

**Contra Costa Health Services
Emergency Medical Services Agency**



**Trauma System Plan
Status Report
2014**



December 2015

SUMMARY OF TRAUMA PLAN STATUS REPORT

Contra Costa County's initial Trauma System Plan was developed in 1985, approved by the Board of Supervisors on November 19, 1985, and approved by the State Emergency Medical Services Authority (EMSA) on December 20, 1985 based upon the draft trauma regulations available at that time. The format and information contained in the plan were updated in October 1987 and again in December 2001 to comply with State trauma regulations. These plans were re-approved by EMSA on November 28, 1988, March 7, 2003, and January 2010 respectively. In August of 2010 the Trauma System Plan Status Report was submitted to EMS addressing comments and questions included in EMSA correspondence dated January 20, 2010. The 2010-2013 Contra Costa County Trauma System Status Reports were accepted by EMSA with minimal recommendations.

Key elements of the current Trauma System Program include the following:

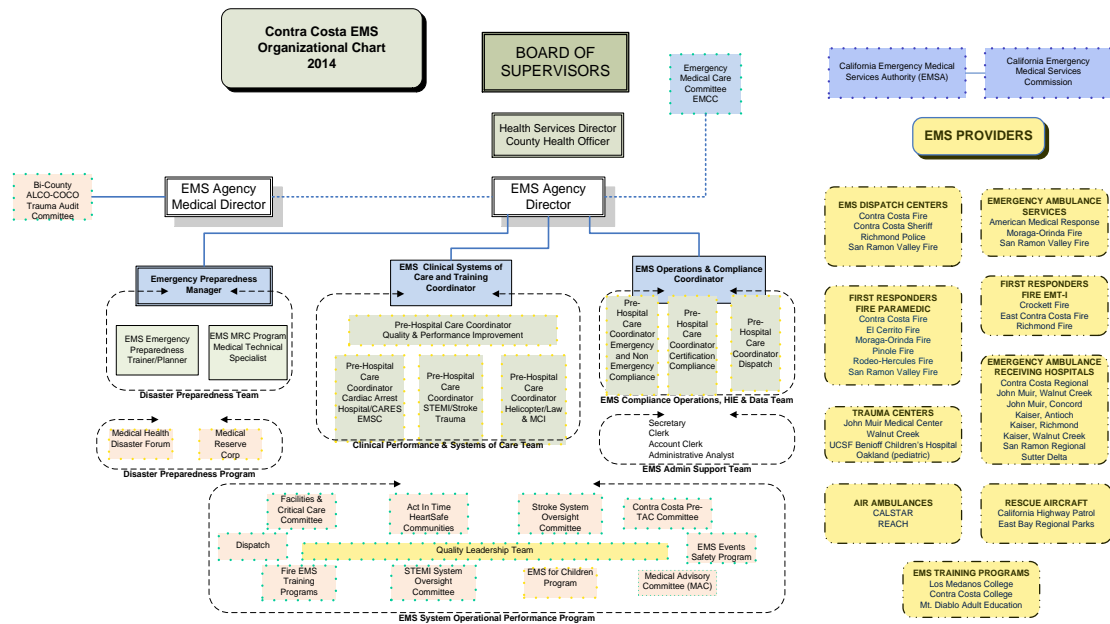
- ▶ Designation of a single Level II trauma center to serve all of Contra Costa County.
- ▶ Trauma center designation made on the basis of an open competitive process including use of an outside team of experts to evaluate trauma center applications.
- ▶ Maintenance of the American College of Surgeons Committee on Trauma Level II Trauma Center Verification.¹
- ▶ Recognition of the Level I pediatric trauma center designated by Alameda County as the appropriate facility to serve the needs of pediatric trauma patients.
- ▶ Full integration of the trauma system into the existing EMS system.
- ▶ Field triage of all major trauma patients to a designated trauma center when possible.
- ▶ Use of air ambulance (helicopter) services to reduce trauma transport times when appropriate.
- ▶ Maintenance of a trauma registry to track trauma system and trauma center performance on a case-by-case basis.
- ▶ A bi-county trauma audit (quality assurance and improvement) process to assure outside expert review of the trauma center and the trauma system on an ongoing basis.
- ▶ Full participation in regional and state trauma system activities.
- ▶ Full participation in CEMSIS Trauma and EMS data sharing.
- ▶ Implementation of a county-wide pediatric and neonatal disaster plan to support traumatic injury as the result of catastrophic earthquake or multicasualty events involving traumatic injury. -
- ▶ Active injury prevention activities supporting preventable injuries in children in collaboration with John Muir Trauma Center and Children's Hospital and Medical Center Oakland.
- ▶ Development of an intra-facility transfer processes to support enhanced trauma patient destination workflow implemented in January 2013.
- ▶ **Implementation of Spinal Motion Restriction field treatment guidelines and equipment.**

