EMS Liaison Committee  
Thursday, August 17, 2017 at 0900 hours  
Health Plan of San Joaquin  
Community Room  
7751 S. Manthey Road  
French Camp, CA 95231  

AGENDA

1. Call to Order

2. EMS Agency Administrator’s Report

3. Staffing and Training  
   A. EMS Training Programs  
   B. EMS Personnel Report  
   C. Enforcement Report  
   D. EMT Applications and EMT Skills Verification Form

4. Response and Transport  
   A. Emergency Ambulance Performance  
   B. Air Ambulance Utilization in the Field Care Setting

5. Facilities and Critical Care  
   A. STEMI System  
      i. STEMI System Regulations Issued by the California EMS Authority  
      ii. STEMI System Report  
   B. Stroke System Planning  
      i. Stroke System Regulations issued by the California EMS Authority  
      ii. Primary Stroke Center Designation Process  
      iii. Draft EMS Policy No. 4812 Primary Stroke Center Data Requirements  
      iv. Draft EMS Policy No. 5774 ALS Acute Stroke – Importance of RACE Scale and Last Know Well Time
   C. Ambulance Patient Off-load Delays and Mitigation of APOD Clusters  
   D. Trauma System  
      i. American College of Surgeons Level III Trauma Center Verification Visit for San Joaquin General Hospital

6. Data Collection and System Evaluation  
   A. Status of Implementation of ePCR with BLS Non-transport Providers pursuant to Health and Safety Code, Section 1797.227  
   B. Standard of Care in Completing a Patient Care Record
7. Disaster Medical
   A. Plausible Threat 2017 Exercise Program
   B. EMResource
   C. Regional Disaster Medical Health System Report
   D. Healthcare Coalition Surge Exercises

8. Hospital and Provider Reports

9. Public Comment

10. Next Meeting – Thursday, October 12, 2017

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: August 14, 2017

TO: EMS Liaison Committee

PREPARED BY: Christine Tualla, EMS Specialist

SUBJECT: EMS Training Programs

RECOMMENDED ACTION:

Receive information on EMS training programs in San Joaquin County.

DISCUSSION:

Health and Safety Code, Division 2.5, Section 1797.208 assigns the local EMS agency responsibility for the approval and oversight of all EMS training programs operating in San Joaquin County. SJCEMSA verifies that new training program applicants and existing training programs meet the requirements of statute, regulation, and SJCEMSA policy. SJCEMSA provides technical assistance to training programs regarding adherence to standards and best practices.

Recent changes in the Health and Safety Code and the adoption of implementing regulations now require local EMS agencies to have processes in place to evaluate applications from training programs seeking approval to teach:

- Public Safety First Aid and CPR courses;
- California Tactical Casualty Care (TCC)-Tactical First Aid/Tactical Emergency Medical Support (TEMS) First Responder Operational (FRO) training courses; and
- California Tactical Casualty Care (TCC) - Tactical Live Saver Technician/Tactical Emergency Medical Support (TEMS) Technician training courses.

SJCEMSA has received and rejected one application for public safety first aid and CPR as incomplete. SJCEMSA has received and is considering one application for CCT FRO and TEMS course.

The following is a summary of currently approved EMS Training Programs:

Paramedic Training Programs:

No applications received since the last reporting period.
<table>
<thead>
<tr>
<th>Approved EMT Training Programs:</th>
<th>Expiration Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ripon Consolidated Fire District</td>
<td>December 31, 2018</td>
</tr>
<tr>
<td>San Joaquin County EMS Agency</td>
<td>December 31, 2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved EMS Continuing Education Providers:</th>
<th>Expiration Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Medical Response</td>
<td>April 30, 2018</td>
</tr>
<tr>
<td>Farmington Rural Fire Protection District</td>
<td>May 31, 2018</td>
</tr>
<tr>
<td>Lodi Fire Department</td>
<td>October 31, 2018</td>
</tr>
<tr>
<td>Manteca District Ambulance</td>
<td>December 31, 2018</td>
</tr>
<tr>
<td>Manteca Fire Department</td>
<td>May 31, 2019</td>
</tr>
<tr>
<td>Montezuma Fire District</td>
<td>April 30, 2018</td>
</tr>
<tr>
<td>Ripon Consolidated Fire Department</td>
<td>December 31, 2018</td>
</tr>
<tr>
<td>San Joaquin County EMS Agency</td>
<td>December 31, 2019</td>
</tr>
<tr>
<td>Stockton Fire Department</td>
<td>December 31, 2018</td>
</tr>
<tr>
<td>Tracy Fire Department</td>
<td>May 31, 2018</td>
</tr>
</tbody>
</table>
DATE: August 14, 2017

TO: EMS Liaison Committee

PREPARED BY: Christine Tualla, EMS Specialist

SUBJECT: EMS Personnel Report

RECOMMENDED ACTION:

Receive information on EMS Personnel activities.

DISCUSSION:

The following is a summary of the number of EMS personnel currently certified, accredited, or approved to practice in San Joaquin County; and the EMS personnel application activity of the SJCEMSA between July 1, 2016, and June 30, 2017.

EMR Certification Total: 38
Applications processed
Initial Certification: 4
Re-certification: 10

EMT Certification Total: 807
Applications processed
Initial Certification: 107
Re-certification: 277
Reciprocity Certification: 1

Paramedic Accreditation Total: 356
Applications processed
Initial Accreditation: 50
Re-accreditation: 133

EMS Dispatcher Accreditation Total: 69
Applications processed
Initial Accreditation: 3
Re-accreditation: 41
MICN Authorization Total: 60
Applications processed
Initial Authorization: 9
Re-authorization: 18

Paramedic Field Internship Authorization Total: 10
Applications processed
Initial Authorization: 10
Extended Authorization: 1

Paramedic Preceptor Authorization Total: 40
Allocation by ALS provider organization
American Medical Response: 16
Escalon Community Ambulance: 2
Manteca District Ambulance: 9
Ripon Consolidated Fire District: 2
Stockton Fire Department: 9
Tracy Fire Department: 2

Each July, the SJCEMSA accepts applications for Paramedic Preceptor authorization. Applicants are required to complete an eight (8) hour paramedic preceptor training course and be approved by a peer review panel.
DATE: August 14, 2017

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 SJCEMSA is required to investigate credible allegations of threats to the public health and safety and when necessary take action against an individual's license, certification, accreditation, or authorization to protect the public. The costs associated with investigations and enforcement are covered by the collection of application fees, and County general fund allocation.

DISCUSSION:

Active Probation:
- Emergency Medical Responder (EMR): 0
- Emergency Medical Technician (EMT): 6
- Emergency Medical Dispatcher (EDM): 2

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

Revocation or denials taken since July 2016:
- Emergency Medical Responder (EMR): 0
- Emergency Medical Technician (EMT): 3
- Emergency Medical Dispatcher (EDM): 0

Pending Cases:

Currently, SJCEMSA has eight active investigations and/or pending disciplinary actions.
EMT Applications and EMT Skills Verification Form FAQ’s - EMT Renewal 2017
July 28, 2017

Changes to the EMT regulations issued by the California EMS Authority became effective on July 1, 2017. Below are answers to some of the frequently asked questions regarding the impact of these revisions, several of which affect the requirements for EMT certification and the basic scope of practice.

Q1: Do I have to use the new EMT Skills Competency Verification Form (EMSA-SCV (01/17)) skill sheet?

A: Yes. Applicants for EMT certification renewal are required to submit the revised EMT Skills Competency Verification Form (EMSA-SCV (01/17)) for all skills verified on or after July 1, 2017. However, renewal applicants that have had one or more of their skills verified prior to July 1, 2017, may submit the previous version of the EMT Skills Verification Form.

Q2: Are renewal applicants required to demonstrate skills competency in the administration of naloxone and epinephrine?

A: Yes, starting January 1, 2018. The San Joaquin County EMS Agency is working with BLS departments and training programs to implement training and testing on these modalities. It is anticipated that this training will be completed by January 1, 2018.

Q3: If I had my EMT Skills Competency Verification form completed by June 30, 2017, can I still submit it on the EMT Skills Competency Verification Form (EMSA-SCV (08/10))?  

A: Yes, if your EMT skills competency were verified on the EMT Skills Competency Verification Form (EMSA-SCV (08/10)) on or prior to June 30, 2017, the form may be submitted for certification renewal as long as the verification was completed within your certification period. EMT Skills Competency Verifications are valid for a maximum of two (2) years; therefore, form EMSA-SCV (08/10) will not be valid after June 30, 2019.

Q4: Are all EMTs authorized to administer epinephrine and naloxone?

A: No. EMTs and BLS departments may not use these modalities until specifically approved to do so by the San Joaquin County EMS Agency.
DATE: August 14, 2017

TO: EMS Liaison Committee

PREPARED BY: Rick Jones, MPA, EMS Analyst
Shahloh Jones-Mitchell, 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:

SJCEMSA’s Report on the Exclusive Emergency Ambulance Provider Contract Compliance for AMR, MDA, ECA, and RCFD for the months of November, December, 2016 through April 2017, provides a summary of the performance of each provider as required under each contract. 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 operational, clinical, and administrative performance. A detailed version of the compliance reports can be found on the SJCEMSA’s website at https://www.sjgov.org/ems/transportationcompliancereports.htm.

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. Unless otherwise indicated in the tables below, if an exemption request is approved (e.g. fog, train crossings, road construction) those responses are not included in response time compliance calculations.

The measurement of response performance requirements for Escalon Community Ambulance (ECA) and Ripon Consolidated Fire District (RCFD) are limited to responses with red lights and sirens (RLS) during this reporting period. Reports for Manteca District Ambulance (MDA) are limited to responses with RLS for November and December 2016, but beginning on January 1, and the beginning of a new ALS agreement with San Joaquin County, MDA’s performance requirements have been expanded to include No Red Lights.
and Sirens (NRLS) performance measures. As noted in previous reports, beginning May 1, 2016, the county’s written agreement with AMR includes additional performance measures, some of which are included in this report.

**American Medical Response (AMR)**

**Performance Measures**

AMR’s November through April contract requires that AMR meet performance criteria for the following response types: Red Lights and Sirens (RLS), No Red Lights and Sirens (NRLS), Advanced Life Support (ALS) interfacility transfers (IFT), and Critical Care Transports (CCT).

The three tables below show AMR’s summaries of all X-Zone compliance for responses in each month from November 2016 through April 2017 that include respectively: RLS; NRLS; and combined RLS & NRLS. Each table includes the total number of responses, number of late calls, the number of exemptions, and the impact on compliance due to approved exemptions.

<table>
<thead>
<tr>
<th>AMR All Zones Combined RLS</th>
<th>Total Responses</th>
<th>Total Late Calls Prior to Exemptions</th>
<th>Compliance Prior to Exemptions</th>
<th>Remaining Late Calls</th>
<th>Approved Exemptions</th>
<th>Compliance After Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 1, 2016 through November 30, 2016</td>
<td>3,874</td>
<td>597</td>
<td>84.59%</td>
<td>308</td>
<td>289</td>
<td>92.05%</td>
</tr>
<tr>
<td>December 1, 2016 through December 31, 2016</td>
<td>4,082</td>
<td>660</td>
<td>83.83%</td>
<td>304</td>
<td>356</td>
<td>92.55%</td>
</tr>
<tr>
<td>January 1, 2017 through January 31, 2017</td>
<td>4,673</td>
<td>929</td>
<td>80.12%</td>
<td>366</td>
<td>563</td>
<td>92.17%</td>
</tr>
<tr>
<td>February 1, 2017 through February 28, 2017</td>
<td>3,399</td>
<td>584</td>
<td>82.82%</td>
<td>314</td>
<td>270</td>
<td>90.76%</td>
</tr>
<tr>
<td>March 1, 2017 through March 31, 2017</td>
<td>3,679</td>
<td>645</td>
<td>82.47%</td>
<td>407</td>
<td>238</td>
<td>88.94%</td>
</tr>
<tr>
<td>April 1, 2017 through April 30, 2017</td>
<td>3,578</td>
<td>510</td>
<td>85.75%</td>
<td>297</td>
<td>213</td>
<td>91.70%</td>
</tr>
<tr>
<td>All Zones Combined</td>
<td>23,285</td>
<td>3,925</td>
<td>83.14%</td>
<td>1,996</td>
<td>1,929</td>
<td>91.43%</td>
</tr>
</tbody>
</table>
## AMR Combined NRLS Total

<table>
<thead>
<tr>
<th>Period</th>
<th>Total Responses</th>
<th>Number of Late Calls Prior to Exemptions</th>
<th>Compliance Prior to Exemptions</th>
<th>Remaining Late Calls</th>
<th>Approved Exemptions</th>
<th>Compliance After Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 1, 2016 through November 30, 2016</td>
<td>1,420</td>
<td>68</td>
<td>95.21%</td>
<td>28</td>
<td>40</td>
<td>98.03%</td>
</tr>
<tr>
<td>December 1, 2016 through December 31, 2016</td>
<td>1,668</td>
<td>66</td>
<td>96.04%</td>
<td>20</td>
<td>46</td>
<td>98.80%</td>
</tr>
<tr>
<td>January 1, 2017 through January 31, 2017</td>
<td>1,744</td>
<td>99</td>
<td>94.32%</td>
<td>29</td>
<td>70</td>
<td>98.34%</td>
</tr>
<tr>
<td>February 1, 2017 through February 28, 2017</td>
<td>1,960</td>
<td>109</td>
<td>94.44%</td>
<td>50</td>
<td>59</td>
<td>97.45%</td>
</tr>
<tr>
<td>March 1, 2017 through March 31, 2017</td>
<td>2,131</td>
<td>116</td>
<td>94.56%</td>
<td>69</td>
<td>47</td>
<td>96.76%</td>
</tr>
<tr>
<td>April 1, 2017 through April 30, 2017</td>
<td>2,004</td>
<td>112</td>
<td>94.41%</td>
<td>68</td>
<td>44</td>
<td>96.61%</td>
</tr>
<tr>
<td>All Zones Combined</td>
<td>10,927</td>
<td>570</td>
<td>94.78%</td>
<td>264</td>
<td>306</td>
<td>97.58%</td>
</tr>
</tbody>
</table>

