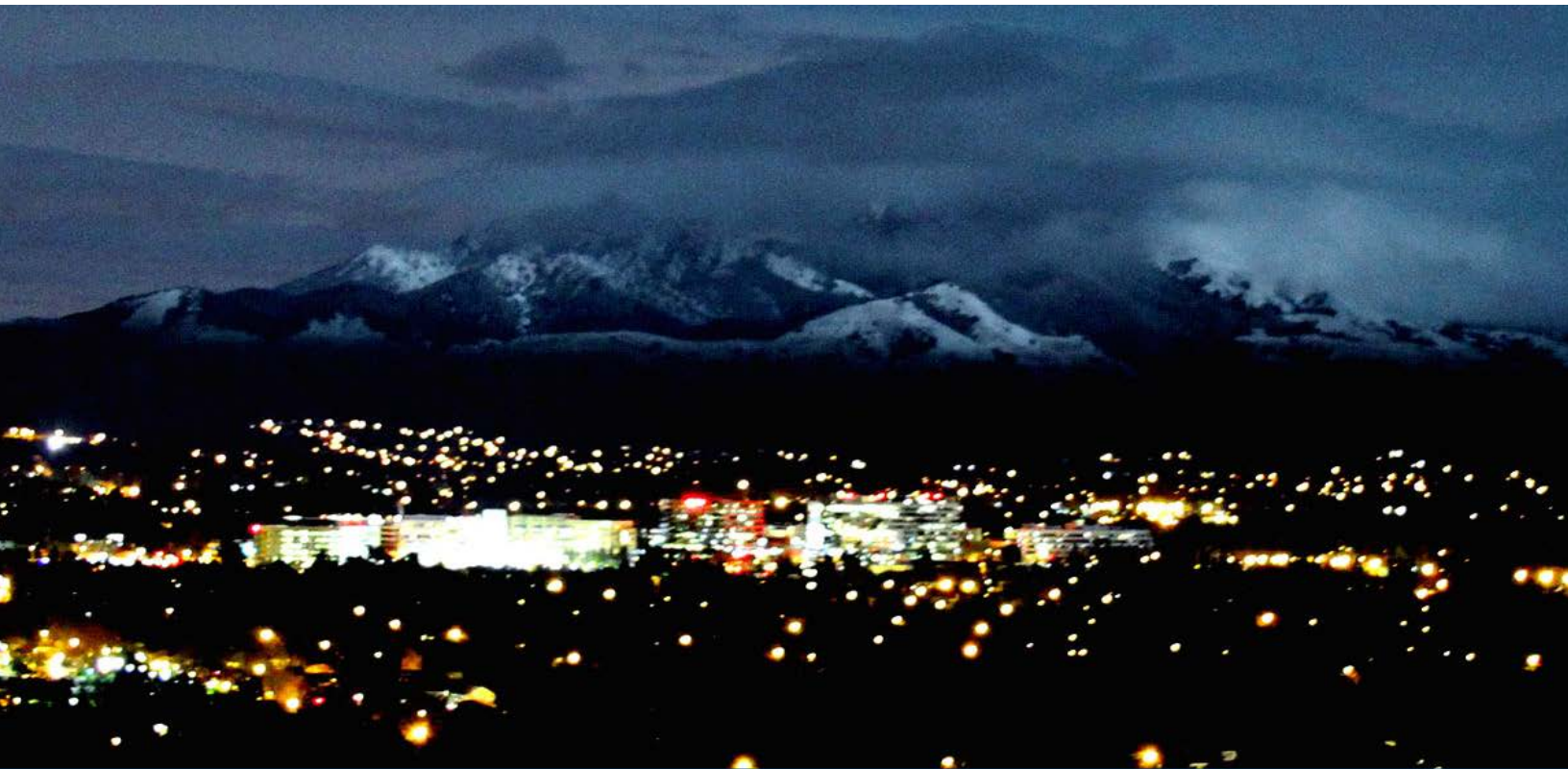




# EMERGENCY MEDICAL SERVICES



**2013**  
**CONTRA COSTA**  
EMS SYSTEM PERFORMANCE REPORT

# Message From the Director

This report represents a snapshot of Contra Costa County's Emergency Medical Services (EMS) system as it stood in 2013. While 2014 has brought new challenges, this report contains the best available data through 2013 regarding the EMS system in our county.

EMS is a coordinated, intricate network of public-private partnerships that provide round-the-clock emergency medical services throughout the county, every day of the year. Even during challenging times, the Contra Costa EMS system has adapted and persevered to ensure the continuous delivery of safe and reliable patient care.

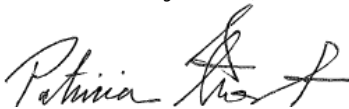
Thousands of dedicated people make it happen, from volunteers to highly trained career professionals. Your Contra Costa EMS team includes:

- ▶ Bystanders who have taken the time to learn CPR and how to work an automated emergency defibrillator (AED)
- ▶ Emergency dispatchers, the front line of our emergency medical response, who coach 911 callers to save lives until help arrives
- ▶ Law enforcement first responders, who carry AEDs and ensure the safety of medical personnel
- ▶ Emergency medical technicians, paramedics and firefighters, who form the cornerstone of pre-hospital emergency medical care
- ▶ Emergency Department physicians, nurses and specialists, who deliver timely, definitive care at hospitals across the county
- ▶ Educators, administrators, and county health services leadership, who work to support the EMS system

Whether career professionals or volunteers, Contra Costa EMS System personnel engage in thousands of hours of specialized training and continuing education to enhance their lifesaving skills. More than 85,000 EMS responses in Contra Costa County were handled by EMS professionals in 2013 alone, a testament to their round-the-clock commitment to emergency care.

We encourage everyone to take a moment to read this report and learn about the important contributions that our EMS community provides to the citizens of Contra Costa County.

For up-to-date information about our EMS system, including our EMS System Modernization Report, upcoming ambulance procurement, and community hospitals in our EMS System, visit [cccems.org](http://cccems.org).



Pat Frost, Director  
Contra Costa County  
Emergency Medical Services Agency

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# History

Contra Costa's coordinated Emergency Medical Services (EMS) system began in 1968, when the Board of Supervisors appointed Contra Costa Health Services to oversee EMS within the county and established the Emergency Medical Care Committee as the county's advisory stakeholder committee to the EMS agency. The first EMS System Plan was established in 1975.

## MISSION STATEMENT

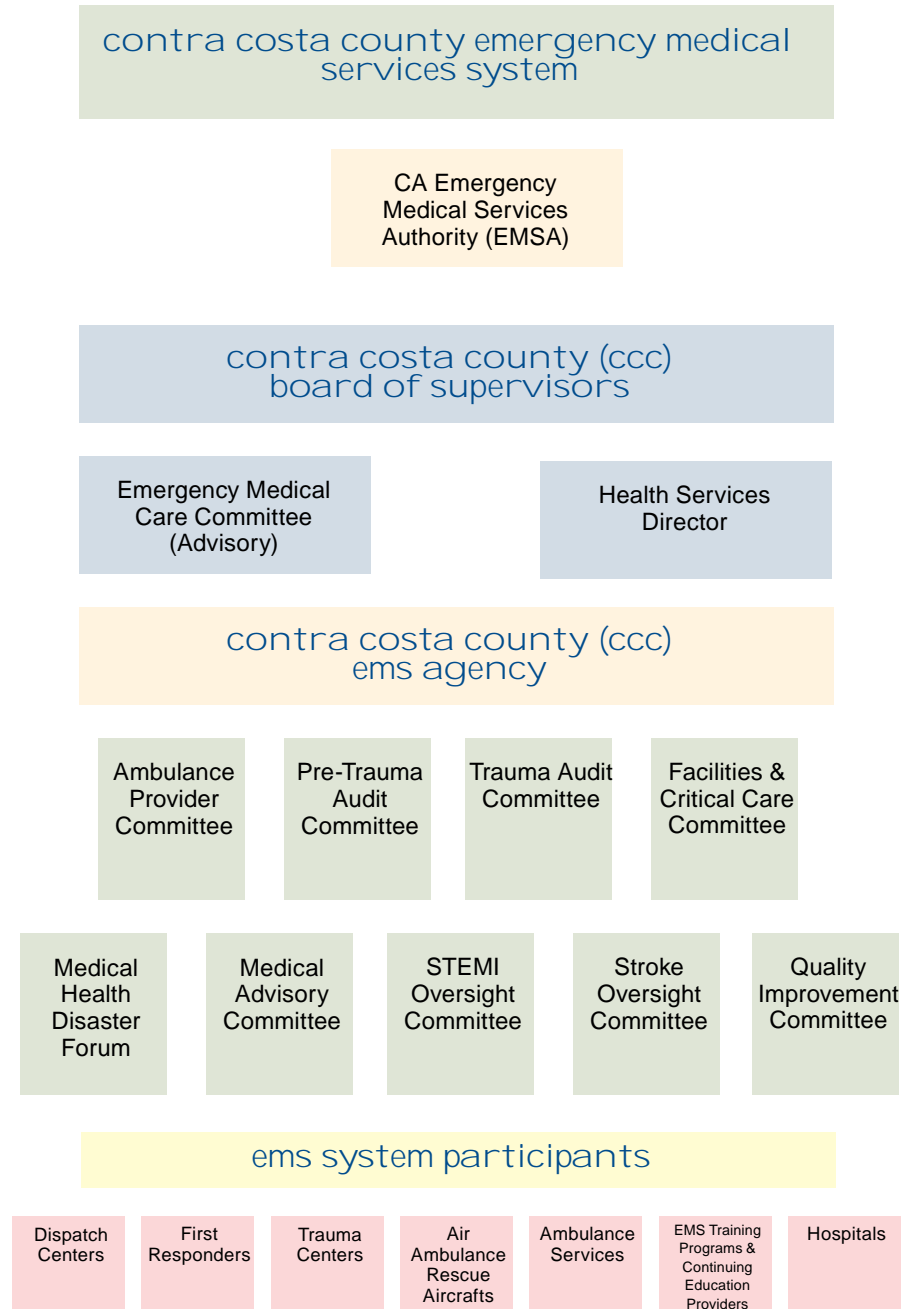
The mission of Contra Costa County EMS is to ensure that quality emergency medical services are available for all people in Contra Costa County, and that emergency medical care is provided in a coordinated, professional and timely manner.