¹ See letter of certification at end of report

ORGANIZATIONAL STRUCTURE

The Contra Costa County trauma system is an integral part of the EMS system shown in **Figure II-1**. The Contra Costa Health Services Department is the Local EMS Agency (LEMSA) as designated by the Board of Supervisors. The LEMSA staff include the EMS Director, EMS Medical Director, EMS Clinical Systems of Care Coordinator, EMS Operations & Compliance Coordinator, Emergency Preparedness Manager, one nursing position, five prehospital care coordinators (nurse or paramedic), and four support staff.

Figure II-1. Contra Costa County EMS system



John Muir Medical Center was designated in May 1986, following a request for proposal process as the County's sole Level II Trauma Center. John Muir's designation was renewed in May 1992, following a second request for proposal process providing an additional opportunity for hospitals to seek trauma center designation. The term of the existing contract is through May 2, 2021 with conditional automatic renewal to 2031.

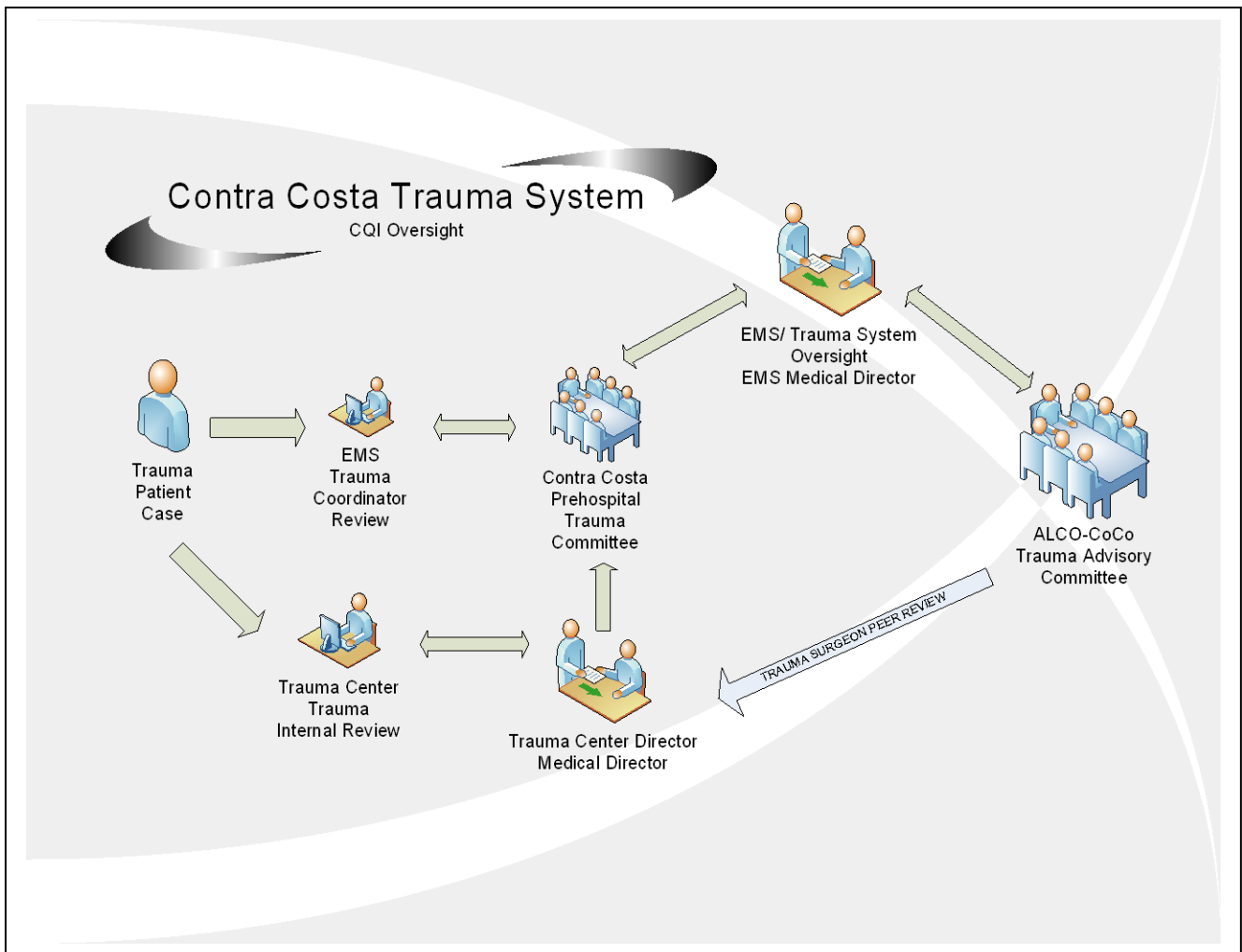
While John Muir is the sole County-designated trauma center, the County recognizes Children's Hospital and Research Center Oakland as an Alameda County designated Level I Trauma Center with specialized capability to care for pediatric trauma and has established mechanisms to assure that most pediatric trauma is transported directly to Children's Hospital.