## AMR RLS and NRLS Compliance

<table>
<thead>
<tr>
<th>Period</th>
<th>Total Responses</th>
<th>Number of Late Calls Prior to Exemptions</th>
<th>Compliance Prior to Exemptions</th>
<th>Remaining Late Calls</th>
<th>Approved Exemptions</th>
<th>Compliance After Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 1, 2016 through November 30, 2016</td>
<td>5,294</td>
<td>665</td>
<td>87.44%</td>
<td>336</td>
<td>329</td>
<td>93.65%</td>
</tr>
<tr>
<td>December 1, 2016 through December 31, 2016</td>
<td>5,750</td>
<td>726</td>
<td>87.37%</td>
<td>324</td>
<td>402</td>
<td>94.37%</td>
</tr>
<tr>
<td>January 1, 2017 through January 31, 2017</td>
<td>6,417</td>
<td>1,028</td>
<td>83.98%</td>
<td>395</td>
<td>633</td>
<td>93.84%</td>
</tr>
<tr>
<td>February 1, 2017 through February 28, 2017</td>
<td>5,359</td>
<td>693</td>
<td>87.07%</td>
<td>364</td>
<td>329</td>
<td>93.21%</td>
</tr>
<tr>
<td>March 1, 2017 through March 31, 2017</td>
<td>5,810</td>
<td>761</td>
<td>86.90%</td>
<td>476</td>
<td>285</td>
<td>91.81%</td>
</tr>
<tr>
<td>April 1, 2017 through April 30, 2017</td>
<td>5,582</td>
<td>622</td>
<td>88.86%</td>
<td>365</td>
<td>257</td>
<td>93.46%</td>
</tr>
<tr>
<td>All Zones Combined</td>
<td>34,212</td>
<td>4,495</td>
<td>86.86%</td>
<td>2,260</td>
<td>2,235</td>
<td>93.39%</td>
</tr>
</tbody>
</table>
Manteca District Ambulance (MDA)

<table>
<thead>
<tr>
<th>MDA All Zones Combined RLS</th>
<th>Total Responses</th>
<th>Total Late Calls Prior to Exemptions</th>
<th>Compliance Prior to Exemptions</th>
<th>Remaining Late Calls</th>
<th>Approved Exemptions</th>
<th>Compliance After Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 1, 2016 through November 30, 2016</td>
<td>447</td>
<td>39</td>
<td>91.28%</td>
<td>20</td>
<td>19</td>
<td>95.53%</td>
</tr>
<tr>
<td>December 1, 2016 through December 31, 2016</td>
<td>523</td>
<td>42</td>
<td>91.97%</td>
<td>25</td>
<td>17</td>
<td>95.22%</td>
</tr>
<tr>
<td>January 1, 2017 through January 31, 2017</td>
<td>607</td>
<td>46</td>
<td>92.42%</td>
<td>31</td>
<td>15</td>
<td>94.89%</td>
</tr>
<tr>
<td>February 1, 2017 through February 28, 2017</td>
<td>447</td>
<td>39</td>
<td>91.28%</td>
<td>20</td>
<td>19</td>
<td>95.53%</td>
</tr>
<tr>
<td>March 1, 2017 through March 31, 2017</td>
<td>523</td>
<td>43</td>
<td>91.78%</td>
<td>24</td>
<td>19</td>
<td>95.41%</td>
</tr>
<tr>
<td>April 1, 2017 through April 30, 2017</td>
<td>458</td>
<td>44</td>
<td>90.39%</td>
<td>25</td>
<td>19</td>
<td>94.54%</td>
</tr>
<tr>
<td>All Zones Combined</td>
<td>3,005</td>
<td>253</td>
<td>91.58%</td>
<td>145</td>
<td>108</td>
<td>95.17%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MDA All Zones Combined NRLS</th>
<th>Total Responses</th>
<th>Number of Late Calls Prior to Exemptions</th>
<th>Compliance Prior to Exemptions</th>
<th>Remaining Late Calls</th>
<th>Approved Exemptions</th>
<th>Compliance After Exemptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 1, 2016 through November 30, 2016</td>
<td><em><strong>Prior to new Contract language</strong></em>*</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>December 1, 2016 through December 31, 2016</td>
<td><em><strong>Prior to new Contract language</strong></em>*</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>January 1, 2017 through January 31, 2017</td>
<td>190</td>
<td>4</td>
<td>97.89%</td>
<td>4</td>
<td>0</td>
<td>97.89%</td>
</tr>
<tr>
<td>February 1, 2017 through February 28, 2017</td>
<td>227</td>
<td>5</td>
<td>97.80%</td>
<td>5</td>
<td>0</td>
<td>97.80%</td>
</tr>
<tr>
<td>March 1, 2017 through March 31, 2017</td>
<td>262</td>
<td>2</td>
<td>99.24%</td>
<td>2</td>
<td>0</td>
<td>99.24%</td>
</tr>
<tr>
<td>April 1, 2017 through April 30, 2017</td>
<td>254</td>
<td>6</td>
<td>97.64%</td>
<td>2</td>
<td>4</td>
<td>99.21%</td>
</tr>
<tr>
<td>All Zones Combined</td>
<td>933</td>
<td>17</td>
<td>98.18%</td>
<td>13</td>
<td>4</td>
<td>98.61%</td>
</tr>
</tbody>
</table>
Escalon Community Ambulance (ECA)

ECA’s November and December compliance was 90.63% in November and 92.75% in December for a combined two-month compliance of 91.69% based on 133 responses.

January and February compliance was 94.12% in January and 94.20% in February for a combined two-month compliance of 94.21% based on 137 responses.

March and April compliance was 93.75% in March and 95.16% in April for a combined two-month compliance of 94.44% based on 126 responses. As illustrated by the chart, ECA is consistently above the 90th percentile when months are combined to increase statistical relevance.
Ripon Consolidated Fire District (RCFD)

RCFD's response time compliance exceeded the 90th percentile standard set by the County for November with 92.73% and December with 96.47%. The combined two-month percentile with 140 responses for November and December was 95.0%.

January and February compliance was 96.30% in January and 96.23% in February for a combined two-month compliance of 96.27% based on 134 responses.

March and April compliance was 92.21% in March and 95.45% in April for a combined two-month compliance of 93.71% based on 143 responses. As illustrated by the chart, RCFD is consistently above the 90th percentile when months are combined to increase statistical relevance.
DATE: August 14, 2017
TO: EMS Liaison Committee
PREPARED BY: Rick Jones, MPA, EMS Analyst
                    Shahloh Jones-Mitchell, EMS Analyst
SUBJECT: Air Ambulance Services Utilization in the Field Care Setting

RECOMMENDED ACTION:

Review the analysis of the proposal to limit Air Ambulance services in the pre-hospital setting.

DISCUSSION:

Introduction

Air ambulances have been permitted to provide services to San Joaquin County since July 19, 1993. San Joaquin County first entered into a written agreement with Reach on April 18, 2005, which coincided with the placement of a REACH base of operations inside San Joaquin County located at the Stockton Airport. Currently, air ambulance companies permitted in San Joaquin County include REACH, CALSTAR and Mercy Air Services.

The perceived advantage of transporting major trauma patients by air ambulance over ground ambulance is the overall reduction in transport time to the trauma center, e.g. speed. Speed is essential when the survival of a critically injured patient relies upon intervention that is only available at a trauma center. The ability of an air ambulance to fly overland to avoid ground traffic at 120 to 140 miles per hour factors heavily in favor of an argument to create and maintain an EMS system that includes this resource.

SJCEMSA Policy No. 5215, Trauma Patient Destination directs prehospital providers to “consider air ambulance transport” using specific criteria that includes:

- Air ambulances shall not be used to transport trauma patients that do not meet major trauma triage criteria;
- When ground ambulance transport is available on scene, the air ambulance scene time must be kept to an absolute minimum;
• If the transfer of care to air ambulance exceeds 10 minutes, ambulance personnel must initiate ground transport without further delay;
• Ground ambulance transport of a major trauma patient shall not be delayed for the arrival of an air ambulance.

Unfortunately, the implementation of EMS policies designed to minimize delays in the transport of major trauma patients have not proven to be effective.

As illustrated in the table below, the number scene transports completed by air ambulance has decreased significantly during the last three years ending June 30, 2017. This reduction may be the result of ground ambulance personnel doing a better job of calculating the time and distance to a major trauma patient between air and ground ambulances. Such a calculation will invariably reveal that ground ambulance transport is faster.

An in depth analysis of the 26 air ambulance transports during 2016-17 was undertaken in response to the death of a 15 year-old patient following a delay in transport by air ambulance on April 15, 2017 at the Lodi Cycle Bowl. An exhaustive review of this case by the San Joaquin County EMS Agency (SJCEMSA) Medical Director, Assistant Medical Director, and the physicians and trauma surgeons from the San Joaquin County Trauma Audit Committee (TAC) led to the finding that the risks of using air ambulance outweigh the benefits in the prehospital setting. As discussed below, the use of air ambulances in the prehospital setting rarely result in the transport of patients in less time than could be accomplished by a ground ambulance.

**ANALYSIS**

This retrospective study was based on a chart review of EMS patient care records (PCRs). There were twenty-six (26) air ambulance scene PCRs reviewed by SJCEMSA for the time period from July 2016 to June 2017 where ground and air ambulances were each on-scene and air ambulance transport was utilized. Of the 26 PCR's reviewed, 7 PCRs were omitted due to the responding air ambulance being from an adjacent out of county response (e.g. county borderline response) or the landing site being a rendezvous at the Stockton Metropolitan Airport. A total of 19 PCR's were kept in the data set (18 REACH, 1 PHI).

**Reports**

The focus of this analysis was to determine whether the use of air ambulance resources contribute to a delay in definitive patient care for major trauma patients compared to the use of ground ambulance resources. While air ambulances have all the advantages of speed over ground ambulances, this advantage is lost due to the complex challenges inherent in
acquiring an air ambulance at a scene call in a timely manner. The report that most clearly illustrates this point is the “Ground Elapsed Time for Air Arrival” chart.

**Ground Ambulance Time Spent On-Scene**

The chart below shows the elapsed time from ground ambulance on-scene to air ambulance on-scene. As shown in this report, the elapsed time from arrival of the ground ambulance to the arrival of the air ambulance is shown in each of the 19 incidents. The average wait time for air arrival was 19 minutes and 44 seconds. In ten percent of the cases (90th percentile) the wait time was up to 33 minutes and 24 seconds before an air ambulance arrived.

**Chart 1**
Response Time to Scene

As shown in Chart 2 below, ground ambulance’s average response time to an incident (from time call received to on-scene verification) was 10 minutes and 16 seconds and the 90th percentile was 17 minutes. Air ambulance response time is calculated from when notified to skids down of aircraft as documented on the air ambulance PCR. The request for air ambulance occurred on average 6 minutes and 25 seconds after fire department resources and ground ambulance were en-route to the call. The average response time for an air ambulance to make skids down was 24 minutes and 16 seconds. The 90th percentile response time was 30 minutes and 36 seconds. As illustrated in Chart 2 in each instance the ground ambulance is delaying transport in order to use air ambulance.

Chart 2

Green = Ground Average 10 minutes and 16 seconds
Blue = Air Average 24 minutes and 16 seconds
Time to a Trauma Center

In an effort to determine whether these patients could have received care in a trauma center sooner if they had been transported by ground ambulance instead of by air ambulance, the following artificial parameters were included in Chart 2 and Chart 3 below. In each case, 10 minutes was added to the ground ambulance “time arrived on scene” as a basis for when these major trauma patients would be packaged and ready for transport by ground ambulance. In addition, calculation of ground ambulance transport assumes moderate traffic speeds and mileage to San Joaquin General for all 19 incidents. Air ambulance destination did not change. Extrication caused additional delays on 4 incidents. These delays took as long as 20-25 minutes and noted on charts below with an asterisk (*).

As shown in Chart 3, the average task time for both ground ambulance and air ambulance is nearly identical. In other words, whether a patient was flown to UC Davis Medical Center, or driven by ground ambulance to SJGH, the time spent accomplishing the transport is the same (ground ambulance average: 58 minutes and 38 seconds; air ambulance average: 58 minutes and 44 seconds). The 90th percentile is longer for ground ambulance (1 hour and 16 minutes and 36 seconds) due to the calls where extrication delayed transport. The air ambulance 90th percentile was 1 hour and 12 minutes and 12 seconds.
Chart 4 measures task time but is designed to show true patient wait times. To accomplish this goal, Chart 4 uses the original Time Call Received (TCR) for ground ambulance as a basis for measuring task time for both air and ground ambulance resources. With this method, air ambulances task time increased from an average of 58 minutes and 44 seconds to an average of 1 hour and 04 minutes and 28 seconds.

**Conclusion**

This analysis strongly suggests that the use of air ambulance resources in the prehospital setting routinely leads to unnecessary delays in the transport of major trauma patients to trauma centers. Unless significant changes are made to the practice and utilization of air ambulances in the San Joaquin County EMS System such delays will continue.

SJCEMSA policies provide clear direction on the appropriate use of air ambulance services. Nonetheless the application of these policies have been demonstrated to be unsuccessful. Prehospital personnel continually demonstrate poor judgment from the initial decision to request an air ambulance through the final decision to use or cancel air ambulance. A new approach to air ambulance utilization that reduces the decision-making challenges inherent in the complex and chaotic nature of scene calls, provides clear direction, and reduces uncertainty is necessary to minimize errors that contribute to an increase in patient morbidity and mortality.
The Emergency Medical Services Authority has illustrated changes to the original text in the following manner:

- Additions to the text proposed in 45-day comment period = double underline
- Deletions to the text proposed in 45-day public comment period = strikeout

ARTICLE 1. DEFINITIONS

§ 100270.101. Cardiac Catheterization Laboratory

“Cardiac Catheterization Laboratory” or “Cath Lab” means the setting within the hospital where laboratory procedures for obtaining physiologic, pathologic, and angiographic data can be performed on patients with cardiovascular disease, the percutaneous coronary intervention (PCI) is done.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

§ 100270.102. Cardiac Catheterization Team

“Cardiac Catheterization Team” means the specially trained medical staff that performs percutaneous coronary intervention. It may include, but is not limited to, an interventional cardiologist, mid-level practitioners, registered nurses, technicians, and other health care professionals.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

§ 100270.103. Clinical Staff

“Clinical Staff” means an individual that has specific training and experience in the treatment and management of ST-Elevation Myocardial Infarction (STEMI) patients.
This includes, but is not limited to, physicians, registered nurses, advanced practice nurses, physician assistants, pharmacists, and technologists.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.
§ 100270.104. Door-to-Balloon Time (Also known as Door-to-Device Time)

“Door-to-Balloon Time” or “D2B Time” means the amount of time between a STEMI patient’s arrival at the hospital to the time he/she receives percutaneous coronary intervention, such as angioplasty.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

§ 100270.105. Door-to-Needle Time

“Door-to-Needle Time” means the time interval between the arrival of a STEMI patient at a hospital to the time fibrinolytic therapy is administered to open a blocked artery.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

§ 100270.106. Emergency Medical Services Authority

“Emergency Medical Services Authority” or “EMS Authority” means the department in California responsible for the coordination and integration of all state activities concerning EMS.

