance Performance

RECOMMENDED ACTION:

Receive information on emergency ambulance performance for American Medical Response (AMR), Escalon Community Ambulance (ECA), Manteca District Ambulance (MDA), and Ripon Consolidated Fire District (RCFD).

FISCAL IMPACT:

None

DISCUSSION:

The EMS Agency Report on the Exclusive Emergency Ambulance Provider Contract Compliance for AMR, ECA, MDA, and RCFD for the months of July and August, 2015, provides an in-depth review of their performance. The County’s contract with these emergency ALS ambulance providers establishes accountability for meeting specific standards and provides the EMS Agency with complete access to data and information on AMR’s operational, clinical, and administrative performance is summarized below. The detailed version of the compliance reports can be found at the EMS Agency’s website: www.sjgov.org/ems.

AMR

The process for determining response time compliance includes a review of late response exemption requests to determine if a delay in response may be attributed to factors outside of the control of the ambulance provider. If an exemption request is approved (e.g. fog, train crossings, road construction) those responses are not included in response time compliance calculations.

Due to the profound impact of ambulance patient offload delays (APOD) on the availability of ambulances within the EMS system the SJCEMS Agency developed a late response exemption approval trigger. The APOD exemption trigger is activated when all of the following occur:
A minimum of 3 ambulances are delayed at one or more Stockton area hospital (Dameron, St. Joseph’s Medical Center, San Joaquin General Hospital) for a time period ≥ 60 minutes for each ambulance.

There are five (5) or fewer ambulances available in the greater Stockton area (Status 5 or less).

The three (3) ambulances referenced above must have been delayed at hospitals during the 60 minutes prior to the call in which an exemption is being sought.

Ambulance staffing must be at or above the contracted minimum staffing levels.

During the previous fourteen month period, AMR has steadily increased the number of exemption requests for responses that exceed response time standards due to APOD. In the reporting period for July/August 2014, AMR requested 41 exemptions that met the APOD trigger out of a total of 91 exemption requests (0.94% of total responses). In the current reporting period for July/August 2015, AMR requested 226 exemptions that met the APOD trigger out of a total of 313 exemption requests (2.7% of total responses).

**Patient Care Impact**

Hospital caused APOD removes ambulance resources from the EMS system significantly impacting the ability of ambulance providers to achieve and maintain response time standards. While the direct impact of APOD on patient care cannot be measured, it is striking to note that the 226 late responses that occurred while the APOD trigger was met in July/August 2015 resulted in 659 late minutes (that exceeded response time compliance criteria).

Appropriately granting hospital caused APOD exemptions to AMR, for factors beyond its control, allows AMR to achieve a combined 91.4% response-time compliance for July/August 2015. Nonetheless, APOD robs the EMS system of efficiency and steals precious response-time minutes from acutely ill and injured patients. Hospital caused APOD decreases monthly response-time compliance by more than 3%.

![AMR's Combined Response Time Performance](chart.png)

AMR's July and August 2015, combined response time compliance for all ambulance zones met or exceeded the 90th percentile standard set by the County with 92.19% for July and 90.68% for August.

AMR exceeded compliance standards in nine (9) of the eleven subzones in July and five (5) of the eleven subzones in August.
**ECA**

ECA’s July and August 2015 compliance met the 90\(^{th}\) percentile standard with 96.30\% in July and 96.55\% in August.

**Note:** Exemption requests for late calls meeting specific criteria were not calculated into the monthly response time compliance prior to November, 2014.

**MDA**

MDA’s July and August 2015, response time compliance met or exceeded the 90th percentile standard set by the County with 90.68 \% for July and 91.87\% for August.

**Note:** Exemption requests for late calls meeting specific criteria were not calculated into the monthly response time compliance prior to November, 2014.
RCFD

RCFD’s July and August 2015, response time compliance met or exceeded the 90th percentile standard set by the County with 96.92 % for July and 96.15% for August.

Note: Data is not shown for previous months because exact percentages were unavailable due to the configuration of RCFD’s computer aided dispatch system. This issue has been corrected.
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Rick Jones, MPA, EMS Analyst

SUBJECT: Revisions to EOA Ambulance and Air Ambulance Agreements

RECOMMENDED ACTION:

Receive information on the project to revise the ground ambulance provider agreements for Escalon Community Ambulance (ECA), Manteca District Ambulance (MDA), and Ripon Consolidated Fire District (RCFD); and air ambulance agreements for REACH, CALSTAR, Mercy Air Services, and PHI Air Med Team.

FISCAL IMPACT:

The San Joaquin County EMS Agency (SJCEMSA) anticipates an increase in contract monitoring costs and penalty assessments in the tens of thousands of dollars per year.