The EMS Agency is responsible for overall trauma system monitoring and quality improvement, and for administration of the trauma center designation contract. The trauma system quality improvement process established by Contra Costa County includes a joint Alameda-Contra Costa County Trauma Audit Committee (TAC), a county-level Pre-TAC Committee, and a trauma registry maintained both by the Trauma Center and by the County EMS Agency. Trauma system oversight is conducted by the EMS Medical Director and an EMS Prehospital Care Coordinator. The Trauma Audit



Committee meets quarterly to review cases treated at the four trauma centers that serve Contra Costa and Alameda Counties. The Contra Costa/Alameda County EMS Medical Directors, Trauma Service Directors, Trauma Surgeons or members of the Pre-Trauma Audit Committees submit cases to the Trauma Audit Committee for review. During 2009 a system was developed to allow trauma surgeons to review these cases electronically.

In 2011 Contra Costa EMS initiated a local Trauma System redesign in collaboration with the Trauma center. The efforts of the redesign are focused on improving local capabilities to evaluate Trauma System Performance with meaningful metrics and data focused on system and process improvement. Grant funding from the CEMSIS project has been directed to support these efforts.



Trauma System

In 1986, the Board of Supervisors approved a comprehensive Trauma System Plan for the County and designated John Muir Medical Center (Walnut Creek) as the County's Level II Trauma Center, and in June of that year, ambulance personnel began transporting critical trauma patients directly to John Muir, Walnut Creek. Ambulance and base hospital personnel use triage protocols, which include evaluation of mechanisms of injury and anatomic factors as well as a physiologic trauma scoring system to identify

critical trauma patients. In 2001, a revised trauma system plan was developed to meet new State trauma system planning requirements.