Note: Authority cited: Sections 1797.1, 1797.107 and 1797.54, Health and Safety Code.
Reference: Sections 1797.100, and 1797.103, Health and Safety Code.

§ 100270.107. Immediately Available

“Immediately Available” means
(a) unencumbered by conflicting duties or responsibilities,
(b) responding without delay upon receiving notification, and
(c) being physically available to the specified area of the hospital when the patient is delivered in accordance with local EMS agency policies and procedures.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.
§ 100270.108. Implementation

“Implementation,” “implemented” or “has implemented” means the development and activation of a STEMI Critical Care System Plan by the local EMS agency, including the pre-hospital and hospital care components in accordance with the plan.


§ 100270.109. Interfacility Transfer

“Interfacility Transfer” means the transfer of a STEMI patient from one acute general care facility to another.


§ 100270.110. Local Emergency Medical Services Agency

“Local Emergency Medical Services Agency” or “local EMS agency” means a county health department, an agency established and operated by the county, or an entity with which the county contracts for the purposes of local emergency medical services administration, or a joint powers agency created for the administration of emergency medical services by agreement between counties or cities and which is designated pursuant to Chapter 4 of the California Health and Safety Code, Division 2.5, Section 1797.200.


§ 100270.111. Percutaneous Coronary Intervention (PCI)

“Percutaneous Coronary Intervention” or “PCI” means a procedure used to open or widen a narrowed or blocked coronary artery to restore blood flow supplying the heart. A primary PCI is generally done on an emergency basis for a STEMI patient.

§ 100270.112. Pre-Arrival Instructions

“Pre-Arrival Instructions” means the medically approved scripted instructions used in time-critical situations where evaluation, verification, and advice is given by trained emergency medical dispatchers to callers that provide necessary assistance and control of the situation prior to arrival of emergency medical services personnel according to the local EMS agency policy.


§ 100270.112. Quality Improvement

“Quality Improvement” or “QI” means methods of evaluation that are composed of 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, and recognize excellence in performance and delivery of care.


§ 100270.113. ST-Elevation Myocardial Infarction (STEMI)

“ST-Elevation Myocardial Infarction” or “STEMI” means a clinical syndrome defined by characteristic symptoms of myocardial infarction in association with ST-segment elevation in ECG, and the subsequent release of biomarkers of myocardial necrosis.


§ 100270.114. STEMI Care

“STEMI Care” means emergency cardiac care, for the purposes of these regulations.
§ 100270.115. STEMI Medical Director

“STEMI Medical Director” means a qualified physician as defined by the local EMS agency and designated by the hospital that is responsible for the STEMI program, performance improvement, and patient safety programs related to STEMI Critical Care System.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

§ 100270.116. STEMI Patient

“STEMI Patient” means a patient with characteristic symptoms of myocardial infarction in association with ST-Segment Elevation in an Electrocardiogram (ECG).

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.

§ 100270.117. STEMI Program

“STEMI Program” means an organizational component of the hospital specializing in the care of STEMI patients.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

§ 100270.118. STEMI Program Manager

“STEMI Program Manager” means a registered nurse or qualified individual as defined by the local EMS agency, and designated by the hospital responsible for monitoring and evaluating STEMI patients, performance improvement, and patient safety programs related to the STEMI Critical Care System.

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.
§ 100270.119. STEMI Receiving Center (SRC)

“STEMI Receiving Center” or “SRC” means a licensed general acute care facility hospital that meets the minimum hospital STEMI care requirements pursuant to Section 100270.128 and is able to perform primary PCI.


§ 100270.120. STEMI Referring Hospital (SRH)

“STEMI Referring Hospital” means a licensed general acute care facility hospital that meets the minimum hospital STEMI care requirements pursuant to Section 100270.129.


§ 100270.121. STEMI Technical Advisory Committee

“STEMI Technical Advisory Committee” means a multidisciplinary committee as appointed by the EMS Authority. The STEMI Technical Advisory Committee serves as an advisory committee to the EMS Authority on STEMI related issues.


§ 100270.122. STEMI Critical Care System

“STEMI Critical Care System” means a critical care component of the EMS system developed by a local EMS agency. This system of care links pre-hospital and hospital care to deliver treatment to STEMI patients within the timeframes recommended by the American Heart Association (AHA).


§ 100270.123. STEMI Team

“STEMI Team” means a component of the hospital’s STEMI Program consisting of a clinical team, support personnel, and administrative staff.
“STEMI Team” means clinical personnel, support personnel, and administrative staff that function together as part of the hospital’s STEMI program.”

Note: Authority cited: Sections 1797.107 and 1798.150, Health and Safety Code.
Reference: Sections 1797.103 and 1797.176, Health and Safety Code.

ARTICLE 2. LOCAL EMS AGENCY STEMI CRITICAL CARE SYSTEM REQUIREMENTS

§ 100270.124. General Requirements and Timeframes

(a) The local EMS agency may develop and implement a STEMI Critical Care System.

(b) A local EMS agency implementing a STEMI Critical Care System shall submit to the EMS Authority a STEMI System Plan in accordance with the requirements in Section 100270.125.

(c) A new STEMI Critical Care System that starts after the effective date of these regulations shall have a STEMI System Plan approved by the EMS Authority prior to implementation. The EMS Authority shall notify the local EMS agency of approval or disapproval of its STEMI System Plan within 30 days from receipt of the Plan. If the EMS Authority disapproves a plan, it shall provide written notification including the reason(s) for the disapproval and the corrective action items required.

(d) The local EMS agency shall provide a corrected plan to the EMS Authority within 60 days of receipt of the disapproval letter.

(e) A local EMS agency currently operating a STEMI Critical Care System implemented prior to the effective date of these regulations, shall submit to the EMS Authority a STEMI System Plan as an addendum to its next annual EMS Plan update, or within 180 days of the effective date of these regulations whichever comes first.

(f) After approval of the Plan, the local EMS agency shall submit an update to its STEMI System Plan as part of its annual EMS update, consistent with the requirements in Section 100270.125.

(g) No health care facility shall advertise in any manner or otherwise hold itself out to be affiliated with the STEMI Critical Care System or a STEMI center unless they have been so designated by the local EMS agency, in accordance with this Chapter.
§ 100270.125. STEMI Critical Care System Plan Requirements

The STEMI System Plan submitted to the EMS Authority shall include, at a minimum, the following components:

(a) the names and titles of the local EMS agency personnel who have a role in the STEMI Critical Care System,

(b) copies verification of agreements with hospitals for designation of STEMI facilities with the list of stroke hospital contracts and contract expiration dates,

(c) description or copy of the local EMS agency’s STEMI patient identification and destination policies,

(d) description or copy of the method of field communication to the receiving hospital specific to STEMI patient, designed to expedite time-sensitive treatment on arrival,

(e) description or copy of policy that facilitates inter-facility transfer of a STEMI patient,

(f) description of the method of data collection from the EMS providers and designated STEMI hospitals to the local EMS agency and the EMS Authority,

(g) a copy of all written agreements with neighboring local EMS agencies that provide STEMI care,

(h) description of the integration of STEMI into an existing QI Committee or description of any STEMI specific QI committee, and

(i) description of programs to conduct or promote public education specific to cardiac care.


§100270.126. STEMI System Plan Updates

The local EMS agency shall submit a STEMI System Plan update as part of its annual EMS Plan submittal. The update shall include at a minimum, the following:
(a) any changes in the STEMI Critical Care System since submission of the prior annual plan update or the STEMI System Plan addendum,
(b) status of STEMI Critical Care System goals and objectives,
(c) STEMI Critical Care System QI activities, and
(d) progress on addressing action items and recommendations provided by the EMS Authority within the STEMI System Plan or Status Report approval letter if applicable.


ARTICLE 3. PRE-HOSPITAL STEMI CRITICAL CARE SYSTEM REQUIREMENTS

§ 100270.127. EMS Personnel and Early Recognition
A local EMS agency with an established STEMI Critical Care System shall have protocols for the treatment of STEMI patients, including paramedic capability to perform use of a 12-lead ECG equipment, and determination of to determine patient destination.
(a) When 12-lead ECG equipment is used, those findings shall be assessed and interpreted through one or more of the following methods:
(1) direct paramedic interpretation,
(2) automated computer algorithm, or
(3) wireless transmission to facility followed by physician interpretation or confirmation.
(b) Advance notification of pre-hospital ECG findings of suspected STEMI patients, as defined by the local EMS agency, will be communicated to the STEMI facilities, centers or hospitals according to the local EMS agency STEMI System Plan.


ARTICLE 4. STEMI CRITICAL CARE FACILITY REQUIREMENTS

Any STEMI center designated by the local EMS agency prior to implementation of these regulations may continue to operate. Upon redesignation by the local EMS agency at
the next regular interval, STEMI centers shall be reevaluated to meet the criteria established in these regulations.

§ 100270.128. STEMI Receiving Center

The following minimum criteria shall be used by the local EMS agency for the designation of SRC:

(a) The hospital shall have leadership committed to supporting and sustaining the STEMI Critical Care System.

(b) The hospital shall have established protocols for triage, diagnosis, and Cath Lab activation from field notification.

(c) Written protocols and standing orders shall be in place for the identification of STEMI patients. At a minimum, these protocols shall be available in the intensive care unit/coronary care unit and the emergency department (ED).

(d) The hospital shall be available for treatment of STEMI patients 24 hours per day/7 days per week/365 days per year.

(e) The hospital shall have a process in place for the treatment and triage of simultaneously arriving STEMI patients.

(f) The hospital shall maintain a STEMI team call roster.

(g) The Cath Lab team, including appropriate staff determined by the local EMS agency, shall be immediately available.

(h) The hospital shall agree to accept all STEMI patients according to the local policy.

(i) SRCs shall comply with the requirement for a minimum volume of procedures for designation by the local EMS agency.

(j) The hospital shall have a STEMI program manager and a STEMI medical director.

(k) The hospital shall have job descriptions and organizational charts depicting the relationship between the STEMI medical director, STEMI program manager, and the STEMI team.

(l) The hospital shall participate in the local EMS agency QI processes related to the STEMI Critical Care System.
(m) Local EMS agencies shall ensure STEMI receiving Centers facilities without cardiac surgery capability on-site shall have a written transfer plan and agreements for transfer to a facility with cardiovascular surgery capability.

(n) SRCs shall have on-site accreditation reviews conducted every three years.

(o) Additional requirements may be included at the discretion of the local EMS agency medical director.

§ 100270.129. STEMI Referring Hospital (SRH)

The following minimum criteria shall be used by the local EMS agency for designation of an SRH:
(a) The hospital shall be committed to supporting and sustaining the STEMI Program.
(b) The hospital shall be available to provide care for STEMI patients 24 hours per day/7 days per week/365 days per year.
(c) Written protocols and standing orders shall be in place for the identification of STEMI patients. At a minimum, these protocols shall be available in the intensive care unit/coronary care unit and the emergency department (ED).
(d) The ED shall maintain a standardized procedure for the treatment of STEMI patients.
(e) The hospital shall have a transfer system process through interfacility transfer agreements, and have pre-arranged agreements with EMS providers for a higher level of care and rapid transport of STEMI patients to an SRC when considering ground or air transport.
(f) The hospital shall have a program to track and improve treatment.
(g) The hospital must have a plan to work with SRCs and the local EMS agency on QI processes.
(h) SRH shall have on-site accreditation reviews conducted every three years.
(i) Additional requirements may be included at the discretion of the local EMS agency medical director.

Note: Authority cited: Sections 1797.103, 1797.107, 1797.176, 1797.220, and 1798.150

ARTICLE 5. DATA MANAGEMENT, QUALITY IMPROVEMENT AND EVALUATIONS

§ 100270.130. Data Management
(a) The local EMS agency shall implement a standardized data collection and reporting process for STEMI Critical Care Systems.
(1) The system shall include the collection of both pre-hospital and hospital patient care data, as determined by the local EMS agency.
(2) The prehospital and hospital STEMI patient care elements selected by the local EMS agency shall be compliant with the most current version of the California EMS Information Systems (CEMSIS) database, the National EMS Information System (NEMSIS) and the National Cardiovascular Data Registry, Action Registry, version 2.4 dated March 2014.

(2) The pre-hospital STEMI patient care elements selected by the local EMS agency shall be compliant with the most current version of the California EMS Information Systems (CEMSIS) database, and the National EMS Information System (NEMSIS).

(3) STEMI data shall be integrated into the local EMS agency and the EMS Authority data management system through data submission on no less than a quarterly basis.

(3) The hospital STEMI patient care elements shall be compliant with the most current version of National Cardiovascular Data Registry, Action Registry.

(4) All hospitals that receive STEMI patients shall participate in the local EMS agency data collection process in accordance with local EMS agency policies and procedures.

(b) The following minimum elements shall be collected and submitted to the local EMS agency by the hospital and subsequently to the EMS Authority on no less than a quarterly basis to be used to determine pre-hospital and hospital system performance:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>(1)</td>
<td>EMS ePCR Number</td>
</tr>
<tr>
<td>(2)</td>
<td>Facility</td>
</tr>
<tr>
<td>(3)</td>
<td>Name: Last, First</td>
</tr>
<tr>
<td>(4)</td>
<td>Date of Birth</td>
</tr>
<tr>
<td>(5)</td>
<td>Patient Age</td>
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<tr>
<td>(6)</td>
<td>Patient Gender</td>
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<tr>
<td>(7)</td>
<td>Patient Race</td>
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<td>(8)</td>
<td>Hospital Arrival Date</td>
</tr>
<tr>
<td>(9)</td>
<td>Hospital Arrival Time</td>
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<tr>
<td>(10)</td>
<td>Dispatch Date</td>
</tr>
<tr>
<td>(11)</td>
<td>Dispatch Time</td>
</tr>
<tr>
<td>(12)</td>
<td>Field ECG Performed</td>
</tr>
<tr>
<td>(13)</td>
<td>1st Field ECG Date</td>
</tr>
</tbody>
</table>
(14) 1st Field ECG Time
(15) Did the patient suffer out-of-hospital cardiac arrest
(16) CATH LAB Activated
(17) CATH LAB Activation Date
(18) CATH LAB Activation Time
(19) Did the patient go to the CATH LAB
(20) CATH LAB Arrival Date
(21) CATH LAB Arrival Time
(22) PCI Performed
(23) PCI Date
(24) PCI Time
(25) Fibrinolytic Infusion
(26) Fibrinolytic Infusion Date
(27) Fibrinolytic Infusion Time
(28) Transfer
(29) SRHF ED Arrival Date
(30) SRHF ED Arrival Time
(31) SRHF ED Departure Date
(32) SRHF ED Departure Time
(33) Hospital Discharge Date
(34) Patient Outcome
(35) Discharge Diagnosis


§ 100270.131. Quality Improvement Process
STEMI Critical Care Systems shall have a quality improvement process to include structure, process, and outcome evaluations that focus on improvement efforts to identify root causes of problems, reduce or eliminate such causes, and take steps to correct the process. This process shall include, at a minimum:
(a) an audit of all STEMI-related deaths.
(b) a multidisciplinary STEMI QI Committee, including both pre-hospital and hospital members,
(c) compliance with the California Evidence Code, Section 1157.7 to ensure confidentiality, and
(d) a disclosure-protected review of selected STEMI cases.