DISCUSSION:

Ground Ambulance Provider Agreements

The ambulance provider agreements between San Joaquin County and ECA, MDA, and RCFD have remained unchanged since January 1, 1995. The EMS Agency plans to update the agreements within 2016. The first phase of this project has begun. SJCEMSA is currently in negotiations with MDA to update the agreement for consistency with current best practices for all emergency ground ambulance providers in San Joaquin County. Examples of key proposed changes address:

- System status and deployment strategies
- Physical fitness requirements
- An analysis of the efficacy of shifts greater than 12 hours
- County population density and response time compliance requirements
- Penalties and fines
- Reporting requirements

Air Ambulance Provider Agreements

The project to complete written agreements with air ambulance providers is in the final stages of negotiations with REACH. Once completed, the agreement with REACH will be used as a
basis for agreements with CALSTAR, Mercy Air Services, and PHI Air Med Team. Key elements in the air ambulance agreements include:

- Data collection (both CAD and patient care reports)
- Coordination between air and ground ambulance for both scene and interfacility transports.
- Access to medical records
- Access to financial records
- Quality improvement and program evaluation
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Rick Jones, MPA, EMS Analyst

SUBJECT: Zone X Implementation

RECOMMENDED ACTION:

Receive information on the agreement between San Joaquin County and American Medical Response (AMR) for Zone X set to begin on May 1, 2016.

FISCAL IMPACT:

None

DISCUSSION:

AMR was awarded the exclusive operating areas Zones X-1 through X-11, (currently known as zones A, B, and C) following a competitive bid process that was completed in 2014. This process resulted in the development of a written agreement with AMR for a five (5) year period with the option for an additional five (5) year period. The start date for AMR’s agreement for Zone X is May 1, 2016.

A partial list of key requirements in the new agreement includes the following:

- An increase in penalties for failure to meet response time standards.
- Inclusion of all ALS and CCT interfacility transports as part of exclusivity.
- Crew fatigue avoidance requirement maintained with the prohibition against personnel working more than 16 consecutive hours without a minimum break of 8 hours.
- A physical ability testing (PAT) program, for all field personnel, including field supervisors; including pre-hire testing, annual testing, and remediation for those individuals failing the annual test.
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Jamie Nielsen, RN, EMS Trauma Coordinator

SUBJECT: Trauma System

RECOMMENDED ACTION

Receive information on the Trauma System of San Joaquin County.

FISCAL IMPACT

None

TRAUMA REGULATIONS

Trauma Center designation in the State of California is the responsibility of local EMS agencies (LEMSA) in accordance with the Health and Safety Code, Division 2.5 and California Code of Regulations, Title 22, Chapter 7, Trauma Care Systems.

http://www.emsa.ca.gov/Legislation_Regulation

Current Trauma Care Systems regulations in Title 22 are based on the American College of Surgeon (ACS) “gold book” published in 1999. This section of Title 22 is scheduled for revision in 2016. Time allowed to complete the revision is one year and will be based on the 2014 ACS “orange book” and the State trauma plan.

A 4-day ACS site visit on trauma has been scheduled to review the California Emergency Medical Services Authority; trauma plan in San Diego March 22-25, 2016.

DISCUSSION

San Joaquin County has one Level III Trauma Center; San Joaquin General Hospital (SJGH) designated August 1, 2013. The San Joaquin County EMS Agency (SJCEMSA) rigorously monitors and evaluates 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 SJCEMSA’s trauma quality improvement activities the level III 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. Below are the statistics and summaries of the pertinent areas involving trauma in San Joaquin County.

**TRAUMA SYSTEM PROGRESS REPORT**

**San Joaquin County Trauma Statistics**

**Third Quarter (Jul, Aug, Sep) 2015 Major Trauma Patients Transported to SJGH**

**Total Number of Trauma Activations = 578**

![Method of Arrival 3qtr 2015](chart.png)
San Joaquin General Hospital Level III Trauma Center
During November 2015, the annual Mobile Intensive Care Nurse (MICN) Course was completed which added 5 new MICNs to the radio room at SJGH. In an effort to ensure that the policy skills review (PSR) class is relevant and focused on issues pertinent to MICNs, all re-authorizing MICN’s will no longer be required to attend the PSR class for paramedics and will instead be required to attended the MICN breakout course every two (2) years.

Trauma services welcomes Larry Gentilello, M.D., F.A.C.S., as the new Trauma Medical Director, scheduled to start February 8th, 2016.

Carla Meckler, RN has accepted the position of trauma prevention nurse position in November 2015. The SJGH trauma department is working to develop the requirements of this role in our trauma system.

