

Ventura County Public Health
Emergency Medical Services Agency
2016 ANNUAL REPORT



VENTURA COUNTY
HEALTH CARE AGENCY



VENTURA COUNTY
PUBLIC HEALTH

VENTURA COUNTY EMERGENCY MEDICAL SERVICES AGENCY

A Division of Ventura County Public Health Department

A Department of Ventura County Health Care Agency

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Administration Message

The Ventura County EMS Agency is pleased to provide our 2016 Annual System Report, reviewing the operations and performance of the Ventura County EMS Agency and the EMS System.

2016 was full of new challenges, changes and opportunities. During this year, we revised the multi-casualty incident training program and established improved triage equipment for deployment in MCIs. Simi Valley Hospital was designated as a STEMI Receiving Center, a paramedic was added to the staffing of Fire Station 21 in Ojai, and Fire/EMS dispatch services for the City of Oxnard were transitioned to Ventura County Fire Communications Center. The January storms presented challenges and opportunities for improvement to our system. December brought the implementation of the ImageTrend NEMSIS Version 3 upgrade. The PRESTO cardiac arrest outcome research, fall prevention coalition, and community paramedicine pilot programs continue as important, ongoing EMS projects.

As in previous years, EMS expanded along with the needs of our system, and we are confident in our sustainability and ability to adapt to the dynamic communities we serve.

Maintaining our current capabilities and striving toward future success depends on the outstanding support we receive from the local system stakeholders and the leadership of the Ventura County Board of Supervisors, County Executive Office, Ventura County Health Care Agency Administration and the Public Health Department Administration.

Our goal is to provide the highest quality care for those in need of emergency medical services in the county. Through our exceptionally coordinated network of public and private first responders, paramedics, EMTs, nurses, physicians, and other emergency professionals who work together with a strong commitment to excellence in all aspects of patient care, we will continue to achieve, and exceed, this goal.

We are confident that 2017 will bring many challenges and opportunities to grow. With the collaboration of our partners, we look forward to another year of providing the best care, anywhere.

Steve Carroll, Paramedic
EMS Administrator

Daniel Shepherd, MD
EMS Medical Director

Angelo Salvucci, MD FACEP
Assistant EMS Medical Director

Executive Summary

Ventura County is a geographically diverse region covering over 2200 square miles with a population of over 823,000. With 10 incorporated cities, a number of unincorporated communities, 43 miles of coastline, two offshore islands, two military installations, a variety of lakes and a large area of national forest and state park land, Ventura County offers a distinct mix of urban cities, rural sectors and wilderness.



The Ventura County EMS System is comprised of various disciplines, including fire departments, law enforcement, ambulance services, hospitals, and other provider agencies. These agencies respond to provide lifesaving care to those in need 24 hours a day, seven days a week. From the dispatchers who talk with 9-1-1 callers and the responders who provide care in the field and transport patients, to the emergency room staff who receive the patients, the EMS Agency ensures the highest quality pre-hospital care for those in need of emergency medical services in Ventura County through an integrated and coordinated system of services.

A division of the Health Care Agency Public Health Department, the EMS Agency monitors and evaluates the quality of advanced life support (ALS) and basic life support (BLS) emergency medical care provided to the residents of and visitors to Ventura County by authorized pre-hospital personnel, provider agencies, and hospitals. In this role, the EMS Agency:

- Serves as the lead agency for the emergency medical services system in the county and coordinates all system participants in its jurisdiction, encompassing both public and private sectors.
- Provides system guidance and direction through provider and community driven policy development aimed at establishing and maintaining standards for care.
- Monitors patient care through a comprehensive quality improvement program.
- Ensures medical disaster preparedness through the emergency planning process and coordinates response to local disasters and incidents with multiple casualties.
- Ensures prehospital personnel excellence through training, certification, accreditation and continuing education program review.

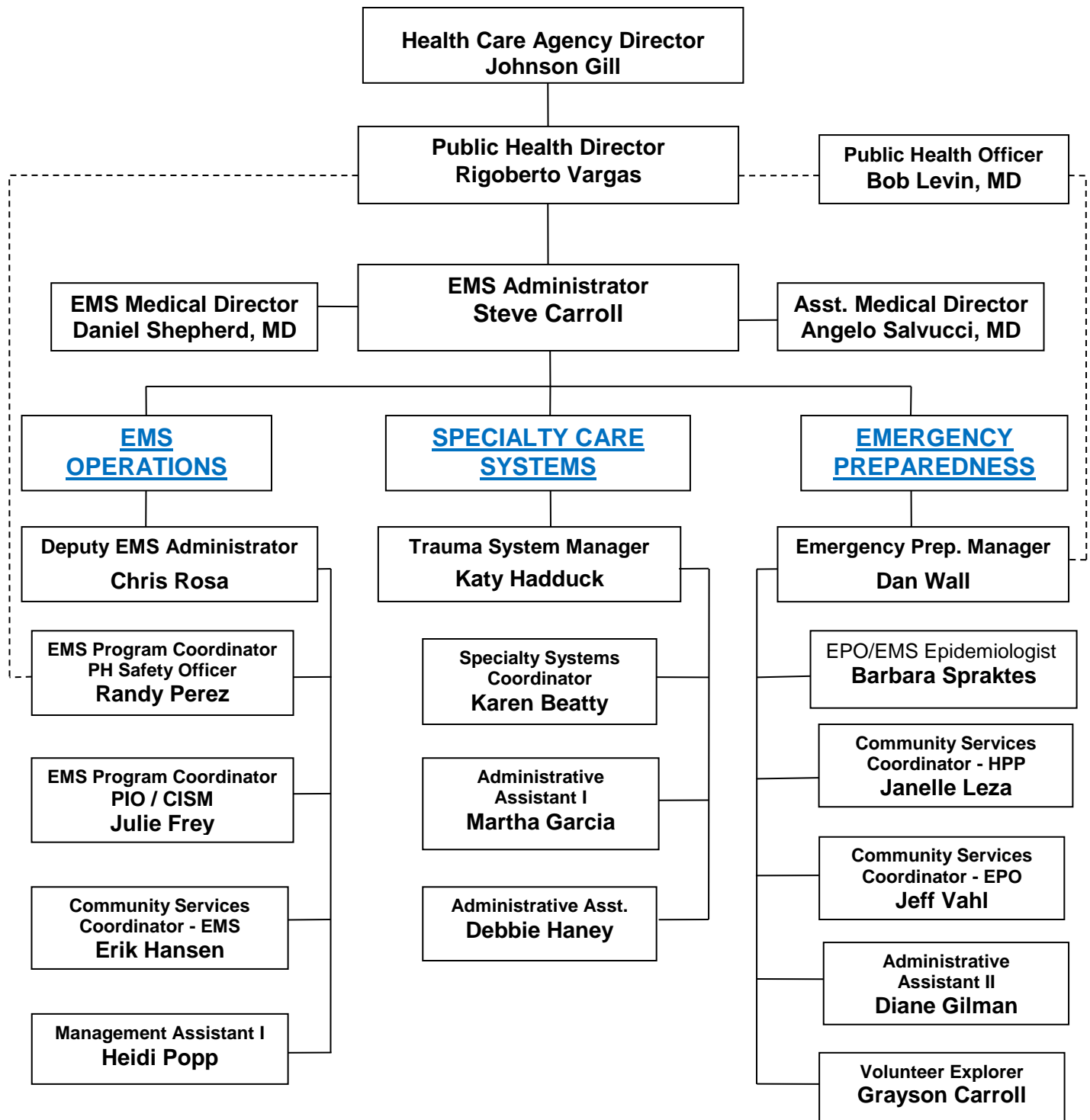
In FY 16-17, Ventura County EMS Agency had an annual budget of \$5,269,201, which includes a mix of service fees, provider charges and penalties, traffic fine collections, grant funding and county general funds. The EMS Agency also provides administration of the Maddy Fund, which reimburses physicians and emergency rooms for a portion of uncompensated care with traffic fine funding. \$2,221,194 was dispersed from the Maddy Fund in 2016 to settle the hospital and physician claims.

The EMS Agency is comprised of three divisions, Emergency Operations, Specialty Care Systems and Emergency Preparedness, and is staffed with 14 full time personnel, a half-time medical director and an assistant medical director. In addition to the medical directors, positions include EMS Administrator, Deputy Administrator, Trauma System Manager, Emergency Preparedness Manager, Specialty Systems Coordinator, Epidemiologist, two Program Administrators, three Community Services Coordinators, two Administrative Assistants and one Management Assistant.

The EMS Agency is proud of its strong team of professionals that are called to action with every 9-1-1 call. This team is made up of people who care about serving the community while maintaining high standards in a demanding career. No matter the uniform, all team members strive for excellence each and every time they respond. Through a state-of-the-art communication system, ongoing training and modern equipment, Ventura County EMS providers can respond quickly and efficiently to the needs of the community.

The 2016 annual report is designed to provide an overview of the Ventura County EMS operations, specialty care and emergency preparedness programs, and provide updates on program activities and performance data.