§ 100270.132. STEMI Critical Care System Evaluation
(a) The local EMS agency is responsible for on-going performance evaluation of the local or regional STEMI Critical Care System.
(b) The local EMS agency shall be responsible for the development of a QI process pursuant to Section 100270.131.
(c) The local EMS agency shall be responsible for ensuring that designated STEMI centers and other hospitals that treat STEMI patients participate in the QI process contained in Section 100270.131, as well as pre-hospital providers involved in the STEMI Critical Care System.

DATE: August 14, 2017

TO: EMS Liaison Committee

PREPARED BY: Rick Jones, MPA, EMS Analyst

SUBJECT: STEMI System Report – January through June 2017

RECOMMENDED ACTION:

Receive information on the STEMI System in San Joaquin County for January through June 2017.

FISCAL IMPACT:

The San Joaquin County EMS Agency (SJCEMSA) receives $25,000 per year from each designated STEMI center to offset the costs associated with STEMI system planning, implementation, and evaluation.

DISCUSSION:

The SJCEMSA 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 SJCEMSA 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 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 SJCEMSA 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

The data in this report is derived from a review of patient care reports and in-hospital care at each SRC. The focus of this process is appropriate STEMI documentation, 12-lead ECG interpretation and application, and whether timely and correct notification of SRCs for patients identified as having STEMI has occurred.

Data collected for this report that comprise “N” contains two subsets: 1) Ambulance transports with STEMI patients identified in the prehospital setting and 2) ambulance transports that arrive at SRCs that were not identified as possible STEMI patients in the prehospital setting. When cases from both subsets are included, they can be broken into the following categories:

<table>
<thead>
<tr>
<th>Table 1. Reporting Categories</th>
<th>SJMC</th>
<th>Dameron</th>
</tr>
</thead>
<tbody>
<tr>
<td>True Positive</td>
<td>49</td>
<td>11</td>
</tr>
<tr>
<td>False Positive</td>
<td>63</td>
<td>7</td>
</tr>
<tr>
<td>Evolving Subsequent</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>False Negative</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Atypical Presentation</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>True Negative</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>137</td>
<td>20</td>
</tr>
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</table>

Cases in the second subset include those reported as True Negative, NA, False Negative, and Evolving Subsequent. **True Negative** are cases in which the SRC concurred with the prehospital finding of no STEMI, but were included for review because the case appeared to be cardiac in nature. **False Negatives** and **Evolving Subsequent** include those cases in which the prehospital ECG did not indicate a STEMI, but was determined to be a STEMI sometime after arriving at the STEMI Receiving Center.
False Positive Report

Table 2 shows the ratio of True Positive and False Positive cases at each SRC during the first six months of 2017.

Table 2

<table>
<thead>
<tr>
<th>Cases with Prehospital STEMI Alerts</th>
<th>SJMC</th>
<th>Dameron</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>True Positive</td>
<td>49</td>
<td>11</td>
<td>60</td>
</tr>
<tr>
<td>False Positive</td>
<td>63</td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td>Total Prehospital STEMI Alerts</td>
<td>112</td>
<td>18</td>
<td>130</td>
</tr>
</tbody>
</table>

As shown in Chart 1 for the first half of 2017, False Positive cases occurred on average 53.8% of the time and True Positive cases occurred 46.2% of the time.

Chart 1
As shown in Chart 2, the number of False Positive cases increased dramatically in July, 2016, which coincides with a replacement of a significant number of LifePak 12s with LifePak 15s.

**Chart 2**

Prior to 2016, the percentage of false positives for cases identified as STEMI alerts in the prehospital setting was consistently less than 40%. In 2016, the percentage of False Positives increased to 54.2%.
 SRC STEMI Alert Performance Report

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.

Charts 3 and 4 show SJMC and Dameron Hospital's In-Hospital STEMI Alert performance during the first six months of 2017.

**Chart 3**

Range of Elapsed Time from Prehospital STEMI Alert to In-Hospital

**Chart 4**

Range of Elapsed Time from Prehospital STEMI Alert to In-Hospital
Transmission of ECGs from the Prehospital Setting

To minimize on-scene delays in the prehospital setting, current SJCEMSA policy does not require that prehospital personnel transmit an ECG to the STEMI Receiving Center. Instead, paramedics are encouraged to transmit ECGs to the SRC while enroute when possible. As shown in the table below, there has been a significant increase in the number of ECG transmissions associated with prehospital STEMI Alerts since 2014. The increase in ECG transmissions is attributed to improvements in ECG transmission technology.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number of Prehospital STEMI Alerts</th>
<th>Total Number of ECG Transmissions with STEMI Alerts</th>
<th>Percentage of ECG Transmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>135</td>
<td>81</td>
<td>60%</td>
</tr>
<tr>
<td>2015</td>
<td>201</td>
<td>72</td>
<td>36%</td>
</tr>
<tr>
<td>2016</td>
<td>330</td>
<td>201</td>
<td>61%</td>
</tr>
<tr>
<td>2017*</td>
<td>135</td>
<td>102</td>
<td>76%</td>
</tr>
</tbody>
</table>

*January through June

Chart 5
Return of Spontaneous Circulation

Per EMS Policy No. 5201, Medical Patient Destination, medical patients with a return of spontaneous circulation (ROSC) shall be transported to the closest STEMI receiving center. SJMC reported (15) fifteen patients transported by ambulance due to ROSC during the first half of 2017. Patient outcomes are categorized below by whether they remained in the emergency department, or were moved to the cath lab.

<table>
<thead>
<tr>
<th>Pt. Not Moved to Cath Lab</th>
<th>Pt. Moved to Cath Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Expired in ED</td>
<td>2 True Negative (confirmed in Cath Lab)</td>
</tr>
<tr>
<td>1 Prior lesion</td>
<td>3 Successful PCI</td>
</tr>
<tr>
<td>2 True Negative (non-STEMI per ECG)</td>
<td>1 Unsuccessful PCI</td>
</tr>
<tr>
<td>1 No intervention</td>
<td></td>
</tr>
</tbody>
</table>

Time Spent On-Scene

Chart 6

The SJCEMSA policy that directs patient care in the prehospital setting (EMS Policy No. 5719, ALS Chest Pain) directs prehospital providers to “initiate rapid transport to a STEMI receiving center.” The chart below shows the elapsed time from patient contact to the initiation of transport for all patients that were determined to have a STEMI in the prehospital setting. Cardiac arrest is the typical cause of extended on-scene times.
Volume of Cath Lab Interventions Originating via 911 System

The number of patients identified in the prehospital setting as STEMI patients exceed the number of patients that ultimately receive care in a cardiac cath lab, usually a percutaneous intervention (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, or upon review of an ECG transmitted from the prehospital setting, either the emergency department physician either confirms or cancels the SRC STEMI alert. Second, some patients 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.

SJMC received 113 prehospital STEMI alerts and performed 35 cath lab interventions from January through June 2017 (Chart 7). An additional 5 prehospital patients were transported by ambulance to SJMC that did not present with STEMI in the prehospital setting, but who received cath lab intervention. Dameron Hospital received 16 STEMI alerts and performed 9 cath lab interventions during the same period.

Door to Balloon Times

Charts 7 and 8 show the time of arrival of an ambulance patient at the hospital emergency department until completion of a PCI in the hospital cardiac cath lab. This data only includes those cases in which a STEMI alert was initiated in the prehospital setting. As shown in Chart 7 and 8 below, SJMC and Dameron Hospital consistently meet or exceed the ACC/AHA ≤ ninety (90) minute the door to balloon time (D2B) interval minimum standards.

Chart 7
Chart 8

Elapsed Time from the Arrival Ambulance Patients at Dameron Hospital to Percutaneous Intervention (PCI) from January through June (D2B)

90 Minutes

Individually STEMI Alerts January through June 2017
ARTICLE 1. DEFINITIONS

§ 100270.200. Board-certified
“Board-certified” means a physician who has fulfilled all of the Accreditation Council for Graduate Medical Education (ACGME) requirements in a specialty field of practice, and has been awarded a board diploma by an American Board of Medical Specialties (ABMS) ACGME approved program.


§ 100270.201. Board-eligible
“Board-eligible” means a physician who has applied to a specialty board examination and has completed the requirements and received permission ruling that he or she has fulfilled the requirements to take the examination by ABMS. Board certification must be obtained within the allowed time five (5) years by ABMS from the first appointment.


§ 100270.202. Clinical Stroke Team
“Clinical Stroke Team” means a team of healthcare professionals who provide care for the stroke patient and may include, but is not limited to, neurologists, neurointerventionalists, neurosurgeons, anesthesiologists, emergency medicine physicians, registered nurses, advanced practice nurses, physician assistants, pharmacists, and technologists.
§ 100270.203. Continuing Medical Education

"Continuing Medical Education" or "CME" means educational activities required for the maintenance of a license and refers to the highest level of continuing education approved or recognized by the national and/or state professional organization.


§ 100270.204. Emergency Medical Services Authority

"Emergency Medical Services Authority" or "EMS Authority" means the department in California that is responsible for the coordination and the integration of all state activities concerning Emergency Medical Services (EMS).


§ 100270.205. Immediately Available

"Immediately Available" means:

(a) unencumbered by conflicting duties or responsibilities,
(b) responding without delay upon receiving notification, and
(c) being physically available to the specified area of the hospital when the patient is delivered in accordance with local EMS agency policies and procedures.


§ 100270.205. Local Emergency Medical Services Agency

"Local Emergency Medical Services Agency" or "local EMS agency" means a county health department, an agency established and operated by the county, an entity with which the county contracts for the purposes of local emergency medical services.
administration, or a joint-powers agency created for the administration of emergency medical services by agreement between counties or cities and which is designated pursuant to the California Health and Safety Code, Division 2.5, Chapter 4, Section 1797.200.


§ 100270.206. Protocol

“Protocol” means a predetermined, written medical care guideline, which may include standing orders.


§ 100270.207. Stroke

“Stroke” means a condition of impaired blood flow to a patient’s brain resulting in brain dysfunction, most commonly through vascular occlusion or hemorrhage.


§ 100270.208. Stroke Call Roster

“Stroke Call Roster” means a schedule of licensed health professionals available twenty-four (24) hours a day, seven (7) days a week for the care of stroke patients.


§ 100270.209. Stroke Care

“Stroke Care” means emergency transport, triage, acute intervention and other acute care services for stroke patients that potentially require immediate medical or surgical intervention treatment, and may include education, primary prevention, acute
intervention, acute and subacute management, prevention of complications, secondary stroke prevention, and rehabilitative services.


100270.210. Stroke Critical Care System

“Stroke Critical Care System” means a subspecialty care component of the EMS system developed by a local EMS agency. This critical care system links pre-hospital and hospital care to deliver treatment to stroke patients who potentially require immediate medical or surgical intervention.


§ 100270.211. Stroke Medical Director

“Stroke Medical Director” means a board-certified physician designated by the hospital who is responsible for the stroke service, performance improvement, and patient safety programs related to the Stroke Critical Care System.


§ 100270.212. Stroke Program Manager/Coordinator

“Stroke Program Manager/Coordinator” means a registered nurse or qualified individual designated by the hospital with the responsibility for monitoring and evaluating the care of stroke patients and the coordination of performance improvement and patient safety programs for the stroke center in conjunction with the stroke medical director.
§ 100270.213. Stroke Program

“Stroke Program” means an organizational component of the hospital specializing in the care of stroke patients.

§ 100270.214. Stroke Team

“Stroke Team” means the clinical stroke team, support personnel, and administrative staff.

§ 100270.215. Telehealth Telemedicine

—“Telemedicine” means the use of medical information exchanged from one site to another via electronic communications to manage and improve a patient’s health status. A neurology specialist will assist the physician in the center in rendering a diagnosis. This may involve a patient “seeing” a specialist over a live, remote consult or the transmission of diagnostic images and/or video along with patient data to the specialist.

“Telehealth” means the mode of delivering health care services and public health via information and communication technologies to facilitate the diagnosis, consultation, treatment, education, care management, and self-management of a patient's health care while the patient is at the originating site and the health care provider is at a distant site.
ARTICLE 2. LOCAL EMS AGENCY STROKE CRITICAL CARE SYSTEM

REQUIREMENTS

§ 100270.216. General Requirements and Timeframes

(a) The local EMS agency may develop and implement a Stroke Critical Care System.

(b) Each local EMS agency implementing a Stroke Critical Care System shall submit to the EMS Authority a Stroke System Plan in accordance with the requirements in section 100270.222.

(c) A new Stroke Critical Care System that starts after the effective date of these regulations shall have the Stroke System Plans approved by the EMS Authority prior to implementation. The EMS Authority shall notify the local EMS agency of approval or disapproval of its Stroke System Plan within 30 days of receipt of the Plan. If the EMS Authority disapproves a plan, it shall provide a written notification including the reason(s) for the disapproval and the corrective action items required.

(d) The local EMS agency shall provide a corrected plan to the EMS Authority within 60 days of receipt of the disapproval letter.

(e) A local EMS agency that is currently operating a Stroke Critical Care System implemented prior to the effective date of these regulations, shall submit, to the EMS Authority, a Stroke System Plan as an addendum to its annual EMS Plan update, or within 180 days of the effective date of these regulations - whichever comes first.

(f) After the approval of the plan, the local EMS agency shall submit an update to its Stroke System Plan as part of its annual EMS Plan update, consistent with the requirements in section 100270.217.