Trauma Audit Committee (TAC)
The most recent TAC meeting was held at SJCEMSA classroom Tuesday, October 20th, 2015. The committee reviewed 23 cases. The next TAC is scheduled for Tuesday, January 19th, 2016. Dr. David Shatz, (TAC Chairperson) is currently conducting a preliminary review of 27 cases for possible review by TAC on January 19, 2016
SJCEMSA is pleased to announce David Shatz, trauma surgeon at UC Davis Medical Center, has been selected as the 2015 EMS Medical Director of the Year by the California Emergency Medical Services Authority. Dan Burch, EMS Administrator of the San Joaquin County EMS Agency, nominated Dr. Shatz for the EMS Medical Director of the Year Award.

“Dr. Shatz has dedicated countless hours providing insight and advice on trauma cases for the San Joaquin County Trauma Audit Committee,” Burch wrote. “His invaluable mentorship of the Trauma Audit Committee has contributed greatly to the successful implementation of San Joaquin County’s trauma system. Dr. Shatz’ leadership of the trauma quality improvement process has set a high standard for case review accountability in San Joaquin County.”

You can view the full article at http://www.ucdmc.ucdavis.edu/publish/news/newsroom/10499.

**Prehospital Trauma Case Review (TCR)**

American Medical Response (AMR) participated in their fifth (5th) trauma case review on October 20th, 2015 at the SJCEMSA classroom. There were 32 in attendance and 14 cases reviewed. The next TCR for AMR is scheduled for January 27th, 2016.

Manteca District Ambulance (MDA) participated in their third (3rd) trauma case review on November 23rd, 2015 at MDA. There were 18 in attendance and 5 cases reviewed.

**Trauma Registry**

SJCEMSA will be reporting first and second quarter data of 2015 to the California Emergency Medical Services Authority in January 2016. The trauma registry has 4,172 patients entered since the start of the trauma program August 1, 2013.
DATE: January 6, 2016
TO: EMS Liaison Committee
PREPARED BY: Rick Jones, MPA, EMS Analyst
SUBJECT: Report on STEMI System in 2015

RECOMMENDED ACTION:
Receive information on the STEMI System in San Joaquin County for January through August 2015.

FISCAL IMPACT:
The EMS Agency receives $25,000 per year from each designated STEMI center to offset the costs associated with STEMI system planning, implementation, and evaluation.

DISCUSSION:
The San Joaquin County EMS Agency developed and implemented a system to identify “heart attack” patients experiencing an ST elevated myocardial infarction (STEMI) and to direct these patients to specially designated hospitals staffed and equipped with cardiac catheter laboratories capable of providing immediate “life-saving” intervention. The ability of the EMS Agency to evaluate the STEMI system relies upon data measuring the performance of prehospital and hospital timeliness and adherence to policies and procedures.

The STEMI system of care began with the designation of St. Joseph’s Medical Center and Dameron Hospital as the two STEMI Receiving Centers (SRCs) in San Joaquin County beginning on April 1, 2012.

The following Quality Indicators, used as a means to measure the effectiveness of the STEMI system in San Joaquin County, rely upon data derived from both prehospital and in-hospital sources.

Prehospital Quality Indicators include measurement of the following:
1. Accurate and complete documentation
2. Time spent on-scene
3. Appropriate use of 12 lead ECGs (Pts correctly identified as possible cardiac patients)
4. Identification of STEMI patients (using criteria set forth in EMS Agency policy)
5. Timely and correct notification of SRCs for patient’s identified as having STEMI
6. Efficacy of ECG transmission

In-Hospital Quality Indicators include measurement of the following:
1. Timeliness of in-hospital STEMI alert in response to prehospital STEMI alert;
2. Efficacy of prehospital STEMI identification method (e.g. percentage of false positives);
3. Timeliness of prehospital alert and ED arrival to cath lab/balloon times.

Reports
Ensuring accurate and complete documentation of STEMI patients from the prehospital setting requires a careful review of patient care reports. This review is conducted by staff at the SRCs in consultation with the SJCEMSA EMS Analyst. The EMS Analyst provides feedback to prehospital personnel to improve STEMI documentation, ensure appropriate use of 12 lead ECGs, and whether timely and correct notification of SRCs for patient’s identified as having STEMI has occurred. The efficacy of ECG transmission has been questionable due to technology challenges (slow or inoperable modems) and because not all 12 Lead ECG machines are equipped with the necessary capability.

Time spent on scene by ambulance crews caring for potential STEMI patients has been (12) twelve minutes on average since the inception of the STEMI program. The chart below shows the variation in the time on-scene during the first nine months of 2015. Those cases in which time on scene exceeds twenty (20) minutes are the result of challenges associated with transporting patients from penal institutions.