Ventura County Emergency Medical Services Agency Organizational Chart 2016



EMS Agency Staff Responsibilities

Name	Title	Contact Info	Primary Responsibilities
Steve Carroll, Paramedic	EMS Administrator	Steve.carroll@ventura.org 805-981-5305	<ul style="list-style-type: none"> EMS System Delivery and Emergency Preparedness oversight Ambulance contract administration and compliance monitoring Certification, accreditation, authorization and discipline oversight Disaster Medical Health Operational Area Coordination Agency operations oversight and fiscal management
Daniel Shepherd, MD	EMS Medical Director	Daniel.shepherd@ventura.org 805-981-5304	<ul style="list-style-type: none"> EMS Medical direction and oversight, including development of local policies, procedures, protocols and treatment guidelines Medical direction and oversight of specialty care systems, QI program, system wide committees and various EMS projects
Angelo Salvucci, MD, FACEP	Assistant EMS Medical Director	Angelo.salvucci@ventura.org 805-981-5301	<ul style="list-style-type: none"> Medical direction and oversight, including maintaining various specialty care system programs and development and maintenance of local policies, procedures and protocols
Chris Rosa, MS, Paramedic	Deputy EMS Administrator	Chris.rosa@ventura.org 805-981-5308	<ul style="list-style-type: none"> Assist with oversight of day-to-day EMS System operations EMS data systems management Countywide MCI program management Oversight of prehospital education providers Disaster Medical Health Operational Area Coordination Designee
Katy Haddock, RN, BSN, CFRN, TCRN	Trauma System Manager	Katy.haddock@ventura.org 805-981-5311	<ul style="list-style-type: none"> Trauma and specialty care system oversight and management Represent Ventura County at local, State, and national committees Cardiac arrest database and statistical reporting CARES administrator for Ventura County
Daniel Wall, RN, MPPA	Emergency Preparedness Manager	Dan.wall@ventura.org 805-981-5307	<ul style="list-style-type: none"> Emergency Preparedness Office oversight Responsible for management of HPP, PHEP, Pan Flu Grants Facilitates medical/health disaster preparedness and training efforts Coordinates community preparedness initiatives
Barbara Spraktes	EPO/EMS Epidemiologist	Barbara.spraktes-wilkins@ventura.org 805-981-5279	<ul style="list-style-type: none"> Epidemiological support for Public Health, EPO and EMS Syndromic surveillance and outbreak response Liaison to medical/health partners for public health monitoring
Karen Beatty, RN, EMT	Specialty Care Coordinator	Karen.beatty@ventura.org 805-981-5309	<ul style="list-style-type: none"> Collection and monitoring of STEMI and Stroke data Oversight of Stroke, STEMI and QI programs Maintenance of policies for the QI, Stroke and STEMI systems
Julie Frey	EMS Program Administrator/ CISM Coordinator	Julie.frey@ventura.org 805-981-5306	<ul style="list-style-type: none"> EMD and CISM Program Coordinator Community Paramedic Program Liaison Prehospital Services Committee Coordinator
Randy Perez, Paramedic	AED Program Administrator/ PH Safety Officer	Randy.perez@ventura.org 805-981-5310	<ul style="list-style-type: none"> Countywide AED Program Administrator Ventura County Public Health Department Safety Officer Countywide Sidewalk CPR Program Coordinator
Erik Hansen, EMT	EMS Community Services Coordinator	Erik.hansen@ventura.org 805-981-5322	<ul style="list-style-type: none"> Emergency preparedness and communications coordination Coordination of various EMS training programs Medical volunteer management and CAHAN Administration
Jeff Vahl, EMT	EPO Community Services Coordinator	Jeffrey.vahl@ventura.org 805-981-5261	<ul style="list-style-type: none"> Countywide medical/health logistics coordination HCA Department Operations Center coordination Disaster preparedness outreach
Janelle Leza, MPPA	Health Care Coalition Coordinator	Janelle.leza@ventura.org 805-981-5335	<ul style="list-style-type: none"> Ventura County Health Care Coalition Coordinator Health care facilities' emergency contacts database Coordinate preparedness outreach with partner agencies
Diane Gilman	EMS Administrative Assistant	Diane.gilman@ventura.org 805-981-5331	<ul style="list-style-type: none"> Fiscal accounting, processing and tracking EPO grant tracking Front office staff management Provide administrative support
Martha Garcia	EMS Administrative Assistant	MarthaL.garcia@ventura.org 805-981-5303	<ul style="list-style-type: none"> Certification, accreditation and authorizations of personnel Monitor and audit personnel training requirements Update and maintain databases Provide administrative support
Heidi Popp	EMS Management Assistant	Heidi.popp@ventura.org 805-981-5301	<ul style="list-style-type: none"> Certification, accreditation and authorization of personnel Maintain database for EMTs, Medics Medical Marijuana Identification Card program Provide administrative support

EMS Agency Medical Direction

Welcome Dr. Daniel Shepherd



In August 2016, the Ventura County EMS Agency welcomed Dr. Daniel “Danny” Shepherd as our medical director.

Dr. Shepherd currently works in the emergency department at Cottage Hospital, and brings a wealth of experience to our EMS community. His first exposure to patient care on the front lines was as an ocean lifeguard in Oceano and Ventura. Later, he served as an EMT on an ALS ambulance in Santa Barbara.

As a graduate of Pennsylvania State College of Medicine, Dr. Shepherd snagged a residency in Emergency Medicine at San Francisco General Hospital, one of the busiest EDs and trauma centers in the country. Dr. Shepherd’s experience, enthusiasm, and professionalism are tailor-made for him to lead our EMS community. He and his wife, Flavia, along with their daughter Dannika, live in Santa Barbara. Welcome aboard, Dr. Shepherd!

In Appreciation of Dr. Angelo Salvucci

In 1996, more than twenty years ago, Dr. Angelo Salvucci brought his experience as an emergency physician, writer, teacher, researcher, and leader, to serve as the medical director for the Ventura County EMS Agency. Since that time Dr. Salvucci has carried the banner for excellence in prehospital care for our EMS community.



Ventura County EMS is distinctive in California. We are uniquely collaborative. Stakeholders work harmoniously together on projects involving QI, policy, research, and training. Dr. Salvucci has been the anchor for this extraordinary system. He has earned the respect of the EMS community as a whole, from fire chiefs and ambulance directors, to the nurses, paramedics, and EMTs on the front lines.

As a leader in research that involves EMS, a specialty in which evidence-based practice is slow to evolve, Dr. Salvucci brought our agency to the forefront with our involvement in several research projects. Such research allows the patient care delivered in the front lines of EMS to result in better outcomes, fewer disabilities, and a greater number of individuals returning to their lives and families.

Perhaps more meaningful than a list of his positions, publications, and accomplishments, however, is Dr. Salvucci’s deep commitment to compassion and dignity for the individuals who are his patients. After a career that includes serving as an ED physician for more than thirty-five years, as well as overseeing, teaching, consulting, writing, and researching for EMS systems, his approach to patient care remains solidly kind.

Last fall, Dr. Salvucci stepped into a supporting role and now serves as the Assistant Medical Director for Ventura EMS. Thank you, Dr. Salvucci, for your service to the EMS community, and your fierce determination to provide the best care, anywhere.



Ventura County Critical Incident Stress Management (CISM) Coalition

Throughout Ventura County and across the nation, emergency service personnel have become more aware of the stressors unique to their occupations. These stressors, to which the providers are routinely exposed, can manifest themselves in physical and/or psychological symptoms which the individuals may not be able to manage on their own.

In Ventura County we offer a countywide response team for all emergency agencies, hospitals and the medical examiner's office. This program is coordinated by the Ventura County Emergency Medical Services (EMS) Agency.

The CISM Coalition is dedicated to providing support services in the aftermath of any critical incident and working to reduce stress among emergency services personnel. This is accomplished through education, post incident support and appropriate referrals.

The CISM Coalition meets monthly to discuss the countywide coordination efforts, review defusing/debriefing activity, and continue disaster response planning efforts among participating agencies. In 2016, the CISM Coalition responded to 54 requests for service.

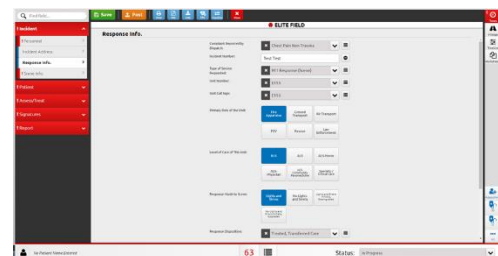
NEMSIS Version 3 Transition



Over the past several years, Ventura County EMS Agency and its partner agencies have been preparing for a major transition from the National EMS Information System (NEMSIS) v2 standard to the new NEMSIS v3 standard. This change represents a completely new approach to the documentation and interpretation of patient care data, and had significant impacts on how patient care reports are documented, and how that data is analyzed for quality assurance and improvement purposes. This transition ensures VCEMS is in compliance with National and State standards, and that we will be better prepared for future developments related to patient care reporting.

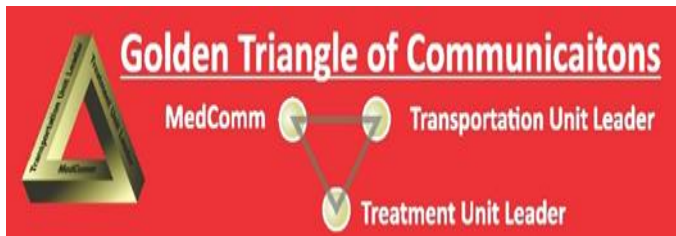


Utilizing the ImageTrend Elite platform for electronic Patient Care Reporting, VCEMS began a pilot implementation project in October 2016. Following the successful pilot, a full transition to the NEMSIS v3 system was implemented on December 20th, 2016. This transition would not have been possible without our partner agencies, all of which are committed to ensuring accurate and detailed documentation of each patient encounter.