(g) No health care facility shall advertise in any manner or otherwise hold itself out to be affiliated with the Stroke Critical Care System or a stroke center unless they have been designated by the local EMS agency, in accordance with this Chapter.
§ 100270.217. State Stroke System Plan Requirements

The Stroke System Plan submitted to the EMS Authority shall include, at a minimum, the following components:

(a) the names and titles of the local EMS agency personnel who have a role in the Stroke Critical Care System,

(b) copies verification of agreements with hospitals for designation of stroke facilities with the list of stroke hospital contracts with expiration dates,

(c) description or copy of the local EMS agency’s stroke patient identification and destination policies,

(d) description or copy of the method of field communication to the receiving hospital specific to stroke patients, designed to expedite time-sensitive treatment on arrival,

(e) description or copy of policy that facilitates the inter-facility transfer of stroke patients,

(f) description of the method of data collection from the EMS providers and designated stroke hospitals to the local EMS agency and the EMS Authority,

(g) a copy of all written agreements with neighboring local EMS agencies to provide stroke care,

(h) description of the integration of stroke into existing Quality Improvement QI Committee or description of any stroke specific QI committee, and

(i) description of programs to conduct or promote public education specific to Stroke and Cardiac Care.


§ 100270.218. Stroke System Plan Updates
The local EMS agency shall submit a Stroke System Plan update as part of its annual EMS plan update. The update shall include, at a minimum, the following:

(a) any changes in the Stroke Critical Care System since submission of the prior annual plan update or the Stroke System Plan addendum,
(b) status of Stroke System Plan goals and objectives,
(c) Stroke Critical Care System performance improvement activities, and
(d) progress on addressing action items and recommendations provided by the EMS Authority within the Stroke System Plan or status report approval letter if applicable.


ARTICLE 3. PRE-HOSPITAL STROKE CRITICAL CARE SYSTEM REQUIREMENTS

§ 100270.219. EMS Personnel and Early Recognition

(a) The local EMS agency shall ensure that pre-hospital stroke assessment and treatment training is available for pre-hospital emergency medical care personnel as determined by the local EMS agency as part of accreditation.
(b) The local EMS agency shall require the use of a validated pre-hospital stroke-screening algorithm for early recognition and assessment.
(c) The local EMS agency’s protocols for the use of online medical direction shall be utilized for suspicious or complex findings.
(d) The pre-hospital treatment policies for stroke-specific basic life support (BLS), advanced life support (ALS), and limited advanced life support (LALS) shall be developed according to scope of practice and local accreditation.
(e) Pre-hospital findings of suspected stroke patients, as defined by the local EMS agency, will be communicated to the Stroke Center of Care facility in advance of arrival, according to the local EMS agency’s Stroke System Plan.

ARTICLE 4. HOSPITAL STROKE CARE REQUIREMENTS

Any stroke center designated by the local EMS agency prior to implementation of these regulations may continue to operate. Upon re-designation by the local EMS agency at the next regular interval, stroke centers shall be re-evaluated to meet the criteria established in these regulations.

§ 100270.220. Comprehensive Stroke Centers

Hospitals designated as Comprehensive Stroke Centers by the local EMS agency shall have the following minimum criteria in addition to the requirements for being Primary Stroke Centers explained in this chapter.

(a) Neuro-endovascular diagnostic and therapeutic procedures available twenty-four (24) hours a day, seven (7) days a week.

(b) Advanced imaging, including but not limited to, computed tomography (CT), angiography, magnetic resonance imaging (MRI), and diffusion-weighted magnetic resonance imaging, available twenty-four (24) hours a day, seven (7) days a week.

(c) Intensive care unit (ICU) beds with licensed independent practitioners with the expertise and experience to provide neuro-critical care twenty-four (24) hours a day, seven (7) days a week.

(d) Written policies and procedures for comprehensive stroke services that are reviewed at least every two (2) years, revised as needed, and implemented.

(e) Data-driven QI, including collection and monitoring of standardized comprehensive stroke center performance measures

(f) Stroke patient research program

(g) Satisfy the following staff qualifications:

(1) a neurosurgical team capable of assessing and treating complex stroke and stroke-like syndromes,

(2) a neuroradiologist with a current Certificate of Added Qualifications in Neuroradiology on staff,

(3) a physician with neuro-interventional angiographic training and skills on staff as deemed by the hospital’s credentialing process,
(4) a physician with current Certificate of Added Qualifications in vascular neurology on staff.

(4) a qualified neuroradiologist, board-certified by the American Board of Radiology or the American Osteopathic Board of Radiology, and

(5) a qualified vascular neurologist, board-certified by the American Board of Psychiatry and Neurology or the American Osteopathic Board of Neurology and Psychiatry.

(h) In the event that tele-radiology is used, all staffing and staff qualification requirements contained in § 100270.223 shall remain in effect and shall be documented by the hospital.

(i) Provide comprehensive rehabilitation services either on-site or by written transfer agreement with another health care facility licensed to provide such services.

(j) Written transfer agreements with primary stroke centers in region to accept transfer of patients with complex strokes when clinically warranted.

(k) Comprehensive Stroke Center shall at a minimum, provide guidance and continuing medical education to hospitals designated as Primary Stroke Centers with which they have transfer agreements.

(l) Additional requirements may be included at the discretion of the local EMS agency medical director.


§ 100270.221. Primary Stroke Centers

Hospitals to be designated by the local EMS agency as a Primary Stroke Center shall meet the following minimum criteria to provide care for stroke patients in the emergency department and those patients that are admitted:

(a) adequate staff, equipment, and training to perform rapid evaluation, triage and treatment for the stroke patient in the emergency department;

(b) standardized stroke care protocol:
(c) twenty-four (24) hours a day, seven (7) days a week stroke diagnosis and treatment capacity; and
(d) a quality improvement system, including data collection;
(e) continuing education in Stroke care provided for staff physicians, staff nurses, staff allied health personnel, and EMS personnel;
(f) public education on stroke and illness prevention; and
(g) any additional requirements included at the discretion of the local EMS agency medical director:


§ 100270.222. Evaluation of Primary Stroke Centers

The local EMS agency shall ensure evaluation of the Primary Stroke Center occurs as part of their Stroke Critical Care System including assessment of the following minimal criteria:
(a) The hospital shall be committed to supporting the Stroke Critical Care System.
   (a) An acute stroke team, available to see in person or via telemedicine telehealth, a patient identified as a potential acute stroke patient within 15 minutes following the patient’s arrival at the hospital’s emergency department or within 15 minutes following a diagnosis of a patient’s potential acute stroke.
(b) Written policies and procedures for stroke services that are reviewed at least every two (2) years, revised more frequently as needed, and implemented. These policies and procedures shall include written protocols and standardized orders for emergency care of stroke patients.
(c) Data-driven, continuous quality improvement including collection and monitoring of standardized performance measures.
(d) Neuro-imaging services capability that is available twenty-four (24) hours a day, seven (7) days a week, such that imaging shall be performed initiated within twenty-five (25) minutes following order entry emergency department arrival. Such studies shall be
reviewed by a physician with appropriate expertise, such as a board-certified radiologist,
board-certified neurologist, a board-certified neurosurgeon, or residents who interpret
such studies as part of their training in an ACGME-approved radiology, neurology, or
neurosurgery training program within twenty (20) minutes of study completion forty-five
(45) minutes of emergency department arrival.

(1) Neuro-imaging services shall, at a minimum, include computerized tomography
(CT) scanning or magnetic resonance imaging (MRI), as well as interpretation of the
imaging.

(2) In the event that tele-radiology is used in image interpretation, all staffing and staff
qualification requirements contained in this sub-chapter shall remain in effect and shall
be documented by the hospital.

(3) For the purpose of this sub-section, a qualified radiologist shall be board certified
by the American Board of Radiology or the American Osteopathic Board of Radiology.

(4) For the purpose of this sub-section, a qualified neurologist shall be board certified
by the American Board of Psychiatry and Neurology or the American Osteopathic
Board of Neurology and Psychiatry.

(5) For the purpose of this sub-section, a qualified neurosurgeon shall be board
certified by the American Board of Neurological Surgery.

(e) Laboratory services capability that is available twenty-four (24) hours a day, seven
days a week, such that services may be performed within forty-five (45) minutes
following order entry emergency department arrival.

(f) Neurosurgical services that are available, including operating room availability,
either directly or under agreement with a comprehensive or primary stroke center, within
two (2) hours following admission of acute stroke patients to the primary stroke center.

(g) Acute care rehabilitation services.

(h) Transfer arrangements with one or more higher level of care centers when
clinically warranted.

(i) There shall be a physician director of a primary stroke center, who may also serve
as a physician member of a stroke team, who is board-certified in neurology or
neurosurgery or other board certified physician with sufficient experience and expertise
dealing with cerebral vascular disease as determined by the hospital credentials committee.

(j) At a minimum, an acute care stroke team shall consist of:
   (1) a neurologist, neurosurgeon, interventional neuroradiologist, or emergency physician who is board certified or board eligible in neurology, neurosurgery, endovascular neurosurgical radiology, or other board-certified physician with sufficient experience and expertise in managing patients with acute cerebral vascular disease as determine by the hospital credentials committee; and
   (2) a registered nurse, physician assistant or nurse practitioner who has demonstrated competency, as determined by the physician director described in above, in caring for acute stroke patients.

(k) Local EMS agencies may identify thrombectomy capable primary stroke centers and preferentially triage and transport patients to those centers.

Note: Authority cited: Sections 1797.102, 1797.103, 1797.107, 1797.176, 1797.204 1797.220, 1797.250, 1797.254, 1798.150, and 1798.172, Health and Safety Code.

§ 100270.223. Acute Stroke Ready Hospitals (Satellite Stroke Centers)
Acute Stroke Ready Hospitals (Satellite Stroke Centers) are able to provide the minimum level of care for stroke patients in the emergency department, which are paired with one or more hospitals with higher level of services. In these hospitals, the necessary emergency department neurological expertise may be provided in person or through telemedicine telehealth. The local EMS agency is responsible for evaluation of Acute Stroke Ready Hospitals as part of their Stroke Critical Care System, which includes assessment of the following structural components:
   (a) An acute stroke team available to see, in person or via telemedicine telehealth, a patient identified as a potential acute stroke patient within thirty (30) minutes following the patient’s arrival at the hospital’s emergency department.
   (b) Written policies and procedures for emergency department stroke services that are reviewed, revised as needed, and implemented at least every three (3) years.
(c) Emergency department policies and procedures shall include written protocols and
standardized orders for emergency care of stroke patients.

(d) Data-driven, QI including collection and monitoring of standardized performance
measures.

(e) Neuro-imaging services capability that is available twenty-four (24) hours a day,
seven (7) days a week, such that imaging shall be performed and reviewed by physician
within sixty (60) minutes following order entry emergency department arrival. Such
studies shall be reviewed by a physician with appropriate expertise, such as a board-
certified radiologist, board-certified neurologist, a board-certified neurosurgeon, or
residents who interpret such studies as part of their training in an ACGME-approved
radiology, neurology, or neurosurgery training program, within forty-five (45) minutes of
patient arrival at the emergency department.

(1) Neuro-imaging services shall, at a minimum, include computerized tomography
(CT) scanning or magnetic resonance imaging (MRI), as well as interpretation of the
imaging.

(2) In the event that tele-radiology is used in image interpretation, all staffing and staff
qualification requirements contained in this sub-section shall remain in effect and shall
be documented by the hospital.

(3) For the purpose of this sub-section, a qualified radiologist shall be board-certified
by the American Board of Radiology or the American Osteopathic Board of Radiology.

(4) For the purpose of this sub-section, a qualified neurologist shall be board-certified
by the American Board of Psychiatry and Neurology or the American Osteopathic Board
of Neurology and Psychiatry.

(5) For the purpose of this sub-section, a qualified neurosurgeon shall be board-
certified by the American Board of Neurological Surgery.

(f) Laboratory services at a minimum, including blood testing, electrocardiography and
x-ray services capability, available twenty-four (24) hours a day, seven (7) days a week
and able to be performed completed and reviewed by physician within sixty (60) minutes
following order entry emergency department arrival.

(g) Neurosurgical services that are available, including operating room availability,
either directly or under agreement with a Primary or Comprehensive Stroke Center.
within three (3) hours following admission of acute stroke patients to the Satellite Stroke Center.

(h) Transfer arrangements with one or more primary or comprehensive stroke center(s) that facilitate transfer of patients with strokes to the stroke center(s) for care when clinically warranted.

(i) There shall be a director of the Satellite Stroke Center, who may also serve as a member of a stroke team, who is a physician or advanced practice nurse who maintains at least six (6) hours per year of educational time in cerebrovascular disease;

(j) Acute care stroke team for Satellite Stroke Center at a minimum shall consist of a nurse and a physician with training and expertise in acute stroke care.

(k) Additional requirements may be included at the discretion of the local EMS agency medical director.


§ 100270.224. EMS Receiving Hospitals (Non-designated for Stroke Critical Care Services)

Hospitals that are not designated shall do the following at minimum, in cooperation with Stroke Receiving Centers and the local EMS agency in their jurisdictions:

(a) Participate in the local EMS agency's QI system, including data submission as determined by the local EMS agency medical director;

(b) Participate in the inter-facility transfer agreements to ensure access to the Stroke Critical Care System for potential stroke patient.


ARTICLE 5. DATA MANAGEMENT, QUALITY IMPROVEMENT AND EVALUATION

§ 100270.225. Data Management
(a) The local EMS agency shall implement a standardized data collection and reporting process for Stroke Critical Care Systems.

(1) The system shall include the collection of both pre-hospital and hospital patient care data, as determined by the local EMS agency.

(2) The pre-hospital stroke patient care elements shall be complaint with the most current version of the California EMS Information Systems (CEMSIS) database, the National EMS Information System (NEMSIS) and the hospital stroke patient care elements shall be compliant with the most current national standards published by the U.S. Centers for Disease Control and Prevention, Paul Coverdell National Acute Stroke Program Resource Guide.

The prehospital and hospital stroke patient care elements selected by the local EMS agency shall be compliant with the most current version of the California EMS Information Systems (CEMSIS) data base, the National EMS Information System (NEMSIS) and national standards published by the U.S. Centers for Disease Control and Prevention, Paul Coverdell National Acute Stroke Program Resource Guide, dated October 24, 2016.

(3) All hospitals that receive stroke patients shall participate in the local EMS agency data collection process in accordance with local EMS agency policies and procedures.

(4) Stroke data required shall be collected and submitted by the local EMS agency to the EMS Authority data management system through data submission on no less than a quarterly basis.


§ 100270.226. Quality Improvement Process

Each Stroke Critical Care System shall have a quality improvement process 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 taking steps to correct the process. This process shall include, at a minimum:

(a) a detailed audit of all stroke-related deaths, major complications, and transfers;
(b) a multidisciplinary stroke QI Committee including both pre-hospital and hospital members;

(c) participation in the stroke data management system;

(d) compliance with the California Evidence Code, Section 1157.7 to ensure confidentiality, and a disclosure-protected review of selected stroke cases.