## CORE VALUES

- Monitor and ensure patient safety at all times
- Inspire and emulate professionalism
- Provide services with a high level of integrity
- Assure a reliable and high-quality emergency medical response
- Support and facilitate emergency and disaster preparedness
- Integrate with healthcare systems to improve patient outcomes
- Promote and support community resiliency



# Contra Costa EMS Organization



# EMS Timeline: Annual Accomplishments

## 2007

- ▶ A new multi-casualty plan was implemented countywide.
- ▶ Kaiser Permanente's Antioch Medical Center opened.
- ▶ Implemented an electronic patient care record for use by fire paramedic units.
- ▶ 30th anniversary of paramedic services in Contra Costa County.

## 2008

- ▶ Launched a STEMI system, including a 12-lead EKG program in ambulances and four receiving hospitals: Doctors Medical Center in San Pablo, John Muir Health's Walnut Creek and Concord campuses, and San Ramon Regional Medical Center. (STEMI is an acronym meaning "ST segment elevation myocardial infarction," a type of heart attack.)

## 2009

- ▶ Developed an online portal for access to pre-hospital training curriculum.
- ▶ Sutter Delta Medical Center becomes the fifth receiving hospital for Contra Costa's STEMI system.
- ▶ Implemented Contra Costa County Medical Reserve Corps.
- ▶ Chest Pain Centers at John Muir Health's Concord and Walnut Creek campuses received accreditation in percutaneous coronary intervention (PCI).

## 2010

- ▶ Stroke System Stakeholder Advisory Group formed.
- ▶ East Contra Costa Fire Protection District formed.
- ▶ Implemented EMS Twitter feed.
- ▶ Developed 911 interfacility emergency response dispatch and pre-hospital protocols.
- ▶ Drafted the first countywide pediatric and neonatal disaster and medical surge toolkit.
- ▶ Was awarded a \$30,000 CEMSIS trauma grant to support statewide data sharing.
- ▶ Initiated a paramedic fire agency contract compliance process.



# EMS Timeline: Annual Accomplishments

- ▶ Implemented the American Heart Association's HeartSafe Community program locally.

## 2011

- ▶ New EMS website launched.
- ▶ El Cerrito and all cities in the San Ramon Valley became HeartSafe Communities.
- ▶ Board of Supervisors approves Stroke System Program.
- ▶ John Muir Medical Centers in Concord and Walnut Creek, Kaiser Permanente Medical Centers in Walnut Creek, Antioch and Richmond, Doctors Medical Center in San Pablo and San Ramon Regional Medical Center are designated Primary Stroke Receiving Centers.
- ▶ Acquired a Disaster Mobile Support Unit for county and regional response.
- ▶ Implemented a 12-lead transmission program with five STEMI centers.
- ▶ Adopted Institute of Healthcare Improvement (IHI) Certificate of Quality, Patient Safety and Leadership core curriculum for EMS personnel.
- ▶ Implemented Continuous Quality Improvement Initiatives on Pediatric Medication Safety and Bariatric Resource Awareness.

## 2012

- ▶ Launched a comprehensive primary stroke system.
- ▶ Kensington designated a HeartSafe Community.
- ▶ Participated in the medical and public health response to a fire at the Chevron Richmond Oil Refinery that affected 15,213 patients.
- ▶ Published a [white paper](#), "The Importance of Fire-EMS First Medical Response."
- ▶ Implemented pre-hospital high-performance resuscitation protocols.
- ▶ Sponsored a "Data Sanity" conference.
- ▶ Provided matching funds for a FEMA Assistance to Firefighters Grant (AFG) to acquire new cardiac monitors.
- ▶ Co-sponsored the first California Neonatal/Pediatric Disaster Coalition Conference.
- ▶ Established ambulance provider quarterly training and meetings.

# EMS Timeline: Annual Accomplishments

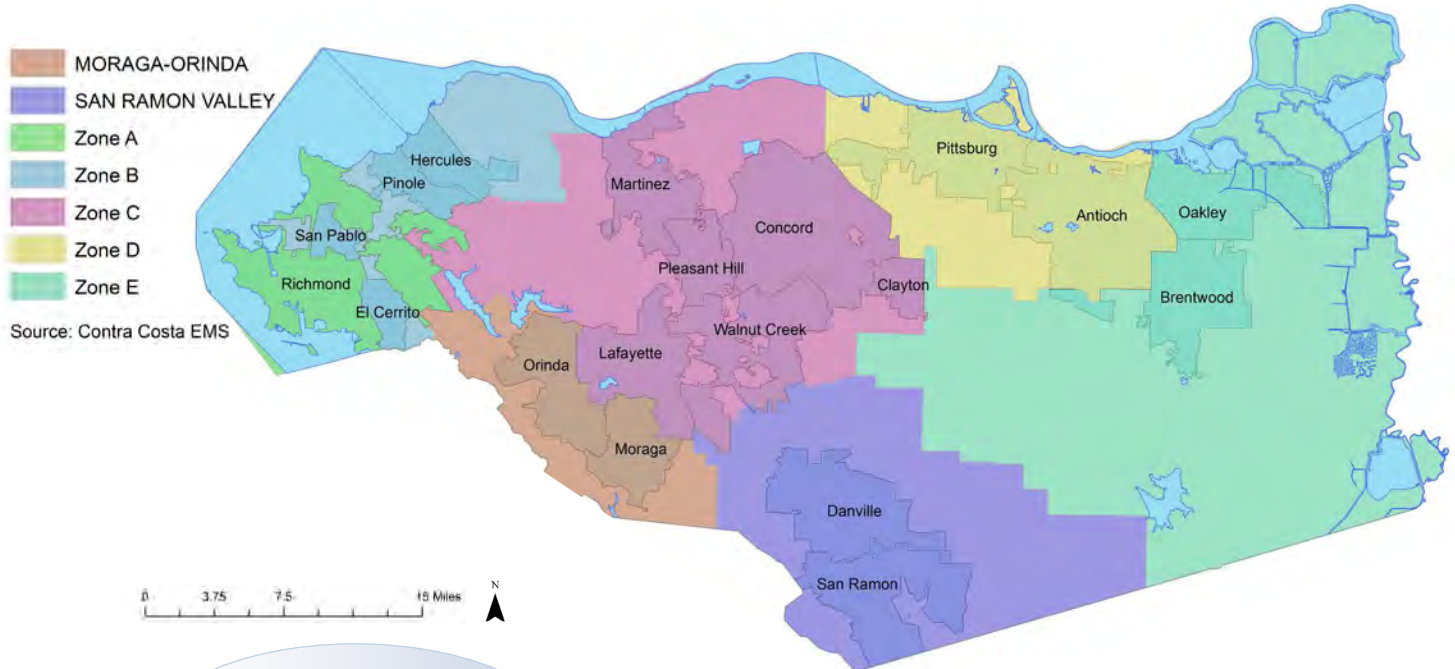
## 2013

- ▶ All county Advanced Life Support (ALS) ambulance providers began transmitting real-time 12-lead information to hospitals.
- ▶ Began an EMS System Modernization Study engaging more than 130 stakeholders.
- ▶ Emergency radio communication became accessible to all county ambulance providers, community clinics and long-term care facilities.
- ▶ Received an Urban Areas Security Initiative grant allowing the East Bay Regional Communications System to purchase disaster communication equipment for hospitals.
- ▶ Presented at an Institute of Medicine conference in Washington DC about supporting local, regional and statewide disaster preparedness for children.
- ▶ Provided mutual aid in response to the Asiana Airlines crash at San Francisco International Airport on July 6.
- ▶ California extended the sunset of the Maddy Emergency Medical Services Fund, which provides Contra Costa with \$2.2 million annually to help cover uncompensated emergency care, pediatric trauma and EMS programs.
- ▶ Adopted a Spinal Motion Restriction guideline.
- ▶ Contra Costa Regional Medical Center's Health Information Exchange began using Electronic Patient Information Charts (EPIC) to track EMS patient care outcomes.
- ▶ The Cardiac Arrest Registry to Enhance Survival (CARES) showed Contra Costa County's Utstein survival rate was 25.6%, and Utstein survival when a bystander performs CPR was 35.5%.