After a series of high-profile multi-casualty incidents (MCI) and exercises, prehospital responders in Ventura County began to offer suggestions on how to better manage these incidents through new equipment and adoption of some new concepts. In collaboration with key stakeholder agencies, VCEMS purchased new equipment intended to aide responders with the 4 T's of an MCI (Triage, Treatment, Transport, and Tracking). In addition, VCEMS and its partner agencies produced a high-quality training video, intended to highlight key priorities in MCI management.

This new equipment is designed to make the initial triage of MCI victims easier and faster. New patient management and tracking forms facilitate better tracking of patients through treatment areas, into awaiting ambulances, and off to their hospital destinations. In addition, this transition brought all agencies up to the same standard in terms of equipment and operations on an MCI. Coupled with ongoing training, the end goal of this program is to ensure MCI victims are accessed and triaged quickly, assessed and transported appropriately, and tracked at all points throughout the duration of an incident – regardless of size or complexity.



Initial Triage

2ndary Triage

Treatment and Transport

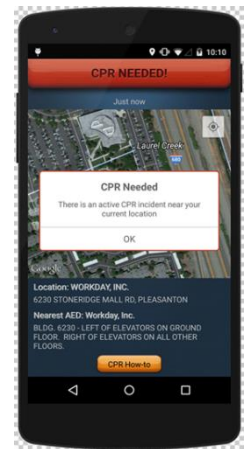


PulsePoint Mobile Application (App)



The Ventura County Fire Protection District (Fire District), in partnership with the Ventura County Emergency Medical Services Agency (EMSA), initiated participation in the PulsePoint Program, a mobile app that alerts registered users whenever a cardiac arrest occurs in a public place nearby. This project increases citizen awareness and enables the public to provide potentially life-saving CPR.

The app is linked directly to the Fire District's Ventura County Regional Dispatch (VCRD) system, which handles fire and emergency medical dispatching for all fire and ambulance resources in Ventura County. The free app is intended to connect trained lifesavers, who may already be nearby, with people who need immediate help when seconds count the most. Targeted toward off duty rescue professionals and citizens trained in CPR, the PulsePoint app alerts subscribers when a sudden cardiac arrest occurs in a nearby public place, directs them to the patient location, and provides CPR guidance while emergency responders are en-route to the call.



Enlisting nearby citizens who are prepared to deliver "hands-only CPR" — hard and fast compressions in the center of the chest — could greatly improve survival rates among cardiac arrest patients. The app also notifies subscribers of the closest available Automatic External Defibrillator (AED). PulsePoint is not limited to emergency responders or those with official CPR certification. It can be used by anyone who has been trained in CPR. Another benefit of PulsePoint is its ability to display VCRD's active and recent incidents, as well as incidents for numerous other fire and emergency response agencies. This helps create a way for the public to become more aware of active VCRD incidents. The free PulsePoint app is available for iPhone and Android and can be downloaded from the iTunes Store and Google Play as "PulsePoint Foundation."

Community CPR and Public Access Defibrillation



Sudden cardiac arrest is a leading cause of death in the U.S., striking people in all settings. From schools to homes to public places, approximately 326,200 people experience sudden cardiac arrest each year, often from undiscovered heart defects. The American Heart Association tells us that early CPR and rapid defibrillation are key elements in the Chain of Survival. When people properly use an AED and CPR on a victim within the first three to five minutes of a heart stopping, survival rates are as high as 60%.

Hands Only “Sidewalk” CPR

Ventura County Emergency Medical Services (VCEMS), along with partner agencies host free Hands-Only “Sidewalk CPR” trainings at several locations throughout Ventura County, including local high schools, shopping malls and health fairs. CPR instructors demonstrate the Hands-Only CPR technique in public places with the goal of teaching more people how to respond appropriately if they witness someone experiencing sudden cardiac arrest. Participants have the opportunity to learn the simple two-step technique, practice on mannequins and receive information on where they can go if they want to become fully CPR certified. In 2016, over 11,000 residents and visitors of Ventura County were trained in Hands Only CPR.



Ventura County Public Access Defibrillator Program



Ventura County EMS Agency administers the Ventura County Public Access Defibrillator (PAD) Program. This is a partnership between public and private organizations and businesses placing over 660 AEDs throughout Ventura County. Over 140 AEDs are placed in Government Buildings and vehicles, and another 520 provided by public and private businesses and organizations for the protection of their patrons and community.

Community Paramedicine Pilot Programs

Hospice / Tuberculosis



In 2014, the California Emergency Medical Services Authority (EMSA) approved Ventura County to take part in two unique pilot programs that allows paramedics to provide hospice support, as well as, follow-up treatment for tuberculosis patients.

Hospice

The provision of hospice care by paramedics is an innovative program designed to improve patient care for hospice patients in their home environment.

The Community Paramedic (CP) is dispatched to all 911 calls involving hospice patients. The CP will liaison between the patient, hospice team and the patients family/caregiver and provide the appropriate care/treatment until the hospice team arrives. In a majority of cases, the patient's wish to stay out of a hospital environment can be maintained.

Community Paramedics have responded to 183 hospice patients to date. Some of the contacts are recurring patients. Overall, the transport rate has dropped by 64%.

Tuberculosis (TB)



The purpose of this project is to improve the treatment for people with tuberculosis (TB), and thereby benefit the patient, their family, other contacts, and the community, by providing directly observed treatment to TB patients in the field, in support of the Ventura County Public Health Department's TB Specialty Clinic and the patients they serve.

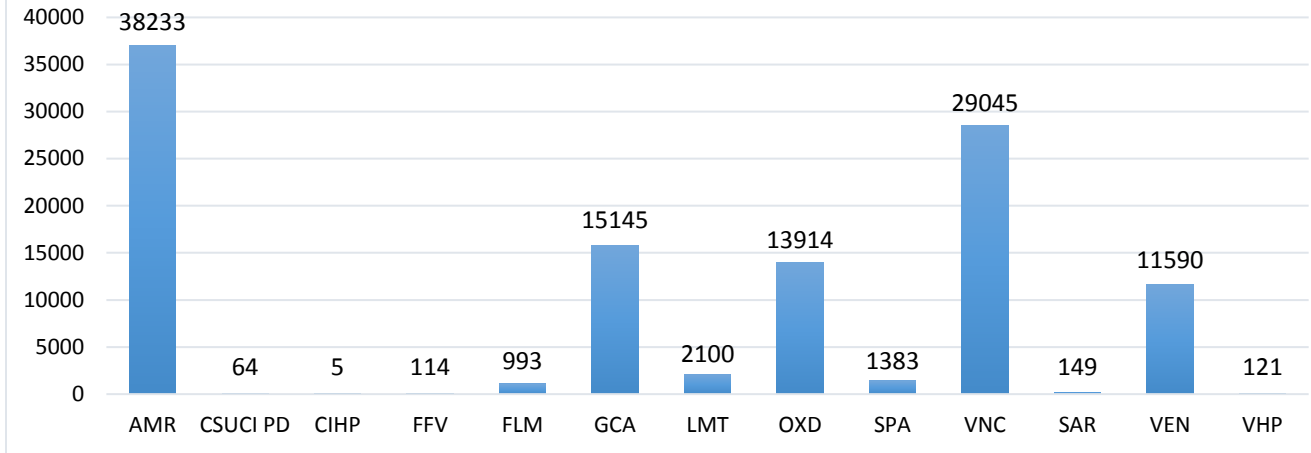
This is being accomplished by improving patient compliance with directly observed treatment (DOT), increasing the percentage of patients who complete the full course of treatment for TB and identifying and treating side-effects and mal-absorption issues early, with physicians as needed.

Community Paramedics completed 1,204 DOT's in 2016 (some of these patients were seen multiple times per day).



Ventura County EMS System Volume

Medical Responses by Agency - 2016



AMR = American Medical Response

CSUCI PD = Cal State University Channel Islands PD

CIHP = Channel Islands Harbor Patrol

FFV = Naval Base Ventura County Fire Dept.

FLM = Fillmore Fire Department

GCA = Gold Coast Ambulance

LMT = Lifeline Medical Transport

OXD = Oxnard Fire Department

SPA = Santa Paula Fire Department

VNC = Ventura County Fire Protection District

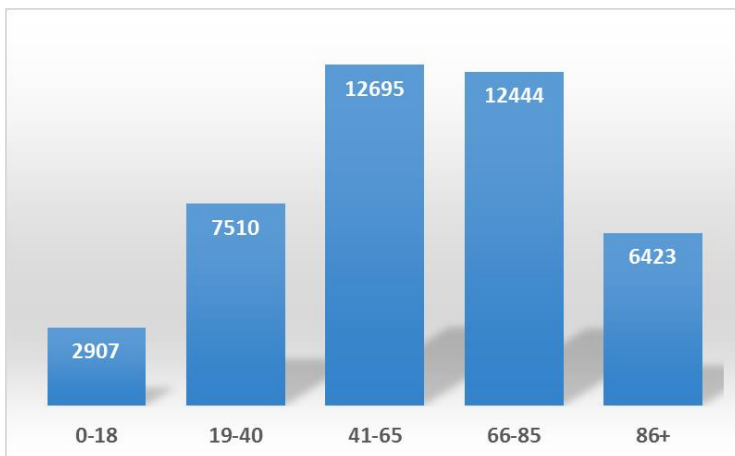
SAR = Ventura County Sheriff's Air Unit / SAR

VEN = Ventura City Fire Department

VHP = Ventura Harbor Patrol

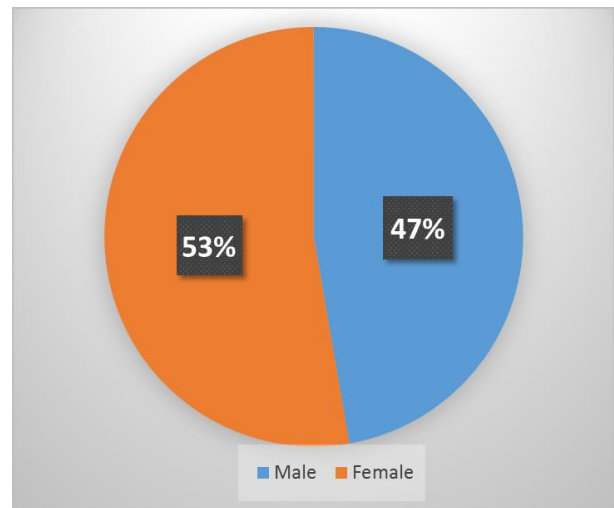
Patient Demographics (transported only) - 2016

Patent Population, by Age Group



Median Age - 62

Patient Gender



Medical Responses by Agency and Patient Demographic data is collected through the ImageTrend Electronic Patient Care Reporting System posted within the Ventura County EMS system and may differ slightly from other data sources due to collection process variances.