§ 100270.227. Stroke Critical Care System Evaluation

(a) The local EMS agency is responsible for on-going performance evaluations of the local or regional Stroke Critical Care System.

(b) The local EMS agency shall be responsible for the development of a quality improvement process pursuant to Section 100270.226.

(c) The local EMS agency shall be responsible for ensuring that designated Stroke Centers and other hospitals that treat stroke patients participate in the quality improvement process contained in Section 100270.226, as well as pre-hospital providers involved in the Stroke Critical Care System.

San Joaquin County EMS Agency Primary Stroke Center (PSC) Application Instructions

Thank you for your interest in applying to be designated as a Primary Stroke Center. Please carefully review the application and complete both sections including the submission of all required supporting documents.

Section I of the application requires identification of the hospital and the names and contact information for key Stroke program personnel. Section I also includes a list of additional documents that the applicant must provide as part of the completed application packet and a signature line for the hospital Chief Executive Officer.

Section II of the application is comprised of a hospital Self Evaluation Form. This form is divided vertically into two sections. The section on the left side of the page entitled “Explanation of Evaluation Standards” contains a description of PSC standards and a brief description of some ways in which these standards will be objectively measured. The applicant must attest to whether the hospital meets each standard by circling either Y or N (yes or no). The applicant must provide written documentation to support or explain responses if applicable and submit supporting documentation that demonstrates conformance with the PSC standards and objective measures. Applicants are encouraged to provide comprehensive responses to fully support the self-evaluation.

A PSC application/annual designation fee of $25,000.00 is required with the submission of the completed application packet. A check or money order should be made payable to the “San Joaquin County EMS Agency”. The completed and signed application along with all supporting documents and the PSC application/annual designation fee may be hand delivered to the EMS Agency office or mailed to:

San Joaquin County EMS Agency
P.O. Box 220
French Camp, CA 95231

The completed application packet is due by 5pm on August 31, 2017, to be considered for designation during this initial startup period.

A completed application packet includes:

1. Sections I & II
2. All Supporting Documents
3. PSC Application/Annual Designation Fee
The San Joaquin County EMS Agency plans to conduct site surveys of the applicant hospitals during the months of September and October. It is the County’s goal to stand up the stroke system of care no later than January 1, 2018.

If you have any questions or need assistance completing the PSC Application, please contact: Rick Jones, MPA. Telephone: (209) 468-6818, email: rjones@sjgov.org
Application for Primary Stroke Center Designation

SECTION I

Hospital Name: ____________________________________________________________

Mailing Address: __________________________________________________________

City: __________________________ State: _____ Zip Code: ____________________

Telephone: __________________________ Fax: __________________________

Contact Information for Key Stroke Program Personnel

Hospital Stroke Program Manager/Administrative Contact: ________________________

Telephone: __________________________ Fax: __________________________

Mobile: __________________________ Email: __________________________

Hospital Stroke Program Medical Director: ________________________________

Telephone: __________________________ Fax: __________________________

Mobile: __________________________ Email: __________________________

Hospital Stroke Data Reporting Manager: _________________________________

Telephone: __________________________ Fax: __________________________

Mobile: __________________________ Email: __________________________
Summary of Supporting Documents to be submitted with Completed Application:

- Proof of JCAHO Accreditation as a Primary Stroke Center
- Copy of Special Permit from CDPH for Basic or Comprehensive Emergency Medical Services
- Copy of daily roster and job title of all hospital staff and on-call neurologists available to respond to stroke alerts and arrive in the Emergency Department within thirty (30) minutes (three months)
- Copy of PSC Program Medical Director’s CV that supports his/her qualifications as identified by the Joint Commission
- Copy of staffing policies/protocols supporting PSC operations
- Policies supporting priority phone intake procedures that ensure prompt response by hospital staff and a timely subsequent stroke alert
- Job description of PSC program manager (RN)
- Copy of policies, procedures or guidelines that describe:
  1. Stroke Alert
  2. Contingency plans for personnel and equipment (equipment failures, etc)
  3. Criteria for patients to receive fibrinolytic therapy (ie: Alteplase)
  4. Interfacility transfer stroke policies/protocols
  5. Adoption of goals for internal process components that affects the time to fibrinolytic therapy &/or transfer for endovascular therapy
  6. Acceptance of all patients transported by ambulance with a field clinical impression of an stroke
- Copy of written PSC quality improvement program including QI program description

Statement Requesting Designation as a Primary Stroke Center in San Joaquin County:

I hereby certify under penalty of perjury that all statements made in this application are true, correct and complete. I understand that the information on this application shall be used to determine if the qualifications are met to designate the applicant’s facility as a Primary Stroke Center in San Joaquin County. In addition, the information contained on this application may be used for conducting an investigation and subsequent site survey. I hereby request that the San Joaquin County Emergency Medical Service Agency process this application and authorize them to use this information in making a Primary Stroke Center designation decision.

Signature of
Hospital Administrator: _______________________________ Date: ______________

Name of Hospital Administrator: _______________________________
## Explanation of Evaluation Standards

### Hospital Services

<table>
<thead>
<tr>
<th>Standard</th>
<th>Applicant’s Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Stroke Center Designation Standards</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Objective Measurement</strong> (supported by accompanying documentation)</td>
<td></td>
</tr>
<tr>
<td><strong>Meets Standard</strong></td>
<td></td>
</tr>
</tbody>
</table>

### A. General
- Proof of JCAHO accreditation as a Primary Stroke Center
- Special permit from CDPH for Basic or Comprehensive Emergency Medical Services

### B. CT availability 24 hours per day / 7 days per week
- Schedule of Radiologist / Radiology Technician (3 month period)
- Proof of Radiologist credentialing at applicant's facility

### C. Priority contact line for ambulance contact with hospital
- Reliable telephone/radio line that is recorded, stored for a minimum of 180 days, and audio recordings made available to the EMS agency upon request. Policies supporting priority phone intake procedures that ensure prompt response by hospital staff and a timely subsequent Stroke Alert

### Hospital Personnel

<table>
<thead>
<tr>
<th>Standard</th>
<th>Applicant’s Response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. PSC PROGRAM MEDICAL DIRECTOR</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Position currently filled?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Qualifications:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Sufficient knowledge of cerebrovascular disease</td>
<td></td>
</tr>
<tr>
<td><strong>Proof of PSC Medical Director’s credentialing at applicant’s facility</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Current curriculum vitae</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Meets Standard</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Y</strong></td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td></td>
</tr>
</tbody>
</table>

---

**SECTION II**

---
### Explanation of Evaluation Standards

<table>
<thead>
<tr>
<th>Primary Stroke Center Designation Standards</th>
<th>Applicant’s Response</th>
<th>Meets Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. PSC PROGRAM MANAGER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position Currently filled?</td>
<td>Current RN license and curriculum vitae</td>
<td></td>
</tr>
<tr>
<td>Qualifications: RN License and Stroke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>program experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>D. PHYSICIAN CONSULTANTS:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Neurology</td>
<td>On-Call schedules x 3 months if neurology onsite</td>
<td></td>
</tr>
<tr>
<td>If neurology unavailable onsite, tele</td>
<td>Proof of credentialing for staff Neurologists or documentation of credentialing of contracted tele neurology services</td>
<td></td>
</tr>
<tr>
<td>neurology consultants</td>
<td>Telemedicine policy</td>
<td></td>
</tr>
<tr>
<td><strong>C. Neurointerventional Radiology Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently available?</td>
<td>Yes – Provide the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Policy &amp;/or procedure for identifying patients needing</td>
<td></td>
</tr>
</tbody>
</table>
### Explanation of Evaluation Standards

<table>
<thead>
<tr>
<th>Primary Stroke Center Designation Standards</th>
<th>Objective Measurement (supported by accompanying documentation)</th>
<th>Meets Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>interventional services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Credentials for all neurointerventional radiologists</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No – In process for obtaining this service?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CLINICAL CAPABILITIES

#### A. Clinical Volume Performance:
- Volume of past 1 year will be evaluated
- Annual case total volume for all patients diagnosed with stroke that received fibrinolytic therapy

<table>
<thead>
<tr>
<th>Objective Measurement</th>
<th>Meets Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data from all stroke patients treated for prior 1 year</td>
<td>Y N</td>
</tr>
<tr>
<td>Door to fibrinolytic therapy for most recent 12 month period. Door to needle times &lt;60 minutes (50% compliance)</td>
<td>Y N</td>
</tr>
</tbody>
</table>

#### B. Process Performance

<table>
<thead>
<tr>
<th>Objective Measurement</th>
<th>Meets Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door to fibrinolytic therapy for most recent 12 month period. Door to needle times &lt;60 minutes (50% compliance)</td>
<td>Y N</td>
</tr>
</tbody>
</table>

### POLICIES AND PROCEDURES

#### A. Stroke Alert activation Policy & Procedures

<table>
<thead>
<tr>
<th>Objective Measurement</th>
<th>Meets Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal policies that support Stroke Alert activation of personnel and resources</td>
<td>Y N</td>
</tr>
</tbody>
</table>

#### B. Stroke policies or protocols for interfacility transfers

<table>
<thead>
<tr>
<th>Objective Measurement</th>
<th>Meets Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy, Procedure, and/or Guidelines</td>
<td>Y N</td>
</tr>
<tr>
<td>Explanation of Evaluation Standards</td>
<td>Applicant’s Response</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td><strong>PERFORMANCE IMPROVEMENT PROGRAM</strong></td>
<td><strong>Objective Measurement (supported by accompanying documentation)</strong></td>
</tr>
</tbody>
</table>
| A. Systematic Internal Review Program | Policy and procedure or program description of peer review protocol/program through a Stroke QI Committee that reviews and addresses:  
• Deaths (in-hospital, related to procedures)  
• Complications (e.g. Bleeding after fibrinolytic administration)  
• System issues | Y N |
| B. Systematic Prehospital Review Program | Written quality improvement plan or program description for EMS transported stroke patients supporting:  
• Timely prehospital feedback  
• Prehospital provider education  
• Cooperative stroke QI data management | Y N |
| D. Community stroke prevention activities and educational outreach | Commitment to community stroke prevention evidenced by a plan for prevention and educational activities | Y N |
| **DATA COLLECTION SUBMISSION AND ANALYSIS** | **Objective Measurement (supported by accompanying documentation)** | **Meets Standard** |
| A. Ability to participate with the San Joaquin County EMS Agency for Data Collection | Mechanisms in place to collect EMS Agency data elements  
Provide name and contact information of responsible party  
• Provide a description of the process that will be used to successfully collect data required and submit using the form provided by the EMS agency, as well as data input to Paul Coverdale Stroke Registry &/or Get With the Guidelines Stroke Registry | Y N |
PURPOSE: The purpose of this policy is to establish the minimum data and report requirements for designated Primary Stroke Centers (PSC).

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.67, 1797.88, 1797.220, 1798, and 1798.170; California Code of Regulations, Title 22, Chapter 7.2

DEFINITIONS:

A. “Advanced Life Support (ALS)” means special services designed to provide definitive prehospital emergency medical care as described in H.S.C. Division 2.5 Section 1797.52.

B. “Primary Stroke Center” (PSC) is a receiving hospital that has met the standards of a Center for Medicaid and Medicare Services (CMS) approved accreditation body as a Primary Stroke Center and has been designated as a PCS by the SJCEMSA.

C. “Door to Needle” means the time interval as measured from the time the patient arrives at the hospital emergency department until initiation of fibrinolytic therapy.

POLICY:

I. Monthly Data Submission Requirements.
   A. For each patient transported to the PSC by ambulance who have a stroke documented on the prehospital patient assessment, collect data on a form provided by the EMS Agency that at a minimum includes:
      1. Incident Date
      2. Prehospital Incident Number
      3. Hospital Record Number
      4. Patient age
      5. Patient gender
      6. Method of arrival
      7. Call Origin
      8. Incident address
      9. Time call received
      10. Time call dispatched
      11. Time EMS on scene
      12. Time EMS at patient’s side
      13. Time field neurological exam performed (RACE)
      14. Prehospital documentation of last known well time
      15. Time stroke alert called to PSC
      16. PSC notified of stroke patient by EMS
17. Field primary impression of stroke
18. Time enroute to PSC
19. Time of arrival at PSC per EMS
20. Time of arrival at PSC per hospital
21. Time stroke alert called at PSC
22. Time stroke team at bedside
23. Time patient transported to Computed Tomography (CT)
24. CT report interpretation time
25. Time of neurology consult
26. NIH stroke scale score on initial examination
27. Last known well time per hospital
28. Time of thrombolytic administration
29. Status at discharge
30. Discharged to (location)

II. Quarterly Aggregate Report Submission Requirements
A. Hospital-Based Reports:
1. Total time and number of episodes per year that computed tomography (CT) was not available.
2. Number of stroke alerts called
   a. Door to needle time for patients meeting criteria for fibrinolytic therapy.
3. Get With the Guidelines (GWTG) stroke quarterly report to include:
   a. Coverdell measures
   b. STK measures
   c. Standard GWTG measures
ALS Acute Stroke

AUTHORITY: Division 2.5, Health and Safety Code, Sections 1797.220 & 1798 et seq.

PROCEDURE:

I. Perform routine ALS/BLS medical care as directed in EMS Policy No. 5502, Routine BLS Care and EMS Policy No. 5701, Routine ALS Care.

II. Assess patient using the Rapid Arterial Occlusion Evaluation (RACE) Scale and document findings. An acute stroke should be considered if any findings are positive. A RACE of greater than 5 is indicative of an ischemic stroke with a large vessel occlusion.

   a. Determine the patient's Last Known Well Time (LKWT) and if patient is on anticoagulation therapy.