In **2014**, 2,146 patients were identified as requiring **trauma triage**, 1,125 of which were transported directly to **John Muir Trauma Center**. Fifty were transported to Children's Hospital Oakland, and fifteen to out-of-county adult trauma centers, primarily Eden Hospital, Castro Valley and Highland Hospital, Oakland, U.C. Davis, and Santa Clara Valley Medical Center. Patients in traumatic full arrest or whose airway cannot be managed are triaged to the closest basic emergency department for resuscitation. During the past 27.5 years of operation, more than **70,000** patients have been triaged through the County trauma system.

In 2010, the definition of "**Major Trauma Victim**" (**MTV**) was modified in the system to include only patients with an Injury Severity Score (ISS) of greater than 15. Injury Severity Score is a standardized retrospective assessment of the level of severity of injury. Previously, patients with ISS score of 10-14 with length of stay of three days or more were also considered MTVs. This new definition is the one utilized by most trauma systems across the nation.

Critically injured patients who arrive at non-trauma center hospitals may be transferred to trauma centers. In 2012, a task force was appointed to address the process of "re-triaging" patients to the Trauma Center from outlying facilities. On average, the time to transfer patients with blunt injuries averaged between 3.5 to 4 hours. For penetrating trauma, the average length of stay was 2.5 hours. The goals of the Trauma Triage Task Force were to identify the reasons for delays in transfer and establish re-triage guidelines that ensure rapid assessment and transfer of patients to the Trauma Center. The task force accomplished their goals and implemented the Contra Costa County Trauma Re-Triage Procedure on January 1, 2013. In 2013, there was a significant decrease in the length of stay at sending facilities for patient who were considered Major Trauma Victims. **Trauma re-triage continued to be tracked in 2014 with the goal of providing additional outreach to referral facilities on a regular basis to maintain optimal re-triage times.** John Muir Trauma Center also received **100 trauma patients from surrounding counties**, generally by air transport. Twenty of the injured Out-of-County patients were retrospective MTVs related to trauma.



In 2010, a study of head injury triage was undertaken. The results of the study showed no clear single clinical criteria that would help us in triage of head injury patients, although history loss of consciousness appeared to have a greater tendency toward serious injury in patients 60 and over (24% in the study) versus those under 60 (8%). That criteria was subsequently added to the criteria for triage calls needing trauma center destination determination. The study did not have the power to assess how multiple findings might improve triage.

When Trauma center resources are temporarily overwhelmed, the trauma center may consider "Trauma Center Bypass," directing any critical trauma patients to out-of-County trauma centers until resources are again available. In 2014 John Muir Trauma Center bypass rate was **0.8%**

Trauma System Evaluation

A major aspect of the trauma system is an extensive trauma system and trauma center monitoring program. Part of this program is a unique, bi-county audit system called the Trauma Audit Committee (TAC) held in conjunction with Alameda County EMS and Alameda County trauma centers. This review process has been in place since the inception of the County trauma system. Trauma surgeons from other California trauma systems also participate in the trauma system evaluation and monitoring process, bringing outside perspectives and the additional expertise from teaching facilities.

Historically, selection of cases to be presented at TAC meetings was done through the Pre-Trauma Audit Committee (PreTAC) meetings. Trauma Surgeon Directors on a rotating basis traveled to another of the four trauma centers to review care (chart review) provided trauma patients. In 2005 a new case review selection process was implemented which provided for Trauma Surgeon Director case review off site. The PreTAC continues to review EMS system issues related to trauma care.

John Muir Trauma Center also has its own internal monitoring and evaluation systems coordinated by an RN Trauma Program Coordinator. The Coordinator meets weekly with nurses, social service, physical therapists, neuropsychology, rehabilitation, nutritional services, pastoral care and patient accounting to analyze patients on the trauma service from a multidisciplinary perspective.

The Trauma System Plan for Contra Costa EMS was approved and updated in March of 2009 and submitted to EMSA in the fall of 2009. The Trauma System Plan was accepted by EMSA with recommendations for improvement. In August 2010 Contra Costa EMS submitted a Trauma System Status Report addressing the recommendations. In September of 2010, EMSA accepted the report as in full compliance with State guidelines.