Certification/Accreditation/Authorization



EMT Certification

Emergency Medical Technician (EMT) - The EMT provides basic assessment and treatment to patients that access the Ventura County EMS System. The EMT is trained in basic life support skills including patient assessment and treatment of minor medical conditions and injuries. Once an EMT is certified by a Local EMS Agency, he/she is authorized to operate as an EMT anywhere in the State of California.

EMT ALS Assist – Local authorization level indicating that an EMT has met additional training requirements, and is now able to operate with a Level II Paramedic on a 911 ambulance that responds to medical emergencies. The ALS Assist training includes more in depth training on major medical emergencies such as Cardiac Arrest, and better prepares the EMT for working with a Paramedic in an emergency setting.

Paramedic Accreditation and Authorization

Paramedic – The Paramedic provides advanced emergency medical care for patients who access the Ventura County EMS system. The Paramedic is highly trained in various aspects of patient care and assessment, and is continuously evaluated to ensure knowledge of skills and treatment modalities remains current. The Paramedic operates under clearly defined medical control guidelines and protocol established by the VCEMS Medical Director.



Level I Paramedic – Local authorization level indicating Paramedic has met requirements for initial accreditation, but is not yet authorized to function as the only Paramedic at the scene of a medical emergency.

Level II Paramedic – Local authorization level indicating Paramedic has met requirements for continued accreditation, and is authorized to function as the only Paramedic at the scene of a medical emergency. Level II Paramedics can function alone on a Paramedic Support Vehicle, but may also function as the senior Paramedic working on a two (or more) person team comprised of other EMTs or Paramedics.



MICN Authorization

Mobile Intensive Care Nurse (MICN) – The MICN is a registered nurse authorized by the medical director of the Agency as qualified to communicate instructions to pre-hospital personnel according to EMS policy and procedures. In addition, MICNs are trained in certain

aspects of multi-casualty incident management and act as destination coordinators during a declared MCI, regardless of incident size.

Certification/Accreditation/Authorization Activity

VCEMS Certifications, Accreditations, and Authorizations Issued - 2016	
EMT Certifications	459
EMT Re-Certifications	395
Authorized EMT ALS Assist Active in the VCEMS System	125
Paramedic Accreditation	56
Paramedic Re-Accreditation	99
Authorized Level I Active in VCEMS System	31
Authorized Level II Active in VCEMS System	207
MICN Authorization	22
MICN Re-Authorization	72
Active MICNs in VCEMS System	150

EMS Education Programs

VCEMS Authorized Prehospital Training Programs - 2016	
EMT – Initial and Refresher	9
Paramedic Training Program	1

Additional information regarding CE Provider Programs, EMT, and Paramedic Training Programs can be found online at the California EMS Authority Education Database:
<http://www2.emsa.ca.gov/Training/TrainingMaster/GroupByTrainingMasterTable.aspx>

Emergency Medical Dispatch

The County of Ventura has 9 primary Public Safety Answering Points (PSAP), including California Highway Patrol (CHP), California State University Channel Islands (CSUCI), Naval Base Ventura County (NBVC), Oxnard Police Department (OPD), Port Hueneme Police Department (PHPD), Santa Paula Police Department (SPPD), Simi Valley Police Department (SVPD), Ventura City Police Department (VPD) and Ventura County Sheriff's Office (VCSO). When a primary PSAP receives a call for a medical or fire emergency, the call is transferred to the secondary PSAP at the Ventura County Fire Communications Center (FCC), where fire and ambulance resources are coordinated. In September 2016, the Oxnard Fire Department began receiving dispatch services from FCC, completing the complete regionalization of all Fire/EMS communications under the same system. This change has resulted in increased coordination and communication among response partners, reduced duplication, and closest unit response to emergencies regardless of geographic jurisdiction.

Emergency Medical Dispatch (EMD) is a program designed to provide predetermined medical protocols/medical instructions to victims and bystanders before the arrival of first responders.

Medical Priority Dispatch Systems ProQA Dispatch Software helps emergency dispatchers move smoothly through case entry and key questioning. It assists dispatchers in quickly identifying the appropriate Determinant Code for each case and clearly displays the response configuration. ProQA then guides dispatchers in providing all relevant Pre-Arrival Instructions, as well as important case completion information. In 2016, EMD software was upgraded to ProQA – Version 13 Medical Dispatch Protocols.

Examples of EMD questions and instructions:

ENTRY QUESTIONS

1. What's the **address** of the emergency?
2. What's the **phone number** you're calling from?
3. What's the **problem**, tell me **exactly** what happened?
 - Hanging _____
 - Underwater _____
 - a. **(Not obvious)** Are you **with the patient now**?
 - b. **(Not obvious)** How **many** (other) people are **hurt** (sick)?
 - Traffic/Transportation accident _____
 - Multiple victims _____
 - c. **(Choking)** Is s/he **still choking now**? (You go check and tell me what you find.)

19 HEART PROBLEMS / A.I.C.D.

KEY QUESTIONS

1. Is s/he **completely awake** (alert)?
2. Is s/he **breathing normally**?
3. Is s/he **changing color**?
4. Is s/he **clammy** (cold/sweats)?
5. Does s/he have a **history of heart problems**?
 - a. **(A.I.C.D.)** Did it **fire** (go off) in the last 30 minutes?

A AIRWAY / ARREST / CHOKING (UNCONSCIOUS) – INFANT < 1 YR

1 (Patient to Phone) • Are you right by the baby now ? Yes → 2 (No) Get the baby as close to the phone as possible. Don't hang up. Do it now and tell me when it's done. (If I'm not here, stay on the line.)	2 Check Airway Listen carefully. Lay the baby flat on her/his back on the ground and remove any pillows . Kneel next to the baby and look in the mouth for food or vomit . • Is there anything in the mouth ? Yes → 13 No → 3
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POST-DISPATCH INSTRUCTIONS

- a. I'm sending the **paramedics** (ambulance) to help you now. **Stay on the line** and I'll tell you **exactly** what to do next.
- b. **(Patient medication requested)** Remind her/him to do what her/his **doctor has instructed** for these situations.
- c. **(Special equipment/instructions not yet used)** Advise her/him to **use that treatment now**.

Quality Assurance — ProQA helps each agency maintain a consistently high level of service by improving call taker compliance to the International Association of Emergency Dispatcher (IAED) Protocols. ProQA automatically presents questions and instructions in the proper order. It automatically skips questions and instructions that are not appropriate for the specific circumstances of each case. This automation frees call takers to focus their attention on providing quality service. ProQA also saves every action taken by the call taker so that the information can be exported for use in Quality Assurance (QA) program software.

Emergency Medical Dispatch



Ventura County Fire Communications Center

Oxnard Police/Fire Dispatch

Countywide Emergency Medical Dispatch Activity by Call Type

PROBLEM TYPE	2016 TOTAL INCIDENTS	PROBLEM TYPE	2016 TOTAL INCIDENTS
ABDOMINAL PAIN	1234	HEART PROBLEM	676
ALERT1 / AIRCRAFT STANDBY	11	HEAT / COLD EXPOSURE	56
ALERT3 / AIRCRAFT DOWN	8	HEMORRHAGE / LACERATION	1330
ALLERGIES / ENVENOMATION	469	JUVENILE BEHAVIORAL TRANSPORT	2
AMBULANCE ONLY	468	LIFT ASSIST	647
ANIMAL BITES / ATTACKS	108	MEDICAL ALARM	1800
ASSAULT	1259	MOTORCYCLE COLLISION	103
ASSIST OTHER AGENCY MEDICAL	55	MUTUAL AID - MEDICAL	204
BACK PAIN	540	OBVIOUS OR EXPECTED DEATH	132
BEHAVIORAL EMERGENCY	1317	OVERDOSE / POISONING	1814
BREATHING PROBLEMS	4764	PENETRATING WOUNDS	10
BURNS / EXPLOSIONS	41	PREGNANCY RELATED EMERGENCY	172
CARDIAC / RESP ARREST	790	SICK PERSON	7295
CHEST PAIN	3365	STABBING	123
CHOKING	294	STEMI TRANSPORT	106
INHALATION EXPOSURE / HAZMAT	75	STROKE (CVA)	1266
CONVULSIONS / SEIZURES	2390	TRAFFIC COLLISION	3417
DIABETIC PROBLEMS	923	TECHNICAL RESCUE	27
ELECTROCUTION / LIGHTNING	8	TRAUMA TRANSFER	49
ENTRAPMENT NON VEHICLE	60	TRAUMATIC INJURIES	2146
EYE PROBLEMS / INJURIES	58	UNCONSCIOUS / FAINTING	4491
FALLS	7424	UNKNOWN PROBLEM	8314
GUNSHOT	147	WATER RESCUE	32
HEADACHE	265		
TOTAL 2016 MEDICAL RELATED RESPONSES - 60285			

Fire Departments

Federal Fire Department – Ventura County

Covers all areas of Naval Base Ventura County, including San Nicholas Island, from four stations with BLS engines and BLS ambulances.



