CONTRA COSTA COUNTY
EMERGENCY MEDICAL SERVICES
SYSTEM CORE PERFORMANCE MEASURES REPORT
ANNUAL: 2014

Executive Summary

The annual 2014 Core Performance Measures Report demonstrates EMS system activity and outcomes that are within normal and safe statistical control limits. Performance levels continue to meet and exceed established national benchmarks and standards of care.

System Utilization

- 911 system responses and transports for 2014 showed a level volume with fluctuations becoming higher towards the end of the year.
- The base hospital call volume decrease is not a full representation of the real picture since the data program was changed in 2014 and does not contain all of the year’s data.

Cardiac Care

- Both the Utstein and the overall survival rates remained consistently above national benchmarks CARES 30% benchmark.
- Due to changes in the methodology of how the CARES data registry calculates bystander CPR, there was a statistically significant drop in performance levels. We will continue to watch and understand the best way to define and measure bystander CPR rates. Meanwhile, high performance CPR and cardiac arrest care continue to be a hallmark driving force behind providing exceptional care to our customers in the field.

STEMI System

- “Door to Intervention” time intervals continued to meet the 90 minute benchmark.

Stroke System

- Our stroke system continues to meet benchmark 60 mins door to care time intervals.

Trauma System

- Trauma System data shows system in control with on scene times for MTV patients within the 10 min benchmark and with blunt trauma being slightly longer on scene. These performance levels are consistent and within process control limits.

Conclusion

All 2014 quality indicators were vetted and reviewed by the Contra Costa County Quality Leadership Council (QLC) at their meeting of March 10, 2015.
System Utilization
2014

Data Source: First Watch
Contra Costa County
911 Ambulance Response and Transport Frequency
Annual 2014
N= 85267 Responses
N=65427 Transports
Contra Costa County 911 Ambulance
% Transport per Response
Annual 2014

N = 85,267 Responses
N = 65,427 Transports
Mean Transport/Response = 77 %
Contra Costa EMS
Cumulative Hours on EMS Diversion by Hospital
Annual 2014

N=586 Total Hours on Diversion

2014 Cumulative Hours

- KR: 301
- DSP: 76
- SDMC: 45
- SRVMC: 98
- JMMWC: 56
- JMMC-C: 9
- KWC: 1
- KA: 0
Contra Costa EMS
Hospital Diversion Hours % by Cause
Annual 2014
N=586 Total Hours on Diversion 2014

CT 68%
TRAUMA 16%
OTHER 16%
STEMI 14%
Base Hospital
Annual 2014

Data Source: Base Hosp Log
### Base Hospital Average Daily Calls
#### Annual 2014

**Note:** No data reported Dec 2014

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<thead>
<tr>
<th>Year</th>
<th>Calls per Day</th>
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<td>2003</td>
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<td>2013</td>
<td>8.7</td>
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<tr>
<td>2014</td>
<td>6.9</td>
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Cardiac Arrest
Annual 2014

Data Source: CARES Registry through June 2012.
Excludes Medical Facilities (hospitals, clinics, SNF); Excludes arrest after EMS arrival
% Bystander CPR by Quarter
Annual 2014
N=509 Total Resuscitations Attempted
Cardiac Arrest Survival Utstein
% Survival by Quarter
Annual 2014
N=509 Total Resuscitations Attempted
STEMI System
Annual 2014

Data Source: AMR, CCC STEMI Centers
Median Prehospital Scene Time Interval - STEMI
By Quarter through 2014

No Special Cause Detected

Chart Type: Chart for Individuals

Centerline: 15.10
Process Limits: Lower: 11.45  Upper: 18.75

Avg of Data Shown 15.1
Median Data Shown 15
Sigma for Limits 1.216
Base for Limits Average MR

Database Column 1

A 1 Beyond Control Limit
B 9 On One Side of Average
C 6 Trending Up or Down
D 14 Alternating Up & Down
E 2 of 3 Beyond 2 Sigma
F 4 of 5 Beyond 1 Sigma
G 15 Within 1 Sigma
H 8 Outside 1 Sigma
X Excluded or Missing Data
Contra Costa STEMI System
Activations and Disposition
2014

N=230 Total Activations

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<tr>
<th>Quarter</th>
<th>STEMI Activations</th>
<th>To Cath Lab</th>
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<tr>
<td>Q1</td>
<td>53</td>
<td>31</td>
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<td>Q2</td>
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<tr>
<td>Q3</td>
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<td>33</td>
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<tr>
<td>Q4</td>
<td>54</td>
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STEMI System Median Time Benchmarks
By Quarter 2014
N=230 Activations

Benchmark: Scene to PCI <90 mins

<table>
<thead>
<tr>
<th>Quarter</th>
<th>2014</th>
<th>Percentage</th>
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<tr>
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<td>Q3</td>
<td>58</td>
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<tr>
<td>Q4</td>
<td>79</td>
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STEMI System Median Time Benchmarks
By Quarter 2014
N=230 Activation

Benchmark: Door to PCI < 90 mins

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<thead>
<tr>
<th>Quarter</th>
<th>% 90 Mins or Less</th>
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<tr>
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<td>98</td>
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<td>Q2</td>
<td>97</td>
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<tr>
<td>Q3</td>
<td>89</td>
</tr>
<tr>
<td>Q4</td>
<td>95</td>
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Stroke System
Annual 2014