III. Initiate transport to Primary Stroke Center without delay.

IV. Provide stroke alert to PSC as early as possible after initiation of transport.

V. Provide supportive care according to EMS Policy No. 5751, ALS Altered Level of Consciousness (ALOC).

RACE Exam:

<table>
<thead>
<tr>
<th>Test Item</th>
<th>Score = 0</th>
<th>Score = 1</th>
<th>Score = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial Palsy</td>
<td>Absent</td>
<td>Mild</td>
<td>Moderate to Severe</td>
</tr>
<tr>
<td>Arm Motor Function</td>
<td>Normal to Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Leg Motor Function</td>
<td>Normal to Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Head/Gaze Deviation</td>
<td>Absent</td>
<td>Present</td>
<td>N/A</td>
</tr>
<tr>
<td>Aphasia * (Evaluate in right sided weakness)</td>
<td>Performs both tasks correctly</td>
<td>Performs 1 task correctly</td>
<td>Performs neither task</td>
</tr>
<tr>
<td>Agnosia ** (Evaluate in left sided weakness)</td>
<td>Recognizes Arm &amp; Impairment</td>
<td>Unable to recognize Arm or Impairment</td>
<td>Unable to recognize BOTH Arm and Impairment</td>
</tr>
</tbody>
</table>
* Aphasia: Ask the patient to "Close your eyes" & "Make a fist".
** Agnosia: Assess for recognition deficit: Does patient recognize effected side? Whose arm is this? Can patient lift both arms and clap?
DATE: August 14, 2017
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 (APOD) occurring in San Joaquin County.

FISCAL IMPACT:
The financial impact of APOD on the EMS system during the first half of 2017 was $846,726.

DISCUSSION:
Section 1797.120 of the Health and Safety Code requires that the California State EMS Authority (EMSA) develop a standard methodology for calculation of, and reporting by local EMS Agencies (LEMSAs) of ambulance patient offload times (APOT).

Health and Safety Code 1797.225 establishes that a LEMSA may adopt policies and procedures for calculating and reporting ambulance offload time. Those policies and procedures must be based on the statewide standard methodology developed pursuant to 1797.120. LEMSAs that adopt patient off-loading policies and procedures must also establish criteria for reporting and quality assurance follow-up for a patient off load time that exceeds the standard.

The Standard
The standardized model to measure APOT includes standardized definitions, including:

**Ambulance Patient Offload Time (APOT)** - the time interval between the arrival of an ambulance patient at an ED and the time the patient is transferred to the ED gurney, bed, chair or other acceptable location and the emergency department assumes the responsibility for care of the patient.
The adoption of this definition ensures uniformity of measurement for comparison purposes statewide, and establishes a more accurate method to determine transfer of care time at the ED than used prior to 2017. This APOT report follows the standardized model recommended by the EMS Commission and adopted by the EMSA utilizing the categories defined as APOT-1 and APOT-2.

a. APOT-1: The number reported is the APOT in minutes for transfer of care of 90% of ambulance patients and the number of ambulance runs included in the report.

b. APOT-2: The number reported is the percentage of ambulance patients transported by EMS personnel with an offload time within twenty (20) minutes and those transports with an ambulance patient offload delay beyond 20 minutes. APOD is further stratified by sixty (60) minute intervals up to one hundred eighty (180) minutes then any APOT exceeding one hundred eighty (180) minutes. Twenty minutes has been selected as the target standard for statewide reporting consistency based on precedence from other systems outside of California, as well as experience of some of the California LEMSAs.

The APOT standard adopted by the San Joaquin County EMS Agency is twenty (20) minutes. An APOT delay (APOD) shall be deemed to have occurred when the APOT interval exceeds this standard.

**Goal**

To reduce all wall times to less than 20 minutes. With cooperation, this is an attainable goal.

**Patient Care Impact**

When an ambulance is kept at an emergency department over 20 minutes due to an ambulance patient offload delay, this 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 offload delays are deleterious to patient care, one way in which the impact of offload delays can be measured is through an analysis of ambulance response compliance data. Such an analysis indicates that offload delays directly reduce the number of ambulances available to respond to emergencies with response times required for contract compliance.\(^1\) The reduction in available ambulance services caused by offload delays can be measured in two ways: the

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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.
relative increase in the number of exemption requests and the real impact of off-load delays on ambulance response time compliance.

Increase in Ambulance Response Compliance Exemptions: When the frequency and length of offload delays reach a trigger point, an ambulance provider may request an exemption from meeting ambulance response compliance requirements. An offload delay 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 > 50 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 50 minutes prior to the call in which an exemption is being sought.
- Ambulance staffing must be at or above the contracted minimum staffing levels.

The EMS system continues to experience a profound impact on ambulance availability and response caused by ambulance patient offload delays (A PODs) at emergency departments. The inability of emergency departments to readily accept ambulance patients has a direct negative effect on the availability of ambulances to respond to emergency requests. A PODs continue to rob the EMS system of efficiency and steals precious response-time minutes from acutely ill and injured patients. During the first half of 2017, hospital caused APODs continued to decrease monthly response-time compliance by more than 6%.

Ambulance Patient Off-load Delay performance

The performance of the seven hospitals in San Joaquin County during the first two quarters of 2017 is shown in tables and charts below. Table 1 and Table 2 show the volume of ambulance patient off-loads by each hospital and the number of minutes required to off-load patients at the 90th%ile (APOT-1) during the first two quarters in 2017.
Table 1

<table>
<thead>
<tr>
<th>APOT-1 1st Quarter 2017</th>
<th>Volume</th>
<th>90th%ile APOT Minutes</th>
<th>Unk APOT Values*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutter-Tracy Hospital</td>
<td>903</td>
<td>37:04</td>
<td>47</td>
</tr>
<tr>
<td>St. Josephs Medical Center</td>
<td>5856</td>
<td>1:14:21</td>
<td>18</td>
</tr>
<tr>
<td>San Joaquin General</td>
<td>2504</td>
<td>1:01:47</td>
<td>47</td>
</tr>
<tr>
<td>Lodi Memorial</td>
<td>2121</td>
<td>33:07</td>
<td>2</td>
</tr>
<tr>
<td>Kaiser Hospital Manteca</td>
<td>714</td>
<td>39:08</td>
<td>103</td>
</tr>
<tr>
<td>Doctors Hospital Manteca</td>
<td>807</td>
<td>34:47</td>
<td>177</td>
</tr>
<tr>
<td>Dameron Hospital</td>
<td>2063</td>
<td>43:00</td>
<td>2</td>
</tr>
</tbody>
</table>

*Data not entered on PCR

Table 2

<table>
<thead>
<tr>
<th>APOT-1 2nd Quarter 2017</th>
<th>Volume</th>
<th>90th%ile APOT Minutes</th>
<th>Unk APOT Values*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutter-Tracy Hospital</td>
<td>959</td>
<td>37:58</td>
<td>0</td>
</tr>
<tr>
<td>St. Joseph’s Medical Center</td>
<td>5918</td>
<td>1:01:00</td>
<td>2</td>
</tr>
<tr>
<td>San Joaquin General</td>
<td>2535</td>
<td>45:11</td>
<td>0</td>
</tr>
<tr>
<td>Lodi Memorial</td>
<td>1938</td>
<td>29:42</td>
<td>2</td>
</tr>
<tr>
<td>Kaiser Hospital Manteca</td>
<td>761</td>
<td>35:50</td>
<td>0</td>
</tr>
<tr>
<td>Doctors Hospital Manteca</td>
<td>1011</td>
<td>31:36</td>
<td>1</td>
</tr>
<tr>
<td>Dameron Hospital</td>
<td>1733</td>
<td>37:43</td>
<td>1</td>
</tr>
</tbody>
</table>

*Data not entered on PCR

Charts 1 & 2 show the volume of ambulance patient offload times stratified within APOT-2 intervals (0-20; 21-60; 61-120; 121-180; >180) during the first and second quarter of 2017 for each hospital. Tables 1 and 2 show a detailed count of the volume and percentage within each APOT-2 interval per hospital.
### Table 3 APOT-2 Volume & Percentage 1st Quarter 2017

<table>
<thead>
<tr>
<th>Hospital</th>
<th>≤20</th>
<th>&gt;20 to 60</th>
<th>&gt;60 to 120</th>
<th>&gt;120 to 180</th>
<th>&gt;180</th>
<th>Total Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutter-Tracy Hospital</td>
<td>537 (59.47%)</td>
<td>353 (39.09%)</td>
<td>9 (1.00%)</td>
<td>4 (0.44%)</td>
<td>0 (0.00%)</td>
<td>903</td>
</tr>
<tr>
<td>St. Josephs Medical Center</td>
<td>1811 (30.93%)</td>
<td>3118 (53.24%)</td>
<td>557 (9.51%)</td>
<td>194 (3.31%)</td>
<td>176 (3.01%)</td>
<td>5856</td>
</tr>
<tr>
<td>San Joaquin General</td>
<td>1260 (50.32%)</td>
<td>972 (38.82%)</td>
<td>174 (6.95%)</td>
<td>55 (2.20%)</td>
<td>43 (1.72%)</td>
<td>2504</td>
</tr>
<tr>
<td>Lodi Memorial</td>
<td>1473 (69.45%)</td>
<td>618 (29.14%)</td>
<td>26 (1.23%)</td>
<td>4 (0.19%)</td>
<td>1 (0.05%)</td>
<td>2121</td>
</tr>
<tr>
<td>Kaiser Hospital Manteca</td>
<td>468 (65.55%)</td>
<td>213 (29.83%)</td>
<td>29 (4.06%)</td>
<td>4 (0.56%)</td>
<td>0 (0.00%)</td>
<td>714</td>
</tr>
<tr>
<td>Doctors Hospital Manteca</td>
<td>599 (74.23%)</td>
<td>187 (23.17%)</td>
<td>19 (2.35%)</td>
<td>1 (0.12%)</td>
<td>1 (0.12%)</td>
<td>807</td>
</tr>
<tr>
<td>Dameron Hospital</td>
<td>1117 (54.14%)</td>
<td>854 (41.40%)</td>
<td>72 (3.49%)</td>
<td>14 (0.68%)</td>
<td>6 (0.29%)</td>
<td>2063</td>
</tr>
</tbody>
</table>

**Chart-1**

*Duration of Ambulance Patient Offload Time per Hospital in San Joaquin County During 1st Quarter 2017 (APOT-2)*
Financial Impact

Every minute that an ambulance must remain at a hospital emergency department longer than 20 minutes (APOD), the financial impact to the 9-1-1 system is approximately $2.74 per minute for 186,700 cumulative APOT minutes which cost the system $489,419 during the first three months and 141,520 cumulative APOT minutes which cost the system $357,307 during
the second quarter of 2017. The breakdown of cost of APOD by hospital is shown below in Charts 3 and 4.

**Chart 3**

*Ambulance Patient Off-Load Delay (APOD) Cost during 1st Quarter 2017*

Any ambulance patient off-load that exceeded twenty (20) minutes (APOD) is used in the calculation to determine the cost shown herein. For example, AMR's cost to staff one ambulance for one hour (unit hour) is $164.16.

**Chart 4**

*Ambulance Patient Off-Load Delay (APOD) Cost during 2nd Quarter 2017*

Any ambulance patient off-load that exceeded twenty (20) minutes (APOD) is used in the calculation to determine the cost shown herein. For example, AMR's cost to staff one ambulance for one hour (unit hour) is $164.16.
DATE: August 14, 2017
TO: EMS Liaison Committee
PREPARED BY: Phillip Cook
Disaster Medical Health Specialist
SUBJECT: Plausible Threat 2017 Exercise Program

RECOMMENDED ACTION:
Provide an overview of the Plausible Threat 2017 exercise program.

FISCAL IMPACT:
Estimated $38,000 to be funded through the FY 2017-18 Hospital Preparedness Program Grant

DISCUSSION:

I. OVERVIEW

The Plausible Threat 2016 Exercise Program is designed to establish a learning environment for players to evaluate and exercise emergency response plans, policies and procedures as they pertain to the consequences of an active shooter/hostile event. The exercise program consists of the following discussion based and operations based exercises:

1. **Tabletop Exercise** – The purpose of this exercise is to evaluate the San Joaquin County Active Threat Plan and Region IV MCI Plan in response to a simulated Active Shooter/Hostile Event (ASHE), and the challenges associated with integrating Law Enforcement and Multi-Casualty Branch operations; patient distribution from a large scale Trauma MCI, and hospital Operating Room surge.
   
   a. September 29, 2017 (0830 to 1200 Hours)
   
   b. San Joaquin County Ag Center 2101 E. Earhart Ave., Stockton, CA
   
   c. Advanced registration is required for all participants, to ensure adequate seating and exercise materials are available. Registration is free and available online at [https://www.sjgov.org/ems/events](https://www.sjgov.org/ems/events)
   
   d. Exercise flyer
September 29, 2017 ♦ 0830-1200 Hours
San Joaquin County Ag Center
2101 E. Earhart Ave., Stockton, CA

Purpose
The purpose of this exercise is to evaluate the San Joaquin County Active Threat Plan and Region IV MCI Plan in response to a simulated Active Shooter/Hostile Event (ASHE), and the challenges associated with integrating Law Enforcement and Multi-Casualty Branch operations; patient distribution from a large scale Trauma MCI, and hospital Operating Room surge.

Who Should Attend?
Law Enforcement, EMS and Fire personnel from the seven incorporated cities and unincorporated areas of the county, who are likely to respond to an Active Shooter/Hostile Event (ASHE), and fill one or more Multi-Casualty Branch positions. Control Facility Manager, Base Hospital MICNs, Hospital Emergency Department Managers, Hospital House Supervisors, Hospital and SNF Emergency Preparedness Coordinators, EMS Agency Medical Directors and personnel, Behavioral Health Services and Public Health Services.

Registration
Advanced registration is required for all participants, to ensure adequate seating and exercise materials are available. Registration is free and available online at https://www.sjgov.org/ems/events

For More Information Contact:
Phillip Cook
San Joaquin County EMS Agency
pcook@sjgov.org or 209-468-7494

This tabletop exercise is one in a series of exercises in the Plausible Threat 2017 Exercise program, and is part of the 2017 Statewide Medical/Health Exercise program. Funding provided by the 2017/18 Hospital Preparedness Program Grant.
2. **Functional/Full-Scale Exercise** – The purpose of this exercise is to evaluate the San Joaquin Operational Area’s ability to respond to, manage and mitigate an active shooter/hostile event.

<table>
<thead>
<tr>
<th>Exercise Dates</th>
<th>November 15-16, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>This exercise will be Full-Scale Exercise (FSE) in the field (November 15, 2017) and a Functional Exercise (FE) at all other venues, planned for two consecutive days. Day two of the exercise will focus upon information sharing between healthcare facilities, the San Joaquin Operational Area, Region IV, and the California Medical and Health Coordination Center. Local exercise play is limited to the San Joaquin Operational Area.</td>
</tr>
<tr>
<td>Mission Area</td>
<td>Response</td>
</tr>
</tbody>
</table>
| Core Capabilities¹ | Operational Coordination  
Operational Communications  
On-scene Security, Protection, and Law Enforcement  
Public Health, Healthcare and Emergency Medical Services  
Situational Assessment |
| Threat or Hazard | Active Shooter/Hostile Event |
| Scenario       | An active shooter incident occurs at school located in the Lodi Unified School District, resulting in multiple causalities. |
| Sponsor        | San Joaquin Operational Area Healthcare Coalition |

¹ [https://www.fema.gov/core-capabilities](https://www.fema.gov/core-capabilities)
DATE: August 14, 2017

TO: EMS Liaison Committee

PREPARED BY: Shellie Lima
Regional Disaster Medical Health Specialist (RDMHS)

SUBJECT: Report on EMResource (Intermedix)

RECOMMENDED ACTION:

Receive information on EMResource (Intermedix).