Trauma Injury Prevention Program

The John Muir Injury Prevention Program has received National Awards of Recognition for its programs and service to the community. The John Muir Medical Center Trauma Service has reached over 20,000 Contra Costa residents directly. In 2014, John Muir continued to implement and improve Trauma Services' Injury prevention/ intervention projects of 2010: *Beyond Violence and Alcohol Screening and Brief Intervention for High Risk Drinking Behavior*. Described below, the following projects continued in 2014:



Beyond Violence: Modeled after Highland Hospital's "Caught in the Crossfire," "Beyond Violence" is aimed at reducing retaliation and re-injury to trauma patients, ages 15-25 years that result in street violence. The program is a collaborative project between John Muir Health, Contra Costa County Health Services, Richmond's Office of Neighborhood Safety, One Day at a Time and the Williams Group.

Alcohol Screening and Intervention for High Risk Drinking Behavior: A plethora of research has shown a strong correlation between alcohol use and risk for injury. Evidence has also shown that when at-risk drinking behavior is addressed through even a brief intervention with a health care provider, attitudes and behaviors around alcohol use can change, effectively decreasing an individual's risk for injury. Aimed at trauma in-patients, John Muir's goal is to screen and intervene with eligible patients prior to discharge. In 2014, 80% of eligible patients were screened and intervention took place.

Childhood Occupant Protection: The primary goal of the Child Passenger Safety Program is to educate children ages 0-15 years, parents, and other care givers in the proper use of child safety restraints. Under the leadership of Carol Powers, MA, since 2004, the Fitting Stations and Drive-Through Clinics of the John Muir Health Child Safety Coalition have been revitalized. There are presently 13 member agencies of the Coalition which include police and fire departments, and community-based organizations throughout Contra Costa County. Since 2009, the program has provided over 100 new child restraints annually to families in need. In collaboration with JMH Women's Health Center, the program sponsors a Fitting Station (checking just over 1,000 car seat installations annually) and child passenger safety education program such as "Shopping for a Car Seat"

Occupant Protection for Teens: Although a variety of strategies are used to address this very high-risk population, the largest and most active project, the "Every 15 Minutes" program, is an intense two-day crash scene reenactment aimed at increasing awareness among teens and their parents of the medical, legal, social and financial consequences of drinking and driving. Under the leadership of Sherry Watkins, RN, since 2003, John Muir Health participated in programs at 6 area schools in 2014. Beyond the trauma activation reenactment, John Muir Health also assists in event planning and the physical (moulage) and emotional preparation of participating students. There are over 50 John Muir Health RN volunteers serving the community in this emotionally engaging program.

County and Regional Injury Prevention Programs

Child Injury Prevention Network-Bay Area (CIPN): This organization began in 2007 with the aim of bringing together individuals, agencies and organizations that share a common goal: to keep children safe from injury through education and outreach into our communities. The CIPN-BA is a multidisciplinary group of individuals and agencies crossing county lines committed to building community awareness of injury as a public health priority. Trauma is a major cause of pediatric preventable injury. The group provides networking opportunities, information and data-sharing and offers individual expertise in various areas in injury prevention. Contra Costa and Alameda County EMS partner with Children's Hospital and Research Center Oakland to support network activities. For more information go to <http://www.chofoundation.org/corporate-giving/corporate-partners/kohls-injury-prevention-program/cipn-ba/>

Contra Costa County Pediatric and Neonatal Disaster and Medical Surge Network: This is an informal "grassroots" network of pediatric, neonatal, emergency care, and disaster professionals, from all disciplines, working to support Pediatric and Neonatal Surge Preparedness efforts in our communities. There are no costs or fees. The only requirement is a willingness to participate with like-minded colleagues. A listserv connects participants with ideas, information, resources and strategies for supporting regional pediatric surge and disaster preparedness on the local, regional and state level. It is anticipated that in a major earthquake > 380 pediatric trauma victims will require care in Contra Costa County. The Coalition has inspired locals to engage in statewide efforts to support disaster preparedness for infants and children throughout California and regularly reports activities to the EMSAAC Disaster Committee and State EMS for Children Technical Advisory Committee. For more information go to <https://sites.google.com/site/pedineonetw>

In 2014, the Neonatal and Perinatal Disaster Preparedness Project helped plan to support newborns and mothers in the event of a disaster, and prepare the system for medical surges from this population. Staff education has been successful, 25 bedside “go bags” were distributed at four of Contra Costa’s five neonatal intensive care units.