Data Source: MEDS 3 California Stroke Registry
Contra Costa Stroke System
Mean Pt Care Time Intervals
Annual 2014
N = 269

Benchmark ASA: Door-to-Drug within 60 minutes
STROKE ALERT
Mean Prehospital Scene Time Interval
Annual 2014
Control Chart Analysis
N=725 Stroke Alerts
Benchmark = 15 mins

Centerline: 11.98      Process Limits:   Lower: 9.896   Upper: 14.05

Avg of Data Shown 11.975
Median Data Shown 12
Sigma for Limits 0.6931
Base for Limits Average MR

A.1 Beyond Control Limit
B.9 On One Side of Average
C.6 Trending Up or Down
D.14 Alternating Up & Down

E. 2 of 3 Beyond 2 Sigma
F. 4 of 5 Beyond 1 Sigma
G. 15 Within 1 Sigma
H. 8 Outside 1 Sigma
X. Excluded or Missing Data
Final Diagnosis of Stroke Alerts
2014
N = 757
Source: AMR Meds, Zoll, Primary Stroke Centers
Trauma System
Annual 2014

Data Source: Trauma Registry
Trauma Activations & Discharges
By Quarter: Q1-Q3 2014

Discharged Home %ISS< 15: 24, 21, 26
Trauma Activations %ISS> 15: 28, 30, 33
Trauma Activations %ISS< 15: 79, 81, 74
No Q4 Data Available

%
Median Prehospital On Scene Time Interval
Blunt vs. Penetrating Trauma By Quarter
Annual 2014
END
CORE MEASURES
SYSTEM REPORT
Annual 2014
Contra Costa EMS Agency
Quality Initiatives

<table>
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<th>PRIORITY 2015-16</th>
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<tr>
<td>Patient Care Documentation</td>
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<th>2014-15 - Continue Active</th>
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<tr>
<td>High Performance Cardiac Arrest &amp; CPR</td>
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<table>
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<tr>
<th>EMS Patient Off-Load Time Reduction</th>
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<tr>
<td>Never Events - EMS Events Reporting Process</td>
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<table>
<thead>
<tr>
<th>2013-14 – Monitor &amp; Sustain</th>
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<tr>
<th>Spinal Motion Restriction</th>
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<tr>
<th>Pediatric Medication Safety</th>
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EMS Never Events (Patient Handoff > 1 hour)

Patient Safety Initiative: The Journey to Zero

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<td>CCRMC - PES</td>
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<td>34</td>
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<td>John Muir - Concord</td>
<td>8</td>
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<tr>
<td>John Muir - Walnut Creek</td>
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<td>17</td>
<td>3</td>
<td>23</td>
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<td>Kaiser - Antioch</td>
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<td>Kaiser - Richmond</td>
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<td>13</td>
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<td>15</td>
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<td>Kaiser - Walnut Creek</td>
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<td>8</td>
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<td>Sutter Delta</td>
<td>36</td>
<td>285</td>
<td>20</td>
<td>341</td>
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Which Patients Experience Never Events?

Paramedic Primary Impressions
Never Events (>1 Hour Handoff Time)
8/1/2013 - 1/31/2015
Source: AMR MEDS (ePCR Database)

- Pain: 120 (24%)
- Other - Sick/Dizzy/Weakness: 67 (13%)
- Trauma: 54 (11%)
- Behavioral / Psychiatric: 63 (12%)
- Toxicological: 31 (6%)
- Gastrointestinal: 33 (7%)
- Respiratory: 33 (7%)
- Neurological: 42 (8%)
- Other: 58 (12%)
- Cardiac: 24 (5%)
- Vascular: 24 (5%)
- Diabetes: 6 (1%)
- OB/GYN: 3 (1%)
- Allergic Reaction: 1 (0%)
Never Event Characteristics: Affects All Ages

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<td>60-69</td>
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<td>3</td>
<td>83</td>
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<td>70-79</td>
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<td>54</td>
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<td>&gt; 100</td>
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## Never Event Patient Characteristics

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<tbody>
<tr>
<td>Female</td>
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<td>235</td>
<td>26</td>
<td>293</td>
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<tr>
<td>Male</td>
<td>30</td>
<td>166</td>
<td>12</td>
<td>208</td>
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<tbody>
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<td>19</td>
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<tr>
<td>Black/African American</td>
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<td>200</td>
<td>20</td>
<td>249</td>
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<td>Hispanic or Latino</td>
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<td>49</td>
<td>7</td>
<td>67</td>
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<tr>
<td>Other Race</td>
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<td>29</td>
<td>2</td>
<td>32</td>
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High Performance Cardiac Arrest & CPR Quality Initiative
Average Compression Ratio

- Jan: 70.2%
- Feb: 73.9%
- Mar: 77.3%
- Apr: 77.1%
- May: 81.0%
- Jun: 80.3%
- Jul: 81.2%
- Aug: 83.8%
- Sep: 79.5%
- Oct: 78.1%
- Nov: 78.4%
Percent of Cases with Both Compliant Compression Rate and Ratio - 2014

Jan: 0%
Feb: 33%
Mar: 40%
Apr: 50%
May: 75%
Jun: 63%
Jul: 70%
Aug: 71%
Sep: 36%
Oct: 45%
Nov: 38%
END REPORT
Annual 2014