# Population Centers

## CONTRA COSTA COUNTY AMBULANCE ZONES



The industry standard for 911 ambulance response is 12 minutes.

Contra Costa County is located in the San Francisco Bay Area of Northern California, northeast of San Francisco and southwest of Sacramento. The county covers roughly 716 square miles, including 19 cities and numerous unincorporated communities. The county has seven emergency response zones for ambulance-based paramedic service. Each response zone is geographically and demographically diverse, and average response times reported include urban, suburban and rural responses.

# Emergency Ambulance Response

## AMBULANCE RESPONSE PERFORMANCE BY EMERGENCY RESPONSE ZONE (ERZ) AND SERVICE PROVIDER



ERZ Zone/Provider	Area Served	2013 Average Code 3 Ambulance Response Time in minutes <sup>1</sup>	2013 Compliance % <sup>2</sup>
ERZ A/AMR	City of Richmond	6:16	96.09%
ERZ B/AMR	West County	7:46	96.09%
ERZ C/AMR	Central County	8:32	94.18%
ERZ D/AMR	Antioch/Bay Point/ Pittsburg	8:36	93.68%
ERZ E/AMR	East County	9:52	91.43%
Moraga-Orinda ERZ <sup>3</sup>	Moraga Orinda Fire Protection District	6:01	95.43%
San Ramon ERZ <sup>3</sup>	San Ramon Valley Fire Protection District	8:48	98.10%

1 Code 3 (Priority 1) Response: Ambulance dispatched with "lights and sirens."

2 The percentage of calls in which the ambulance provider met response-time goals, including non-urban responses.

3 A fire protection district provides emergency ambulance service in this zone.

# EMS System Response Requirements

## ENSURING QUALITY EMS DELIVERY

The county awards exclusive ambulance operating contracts through a competitive process for all Emergency Response Zones (ERZs), with the exception of that served by the Moraga Orinda Fire Protection District, which has a non-competitive ERZ. Emergency ambulance service delivery contracts require compliance with standards for response time, staffing, training and equipment. Providers must offer reliable programs to ensure the delivery of safe and competent patient care.

The quality of EMS delivery is frequently measured by response time, although it has been well established that factors such as early recognition of a serious condition, calling 911 early, dispatch-aided medical instruction, public access to defibrillation devices, bystander CPR capability and rapid transport to the appropriate hospital are also important. Patients with critical conditions make up 7% to 13% of Contra Costa's total 911 calls.

Response time requirements are established for all emergency ambulance providers. American Medical Response (AMR) was awarded the current contract in 2005 and delivers approximately 90% of the emergency ambulance service in the county. The EMS agency is the Board of Supervisors' designated contract manager and reviews AMR's performance monthly. Monthly performance reports are posted at [cchealth.org/ems/amr.php](http://cchealth.org/ems/amr.php). Performance monitoring for independent fire districts providing EMS ambulance services is a responsibility shared by those districts and the EMS agency.

# EMS System Response Requirements

AMBULANCE EMERGENCY RESPONSE ZONE (ERZ)		RESPONSE TIME REQUIREMENTS BY MINUTES AND RESPONSE PERCENT <sup>5</sup>			
ERZ Provider	Geographic Area	Urban	Suburban	Rural	Response %
ERZ A (AMR)	City of Richmond	10:00	NA	20:00	95%
ERZ B (AMR)	West County (non-Richmond)	11:45	NA	20:00	90%
ERZ C (AMR)	Central County	11:45	NA	20:00	90%
ERZ D (AMR)	Antioch, Bay Point, Pittsburg area	11:45	NA	20:00	90%
ERZ E (AMR)	East Contra Costa County	11:45	16:45 <sup>(6)</sup>	20:00	90%
ERZ Moraga-Orinda	Moraga Orinda Fire Protection District <sup>7</sup>	11:59	NA	20:00	90%
ERZ San Ramon	San Ramon Valley Fire Protection District <sup>7</sup>	10:00	NA	20:00	95%

5 Current ambulance response performance requirements for the contracted ambulance provider

6 Includes Bethel Island and Discovery Bay

7 A fire protection district provides emergency ambulance service in this zone. A fire district board is the local authority for establishing response requirements in this service area.

Source: Contra Costa EMS Agency Verified Provider Dispatch Data

# Population Use of EMS Services

In 2012, Contra Costa County had an estimated population of 1,029,703, making it the ninth most populous county in California. Richmond, Concord and Antioch were the three largest cities in the county, each home to more than 100,000 residents. Between 2000 and 2012, the county gained 76,399 residents. EMS utilization over the last three years is displayed below and compared to EMS delivery statewide.

CONTRA COSTA COUNTY EMS SERVICE UTILIZATION BY POPULATION					
YEAR	2010	2011	2012	2013	California 2013
Population <sup>8</sup>	1,049,025	1,066,096	1,078,257*	1,094,205**	37,253,959**
EMS responses <sup>9</sup>	78,580	76,266	86,134	85,033	2,611,209 <sup>10</sup>
EMS Responses/ 1,000 population	75	72	84	78	77
Average EMS responses/day	215	209	236	234	224
Square miles EMS serves	716***	716	716	716	155779***
Population density	1,465***	1,489	1,438	1,465***	239***
Responses per square mile	110	107	120	119	78
Response per person ratio	0.07	0.07	0.08	0.08	0.08*
Median Household Income	\$78,385	\$78,385	\$79,135	\$78,187*	\$61,400
Population below the federal poverty level	9.00%	9.90%	9.90%	10.2%*	15.3%*

\*2012 estimate  
\*\*2013 estimate  
\*\*\*2010 data

8 Source: U.S. Census Bureau

9 Total includes all responses, including those that did not result in patient transport

10 Total based on aggregate data from county and regional EMS systems

# Contra Costa County Quick Population Facts

Population, 2010	1,049,025
Population, 2013 estimate	1,094,205
Population change as a percentage, April 1, 2010 to July 1, 2013	4.3%
People younger than 5 as a percentage, 2012	6.1%
People 18 or younger as a percentage, 2012	24.1%
People 65 and older as a percentage, 2012	13.3%
Females as a percentage, 2012	51.2%
White people as a percentage, 2012	68.3%
African-American people as a percentage, 2012	9.6%
Native American people as a percentage, 2012	1.0%
Asian people as a percentage, 2012	15.6%
Native Hawaiian or Pacific Islander people as a percentage, 2012	0.6%
People reporting two or more races, percentage, 2012	4.9%
People of Hispanic or Latino origin, percentage, 2012	24.8%
Non-Hispanic white people, percentage, 2012	46.8%

## GOVERNANCE

The County of Contra Costa was incorporated in 1850 as one of the original 27 counties of California, with Martinez as the county seat. Contra Costa County is governed by a board of five elected supervisors, each representing a geographical district. Under the board's guidance, county government manages 35 divisions of service for the community. The division responsible for the statutory coordination, oversight and delivery of emergency medical services is the Contra Costa EMS Agency.