<table>
<thead>
<tr>
<th>Elapsed Time from Ambulance Arrival On-Scene to Pt Transport January through September 2015 for Cardiac Cases Reported through STEMI Data Collection Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Graph showing elapsed time from ambulance arrival on-scene to patient transport for STEMI cases]</td>
</tr>
<tr>
<td>Average On-Scene Time: 12 Minutes</td>
</tr>
</tbody>
</table>
The upper control limit (3\textsuperscript{rd} standard deviation) is 28 minutes.

**False Positive STEMI Cases**

The false positive rate provides an indication of whether the method used to identify STEMI patients in the prehospital setting are appropriate to cause an in-hospital STEMI alert. During the first nine months in 2015, the false positive rate reported by SJMC was 44 of 116 cases (38%); and the false positive rate reported by Dameron was 3 out of 30 cases (10%). The chart below shows the ratio of True Positive (Prehospital ECG STEMI confirmed) to False Positive (prehospital ECG STEMI not confirmed) each month at St Joseph’s Medical Center.
SRC STEMI Alert Performance

The premise for alerting a SRC of a STEMI patient in the prehospital setting is to provide the hospital with early notification in order to ensure that the cardiac cath lab team is prepared to provide the care necessary to perfuse the heart and stop heart muscle cell death. The goal is that upon receipt of a STEMI alert from the prehospital setting, the SRCs will immediately call an internal STEMI alert.

Dameron Hospital and SJMC continue to improve by shortening the time to call an in-hospital STEMI alert in response to the imminent arrival of a STEMI patient arriving by ambulance.
Volume of Percutaneous Interventions (PCIs) via 911 System

The number of patients identified in the prehospital setting as STEMI patients exceed the number of patients that receive percutaneous interventions (PCI) due to two primary reasons. First, the identification of STEMI patients in the prehospital setting relies upon the analysis of each patient’s 12-Lead ECG by the computer in each device. Upon arrival at the emergency department at the SRC, the emergency department physician (often in consultation with a cardiologist) performs an in-hospital 12-lead ECG and either confirms or cancels the SRC STEMI alert. Second, some patients that are confirmed at the SRC as a STEMI patient may not be candidates for PCI for a variety of reasons related to their particular medical condition.

There were 51 percutaneous interventions (PCIs) performed by SJMC and 25 PCIs performed by Dameron as a result of ambulance transports via the 911 system.

Door to Balloon Times

Dameron Hospital and SJMC consistently meet or exceed the ACC/AHA ≤ ninety (90) minute the door to balloon time interval minimum standards as shown below:
Elapsed Time from the Arrival of Ambulance Patients at Dameron Hospital to Percutaneous Intervention (PCI) from January through September 2015

* Delay due to cardiac arrest or STEMI evolving or non STEMI per ECG.
Elapsed Time from the Arrival Ambulance Patients at SJMC to Percutaneous Intervention (PCI) from January through September 2015

* Delay due to cardiac arrest or STEMI evolving or non STEMI per ECG.
DATE: January 6, 2016
TO: EMS Liaison Committee
PREPARED BY: Rick Jones, MPA, EMS Analyst
SUBJECT: Report on Ambulance Patient Off-load Delays

RECOMMENDED ACTION:
Receive information on Ambulance Patient Off-load Delays (A POD) occurring in San Joaquin County.

FISCAL IMPACT:
The financial impact of APOD on the EMS system during the eleven (11) months from January 2015 through November 2015 is estimated to be $1,337,575.

DISCUSSION:
The San Joaquin County EMS Agency (SJCEMSA) continues to measure the scope of the problem and to identify the factors that contribute to the amount of time needed to transfer patient care between prehospital personnel and the emergency department.

Ambulance patient offload time, also known as wall time, is the interval between arrival of an ambulance patient at the emergency department and the time the patient is transferred to an emergency department gurney, bed, chair, or other acceptable location and the emergency department personnel assumes responsibility for care of the patient.

The Standard
In San Joaquin County, we consider a reasonable amount of time for the transfer of patient care from ambulance personnel to emergency department staff to be no greater than 15 minutes. In San Joaquin County, ambulance patient offload delay (A POD) occurs when the ambulance patient offload time interval exceeds the established standard (30 minutes).
Goal

To reduce all wall times to less than 30 minutes. With cooperation, this is an attainable goal.

Patient Care Impact

When an ambulance is kept at an emergency department over 30 minutes the resulting ambulance patient offload delay impacts the ability of the EMS system to meet demand and may adversely impact the care of the patient waiting on an ambulance gurney.