Fillmore City Fire Department

Covers the City of Fillmore from one station with ALS and BLS engines.

Oxnard Fire Department

Covers the City of Oxnard from eight stations with eight BLS engines and two BLS ladder trucks.



Fire Departments



Santa Paula Fire Department

Covers the City of Santa Paula from two stations with two BLS engines.

Ventura City Fire Department

Covers the City of Ventura from six stations with six ALS engines and one ALS ladder truck.



Ventura County Fire Department

Covers the cities of Simi Valley, Moorpark, Thousand Oaks, Camarillo, Port Hueneme, Ojai, and all unincorporated areas of Ventura County from 32 stations. Ventura County Fire Department provides services with 11 ALS engines, 21 BLS engines, 3 BLS ladder trucks and 2 ALS squads.



Ambulance Providers

American Medical Response

Covers the cities of Simi Valley, Moorpark, Thousand Oaks, Camarillo, Ventura, Santa Paula, Fillmore, and unincorporated areas within their contracted ambulance service zones with a daily staffing of 14-18 ALS ambulances and 2 ALS supervisors.



Gold Coast Ambulance

Covers the cities of Oxnard and Port Hueneme, and unincorporated areas within their contracted ambulance service zone with a daily staffing of 4-7 ALS ambulances, several BLS ambulances and one ALS supervisor.

Lifeline Medical Transport

Covers the city of Ojai, as well as the unincorporated areas of Oak View, Meiners Oaks and Casitas Springs with daily staffing of 3 ALS ambulances, several BLS ambulances and one ALS supervisor.



Law Enforcement

Ventura County Sheriff's Department Aviation Unit

Covers all areas of the county, including remote wilderness within the Los Padres National Forest and Santa Monica Mountains National Recreation Area



California State University, Channel Islands

Covers first responder emergency medical services for the campus of the State University, as well as the communities immediately surrounding the campus.

Harbor Patrol

Channel Islands Harbor Patrol

Covers the Channel Islands Harbor, as well as the ocean area surrounding the harbor.



Ventura Harbor Patrol

Covers the Ventura Harbor, as well as the communities immediately surrounding the harbor and the ocean area surrounding the harbor.

Ambulance Contract Administration and Oversight



Through “performance-based” ambulance service agreements, the Ventura County Emergency Medical Services Agency conducts comprehensive monitoring and evaluation of the EMS System to ensure compliance with standards, policies and procedures in order to provide our jurisdiction with the best possible prehospital emergency medical care.

In December 2004, the County entered into seven (7) agreements for continued provision of emergency ambulance service by its existing “grandfathered” providers, one for each of the seven Ventura County EMS service areas. One agreement is with Lifeline Medical Transport for Area 1; one with Gold Coast Ambulance Service for Area 6; and five are with American Medical Response (AMR) for Areas 2, 3, 4, 5 and 7.

The original term for each agreement was six (6) years, from January 1, 2005 through June 30, 2011, with review of contractor performance every two years per the Contractors Review Process outlined in the agreement. Contractor’s meeting or exceeding the minimum agreement requirements and expectations shall be entitled to a two-year extension of the term of this agreement. Reviews conducted in 2007, 2009, 2011, 2013 and 2015 resulted in approval of two-year extensions, with current agreements extending through 2021.

The ambulance agreements outline the services to be performed by the contracted providers including, but not limited to:

- Providing uninterrupted emergency ambulance service on a continuous 24/7 basis
- Collecting data utilizing the VCEMS electronic patient care record system
- Ensuring compliance with response time standards
- Participation in the Continuous Quality Improvement Program
- Providing staffing consistent with VCEMS policies and procedures
- Conducting required staff training and education
- Providing comprehensive fleet maintenance and scheduled ambulance replacement
- Conducting public information and education

All emergency ambulances in Ventura County are dispatched through contract with the Ventura County Fire Communications Center using the TriTech Computer Aided Dispatch system. Ambulances are deployed countywide based on established System Status Management plans and all are equipped with modern mobile dispatch computers and automatic vehicle location systems. All emergency ambulances are equipped with mobile and portable radios programmed to the County’s uniform channel listing, which allows all first responders and ambulance personnel to communicate on common radio frequencies.

Ambulance Contract Administration and Oversight

Response Time Performance Standards

Ambulance response time compliance is monitored through the FirstWatch Online Compliance Utility program. Compliance performance by exclusive operating zone is included in this report on subsequent pages. Response time criteria varies based on population density and call priority. Metropolitan/Urban areas require an ambulance response time of 8 minutes, 90% of the time for emergencies and 15 minutes, 90% of the time for non-emergencies. Suburban/Rural areas require an ambulance response time of 20 minutes, 90% of the time. Various low density and geographically remote areas are allowed an ambulance response time of 30 minutes, 90% of the time and highly remote "Wilderness" areas are contracted as ASAP zones and listed as 45 minute response zones in the data for reporting purposes only. Non-compliant responses, without an approved exemption, are assessed a financial penalty based on the contract guidelines. Area 4 is divided into four sub-zones for purposes of penalty assessment, however, contracted 90% requirement is based on total Area 4 compliance. In 2016, there was one instance in Area 3 and one instance in Area 5, where the 90% requirement was not met, however, these were minor variances that did not represent a material breach according to the contract terms. All other areas were fully compliant with the 90% requirement in 2016.

2016 Response Time Compliance

All Exclusive Operating Areas (EOA)

	LMT 1	AMR 2	AMR 3	AMR 4	AMR 5	GCA 6	AMR 7	Average
JAN	95.54%	90.35%	93.69%	90.07%	89.11%	93.39%	95.55%	92.03%
FEB	95.48%	92.13%	91.77%	91.62%	90.93%	95.74%	96.72%	92.95%
MAR	98.00%	94.94%	91.82%	90.59%	92.68%	93.97%	95.35%	93.67%
APR	98.45%	92.83%	92.08%	92.98%	93.57%	94.97%	94.87%	94.15%
MAY	96.15%	91.76%	92.38%	91.71%	93.59%	94.79%	94.34%	93.40%
JUN	96.20%	92.67%	92.77%	91.24%	92.87%	94.85%	93.51%	93.43%
JUL	97.08%	93.62%	89.50%	90.57%	90.87%	95.14%	95.27%	92.80%
AUG	97.58%	92.22%	92.46%	90.72%	92.89%	96.17%	94.36%	93.67%
SEP	96.18%	93.81%	92.84%	92.71%	91.74%	93.70%	95.12%	93.50%
OCT	96.73%	92.64%	93.01%	92.99%	93.40%	95.09%	93.81%	93.98%
NOV	92.76%	93.39%	94.07%	91.71%	91.60%	94.90%	94.44%	93.07%
DEC	93.98%	92.64%	92.90%	91.85%	92.61%	94.86%	96.05%	93.14%
Average	96.18%	92.75%	92.44%	91.56%	92.16%	94.80%	94.95%	93.31%

EOA Providers

AMR = American Medical Response
GCA = Gold Coast Ambulance
LMT = LifeLine Medical Transport

EOA Zones

1 = Ojai/Oak View
2 = Santa Paula/Fillmore/Piru
3 = Simi Valley
4 = Thousand Oaks/Moorpark
5 = Camarillo
6 = Oxnard/Port Hueneme
7 = Ventura

Area 4 Sub-Zones

MP = Moorpark
NP = Newbury Park
OP = Oak Park
TO = Thousand Oaks

Lifeline Medical Transport Exclusive Operating Area 1 Compliance

Comprised of the City of Ojai and the unincorporated areas of the Ojai Valley including Upper Ojai, Meiners Oaks, Miramonte, Oak View, Casitas Springs and the Hwy. 33 and Hwy. 150 corridors.

2016		EOA1				
		08:00	15:00	20:00	30:00	45:00
Total Volume	1,769	1,323	268	115	8	55
At-Scene Time Not Documented	2	2	0	0	0	0
Compliant - Time Extension	64	64	0	0	0	0
Compliant - No Map	0	0	0	0	0	0
Gross Exceptions	190	161	18	11	0	0
Exemptions Requested	149	120	18	11	0	0
Exemptions Approved	122	94	17	11	0	0
Chargeable Late Responses	68	67	1	0	0	0
Compliance	96.18%	94.94%	99.63%	100.00%	100.00%	100.00%

American Medical Response Exclusive Operating Area 2 Compliance

Comprised of the Cities of Santa Paula and Fillmore and the unincorporated areas of the Santa Clara Valley including Piru, South Mountain, Bardsdale, and the Hwy. 126 corridor.

2016		EOA2				
		08:00	15:00	20:00	30:00	45:00
Total Volume	3,174	2,303	427	370	24	50
At-Scene Time Not Documented	17	12	2	3	0	0
Compliant - Time Extension	74	74	0	0	0	0
Gross Exceptions	377	314	33	30	0	0
Exemptions Requested	157	134	10	13	0	0
Exemptions Approved	147	125	10	12	0	0
Chargeable Late Responses	230	189	23	18	0	0
Compliance	92.75%	91.79%	94.61%	95.14%	100.00%	100.00%

American Medical Response Exclusive Operating Area 3 Compliance

Comprised of the City of Simi Valley and the surrounding unincorporated areas.