# County Service Area EM-1 Special Project Funding

County Service Area EM-1 (Measure H) parcel levies have provided limited but important support for the provision and quality of emergency medical services for the residents of Contra Costa County since 1988. In 2012, Measure H assessments generated approximately \$4.6 million. Currently, fire districts receive 60% of that revenue for first-responder EMS programs. The remaining funds support EMS system programs (17%) and multi-casualty and medical mutual aid dispatch from the Contra Costa Sheriff's Office (5%), with the remainder allocated for other services. Priorities for Measure H funding include:

- ▶ Paramedic first-responder and ambulance services
- ▶ Countywide first-responder and public-access defibrillation programs
- ▶ Fire equipment and training for multi-casualty and disaster response
- ▶ Emergency and disaster radio systems
- ▶ Fire and ambulance dispatch technology enhancements
- ▶ Electronic patient care record system support for fire first responders
- ▶ Medical and quality oversight of paramedic personnel
- ▶ EMS "systems of care" programs (Trauma, STEMI, Stroke and Cardiac Arrest)
- ▶ Pre-hospital equipment and training to support safe and competent care

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For more information about this program  
visit <http://cchealth.org/ems/pdf/Measure-H-Guidelines.pdf>

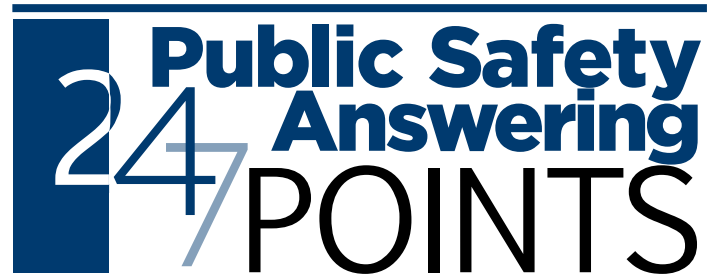


# County Service Area EM-1 Special Project Funding

<b>Major Special Project Funding for EMS System Enhancements 2004-2013</b>		
<b>Project</b>	<b>Purpose</b>	<b>Amount</b>
Meti Mobile Pre-hospital Simulation Program	Fire-EMS simulation training equipment and materials	\$566,662
HeartSafe Communities	Public CPR and AED program	\$46,795
Countywide fire dispatch and communication equipment	Fire radio and dispatch communications	\$993,174
Cardiac monitors, AEDs, automated CPR devices, service and equipment	Fire EMS advanced life support equipment	\$618,149
Pulse Point	Fire dispatch software integration	\$19,741
Knox MedVault Drug Lockers	Fire narcotic inventory control system	\$166,657
ReddiNet	EMS-disaster medical/health communication platform	\$206,922
Institute for Healthcare Improvement (IHI) Open School online EMS and fire-based quality improvement training (50+ scholarships awarded)	Standardized quality improvement training for EMS personnel	\$3,000
Oxygen fill station	Oxygen resupply station for fire agencies	\$17,600
ProQA Dispatch Software	Quality system software for Richmond medical dispatch	\$40,000
Grant match for regional Assistance to Firefighters Grant	Fire 12-lead cardiac monitors with transmission capability with prepaid 5-year service agreements	\$810,000
Fire training grant	Urban search and rescue fire emergency and disaster response	\$182,000
Triage tags	Fire MCI equipment	\$10,314
CAD software and service	Fire emergency medical dispatch software and support	\$117,109
FirstWatch	EMS situation status and performance monitoring data system	\$336,282
EMS system studies and consults	RFP support, EMS system studies, EMS system impact studies	\$250,300
CPR Feedback Mannequins	Fire EMS Simulator Training Equipment and materials	\$27,846
Spinal Motion Restriction Equipment	Updated equipment for fire EMS providers	\$93,576
<b>TOTAL</b>	<b>All purchases</b>	<b>\$5,411,053</b>

# Emergency System Resources

Contra Costa's EMS system is composed of several partners working together to bring the highest level of patient care to our constituents.



## Public Safety Answering Points (PSAPs) and Dispatch Centers

A PSAP answers emergency calls for police, firefighting and ambulance services.

### PSAPs

Antioch Police Department  
California Highway Patrol  
Concord Police Department  
Contra Costa Sheriff's Office  
East Bay Regional Park District Police  
Martinez Police Department  
Pinole Police Department  
Pleasant Hill Police Department  
Richmond Police Department  
Walnut Creek Police Department

### Fire and Medical Dispatch Centers

Contra Costa County Fire Protection District  
Richmond Police Department  
San Ramon Valley Fire Protection District  
Contra Costa Sheriff's Office (multi-casualty coordination)

### Ambulance Dispatch Centers

American Medical Response  
San Ramon Valley Fire Protection District  
Contra Costa County Fire Protection District (Moraga-Orinda only)

# Emergency System Resources

## **County Fire Protection Districts**

Contra Costa County Fire Protection District  
Crockett-Carquinez Fire Protection District

## **Municipal Fire Departments**

El Cerrito Fire Department  
Pinole Fire Department  
Richmond Fire Department

## **Independent Fire Protection Districts**

East Contra Costa Fire Protection District  
Kensington Fire Protection District  
(served by El Cerrito Fire Department)  
Moraga-Orinda Fire Protection District  
Rodeo-Hercules Fire Protection District  
San Ramon Valley Fire Protection District

## **EMS Paramedic Service Providers**

American Medical Response  
California Highway Patrol (helicopter unit)  
Concord Police Department  
(tactical paramedic program)  
Contra Costa County Fire Protection District  
El Cerrito Fire Department  
Moraga-Orinda Fire Protection District  
Pinole Fire Department  
Rodeo-Hercules Fire Protection District  
San Ramon Valley Fire Protection District

## **Public Safety Defibrillation Programs**

Antioch Police Department  
Brentwood Police Department  
California State Parks (Mt. Diablo)  
Concord Police Department  
Contra Costa Sheriff's Office  
Clayton Police Department  
Crockett-Carquinez Fire Protection District  
Danville Police Department  
East Contra Costa Fire Protection District  
El Cerrito Police Department  
Hercules Police Department  
Kensington Police Department  
Lafayette Police Department  
Moraga Police Department  
Orinda Police Department  
Pittsburg Police Department  
Richmond Fire Department  
Richmond Police Department  
San Ramon Police Department  
Non-emergency ambulance providers

# Emergency System Resources

EMS Personnel Certified by Contra Costa County			
	2011	2012	2013
Dispatchers	52	52	52
Emergency Medical Technicians (EMTs)	1,501	1,451	1,149
Paramedics	459	461	433
Mobile Intensive Care Nurses (MICNs)	65	61	51
Public Safety Answering Points (PSAPs)	10	10	10
Fire and EMS Dispatch Centers	3	3	3
911 Ambulance Providers	3	3	3
Available Emergency Ambulance Units per day	20-54	22-55	24-41
Non-Emergency Ambulance Units	76	85	91

Hospitals in Contra Costa County			
Hospitals	2011	2012	2013
Base Hospital	1	1	1
911 Receiving Hospital	9	9	9

# EMS Designated 911 Ambulance Specialty Care Receiving Centers

	STEMI	Helipad	Labor & Delivery	Stroke	Trauma	Behavioral
Contra Costa Regional Medical Center & Health Centers			X			X
Doctors Medical Center in San Pablo	X	X		X		
Sutter Delta Medical Center in Antioch	X	X	X			
San Ramon Regional Medical Center	X		X	X		
John Muir Medical Center in Concord	X			X		
Kaiser Permanente Medical Center in Walnut Creek	X		X	X		
Kaiser Permanente Medical Center in Richmond				X		
Kaiser Permanente Medical Center in Antioch			X	X		
John Muir Medical Center in Walnut Creek	X	X	X	X	X	

# EMS System Utilization

## TOTAL EMS RESPONSES

Responses By Year	2008	2009	2010	2011	2012	2013
AMR	67,585	70,914	73,304	74,500	78,589	77,327
SRVFD	*NR	5,021	3,341	3,407	5,447	5,704
MOFD	1,888	1,937	1,935	1,926	2,098	2,003
Total	69,473	77,872	78,580	79,833	86,134	85,034

## TOTAL EMS TRANSPORTS

Transports By Year	2008	2009	2010	2011	2012	2013
American Medical Response	53,540	53,932	55,377	56,853	59,997	58,911
San Ramon Valley Fire Protection District	*NR	3,106	2,843	3,307	3,216	3,926
Moraga-Orinda Fire Protection District	1,236	1,254	1,318	1,230	1,314	1,296
Totals	54,692	58,292	59,534	61,390	64,527	64,133