While definitive patient outcome data is not available to support the claim that APODs are deleterious to patient care, one way in which the impact of APODs can be measured is through an analysis of ambulance response compliance data. Such an analysis indicates that APODs directly reduce the number of ambulances available to respond to emergencies with response times required for contract compliance. The reduction in available ambulance services caused by APODs can be measured in two ways:

Ambulance Response Compliance Exemptions: When the frequency and length of APODs reach a trigger point, an ambulance provider may request an exemption from meeting ambulance response compliance requirements. An APOD exemption trigger is activated when all of the following occurs:

- There are a minimum of 3 ambulances are delayed at one or more Stockton area hospital (Dameron, St. Joseph’s Medical Center, San Joaquin General Hospital) for a time period > 60 minutes for each ambulance.
- There are five (5) or fewer ambulances available in the greater Stockton area (Status 5 or less).
- The three (3) ambulances referenced above must have been delayed at hospitals during the 60 minutes prior to the call in which an exemption is being sought.
- Ambulance staffing must be at or above the contracted minimum staffing levels

During the previous fourteen (14) month period, AMR has steadily increased the number of exemption requests for responses that exceed response time standards due to APODs. In the reporting period for July/August 2014, AMR requested 41 exemptions that met the APOD trigger out of a total of 91 exemption requests (0.94% of total

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1 The process for determining response time compliance includes a review of late response exemption requests to determine if a delay in response may be attributed to factors outside of the control of the ambulance provider. If an exemption request is approved (e.g. fog, train crossings, road construction) those responses are not included in response time compliance calculations.
responses). In the most recent reporting period for July/August 2015, AMR requested 226 exemptions that met the APOD trigger out of a total of 313 exemption requests (2.7% of total responses).

**Ambulance Response Minutes Lost:** The impact of allowing APOD exemption requests can also be measured by comparing the difference between the most recent official ambulance response compliance report with a report that disallows the APOD exemptions. There were 226 late responses that occurred while the APOD trigger was met in July/August 2015, which resulted in 659 minutes that exceeded response time compliance criteria.

Appropriately granting hospital caused APOD exemptions to AMR, for factors beyond its control, allows AMR to achieve a reported 91.4% response-time compliance. Nonetheless, APOD robs the EMS system of efficiency and steals precious response-time minutes from acutely ill and injured patients. Hospital caused APOD decreases monthly response-time compliance by more than 3%.

**Hospital Performance**

The performance of the seven hospitals in San Joaquin County during 2015 is shown in charts as follows: **Chart 1** consists of data compiled from September through November and shows the total number of ambulance patient offloads (volume) for each hospital and compares the percent of each hospital's ambulance patient offload times that fall within three measurement categories: less than 30 minutes; between 30 and 60 minutes, and greater than 60 minutes.

**Chart 2** consists of data compiled from January through November and shows the relative number of total ambulance off-loads at each hospital compared to the cumulative number of APOD hours at each hospital.

**Financial Impact**

Every minute that an ambulance must remain at a hospital emergency department longer than 30 minutes (APOD), the financial impact to the 9-1-1 system is approximately $2.58 per minute or $154.80 per hour. As shown in **Chart 3**, during the eleven (11) months from January 2015 through November 2015, it is estimated that ambulance patient offload delays cost the emergency ambulance system approximately $1,337,575.
Chart 2 - Cumulative APOD Hours and EMS System Ambulance Transports by Hospital from January thru November 2015

- APOD Hours (cumulative time for each offload that exceeds 30 minutes)
- Number of Ambulance Transports
Chart 3 - APOD Hours per Hospital from January through November 2015 with APOD System Cost Calculation

- Dameron: $256,646
- DHM: $14,692
- Kaiser Manteca: $29,806
- LMH: $71,861
- SJGH: $255,287
- SJMC: $673,453
- Sutter Tracy: $35,830

(APOD Hours (cumulative time for each offload that exceeds 30 minutes))
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Adam Dampier, B.A., MICP, - Prehospital Care Coordinator

SUBJECT: Overview of the Continuous Quality Improvement (CQI) Council Activities

RECOMMENDED ACTION:

Receive information regarding Continuous Quality Improvement (CQI) Council activities.

FISCAL IMPACT:

None.

DISCUSSION:

The San Joaquin County EMS Agency (SJCEMSA) established the CQI Council to assist the SJCEMSA in providing oversight and supervision of the CQI process and foster communication with all EMS system participants. The CQI Council is comprised of representatives from each ALS provider organization, the base hospital, the designated EMS dispatch center, and the SJCEMSA.

Each ALS provider is responsible for the development and implementation of a CQI plan that meets the minimum standards of SJCEMSA policy and state law. As part of the SJCEMSA’s system-wide CQI program ALS provider organizations are required to produce and submit to the SJCEMSA a monthly advanced airway report, and quarterly reports documenting internal provider’s CQI activities and outcomes of key performance indicators (KPI). The CQI Council established the following KPIs for 2015-16:

**Clinical Skills**

1. Pain Assessment.
2. Spinal Stabilization Neuro Check Performed Prior to Stabilization.
4. Spinal Stabilization Neuro Check Performed Every 15 Minutes.
5. Pediatric Dose to Weight Validation.
6. STEMI Receiving Center Alert Prior to Transport.
7. 12 Lead ECG on ROSC.