2016		EOA3				
		08:00	15:00	20:00	30:00	45:00
Total Volume	7,017	5,852	1,082	82	0	1
At-Scene Time Not Documented	41	36	4	0	0	0
Compliant - Time Extension	204	204	0	0	0	0
Gross Exceptions	837	784	47	6	0	0
Exemptions Requested	317	285	29	3	0	0
Exemptions Approved	307	276	29	2	0	0
Chargeable Late Responses	530	508	18	4	0	0
Compliance	92.44%	91.32%	98.34%	95.12%	100.00%	100.00%

American Medical Response Exclusive Operating Area 4 Compliance

Comprised of the Cities of Thousand Oaks and Moorpark and the unincorporated areas of the Conejo Valley including Newbury Park, Oak Park, Westlake, North Ranch and Lake Sherwood.

2016		EOA4				
		08:00	15:00	20:00	30:00	45:00
Total Volume	11170	9109	1778	243	0	47
At-Scene Time Not Documented	42	34	8	0	0	0
Compliant - Time Extension	588	588	0	0	0	0
Gross Exceptions	1197	1128	67	2	0	0
Exemptions Requested	266	234	32	0	0	0
Exemptions Approved	252	221	31	0	0	0
Chargeable Late Responses	945	907	36	2	0	0
Compliance	91.56%	90.04%	97.98%	99.91%	100.00%	100.00%

American Medical Response Exclusive Operating Area 5 Compliance

Comprised of the City of Camarillo and the surrounding unincorporated areas including Somis, Santa Rosa Valley and the California State University Channel Islands.

2016		EOA5				
		08:00	15:00	20:00	30:00	45:00
Total Volume	6,352	5,175	973	188	0	16
At-Scene Time Not Documented	29	27	2	0	0	0
Compliant - Time Extension	249	249	0	0	0	0
Gross Exceptions	703	671	29	3	0	0
Exemptions Requested	210	194	13	3	0	0
Exemptions Approved	204	188	13	3	0	0
Chargeable Late Responses	499	483	16	0	0	0
Compliance	92.16%	90.67%	98.36%	100.00%	0.00%	100.00%

Gold Coast Ambulance Exclusive Operating Area 6 Compliance

Comprised of the Cities of Oxnard and Port Hueneme and the surrounding unincorporated areas including El Rio, Nyeland Acres, Silver Strand, Naval Base Ventura County, Point Mugu and Malibu.

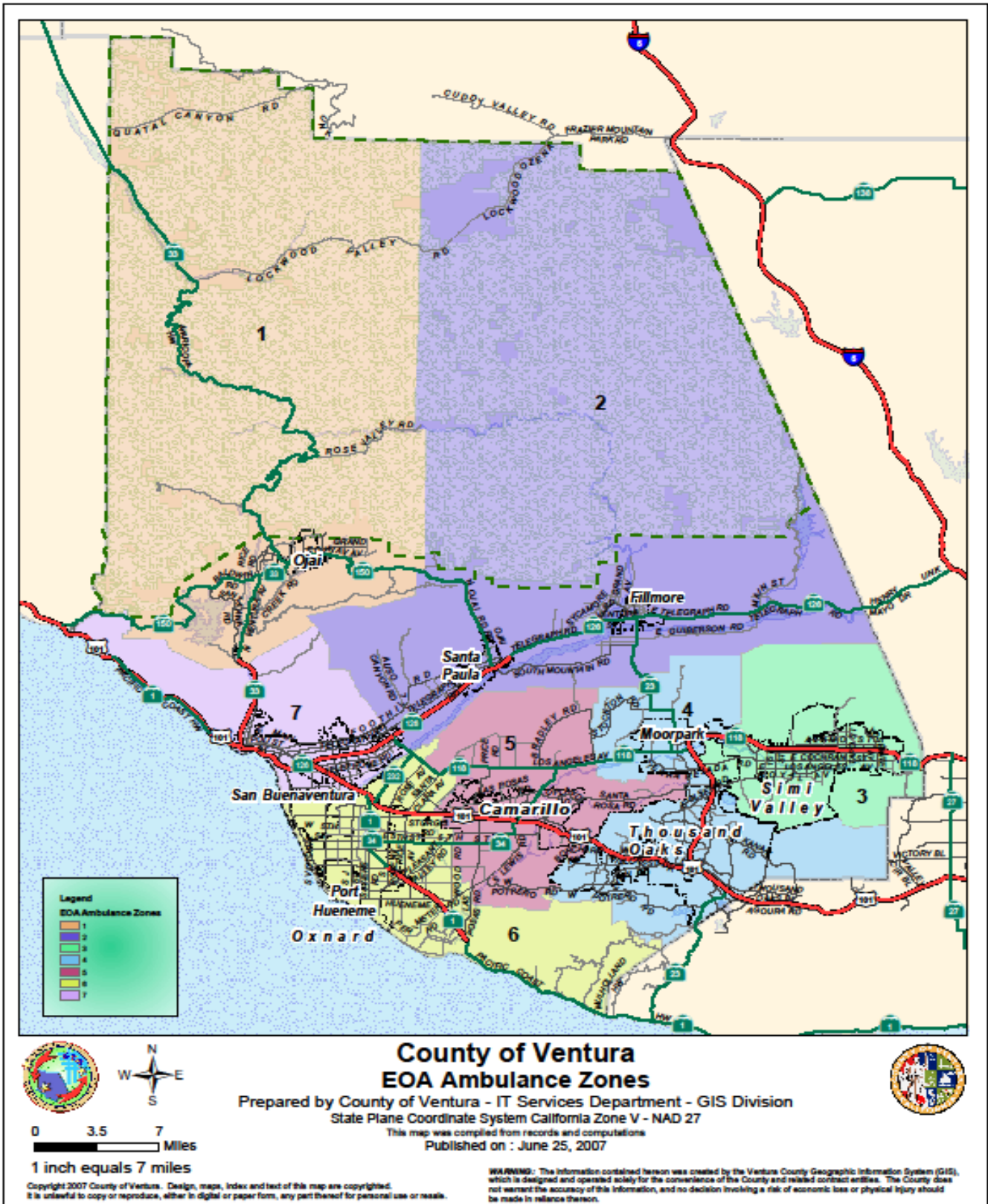
2016		EOA6				
		08:00	15:00	20:00	30:00	45:00
Total Volume	15,234	13,257	1,530	355	52	40
At-Scene Time Not Documented	60	57	2	1	0	0
Compliant - Time Extension	98	98	0	0	0	0
Gross Exceptions	1,446	1,371	69	5	1	0
Exemptions Requested	666	624	39	2	1	0
Exemptions Approved	650	610	37	2	1	0
Chargeable Late Responses	796	761	32	3	0	0
Compliance	94.80%	94.26%	97.91%	99.15%	100.00%	100.00%

American Medical Response Exclusive Operating Area 7 Compliance

Comprised of the City of Ventura and the surrounding unincorporated areas
Including Saticoy, Montalvo, Rincon and La Conchita.

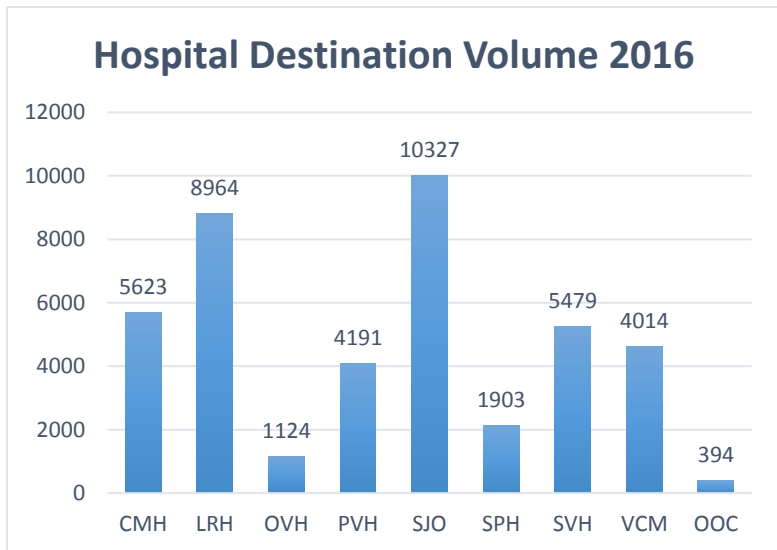
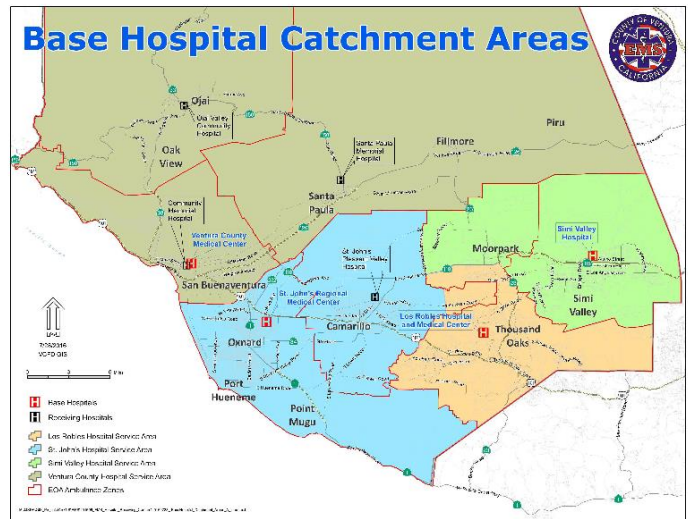
2016		EOA7				
		08:00	15:00	20:00	30:00	45:00
Total Volume	10,657	9,037	1,444	129	30	17
At-Scene Time Not Documented	31	24	6	1	0	0
Compliant - Time Extension	1,290	1,290	0	0	0	0
Gross Exceptions	1,104	1,007	91	5	1	0
Exemptions Requested	583	518	60	4	1	0
Exemptions Approved	568	507	57	3	1	0
Chargeable Late Responses	536	500	34	2	0	0
Compliance	94.95%	94.47%	97.65%	98.45%	100.00%	100.00%





Ventura County Base and Receiving Hospitals

There are eight acute care hospitals in Ventura County, all of whom have emergency departments and receive ambulances with patients involved in prehospital incidents. Four of these hospitals are designated as Base Hospitals, providing oversight and direction to the county’s prehospital providers. Hospitals who provide specialty care services are recognized by EMS policy, and patients who triage into specialty criteria are preferentially directed to the closest, most appropriate hospital for care. A patient who arrives at a hospital by private vehicle may be rapidly assessed, and if any specialty criteria is met, an ambulance may be summoned immediately to transfer the patient to a specialty hospital. Ventura County boasts one of the best systems in the nation for rapid assessment and re-triage to specialty care.