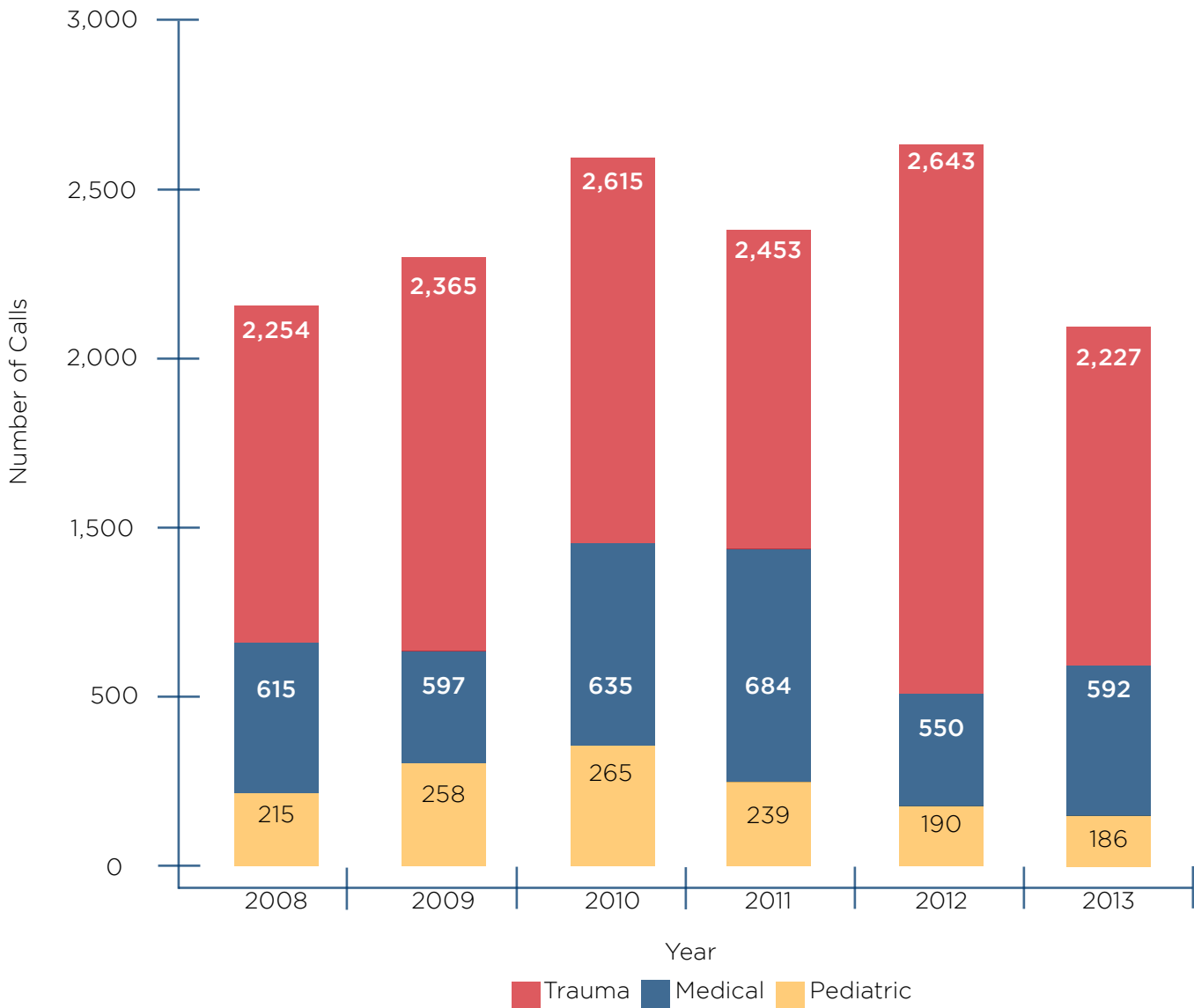
\*NR = not reported

EMS transport totals include transports for both life-threatening and non-threatening conditions.

In Contra Costa County, emergency transport for non-life threatening conditions made up 87% to 93% of all calls for transport.

# EMS and Hospitals Working Together

BASE HOSPITAL CALL VOLUME



Base hospitals provide medical consultation to EMS personnel in the field when they encounter patients with conditions outside of standardized EMS protocols, or in situations that require real-time medical consultation. John Muir Medical Center in Walnut Creek serves as the base hospital for Contra Costa County.



# Cardiac Arrest Program

Contra Costa County participates in a national cardiac arrest survival registry program, which allows for comparative benchmarking and improvement in cardiac arrest emergency care. Through our partnership with the Cardiac Arrest Registry to Enhance Survival (CARES), we collect uniform and reliable outcome information, and have made significant changes to enhance the delivery of CPR by bystanders and improve pre-hospital cardiac arrest care in our communities.

We track our progress using the Utstein survival measure, a standardized cardiac arrest reporting tool introduced in 1991. The measure is used nationally by EMS systems to set benchmarks and compare results.

The tables below compare the percentage of Contra Costa cardiac arrest patients who survived to hospital discharge after receiving optimal (Utstein) care and the percentage of all cardiac arrest patients who survived to hospital discharge.

The tables also show the percentage of patients who receive CPR from bystanders during cardiac arrest.

## CARDIAC ARREST SURVIVAL

Cardiac patients who received care that met CARES and Utstein Uniform Reporting Guidelines were more likely to survive to hospital discharge than patients who did not.

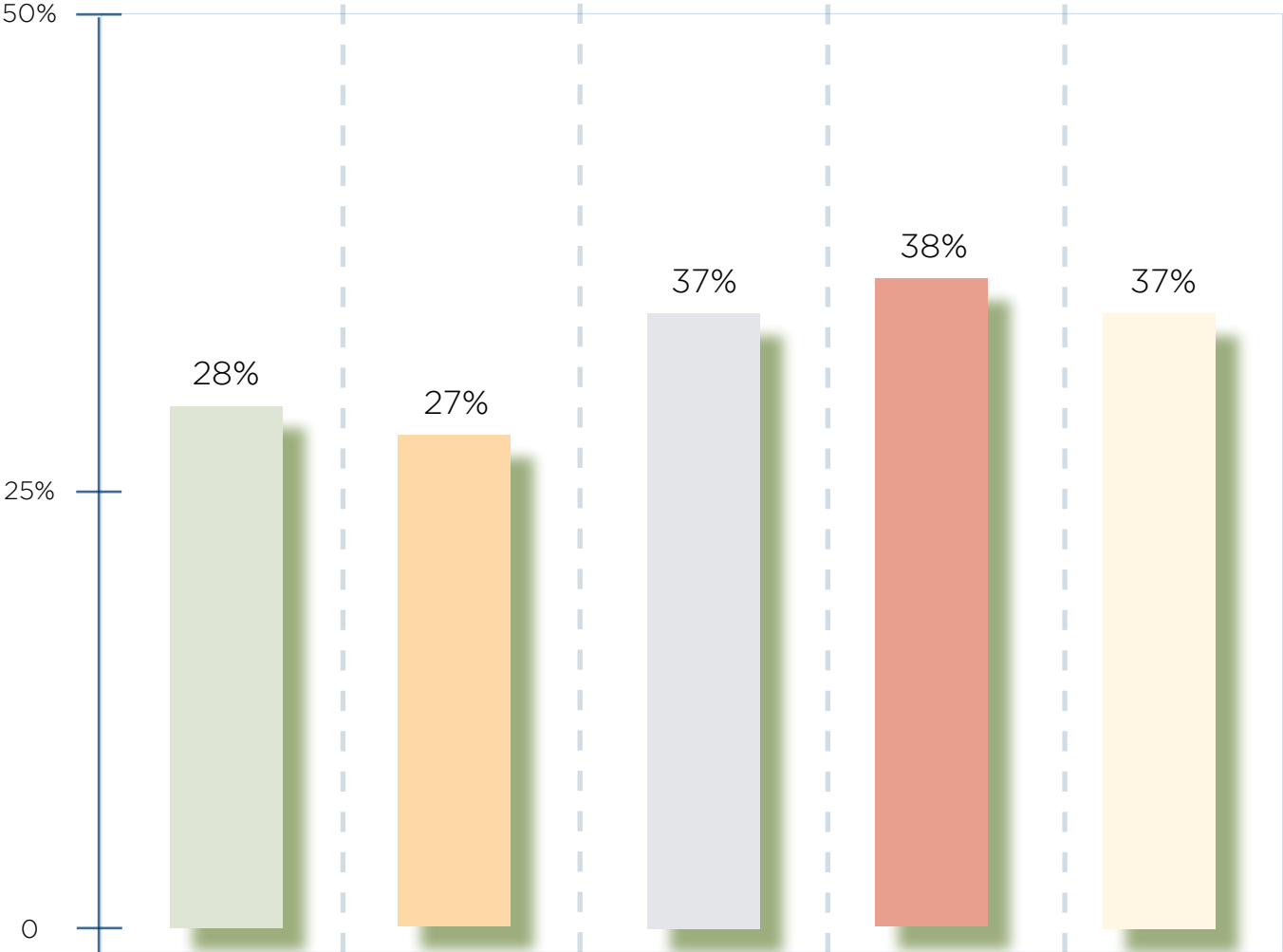
<b>Survival to Hospital Discharge</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Overall survival	9%	10%	12%	11%	8.6%
Survival when Utstein Survival benchmarks were met	33%	22%	36%	31%	36%

For more information about this program visit <http://cchealth.org/ems/cardiac-arrest.php>

# Bystanders Save Lives

Data show an increase in bystanders initiating CPR on someone entering cardiac arrest before emergency medical responders arrive. The CARES national benchmark for this kind of bystander interaction is 38% of all cardiac arrest cases.

Bystanders Initiating CPR				
2009	2010	2011	2012	2013
28%	27%	37%	38%	37%



# STEMI System

Cardiovascular disease is the leading cause of death in the United States. Each year, approximately 250,000 people experience the most deadly type of heart attack, ST Elevation Myocardial Infarction (STEMI). Patients suffering from STEMI have the best chance for survival when they receive rapid assessment and transport to a hospital that is a designated STEMI Receiving Center. These hospitals have specialized equipment and personnel to treat these deadly heart attacks.