**Infrequently Used Skills**

1. Cardioversion.
2. Transcutaneous Pacing.
3. Pleural Decompression.
DATE: January 6, 2016

TO: EMS Liaison Committee

PREPARED BY: Phillip Cook
Disaster Medical Health Specialist

SUBJECT: Hospital Available Beds for Emergencies and Disasters (HAvBED) System

RECOMMENDED ACTION:

Provide an overview of the Hospital Available Beds for Emergencies and Disasters (HAvBED) system and exercise results

FISCAL IMPACT:

None

DISCUSSION:

I. OVERVIEW

The Hospital Available Beds for Emergencies and Disasters (HAvBED) system is used to ascertain the immediate local, regional, and state hospital bed availability during a surge event, public health emergency or other event. The Federal Government has mandated that all states utilize HAvBED as part of their disaster preparedness efforts.

The Federal HAvBED standard requires San Joaquin County to provide HAvBED data to the California Department of Public Health within 60 minutes of a request, 24/7.

II. HAvBED DATA and DEFINITIONS

Available bed: Vacant, immediately ready for patients. Include supporting space, equipment, ancillary and support services and staff to operate under normal circumstances. Licensed and physically available, with staff on hand to attend the patient occupying the bed.

Staffed bed: Licensed and physically available with staff on hand to attend patient. Includes both occupied and available.
Staffed beds should never be less than available beds.

### Definitions:

**Available bed**: Vacant, immediately ready for patients. Include supporting space, equipment, ancillary and support services and staff to operate under normal circumstances. Licensed and physically available, with staff on hand to attend the patient occupying the bed.

**Staffed bed**: Licensed and physically available with staff on hand to attend patient. Includes both occupied and available.

### HAveBED Bed Categories

<table>
<thead>
<tr>
<th>HAveBED Bed Categories</th>
<th>Available</th>
<th>Staffed (includes Available)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult Intensive Care Unit (ICU)</strong>: Beds that can support critically ill or injured patients, including ventilator support.</td>
<td></td>
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<tr>
<td><strong>Medical/Surgical</strong>: Also thought of as Ward Beds.</td>
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</tr>
<tr>
<td><strong>Burn</strong>: Thought of as Burn ICU beds, either approved by the American Burn Association or self-designated. (These beds are NOT to be included in other ICU bed counts.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pediatric ICU</strong>: As for Adult ICU, but patients 17 years and younger.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pediatrics</strong>: Ward Medical/Surgical beds for patients 17 and younger</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Psychiatric</strong>: Ward beds on a closed/locked psychiatric unit or ward beds where a patient will be attended by a sitter</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Airborne Infection Isolation</strong>: Beds provided with negative airflow, providing respiratory solution. NOTE: This value may represent available beds included in the counts of other types.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating Rooms</strong>: An operating room that is equipped staffed and could be made available for patient care in a short period of time.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emergency Room Status</strong>: Open - Accepting patients by ambulance; Closed - Not accepting patients by ambulance; N/A - Not Applicable (hospital does not have an ED)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Decontamination Ability</strong>: Available - The institution has chemical/biological/radiological multiple patient decontamination capability; Not Available - The institution is unable to provide chemical/biological/radiological patient decontamination</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ventilators</strong>: The number of ventilators that are present in the institution not being used and could be supported by currently available staff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
III. EXERCISES

The 2015-16 Hospital Preparedness Program (HPP) Grant required San Joaquin County and each acute care hospital to conduct and participate in quarterly HAvBED drills.

The purpose of the exercises is to provide hospitals with an opportunity to practice collecting and entering the HAvBED data into EMResource, to identify strengths to be built upon, and to identify areas for improvement.

IV. AFTER ACTION REPORTS / IMPROVEMENT PLANS (AAR/IP)

An ongoing area for improvement is the hospital’s inability to collect and enter accurate HAvBED data.