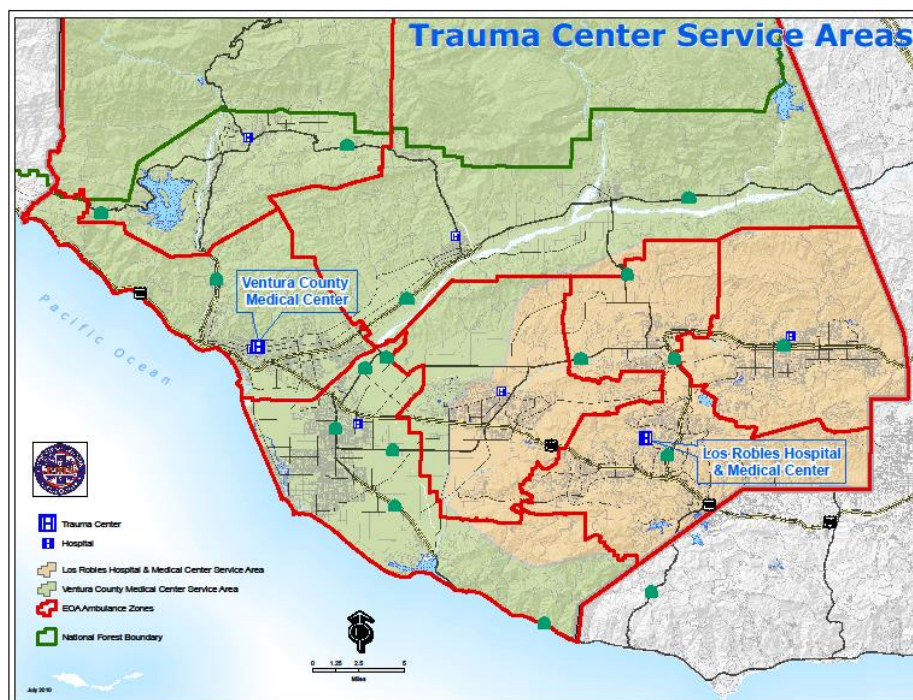
HOSPITAL CAPABILITIES	Receiving Hospital	Base Hospital	Level II Trauma Center	Acute Stroke Center	STEMI Receiving Center	Labor & Delivery
CMH	X			X	X	X
LRHMC	X	X	X	X	X	X
OVCH	X					
PVH	X			X		
SPH	X					X
SVH	X	X		X	X	X
SJRMCC	X	X		X	X	X
VCMC	X	X	X			X

Ventura County Trauma System

Ventura County's trauma system was initiated in July 2010, and since then, has provided specialty trauma care to thousands of patients with traumatic injuries. The County's system of prehospital triage, rapid transport, and emergency department care has resulted in lives saved and reduction in disabilities associated with trauma.

Through prehospital triage and rapid emergency department assessment, patients with life-or-limb threatening injuries are rapidly identified and triaged to the closest, most appropriate trauma center. Patients who self-refer to a non-trauma center hospital may be rapidly triaged by the emergency department physician and immediately transferred to a trauma center by 911 ambulance.

There are two Level II Trauma Centers in the County, both of whom are County-designated and accredited by the American College of Surgeons (ACS): Los Robles Hospital & Medical Center and Ventura County Medical Center. Trauma Center catchment areas are assigned according to drive time from an incident to the trauma center. With the population centers and division of trauma destinations, most trauma patients from a 911 incident arrive at a trauma center within fifteen minutes after an ambulance departs the scene.



2016 Ventura County Trauma Destinations

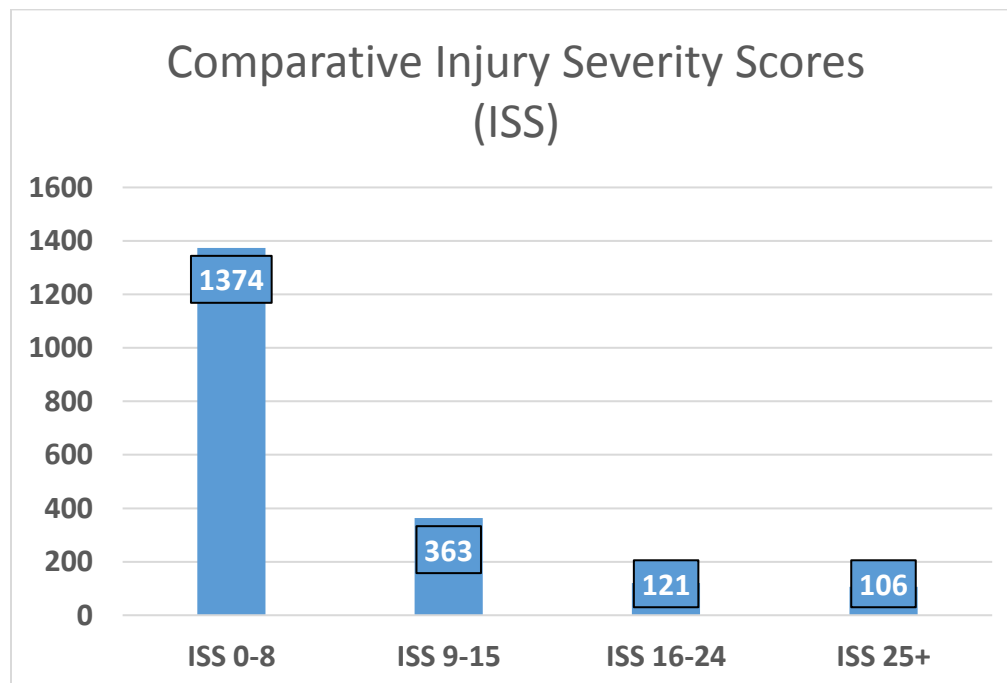
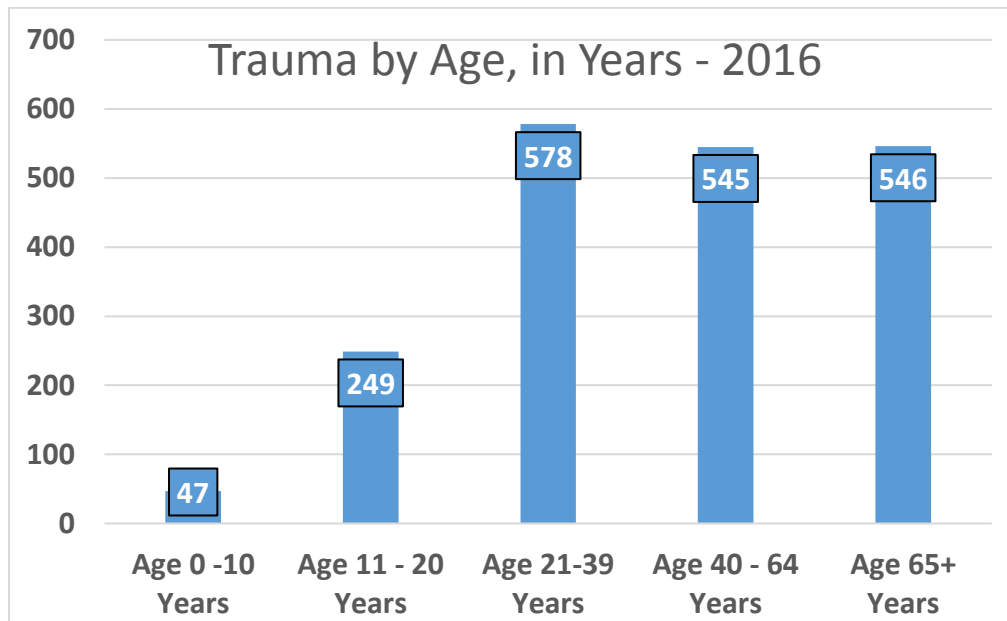
Base Hospital Destination	Step 1 TOTAL 301	Step 2 TOTAL 203	Step 3 TOTAL 468
VCMC Trauma Base Hospital	188	169	335
VCMC	162	149	220
CMH	4	1	6
SPH	5	2	3
SJRCM	2	8	42
SJPV	1	1	1
OVH	2	1	14
LRHMC	10	7	24
HMNMH	2	0	15
LRHMC Trauma Base Hospital	113	34	143
LRHMC	109	32	140
VCMC	1	1	1
SVH	2	1	1
Kaiser WH	1	0	0
Holy Cross	0	0	1

Ventura County established, and provides leadership for, two active committees that provide system oversight, policy review, and peer education.