DISCUSSION:

Since 2007, SJCEMSA has administered the EMResource (formerly EMSSystem) via a Memorandum of Understanding for ten counties within Region IV (Amador, Calaveras, El Dorado, Nevada, Placer, Sacramento, San Joaquin, Stanislaus, Tuolumne, and Yolo). EMResource is a web-based communication solution that provides day-to-day hospital resource bed availability reporting, ensuring appropriate patient transport decisions during multi-casualty incidents and reporting of Hospital Available Bed (HAvBED) status.

As the EMResource administrator, SJCEMSA provides new user logins, maintains the program interface, provides train-the-trainer solutions for other partnering local EMS agencies, and endeavors to ensure EMResource meets the needs of the local EMS agencies in Region IV. Modifications to the program are presented and agreed upon during quarterly Region IV Medical Health Mutual Aid Advisory Committee meetings. A total of 32 hospitals participate in the Region IV viewing area.

In April 2017, Sacramento County separated from the rest of the region so they could better administer their system with other locally owned software. Since the change, there have been a few issues regarding the ability for hospitals internal to Sacramento and those on the region wide system related to viewing permissions. It appears most of the issues have been cleared up on both sides.

As of this report, the change appears to be smooth and users have transitioned with little difficulties. The EMResource Administrator and LEMSAs will continue to monitor closely to ensure there are no bugs.

The training document and videos may be found on the EMS Agency webpage at, https://www.sjgov.org/ems/medicalhealthmutualaid.htm#EMResource.
DATE:     August 14, 2017

TO:     EMS Liaison Committee

PREPARED BY:  Shellie Lima
              Regional Disaster Medical Health Specialist (RDMHS)

SUBJECT: Report on RDMHS Region IV Grant

RECOMMENDED ACTION:

Receive information on the Regional Disaster Medical Health Specialist (RDMHS) Region IV FY17-18 Grant Program

DISCUSSION:

Since 1994, the San Joaquin EMS Agency has received State grant funds to enhance medical mutual aid services and disaster preparation in San Joaquin and 10 other counties make up OES Region IV (Alpine, Amador, Calaveras, El Dorado, Placer, Nevada, Sacramento, Stanislaus, Tuolumne, and Yolo). These services and staff funds have promoted the standardization of regional disaster response services, as well as provided for joint planning and training for pre-hospital, hospital, and public safety personnel. The grants have funded the RDMHS position within the EMS Agency to support disaster coordination in Region IV, and to fulfill the objectives of the grants. These efforts have been successful in promoting disaster planning and response, as well as promoting inter-county cooperation. The State has a long-term commitment to this program.

The SJCEMSA completed the RDMHS Region IV Grant for FY16-17. The entire $120,000 budget has been exhausted. Payment for the first three quarters has been received and the final quarter was invoiced the end of July 2017.

The SJCEMSA has been awarded a base allocation of $120,000 for FY17-18 RDMHS Region IV Grant. The contract will go before the County Board of Supervisors in late August, with a fully executed contract expected by the end of September 2017. A copy of the scope of work is attached.
Regional Disaster Medical Health Specialist (RDMHS)
FY17/18 Contract Scope of Work

The Regional Disaster Medical and Health Specialist (RDMHS) is the component of the Regional Disaster Medical and Health Coordination (RDMHC) Program that directly supports regional preparedness, response, mitigation and recovery activities. Activities to assist in accomplishing this shall include:

1. Continue to support the implementation of the California Public Health and Medical Emergency Operations Manual (EOM).
   1.1 Conduct and/or participate in local and Regional EOM trainings. When possible, work with new EOM instructors to co-facilitate trainings.
   1.1.1 Invite State partners that are based locally to participate, when appropriate, in EOM trainings.
   1.2 Provide input as requested on the EOM during the update process, including improvement to the Situation Report. Seek input from local partners on EOM improvement opportunities during the update process.

2. Assist in the development of a comprehensive Medical Health Operational Area Coordination (MHOAC) program in each operational area within the region.
   2.1 Conduct training for Medical Health Operational Area Coordinators (MHOACs) and other medical and health partners in the operational areas as needed.
   2.2 Assist operational areas in developing contact lists to support the functions of a MHOAC program.
   2.3 Provide updated MHOAC contact list to Emergency Medical Services Authority (EMSA) Program Lead on a monthly basis.
   2.4 Assist operational areas in developing local Situation Report distribution procedures consistent with the EOM.
   2.5 Assist operational areas in developing local Resource Requesting procedures consistent with the EOM.
   2.6 Assist the Emergency Medical Services Administrators’ Association of California (EMSAAC), EMSA and CDPH with the development of a MHOAC Program Guide.

3. Continue to develop the Regional Disaster Medical and Health Coordination (RDMHC) Program.
   3.1 Develop and maintain RDMHC Program Response Procedures. Procedures to include contact lists, medical and health agreements within region (i.e., automatic aid agreements, cooperative assistance agreements).
   3.2 Conduct at least three medical and health regional planning meetings per year for the purpose of planning, coordination, training, and information sharing.
3.3 Participate in the local Mutual Aid Regional Advisory Committee (MARAC) meetings and represent the RDMHC Program as requested.
3.4 Represent the RDMHC Program at regional emergency management meetings.
3.5 Continue to coordinate with regional coordinators as appropriate.
   3.5.1 California Hospital Association Regional Coordinators
   3.5.2 California Governor’s Office of Emergency Services regional staff.
   3.5.3 California Department of Public Health Emergency Preparedness Office Contract Managers
   3.5.4 Emergency Medical Services Authority’s Senior Emergency Services Coordinators.

4 Assist EMSA and the Emergency Medical Services Administrators’ Association of California (EMSAAC) in the development, implementation and evaluation of the California Statewide Patient Movement Plan.
   4.1 Participate in Patient Movement Workgroups to assist with specific tasks or content development as requested.
   4.2 Review and provide feedback on draft work products developed by the contractor and workgroups.
   4.3 Solicit input as requested from operational areas within the region on the Draft Patient Movement Plan.
   4.4 Develop a training plan for the Patient Movement Plan.
   4.5 Participate in exercise of Plan.

5 Participate in activities related to Medical Countermeasure (MCM) programs, including the Strategic National Stockpile (SNS) program and CHEMPACK.
   5.1 Participate on the monthly MCM and Local Health Department (LHD) Emergency Preparedness conference calls (ongoing).
   5.2 Review LHD SNS Operational Readiness Review (ORR) annual self-assessments and provide feedback to the LHD as appropriate. Participate in the Cities Readiness Initiative (CRI) ORR assessments and assist EPO in review and analysis of all LHD SNS preparedness activities within the Mutual Aid Region.
   5.3 Promote Regional CHEMPACK training to include dissemination of training flyers provided by EPO and encourage participation of emergency dispatchers and CHEMPACK host site representatives. Participate in the planning and conduct of annual Regional CHEMPACK training.
   5.4 Develop and/or update regional CHEMPACK Plans annually and distribute to partners as appropriate.
      5.4.1 Maintain current CHEMPACK host site point-of-contact lists.

6 Coordinate operational area participation in catastrophic planning projects, such as the Southern California Catastrophic Earthquake Response Plan, the Bay Area Earthquake Response Plan and the Cascadia Subduction Zone Earthquake and Tsunami Response Projects.
6.1 Develop template to collect medical and health data from operational areas (as requested). Schedule meetings as needed with operational areas to discuss Plan and next steps.

6.2 Conduct meetings with operational areas in conjunction with EMSA, CDPH and United States Department of Health and Human Services Assistant Secretary for Preparedness and Response (ASPR).

6.3 Collect data to enhance Plan.

6.4 Exercise Plan in conjunction with EMSA, CDPH and ASPR.

7 Coordinate inter-State collaboration workgroups, such as the California/Nevada Border Counties Workgroup

7.1 Conduct at least three meetings annually of the California/Nevada Counties Workgroup (ongoing).

7.2 Maintain point-of-contact lists for participants in the California/Nevada Border Counties Workgroup (ongoing).

7.2.1 Participants include RDMHS from Region III, IV and Region VI.

8 Participate in regional and statewide exercises and other significant medical and health related training and exercises authorized by EMSA and/or CDPH.

8.1 Participate in regional planning and post-exercise evaluation activities for the Statewide Medical and Health Exercise and the Cal OES Capstone Exercise (annually).

8.1.1 Participate in the Statewide Medical and Health Exercise performing the roles and responsibilities of the RDMHC Program during an actual disaster, including the coordination of medical and health mutual aid.

8.1.2 Participate in the Capstone Exercise performing the roles and responsibilities of the RDMHC Program during an actual disaster, including the coordination of medical and health mutual aid.

8.2 Participate in the Diablo Canyon Nuclear Generating Station exercises as it applies to the Region I. Participate in the CDPH/EMSA Emergency Preparedness Training Workshop annually.

8.3 Attend conferences as requested by EMSA or CDPH-EPO, as budget allows.

9 Respond in accordance with the EOM to medical and health events in the region (ongoing).

9.1 Maintain incident logs and data related to response. Data to be provided in quarterly reports.

9.2 Report number of requests coordinated by the RDMHC Program for medical and/or health mutual aid and/or assistance from within the region.

9.3 Report number of requests coordinated by the RDMHC Program for medical and/or health mutual aid and/or assistance from outside the region.

9.4 Report number of times that medical and/or health mutual aid or mutual assistance requests required reimbursement coordination.
9.5 Report number of times the RDMHC Program polled the operational areas within the region to assess available resources for a potential request.

9.5.1 Report number of times RDMHC Program assisted operational areas with completing the Medical and Health Situation Report or completed the Situation Report for the operational area.

9.5.2 Report number of times the RDMHC Program assisted operational areas with completing the Medical Health Resource Request form.

9.5.3 Report number of times the RDMHC Program is contacted by the State for additional information regarding unusual events of emergency system activation within the region.

9.5.4 Report the number of times the RDMHC Program is requested to act as a conduit to share information with operational areas within the region.

9.5.4.1 Number of times operational areas from within the region request the RDMHC program to share material/information with all operational areas within the region.

9.5.4.2 Number of times the State requests the RDMHC program to share material/information with all operational areas within the region.

10 Additional Provisions

10.1 Participate in the RDMHC Program quarterly onsite meetings and monthly conference calls convened by EMSA.

10.2 Submit quarterly reports to the EMSA RDMHC Program Lead.

10.3 Submit agendas for meetings held by RDMHSs to EMSA RDMHC program Lead.

10.4 Represent the RDMHC Program as a participant on working/advisory committees as authorized by EMSA in conjunction with CDPH. Committee assignments reviewed annually and subject to change based on RDMHS workload and availability. Potential committee assignments include:

10.4.1 BioWatch program planning and response.
10.4.2 State workgroup for annual Statewide Medical and Health Exercise.
10.4.3 Medical Reserve Corps Advisory Committee.
10.4.4 EOM workgroup.
10.4.5 Disaster Healthcare Volunteers (DHV) Deployment Operations Manual Workgroup.
10.4.6 Ambulance Strike Team Project.
10.4.7 Emergency Function (EF) 8 Technical Workgroup.
10.4.8 California Disaster Mental Behavioral Health Statewide Plan Development workgroup.
10.4.9 HPP/PHEP Grant Guidance workgroup.

10.5 If additional activities are identified during this contract period, the RDMHS
will work with the EMSA RDMHC Program Lead to evaluate current workload and responsibilities and determine how the additional activities support the tasks identified in this SOW. Both parties will agree on the appropriateness of the assignment prior to it becoming a requirement.
San Joaquin County
Emergency Medical Services Agency

DATE: August 14, 2017
TO: EMS Liaison Committee
PREPARED BY: Phillip Cook, Disaster Medical Health Specialist
SUBJECT: San Joaquin Operational Area Healthcare Coalition Surge Exercises

RECOMMENDED ACTION:

Provide an overview of the annual low notice San Joaquin Operational Area Healthcare Coalition Surge Exercises being conducted during the fourth week in October 2017 to 2021.

FISCAL IMPACT:
N/A

DISCUSSION:

I. OVERVIEW

The Coalition Surge Test (CST) Tool is a user-friendly peer assessment low/no-notice exercise that will enable healthcare coalitions to identify gaps in their surge planning. The surge exercises are a Hospital Preparedness Program (HPP) Grant requirement.

The CST scenario involves simulated evacuation of at least 20 percent of a healthcare coalition’s acute-care bed capacity. It is designed to support coalitions in identifying strengths, gaps, and corrective actions. While facility evacuations are perhaps not the most common type of surge situation, they have happened several times during natural disasters (e.g., Hurricane Sandy) and usually involve enough patients to stress entire coalitions, which is a key purpose of this exercise. The exercises will tests our coalition’s ability to work in a coordinated fashion to find appropriate destinations for patients in a simulated evacuation of up to three hospitals.

II. PHASE 1:

*Table Top Exercise with Functional Elements and Facilitated Discussion.* The exercise starts 60 minutes after the assessment team notifies one or more hospitals to activate their Hospital Command Center. The exercise ends when all patients are
placed or after 90 minutes, whichever comes first, after which participants will join a facilitated discussion that explores issues raised during the exercise. The facilitated discussion may include: patient transportation planning, receiving health care facility capacity, patient tracking and public information, the needs of vulnerable patients, and continuity of operations.

III. PHASE 2:

After Action Review. An after action review concludes the CST and consists of an assessment of strengths and weaknesses and corrective action planning. Ideally, this should occur immediately after Phase 1. The After Action Review must include healthcare executives.

REFERENCES:

1. HHS/ASPR Healthcare Coalition Surge Test  
   https://www.phe.gov/Preparedness/planning/hpp/Pages/coalition-tool.aspx

2. Region IV Healthcare Coalition Surge Tool Seminar (How to video)  
   https://www.youtube.com/watch?v=l1MXNvEWn1c

3. San Joaquin County Hospital Evacuation Plan  
   https://www.sjgov.org/ems/emergencypreparedness.htm#HospitalEvac

4. San Joaquin Operational Area Healthcare Coalition  
   https://www.sjgov.org/ems/coalition.htm