- December 2, 2015 Drill AAR/IP
- September 1, 2015 Drill AAR/IP

REFERENCES:

## San Joaquin Operational Area
### Hospital Available Beds for Emergencies and Disasters (HAvBED) Drill
#### December 2, 2015
##### After Action Report / Improvement Plan

<table>
<thead>
<tr>
<th>Prepared by:</th>
<th>Phillip Cook</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Exercise Type:</th>
<th>Seminar</th>
<th>Workshop</th>
<th>X Drill</th>
<th>Full-Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Game</td>
<td>Tabletop</td>
<td>Functional</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participating Organizations:</th>
<th>San Joaquin County EMS Agency</th>
</tr>
</thead>
</table>

**Hospitals:**
- Dameron Hospital
- Doctor’s Hospital of Manteca
- Lodi Memorial Hospital
- San Joaquin General Hospital
- St. Joseph’s Medical Center
- Sutter Tracy Community Hospital

### Overview:

The Hospital Available Beds for Emergencies and Disasters (HAvBED) system is used to ascertain the immediate local, regional, and state hospital bed availability during a surge event, public health emergency or other event. The Federal Government has mandated that all states utilize HAvBED as part of their disaster preparedness efforts.

The 2015-16 Hospital Preparedness Program (HPP) Grant required San Joaquin County and each acute care hospital to conduct and participate in quarterly HAvBED drills.

### Exercise Purpose:

In addition to meeting the 2015-16 HPP grant deliverables; the purpose of these exercises are to provide hospitals with an opportunity to practice collecting and entering the HAvBED data into EMResource, to identify strengths to be built upon, and to identify areas for improvement.

### Core Capability:

Public Health, Healthcare and Emergency Medical Services

### Exercise Objectives:

Evaluate hospital’s ability to collect and enter accurate HAvBED data into EMResource.

### Strengths:

The major strengths identified during the exercise are as follows:
1. Dameron Hospital entered accurate staffed bed data.

### Areas for Improvement:

Primary areas for improvement are as follows:
1. Kaiser Manteca failed to respond to and participate in the HAvBED drill.
2. The following hospitals enter erroneous data for Staffed Beds:
   a. Doctor’s Manteca
   b. Lodi Memorial
   c. San Joaquin General
   d. St. Joseph’s
   e. Sutter Tracy
3. Dameron and Lodi Memorial were not capable of providing patient decontamination.
1. Kaiser Manteca failed to participate and respond to the HAvBED drill.

2. The five hospitals (71.4%) entered erroneous data: Doctor's Manteca, Lodi Memorial, San Joaquin General, St. Joseph's and Sutter Tracy.

3. Dameron and Lodi Memorial reported that they were not capable of providing patient decontamination.

4. Average time to enter HAvBED data 16.5 minutes.
APPENDIX A: IMPROVEMENT PLAN

This IP has been developed specifically for San Joaquin Operational Area Healthcare Coalition as a result of the Region IV HAvBED Drill conducted on December 2, 2015

<table>
<thead>
<tr>
<th>Core Capability</th>
<th>Issue/Area for Improvement</th>
<th>Corrective Action</th>
<th>Capability Element</th>
<th>Primary Responsible Organization</th>
<th>Organization POC</th>
<th>Start Date</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Capability</td>
<td>1. Hospitals entered erroneous data for the numbers of Staffed Beds</td>
<td>Education performed with new Nursing Supervisor</td>
<td>Training</td>
<td>Doctor's Manteca</td>
<td>Brian Beenes</td>
<td>12/2/15</td>
<td>12/3/15</td>
</tr>
<tr>
<td>1: Public Health and Medical Services</td>
<td></td>
<td>Train the ED Charge Nurses</td>
<td>Training</td>
<td>Kaiser Manteca</td>
<td>Chris Neilson</td>
<td>12/2015</td>
<td>12/2015</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Implement further training and education for staff regarding the appropriate way to fill out the HAvBed worksheet</td>
<td>Training</td>
<td>Lodi Memorial</td>
<td>Valerie Hastings MB. VerHagen, House Supervisor</td>
<td>12/14/15</td>
<td>12/23/15</td>
</tr>
<tr>
<td></td>
<td>Instruction sheet on HAvBed data collection and entry with definitions of Available vs. Staffed beds placed in MICN disaster resource binder in radio room</td>
<td>Equipment</td>
<td>San Joaquin General</td>
<td>W. Aaron</td>
<td>1/4/16</td>
<td>1/4/16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difference between Staffed and Available beds to be reviewed in staff meeting and posted in meeting minutes binder</td>
<td>Training</td>
<td></td>
<td>W. Aaron</td>
<td>1/13/16</td>
<td>2/2016</td>
<td></td>
</tr>
</tbody>
</table>