2014 Trauma System Data

Helicopter Utilization Report - 2014

Contra Costa Patients Transported by Helicopter²

Origin	2011		2012		2013		2014	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
TOTAL	263	100.0	280	100.0	252	100.0	197	100.0
East County	143	54.0	173	62.0	124	49.0	89	45
West County	87	33.0	82	29.0	98	39.0	67	34
South County	18	7.0	10	4.0	20	8.0	18	9
Central County	15	6.0	15	5.0	10	4.0	23	12

Source: EMS Agency based on data supplied by helicopter provider agencies.

Helicopter Transports Originating Within Contra Costa by Provider Agency²

Provider	2011		2012		2013		2014	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
TOTAL	264	100.0	280	100.0	252	100.0	197	100
CALSTAR	135	51.0	163	58.0	145	58.0	108	55
REACH	124	47.0	114	41.0	103	41.0	84	43
CHP	4	1.5	3	1.0	4	1.0	5	2
Other	1	0.5	0	0	0	0	0	0

Source: EMS Agency based on data supplied by helicopter provider agencies.

Helicopter Transports by Destination²

Provider	2011		2012		2013		2014	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
TOTAL	263	100.0	280	100.0	252	100.0	197	100.0
John Muir Health	197	75.0	215	77.0	192	76.0	156	79
Children's	39	15.0	40	14.0	38	15.0	22	11
Other/Unknown	27	10.0	25	9.0	22	9.0	19	10

Source: EMS Agency based on data supplied by helicopter provider agencies.

² All of these flights originated from within Contra Costa County.

Helicopter Transports by Patient Assessment³

Provider	2011		2012		2013		2014	
	Pts	%	Pts	%	Pts.	%	Pts.	%
TOTAL	264	100.0	280	100.0	252	100.0	197	100.0
Trauma	236	89.0	266	95	233	92.0	182	92
Burn	20	8.0	6	2.0	10	4.0	5	3
Other	8	3.0	8	3.0	9	4.0	10	5
Unknown	0	0.0	0	0.0	0	0.0	0	0

Source: EMS Agency based on data supplied by helicopter provider agencies.

Helicopter to Trauma Center Transports by Age and Severity (Major Trauma Victim “MTV”)

Origin	2011		2012		2013		2014	
	Pts.	%	Pts.	%	Pts.	%	Pts.	%
TOTAL	236		266		233		197	
Adult	195	100.0	228	100.0	193	100.0	166	100.0
MTV (ISS > 15)	58	30.0	86	38.0	55	30.0	58	35.0
Non-MTV (ISS < 15)	137	70.0	139	62.0	135	69.0	91	55.0
Unknown					3	1.0	17	10.0
Pediatric	41	100.0	38	100.0	40	100.0	31	100.0
MTV (ISS > 15)	10	24.0	8	21.0	6	15.0	4	13.0
Non-MTV (ISS < 15)	31	76.0	30	79.0	32	80.0	18	58.0
Unknown					2	5.0	9	29.0

Source: EMS Agency based on data from the Trauma Registries at John Muir Walnut Creek, Children’s Hospital, Eden Medical Center and UC Davis Medical Center.

³ All of these flights originated from within Contra Costa County.

⁴ Definition of Major Trauma Victim (MTV) modified in 2009 to include only patients with Injury Severity Score (ISS) of greater than 15. Prior years’ data is compared based on new definition. Some outcomes were not available.