Planning for the Contra Costa County STEMI System began in 2008. The first STEMI centers began receiving patients in January 2009. The system supports rapid field identification and pre-hospital management by paramedics, early notification of cardiac intervention teams and rapid transport to designated STEMI Receiving Centers. Paramedics use field transmission of 12-Lead ECGs and “STEMI Alerts” to provide the hospital with advance notification of patient arrival. This early notification allows the hospital to assemble the necessary resources to immediately treat the patient upon arrival.

As of 2013, there were six STEMI Receiving Centers in Contra Costa County: San Ramon Regional Medical Center, John Muir Medical Centers in Concord and Walnut Creek, Sutter Delta Medical Center in Antioch, Kaiser Permanente Medical Center in Walnut Creek and Doctors Medical Center in San Pablo. Contra Costa hospitals that do not provide STEMI services work closely with Receiving Centers to facilitate rapid treatment and transfer of any STEMI patients who arrive at their emergency departments.

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For more information about  
this program visit  
<http://cchealth.org/ems/stemi.php>

# STEMI System

The goal for the patient who is having a STEMI is to receive a procedure called Percutaneous Cardiac Intervention (intervention) that quickly restores blood flow to the heart.

The STEMI System evaluates emergency responses based on how quickly specific steps of care are followed, including important clinical interventions, such as 12-lead ECG acquisition and aspirin administered by prehospital providers. STEMI system performance is based on standards developed by the American College of Cardiology, the American Heart Association and the California Department of Public Health.

## Performance Standards

- ▶ Scene time—The time from arrival at the scene to the departure from the scene should be 15 minutes or less.
- ▶ First medical contact to Intervention—The time the patient is first seen by medical (or prehospital) personnel to the time they receive intervention should be 90 minutes or less.
- ▶ 911 Call to Intervention—The total time from the first 911 call to Intervention should be 120 minutes or less.

## CONTRA COSTA COUNTY STEMI SYSTEM PERFORMANCE MEASURES

Time Interval (minutes)	2010	2011	2012	2013
Prehospital Scene Time	14	12	12	11
911 Call to Intervention	94	88	83	81
First Medical Contact to Intervention	88	79	78	80
Hospital Arrival to Intervention	59	54	55	54

# STEMI System

## CONTRA COSTA COUNTY PREHOSPITAL PERFORMANCE MEASURES

Percentage of STEMI patients	2010	2011	2012	2013
Aspirin administered or noted as not indicated for the patient's condition	90%	75%	92%	90%
12-lead ECG acquired on STEMI patients	99%	100%	97%	98%
Patients identified as having a STEMI and transported to STEMI Receiving Center	99%	100%	100%	100%
Intervention in less than 90 minutes of 12-Lead ECG	76%	75%	85%	81%

The Contra Costa County STEMI system has consistently met or exceeded national and local benchmarks and performance measures for the last four years. In 2013, Contra Costa County STEMI system received Bronze Level recognition from the American Heart Association's Mission Lifeline Program.

The Mission Lifeline Program recognizes Systems of Care that meet the following performance measures: First medical contact to intervention in less than 90 minutes 75% of the time, and 12-Lead ECGs obtained on patients having chest pain 75% of the time.



# Stroke System

The Contra Costa County Stroke System of Care facilitates rapid assessment and transport of patients by paramedics to a designated Primary Stroke Center, enabling patients to quickly receive life-saving treatment and prevent permanent impairment.

All participating hospitals are required to be certified as Primary Stroke Receiving Centers. This certification recognizes that a hospital has achieved a high level of compliance with national standards in stroke care, and is able to meet the unique and specialized needs of stroke patients.

Paramedics are trained to evaluate patients with the Cincinnati Stroke Scale and provide early notification to hospital staff that a potential stroke patient is on their way, so that resources can be mobilized to provide immediate treatment upon arrival.

- ▶ Contra Costa County had approximately 714 stroke system activations in 2013
- ▶ Stroke is the third-leading cause of death nationally, and the leading cause of permanent disability
- ▶ The primary objective of a stroke system is to coordinate care between the emergency medical system and hospitals so that patients possibly suffering from stroke receive care within 3 to 4 1/2 hours of their first symptoms

Contra Costa County designated seven Primary Stroke Receiving Centers in 2012: San Ramon Regional Medical Center, John Muir Medical Centers in Walnut Creek and Concord, Kaiser Permanente Medical Centers in Antioch, Richmond and Walnut Creek, and Doctors Medical Center in San Pablo. Through the Contra Costa Stroke System, these facilities participate in the California Stroke Registry (CSR), a statewide stroke database designed to promote improvement in acute stroke treatment. Through the CSR, participants can evaluate specific measurements of quality of care, such as time to stroke intervention.

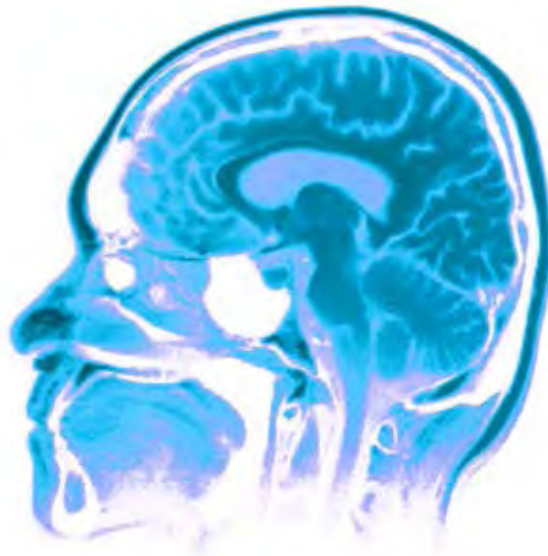
For more information about this program visit <http://cchealth.org/ems/stroke.php>.

# Stroke System

Contra Costa EMS participates in the development and refinement of state EMS stroke system performance measures, including national EMS benchmarks such as on-scene time and documentation of pre-arrival notification. These data are compiled using pre-hospital EMS transport provider documentation that has been stripped of patient identifiers. Examples include:

- ▶ Scene time intervals are reviewed monthly. The national benchmark for on-scene time is 15 minutes. Contra Costa County consistently met or exceeded this benchmark in 2013.
- ▶ Time to medication administration is measured to track how often the clot-busting medication TPA (Tissue Plasminogen Activator) is administered within 4 1/2 hours of symptom onset. The goal is to have the medication given within 60 minutes of patient arrival at the hospital when indicated.

Although all hospitals in Contra Costa are capable of treating stroke patients, our Stroke System of Care allows EMS providers to assist hospitals by minimizing scene time, calling in "stroke alerts," and transporting patients to Primary Stroke Receiving Centers.





# Trauma System

The Board of Supervisors approved a comprehensive trauma system plan for the county in 1986, and the EMS Agency designated John Muir Medical Center in Walnut Creek as the county's trauma receiving center. John Muir also provides and receives aid as needed from a regional network of trauma centers that includes hospitals serving Alameda, Marin, Solano and Sonoma counties.

The goal of a trauma system is to ensure that coordinated emergency services are available to critical trauma patients. This is accomplished through EMS and hospital protocols that allow for rapid identification, management, and transport of critical trauma patients to a designated trauma center within the "golden hour"—the first hour after injury, considered the most crucial time for successful treatment.

The American College of Surgeons has defined the Golden Hour as a national benchmark defining a specific time period within one hour after a serious injury has occurred. This is the time period when medical intervention is most effective in saving lives and saving function.

Ambulance and Base Hospital personnel use EMS-approved triage protocols to identify critical trauma patients. Ambulance crews provide the trauma center with an "early alert" so that the trauma team can be mobilized to manage the patient upon arrival.

<b>All Trauma Patients and Trauma Activations by Year</b>				
	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
All Trauma Patients	1,605	1,484	1,636	1,588
All Trauma Center Activations	981	886	1,097	959
Helicopter Trauma Transports	213	236	266	233

# Trauma System

Traumatic injury can cause significant disability or death and affects all age groups and communities. When emergency first responders arrive at the scene where trauma is involved, they quickly evaluate the patients to determine the appropriate destination for treatment.

Patients with severe, life-threatening injuries are considered Major Trauma Victims (MTV), and they are primary candidates to visit one of the region's designated trauma centers. A "field activation" of the trauma system happens when a first responder triages an MTV directly to a trauma center.

John Muir Medical Center in Walnut Creek is the primary trauma center in Contra Costa County, while UCSF Benioff Children's Hospital Oakland is the primary trauma center for pediatric cases.