1 Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.
<table>
<thead>
<tr>
<th>Task</th>
<th>Location</th>
<th>Name</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in unannounced HAvBed drills</td>
<td>Exercise</td>
<td>W. Aaron</td>
<td>1/4/16</td>
<td>6/30/16</td>
</tr>
<tr>
<td>Provide additional in service to patient placement staff.</td>
<td>Training</td>
<td>St. Joseph’s</td>
<td>1/1/16</td>
<td>1/31/16</td>
</tr>
<tr>
<td>Review worksheets for real time correction</td>
<td>Organization</td>
<td>Mary Cervantes</td>
<td>1/1/16</td>
<td>1/31/16</td>
</tr>
<tr>
<td>Provide additional HAvBED training to ER dayshift and graveyard shift staff</td>
<td>Training</td>
<td>Sutter Tracy</td>
<td>01/08/2016</td>
<td>02/08/2016</td>
</tr>
<tr>
<td>Conduct monthly unannounced HAvBED drills for day and night shifts.</td>
<td>Exercises</td>
<td>San Joaquin County EMS Agency</td>
<td>1/1/16</td>
<td>6/30/16</td>
</tr>
<tr>
<td>2. Hospital wasn't capable of providing patient decontamination</td>
<td>Training</td>
<td>Dameron</td>
<td>1/25/16</td>
<td>2/12/16</td>
</tr>
<tr>
<td>Education for existing and new house supervisors as to the requirements of the HAvBED data.</td>
<td>Training</td>
<td>Lodi Memorial</td>
<td>12/14/15</td>
<td>12/23/15</td>
</tr>
</tbody>
</table>
## San Joaquin Operational Area
### Hospital Available Beds for Emergencies and Disasters (HAvBED) Drill
#### September 1, 2015
##### After Action Report / Improvement Plan

<table>
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<tr>
<th>Prepared by:</th>
<th>Phillip Cook</th>
</tr>
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<td>Exercise Type:</td>
<td>☐ Seminar   ☐ Workshop   X Drill   ☐ Full-Scale   ☐ Game   ☐ Tabletop   ☐ Functional</td>
</tr>
</tbody>
</table>
| Participating Organizations: | San Joaquin County EMS Agency  
Hospitals:  
- Dameron Hospital  
- Doctor’s Hospital of Manteca  
- Kaiser Hospital Manteca  
- Lodi Memorial Hospital  
- San Joaquin General Hospital  
- St. Joseph’s Medical Center  
- Sutter Tracy Community Hospital |
| Overview: | The Hospital Available Beds for Emergencies and Disasters (HAvBED) system is used to ascertain the immediate local, regional, and state hospital bed availability during a surge event, public health emergency or real-world event. The Federal Government has mandated that all States utilize HAvBED as part of their disaster preparedness efforts.  
The 2015-16 Hospital Preparedness Program (HPP) Grant required San Joaquin County and each acute care hospital to conduct and participate in quarterly HAvBED drills. |
| Exercise Purpose: | In addition to meeting the 2015-16 HPP grant deliverables; the purpose of these exercises are to provide hospitals with an opportunity to practice collecting and entering the HAvBED data into EMResource, to identify strengths to be built upon, and to identify areas for improvement. |
| Core Capability: | Public Health, Healthcare and Emergency Medical Services |
| Exercise Objectives: | Evaluate hospital’s ability to collect and enter accurate HAvBED data into EMResource. |
| Strengths: | The major strengths identified during the exercise are as follows:  
1. All San Joaquin County hospitals participated in the exercise.  
2. Average response time to enter HAvBED data was 12.7 minutes |
| Areas for Improvement: | Primary areas for improvement are as follows:  
1. The following hospitals enter erroneous data for Staffed Beds:  
   a. Doctor’s Hospital of Manteca  
   b. Kaiser Hospital Manteca |
1. Doctor’s Hospital of Manteca and Kaiser Hospital Manteca entered erroneous data; staffed beds can never be less than available beds.

2. Average time to enter HAvBED data 12.7 minutes.
This IP has been developed specifically for San Joaquin Operational Area Healthcare Coalition as a result of HA\vBED Drill conducted on September 1, 2015.

<table>
<thead>
<tr>
<th>Core Capability</th>
<th>Issue/Area for Improvement</th>
<th>Corrective Action</th>
<th>Capability Element¹</th>
<th>Primary Responsible Organization</th>
<th>Organization POC</th>
<th>Start Date</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Capability 1: Public Health, Healthcare and Emergency Medical Services</td>
<td>1. Hospital entered erroneous date for the number of Staffed Beds</td>
<td>Implement further training and education for staff regarding the appropriate way to fill out the HA\vBED poll.</td>
<td>Training</td>
<td>Doctor's Hospital of Manteca</td>
<td>Brian Beenes</td>
<td>9/2/15</td>
<td>10/2/15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education for all new charge nurses and house supervisors as to the requirements of the HA\vBED poll.</td>
<td>Training</td>
<td>Kaiser Hospital Manteca</td>
<td>David Wiebe, RN, ADM</td>
<td>9/22/15</td>
<td>10/1/15</td>
</tr>
</tbody>
</table>

¹ Capability Elements are: Planning, Organization, Equipment, Training, or Exercise.