Base Hospital Contact Report - 2014

Base Hospital Activity Summary by Age Distribution

	2011		2012		2013		2014	
	#	%	#	%	#	%	#	%
Total Base Contacts	3,139		3,193		2992		2878	
Daily Average	8.6		8.7		8.2		7.9	
Adult Patients	2930	93%	2979	93%	2633	88%	2622	91%
Pediatric Patients (age < or = 14)	209	7%	214	7%	186	6%	138	5%
Unknown					173 ¹	6%	118 ²	4%

Source: EMS Agency based upon data provided by John Muir Health, Walnut Creek.

Base Hospital Activity Summary by Medical Condition

	2011		2012		2013		2014	
	#	%	#	%	#	%	#	%
Total Base Contacts	3,139		3,193		2,992		2878	
Trauma	2453	78%	2643	83%	2246	75%	2146	75%
Medical	622	20%	507	16%	605	20%	487	17%
Arrest	62	2%	43	1%	0*	0%	33	1%
Trauma Transfer							212	7%
Unknown	2	0%	0	0%	141	5%	0	0%

Source: EMS Agency based upon data provided by John Muir Health, Walnut Creek.

¹Personnel changes at Base Station, data entry not consistent.

²Switch to EPIC EMR

Contra Costa Trauma System Report - 2014

On-Scene Triage of Patients within Contra Costa Meeting Field Trauma Criteria

	2011	2012	2013	2014
TOTAL PATIENTS TRIAGED	2466	2667	2354	2146*
Transported to a trauma center	1215	1320	1145	1448*
John Muir Health, Walnut Creek	1030	1212	1058	1125
Children's Hospital, Oakland	117	87	74	50
Other trauma center	68	21	13	15
Transported to non-trauma center hospitals	1251	1347	1209	1313*
Contra Costa Regional Medical Center	76	98	80	76
Doctors San Pablo	153	130	99	55
John Muir Health - Concord	154	159	132	154
John Muir Health - Walnut Creek ⁴	234	251	195	370
Kaiser Antioch	111	114	132	125
Kaiser Richmond	73	90	71	87
Kaiser Walnut Creek	135	176	155	128
San Ramon Regional	29	51	42	28
Sutter Delta	228	209	161	186
Out-of-county	34	26	34	57
Unknown	24	41	108	47

Source: EMS Agency based on data from the John Muir Health, Walnut Creek Trauma Registry and Emergency Department Log. *Transition to EPIC Charting at John Muir Base.

Undertriage by Year

Type of Triage Error	2011	2012	2013	2014
TOTAL UNDERTRIAGES	52	43	53	44
Undertriage Rate ⁵	4.3	3.3	4.6	3.8
Undertriage % ⁶	4.2	3.2	4.4	3.6
Base Contact for Trauma Destination	16	16	14	17
Triaged by Field Personnel	36	27	39	27

Source: EMS Agency based on data from the John Muir Health, Walnut Creek Trauma Registry and Emergency Department Log. Note: Definition of Major Trauma Victim (MTV) modified in 2009 to include only patients with Injury Severity Score (ISS) of greater than 15. Prior years' data is compared based on new definition.

Trauma Center Time on Trauma By-Pass by Year

2011	2012	2013	2014
0.3%	0.7%	0.4%	0.8%

Source: EMS Agency based on data from the ReddiNet system.

⁴ These patients were triaged as not having major trauma but were transported to John Muir, Walnut Creek as the closest facility.

⁵ Undertriage Rate = number of under triages/number of patients triaged to trauma centers.

⁶ Undertriage Percent = number of under triages/number of patients triaged to receiving facilities.