<b>Trauma Patients in Contra Costa County</b>					
	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Total field activations	955	981	886	1,097	959
Patients transported to John Muir Medical Center in Walnut Creek from an emergency trauma scene	1,018	1,134	1,030	1,212	1,251
Patients transported to UCSF Benioff Children's Hospital Oakland from an emergency trauma scene	108	94	117	87	90
Patients transported to another trauma center from an emergency trauma scene	29	25	68	21	22
Patients transported to a non-trauma center hospital from an emergency trauma scene	1,226	1,167	1,251	1,347	1,405

*Source: EMS Agency based on data from the John Muir Health, Walnut Creek Trauma Registry and Emergency Department Log.*

Not all of the patients necessarily have traumatic injuries at a trauma scene. EMS providers quickly triage patients according to the severity of their injuries, their likely treatment needs and the hospital emergency department best suited to meet those needs.

# Disaster, Medical Surge and Response

Healthcare systems are vulnerable to disruptions due to disasters and emergencies. Mass casualty events can rapidly overwhelm local and regional healthcare systems with large numbers of patients (known as “medical surge”). Healthcare systems, public and private entities, and the community, acting in concert, all play a role in managing these crises. The mission of the Disaster Preparedness/Medical Surge Program is to promote and support the emergency preparedness, response, recovery and resiliency activities of Contra Costa Health Services, the local medical health system, and other external partners and stakeholders.

The Disaster/Medical Surge Program team:

- ▶ Collaborates with EMS and medical health system participants in disaster/medical surge preparedness, response, and recovery activities
- ▶ Performs grant management functions in support of disaster/medical surge preparedness, response, and recovery activities
- ▶ Oversees the Contra Costa County Medical Reserve Corps (CCMRC) operations and administration

The goal is to ensure that Contra Costa County’s medical health system is prepared to quickly respond, manage, and recover from disasters, emergencies and medical surges.

## DRILLS AND EXERCISES, 2011 TO 2013

### MARCH 3, 2011

Hospital hazardous materials incident commander training

### APRIL 18–21, 2011

Hospital hazardous materials training (first-responder awareness, first-responder operations and first-responder refresher training)

### MAY 18, 2011

Golden Guardian 2011, statewide mass-casualty incident exercise

# Disaster, Medical Surge and Response

MAY 26, 2011

Long-term care facility workshop

JULY 20, 2011

Mass-casualty incident drill (improvised explosive device detonation in central Contra Costa County)

SEPTEMBER 26, 2011

Mass-casualty incident drill (motor vehicle collision)

SEPTEMBER 29, 2011

State tabletop exercise (water supply disruption)

NOVEMBER 17, 2011

State functional exercise (water supply disruption)

MARCH 27, 2012

ReddiNet System—Train the Trainer

APRIL 25–26, 2012

Mass-casualty incident drills (Kaiser Permanente Medical Center in Richmond)

JUNE 7, 2012

California Neonatal/Pediatric Disaster Coalition Working Conference

JUNE 15, 2012

“Shelter-in-Place or Evacuation” and 440 MHz Radio training to skilled nursing facilities

JUNE 25–28, 2012

Hospital hazardous materials training (first-responder awareness and first-responder operations)

SEPTEMBER 27, 2012

State tabletop exercise (power supply disruption)

OCTOBER 27–28, 2012

Full-scale exercise (active-shooter scenario at a clinic or hospital)

NOVEMBER 15, 2012

Mass-casualty incident drill (motor vehicle collision during unrelated BART derailment)

NOVEMBER 15, 2012

State functional exercise (power supply disruption)

# Disaster, Medical Surge and Response

## JANUARY 30, 2013

Workshop for planning for the unique evacuation and shelter-in-place needs of people with medical dependencies during a disaster

## FEBRUARY 25–26, 2013

Operational response to mass casualty training

## APRIL 9–10, 2013

Infrastructure training for hospitals and healthcare organizations, disaster preparedness

## JUNE TO DECEMBER, 2013

Personal preparedness training for healthcare workers at long-term care and health centers

Multi-casualty incidents (MCI) are evaluated based on the number of patients involved. A Tier 0 Event does not have reported victims, but prompts an EMS system alert because it has potential to grow. A Tier 1 Event involves 10 or fewer patients while Tier 2 Events (up to 50 patients) and Tier 3 Events (more than 50 patients) are substantially larger.

A Tier 3 Event typically requires the EMS Agency to make mutual aid requests of allied agencies.

<b>Contra Costa County Declared Multi-Casualty Incidents</b>		
	<b>2012</b>	<b>2013</b>
Tier 0	3	4
Tier 1	4	4
Tier 2	0	1
Tier 3	1	0
<b>Total</b>	<b>8</b>	<b>9</b>

# Contra Costa Medical Reserve Corps

## CONTRA COSTA MEDICAL RESERVE CORPS

The **MRC** includes medical and non-medical volunteers and is configured for three levels of response. This provides a scalable approach to incidents in the community.

2013 MRC Membership	
Doctors	16
Nurses	38
Emergency Medical Technicians (EMTs)	23
Other (medical and nonmedical logistics personnel)	69

**INDIVIDUAL** volunteers provide immediate, basic support to the community, often integrated with other community response partners.

**TEAMS** provide up to eight personnel and their equipment for immediate or planned support of first aid stations, points of dispensing and shelter support.

**UNIT** activations combine multiple teams to support prolonged operations deploying staff, equipment, and a pharmaceutical cache to treat up to 1,000 people. (This capability is identified as a 2014 program goal.)

### MRC ACTIVITIES AND ACCOMPLISHMENTS

Training and exercising the MRC ensures that volunteers are versed in county policies and procedures. Volunteers receive ongoing classroom training. In addition, collaborative training with community partners, such as Community Emergency Response Teams and American Red Cross, prepares the Corps to provide a more robust public health response that meets the needs of residents. Training exercises conducted in 2013 include:

- ▶ Teaching hands-only CPR for the HeartSafe Community Program
- ▶ Supporting community education at disaster and health fairs
- ▶ Partnering with Dozier-Libbey Medical High School
- ▶ Administering flu vaccines in county clinics

# Supporting Citizen Heroes

The **EMS SYSTEM's** public outreach efforts increase awareness and educate residents about the actions they should take in the event of a medical emergency. This includes knowing the signs of heart attack, stroke, or sudden cardiac arrest, calling 911 and acting in time to save lives.

Contra Costa EMS encourages community members to learn CPR and how to use an automated external defibrillator (AED). Learning hands-only CPR is easy and takes only a few minutes for adults. The EMS Agency, HeartSafe communities, and numerous EMS system stakeholders partner to provide this training at numerous community events, promoted on the EMS web site at [cccems.org](http://cccems.org).

Brochures and instructional packets are available that contain all the information necessary to implement a public-access defibrillation program and to register an AED. EMS also provides speakers for community organizations such as Rotary Clubs and schools.

In a **HEARTSAFE COMMUNITY**, all elements of the Chain of Survival are in place—immediate recognition and access, early CPR, rapid defibrillation, effective advanced care and integrated post-cardiac arrest care. The EMS Agency and the American Heart Association are partnering with communities in Contra Costa County to improve cardiovascular health and increase the chances that anyone suffering a cardiovascular emergency—heart attack, stroke, or cardiac arrest—will have the best possible chance for survival.

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For more information about this program visit <http://cchealth.org/ems/heartsafe.php>



# Public Access Defibrillation Program

In 2005, EMS distributed 42 automated external defibrillators (AEDs) to public agencies within the county. This project included site selection, CPR and AED training for 121 county employees and AED orientations and demonstrations for other staff. EMS continues to work with American Medical Response to assist with the distribution of 25 AEDs annually.

As of December 31, 2013 there were 767 public access defibrillators registered in the EMS Agency database. The goal of our program is to provide defibrillation to victims of sudden cardiac arrest within three minutes of their collapse anywhere in Contra Costa County.

## **PUBLIC SAFETY AUTOMATED EXTERNAL DEFIBRILLATOR (AED) PROGRAM**

The first-responder defibrillation program, established countywide in 1992, provides rapid access to life-saving care for patients with cardiac arrest. Initially the program was implemented in the fire service, but many police departments have since equipped patrol cars with defibrillators.

AEDs are currently carried on police cars in Antioch, Brentwood, Clayton, Concord, Danville, El Cerrito, Hercules, Kensington, Lafayette, Moraga, Orinda, Pittsburg, San Ramon, Pleasant Hill, Richmond and Blackhawk. Many police agencies have already played critical roles in saving lives using AEDs. AEDs are also carried by fire apparatus in Crockett-Carquinez, Richmond and East Contra Costa County.

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For more information about this program visit <http://cchealth.org/ems/aed.php>





# Quality Improvement & Patient Safety

EMS activity and patient care outcomes are routinely measured to assure the system is performing as designed. These measures focus on patient and provider safety, quality of care and competency in the delivery of EMS services. All EMS system performance levels are within normal statistical control limits and they meet or exceed established national benchmarks.

## PATIENT SAFETY EVENTS

The EMS Agency is committed to supporting a culture of safety. As part of that effort we continue to expand and monitor our performance with a Patient Safety Events Program. As part of a comprehensive, continuous quality improvement program, all aspects of clinical and operational care are reviewed and evaluated for patient safety.

## PATIENT SATISFACTION

All medical transportation agencies are encouraged to collect patient satisfaction information. EMS encourages the public to routinely give feedback to medical transportation providers.

AMR Contra Costa County Customer Satisfaction Survey Results 2012					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I had the trust and confidence in the paramedic ambulance crew's professional skills.	186	54	7	0	8
The paramedic ambulance crew explained the care / treatment in a way I could understand.	163	65	15	5	7
The paramedic ambulance crew took steps to ensure comfort and minimize pain.	181	55	7	4	8
Overall, the service received from the paramedic ambulance company was excellent.	189	49	6	2	9
Total Percentage	92%	3%	1%	3%	

Based on 255 individual responses representing about a 7% survey return

# Current Quality Initiatives

## CQI DIVISION PROJECT STATUS BOARD 2014–15 QUALITY INITIATIVES

### FIELD ADVISORY FORUM

**GOAL:** To provide a forum for increased flow and exchange of pertinent clinical and operational information between EMS field personnel and agency staff

**PHASE I *Staff Research & Review*** Staff is currently planning an inaugural meeting

**Phase II *Task Team QLC Review*** Appoint members at large.

**Phase III *Approval & Planning*** Program objective and members will be announced at the Quality Leadership Committee (QLC) meeting

**Phase IV *Implement & Monitoring*** The first Field Advisory Forum (FAF) met in April 2014.

**Phase V *Outcome*** After the first three meetings staff and members will assess the value and productivity of the FAF.

**Phase VI *Sustaining*** To be determined

### HIGH PERFORMANCE CARDIAC ARREST & CPR

**GOAL:** To increase the quality of CPR provided to patients in cardiac arrest

**PHASE I *Staff Research & Review*** Indicators to measure quality, such as compression, ratios, depth and pauses for shock, were developed and data pulled.

**Phase II *Task Team QLC Review*** A training program was developed with staff and an implementation plan was completed.

**Phase III *Approval & Planning*** Initial indicators were presented to the Quality Leadership Committee (QLC) in March 2014.

**Phase IV *Implement & Monitoring*** The same initial quality indicators will be reviewed by staff and QLC in March and September 2015.

**Phase V *Outcome*** To be determined

**Phase VI *Sustaining*** To be determined

# Current Quality Initiatives

## EMS PATIENT OFF-LOAD TIME REDUCTION

**GOAL:** To monitor and reduce the handoff times between ambulances and hospital emergency departments

**PHASE I *Staff Research & Review*** Current measures reflect that during high-volume periods, patients arriving at emergency departments by ambulance are often waiting longer than 30 minutes for offloading.

**Phase II *Task Team QLC Review*** The measures and other pertinent information are being reviewed by internal staff and the Quality Leadership Committee (QLC)

**Phase III *Approval & Planning*** A letter was sent to all hospitals and ambulance providers to announce more intense monitoring and solicit feedback on this issue.

**Phase IV *Implement & Monitoring*** Reports will be updated monthly and hospital leadership will receive an email linking to the report when it is posted.

**Phase V *Outcome*** EMS Staff and QLC will measure in six months to evaluate reduction in off-load times.

**Phase VI *Sustaining*** Developing countywide policy and public reporting in 2014

## SPINAL MOTION RESTRICTION

**GOAL:** To implement changes in Spinal Immobilization practices that will improve patient care and comfort

**PHASE I *Staff Research & Review*** Staff researched current trends in spinal immobilization and identified potential issues in Contra Costa County.

**Phase II *Task Team QLC Review*** A team including field providers was formed to develop new treatment guidelines and equipment recommendations.

**Phase III *Approval & Planning*** The proposed changes were reviewed with the Quality Leadership Committee (QLC), Medical Advisory Committee and other EMS committees. Funding for equipment was provided through Measure H.

**Phase IV *Implement & Monitoring*** All EMS personnel were trained in 2013. New equipment and treatment guidelines were implemented January 1, 2014.

# Current Quality Initiatives

**Phase V *Outcome*** Spinal Motion Restriction (SMR) use rates will be monitored in ad hoc reports as part of QLC. SMR usage will be compared to historical trends.

**Phase VI *Sustaining*** To be determined

## PEDIATRIC MEDICATION SAFETY

**GOAL:** To check the sustainability of our documented reduction in pediatric medication inaccuracies and to measure and sustain improvements

**PHASE I *Staff Research & Review*** Data to be gathered June 2014 and reviewed by EMS staff, then published in EMS Best Practices newsletter.

**Phase II *Task Team QLC Review*** The information will be reviewed by internal staff and task team leads.

**Phase III *Approval & Planning*** The information will be reviewed by the Quality Leadership Committee (QLC) at its September 2014 meeting.

**Phase IV *Implement & Monitoring*** Staff and QLC will evaluate data and indicators for progress.

**Phase V *Outcome*** To be determined in June 2014, if the error rate continues to drop and improve.

**Phase VI *Sustaining*** Further action may be required to sustain improvement.

## VIDEO LARYNGOSCOPY TRIALS

**GOAL:** To implement and evaluate the efficacy of laryngeal videography for the purposes of increasing efficiencies of airway management

**PHASE I *Staff Research & Review*** Equipment has been demonstrated at various EMS public meetings and training sessions.

**Phase II *Task Team QLC Review*** Specific providers are currently piloting this new equipment at both the local and national levels.

**Phase III *Approval & Planning*** The Medical Director has approved the trial evaluations, and the Quality Leadership Committee (QLC) was advised at its March 2014 meeting.

**Phase IV *Implement & Monitoring*** Providers will report out to the Medical Director and record information on the procedure. The timeline is still to be determined.

**Phase V *Outcome*** To be determined

**Phase VI *Sustaining*** To be determined

# Emergency Medical Services for Children (EMSC)

## PURPOSE OF EMSC PROGRAM

To establish, monitor and maintain a coordinated and comprehensive EMSC system that promotes high-quality emergency care for the children of Contra Costa County.

## BACKGROUND

In 2013, 63,297 children were seen in Contra Costa emergency departments. Fortunately, 94% of them did not require hospitalization. Contra Costa County's designated Pediatric Critical Care and Trauma Center is Children's Hospital & Research Center Oakland, located in Alameda County. Inpatient pediatric services are provided at John Muir Medical Center in Walnut Creek, Kaiser Permanente Medical Center in Walnut Creek and San Ramon Regional Medical Center. In addition, all Contra Costa community hospitals are expected to be ready for emergencies involving children.

## HISTORY

In 1999, Contra Costa Emergency Medical Services began local implementation of the California EMS for Children Program (EMSC). The program ensures that each EMS first responder, ambulance provider and emergency department has the equipment and training needed to effectively treat children. Since most pediatric emergencies are preventable, EMSC not only focuses on the coordination of pediatric emergency and critical care services but also focuses on injury prevention. In 2009, Contra Costa partnered with Alameda County on EMSC to support regional injury prevention, promote pediatric pre-hospital and emergency care capability and statewide neonatal/pediatric disaster and medical surge planning.

# Emergency Medical Services for Children (EMSC)

## ACCOMPLISHMENTS

- ▶ 100% participation in the 2012 California Pediatric Readiness Project, benchmarking hospitals on pediatric capability based on the 2009 National Guidelines for Care of Children in the Emergency Department
- ▶ Median Pediatric Readiness for all Contra Costa hospitals was over 82% compared to the statewide median of 70%
- ▶ Neonatal/Pediatric Disaster Coalition was established in 2010 supporting local, regional, state and national disaster preparedness for children
- ▶ Established first countywide neonatal/pediatric disaster plan for medical health community in California in 2011
- ▶ Co-sponsored Neonatal Pediatric Disaster conferences with Alameda County EMS

Contra Costa EMSC program is committed to facilitating improvements in the emergency care of children by working with our EMS first-responder, ambulance, hospital and injury-prevention partners. To learn more, visit our website at [cchealth.org/ems/feature-emsc.php](http://cchealth.org/ems/feature-emsc.php).



# CONTRA COSTA EMS STAFF DIRECTORY

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 Joe Barger ----- EMS Medical Director  
 Bruce Kenagy ----- Acting EMS Program Coordinator  
 Pam Dodson ----- Prehospital Care Coordinator  
 Craig Stroup ----- Prehospital Care Coordinator  
 Brian Henricksen ----- Prehospital Care Coordinator  
 Maria Fairbanks ----- Prehospital Care Coordinator  
 Laura O’Neal ----- Prehospital Care Coordinator  
 Aaron Doyle ----- Prehospital Care Coordinator  
 Marshal Bennett ----- Prehospital Care Coordinator  
 Steve Huck ----- Emergency Preparedness Manager  
 Lisa Vaigrt-Smith ----- Medical Reserve Corps Coordinator  
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