Trauma Center - Activity Report 2014
All Trauma Patients Seen at the John Muir Trauma Center, Walnut Creek

	All Patients		Field Transports						Hospital Transfers	
			Total		From Contra Costa		From Another County			
	#	%	#	%	#	%	#	%	#	%
TOTAL PATIENTS	1526		1225		1125		100		301	
Adult Total	1524	99.9%	1223	99.8%	1123	99.8%	100	100%	301	100%
Pediatric Total	2	0.1%	2	0.2%	2	0.2%	0	0%	0	0%
Injury Type										
Blunt	1337	88%	1090	89%	995	89%	95	95%	247	82%
Penetrating	184	12%	130	11%	125	11%	5	5%	54	18%
Both	0	0%	0	0%	0	0%	0	0%	0	0%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
Mode of Arrival										
Air Ambulance	203	13%	172	14%	155	14%	17	17%	31	10%
Ground Ambulance	1283	84%	1014	83%	948	84%	66	66%	269	90%
Private Vehicle	38	2.5%	38	2.9%	21	1.5%	17	17%	0	0%
Other	1	0.5%	1	0.1%	1	0.5%	0	0%	0	0%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
County of Injury										
Contra Costa	1346	88%	1125	92%	1125	100%			221	73%
Solano	73	6%	51	4%			51	51%	22	7%
Alameda	23	2%	15	1%			15	15%	8	3%
Marin	7	1.5%	6	0.5%			6	6%	1	0.5%
Napa	1	0.5%	0	0%			0	0%	1	0.5%
Sonoma	0	0%	0	0%			0	0%	0	0%
Other	13	2%	6	0.5%			6	6%	7	2%
Unknown	0	0%	22	2%			22	22%	41	14%
Injury Severity										
ISS >15 (Major Trauma)	390	26%	289	24%	269	24%	20	20%	101	34%
ISS <15 (Not Major Trauma)	1125	74%	928	76%	848	76%	80	80%	197	66%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
ED Disposition										
Admitted	1129	74%	861	70%	792	70%	69	69%	268	89%
Expired	9	0.5%	8	0.5%	8	0.5%	0	0%	1	0.5%
Home	345	23%	326	27%	298	27%	28	28%	19	6%
Transfer	19	2%	19	2%	17	2%	2	2%	0	0%
Other	13	0.5%	11	0.5%	10	0.5%	1	1%	2	0.5%
Unknown	0	0%	0	0%	0	0%	0	0%	11	4%

Source: EMS Agency based on data from the John Muir Health, Walnut Creek Trauma Registry.

Trauma Center Activity Report

All Trauma Patients Seen at the John Muir Trauma Center, Walnut Creek by Year⁷

	2011	2012	2013	2014
All Patients	1483	1635	1538	1526
Adult	1471	1632	1536	1524
Pediatric	12	2	2	2
Injury Type				
Blunt	1221	1404	1350	1337
Penetrating	262	229	183	184
Unknown	0	2	0	0
Mode of Arrival				
Air Ambulance	316	301	283	203
Ground Ambulance	1144	1304	1220	1283
Private Vehicle	23	29	33	38
Other	0	0	1	1
Unknown	0	0	0	0
County of Injury				
Contra Costa	1178	1400	1293	1346
Solano	224	168	160	73
Alameda	29	21	33	23
Marin	7	5	12	7
Napa	6	4	2	1
Sonoma	4	1	1	0
Other	15	22	19	13
Unknown	20	14	0	0
Injury Severity				
ISS >15	404	414	383	390
ISS <15	1079	1219	1149	1125
Unknown	0	2	0	0
Major Trauma ⁸	27.2%	25.3%	25%	26%
Not Major Trauma	72.8%	74.7%	75%	74%
ED Disposition				
Admitted	1133	1182	1164	1129
Expired	24	19	11	9
Home	280	361	292	345
Transfer	11	21	14	19
Other	18	30	30	13
Unknown	17	22	0	0

⁷ Includes patients transported from field in Contra Costa, from field in other counties, and from hospitals within/outside of Contra Costa.

⁸ Based on retrospective review, a major trauma victim is defined as having an Injury Severity Score (ISS) >15. This criteria was modified in 2009 and prior years' data is compared utilizing new criteria.