The Tri-County Trauma Audit Committee (TAC) is a confidential, closed committee consisting of trauma surgeons, program managers and prehospital coordinators from three Level II, and two Level III trauma centers, located in Ventura, Santa Barbara, and San Luis Obispo Counties. The committee provides a collaborative forum in which trauma cases that meet specific audit filter criteria may be discussed and reviewed. Representatives from all five trauma centers present cases for confidential peer review, and bring an important perspective to Ventura County's trauma system and regional trauma care.

The Trauma Operational Review Committee (TORC) is a confidential, closed committee consisting of representatives from the local EMS agency, first responder and transport provider agencies, non-trauma hospitals and trauma centers in Ventura County. The committee provides a collaborative forum in which system issues surrounding trauma care may be brought for discussion and improvement, such as prehospital destination determinations and interfacility transfers for trauma care.

Ventura County Trauma System Statistics



The **Injury Severity Score (ISS)** is an established medical score to assess trauma severity. It correlates with mortality, morbidity and hospitalization time after trauma, and is used to define the term “major trauma.” A major trauma is defined as the ISS being greater than 15.



Cardiac Arrest Management (CAM)

Cardiac Arrest Management (CAM) represents nine years of hard work from all of our EMS Stakeholders. We have tracked our cardiac arrest statistics since 2007 and joined the national Cardiac Arrest Registry to Enhance Survival (CARES) Program in 2008, making a commitment to improve our survival rates. By using the “pit crew” technique combined with the latest resuscitation science, a prescribed set of actions were developed. Each first responder is trained with a job to do and understands their position’s responsibility when arriving on scene of a patient who is not breathing and does not have a pulse. We have improved our bystander CPR rates by expanding our community education of “hands only” CPR. Conejo Valley Unified School district helped support our efforts by providing training for all 9th grade and 12th grade students in “hands only” CPR. The CARES national benchmark for bystander CPR is 39.9%. Ventura County data shows an increase in bystander CPR from 48.6% to 53.3% in 2016.

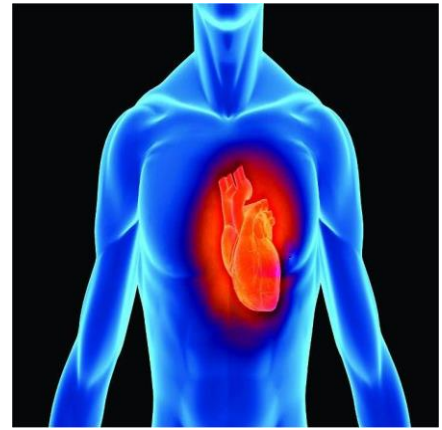
Performance Data for 2016

Presumed Cardiac Etiology: Resuscitation attempted	381
Bystander CPR Provided	53.30%
Survival to Hospital Discharge	15.0%
<i>CARES National Benchmark for survival to Hospital Discharge</i>	10.0%
Bystander Witnessed, Shockable 1st Rhythm: Resuscitation attempted	60
Bystander CPR Provided	71.70%
Survival to Hospital Discharge	43.30%

STEMI System

Most deadly type of heart attack

Patients suffering from an ST Elevation Myocardial Infarction (STEMI) have the best chance of survival when they receive rapid assessment and transport to a receiving hospital which have specialized equipment and personnel to treat these deadly heart attacks. The Ventura County STEMI System began in



2007 with 3 STEMI Receiving Centers (SRC). In 2016, we designated Simi Valley Hospital as a SRC, bringing our total to four in the county. Paramedics use field transmission of 12-Lead ECGs and “STEMI Alerts” to provide early notification of cardiac intervention teams. The goal for the patient who is having a STEMI is to receive a procedure called Percutaneous Cardiac Intervention, which quickly restores blood flow to the heart. When a patient is identified as having a STEMI in a non-STEMI hospital, we have systems in place for a rapid transport to a STEMI receiving hospital within 30 minutes. 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. In 2016, Ventura County STEMI System received the Gold Level recognition from the American Heart Association’s Mission Lifeline program for the second year in a row. 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. Below are other performance measures we track and assess for improvement.

Performance Data for 2016

Criteria	County Performance Data
Total number of EMS STEMI Patients who received Percutaneous Cardiac Intervention	117
911 call to Percutaneous Cardiac Intervention	86 Min (Goal < 90 min)
Positive EMS STEMI 12-Lead to Percutaneous Cardiac Intervention	72 Min (Goal < 90 min)
Arrival at STEMI hospital to Percutaneous Cardiac Intervention	53 Min (Goal < 90 min)



Stroke System

Fifth-leading cause of death nationally,
and the leading cause of permanent disability

In 2016, Ventura County had 1474 patients who were diagnosed with strokes, which were treated at one of five facilities designated as Primary Stroke 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. One of these five facilities, Los Robles Hospital and Medical Center, took it a step further and was certified as a Comprehensive Stroke Center (CSC), which provides for specialty procedures such as removal of a blood clot, known as an Emergent Large Vessel Occlusion (ELVO). All of these facilities participate in the American Heart Association “Get with the Guidelines” Stroke Registry. We are able to evaluate specific measurements of quality of care and report Core Measures to the State. Paramedics are trained to evaluate patients using the Cincinnati Stroke Scale and provide early notification by calling in a “stroke alert” to the hospital so resources can be mobilized to provide immediate treatment of a possible stroke patient upon arrival. In 2016 we developed a pilot study in the east end of our county to screen for ELVO type stroke patients. Once identified, using a prehospital screening tool called the Ventura ELVO Score (VES), the patient was transported to our CSC. There were 26 ELVO prehospital activations in 2016. We hope to expand our ELVO study countywide in 2017 to directly transport ELVO patients from the field to a CSC or a Thrombectomy Capable Acute Stroke Center (TCASC) for this specialized treatment of removing the blood clot. In 2017, our plan includes the certification of one or two more of our current Stroke Centers to be a TCASC. The primary objective of a stroke system is to coordinate care between the emergency medical system and hospitals so patients possibly suffering from a stroke will receive care within 3 to 4 ½ hours of their first symptoms.

Ventura County EMS Agency developed a unique identifier which allows us to track a patient’s care from the 911 call through their hospital stay. One of the intervals we track is the time dispatch is notified to the time a neurologist receives the brain image report. In 2016 our median time for this interval is 47 minutes. Our on-scene time is 12 minutes, well below the 15 minute goal. We also monitor the time of arrival at the hospital to the time the clot-busting medication tPA (Tissue Plasminogen Activator) is administered. The benchmark goal is within 60 minutes, and in 2016 our median time is 54 minutes.

Performance Data for 2016

Criteria	County Performance Data
Total stroke patients	1474
Total number of ischemic strokes	923 (63%)
Total ischemic stroke patients who arrived by ambulance	422 (46%)
Total ischemic stroke patients who self-transported	385 (42%)
Total ischemic stroke patients who arrived by interfacility transport	116 (12%)
Percentage of ischemic stroke patients treated with IV tPA who arrived within 4.5 hours of time last known well.	9% (national average 1-7%)
Percentage of patients treated with IV tPA within 60 min.	73% (national average 50%)

Quality Improvement Program



The Ventura County EMS Quality Improvement Program uses patient care data from our stakeholders to evaluate system performance. Hospitals submit data through the Outcome Sciences Registry for our Stroke Program, Cardiac Arrest Registry to Enhance Survival (CARES) for our Sudden Cardiac Arrest Program, ImageTrend Trauma Registry for our Trauma System, and an internal secure system for our STEMI Program data. Countywide EMS providers use the ImageTrend electronic patient

care record system (e-PCR) and dispatch data is collected through the County Fire Department TriTech Computer Aided Dispatch system and Medical Priority Dispatch System (MPDS). Data is collected from our pre-hospital agencies and hospitals in order to follow a patient from a 911 call to activities done in the hospital.

In 2016, we developed and distributed to our stakeholders a complete annual EMS Systems Performance Report along with posting it on our new EMS website for the public to review.

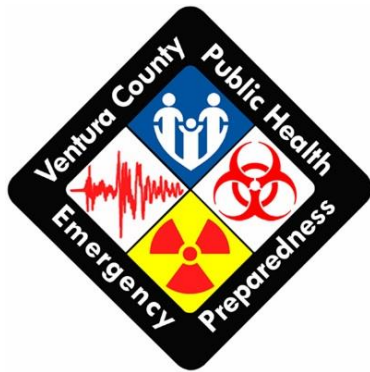
The American Heart Association awarded our EMS Agency, along with 10 other first responder agencies, the 2016 Mission Lifeline Gold Level Award for outstanding performance in STEMI data measures. By reviewing our Sudden Cardiac Arrest data, we are able to maintain our survival rate percentages above the CARES national benchmark.

We participate in Ventura County's Fall Prevention program by gathering data on patients that have fallen or have a potential to fall and are *not* transported by EMS to the hospital. We answer a set of questions that are sent to the fall prevention coordinator along with leaving educational material about fall prevention at the home. We meet quarterly to discuss the data and areas of improvement. The Fall Prevention Committee had two community outreach symposiums in 2016, including one presented in Spanish. We have seen a decrease in secondary falls during 2016.

Ventura County EMS continues to require all paramedics to attend 4 airway lab stations over a two year period along with one paramedic skills day annually. The paramedic skills lab sessions include education stations covering certain low frequency, high risk procedures. In addition, various critical procedures, such as advanced airway, transcutaneous pacing, and intraosseous infusion are monitored regularly through the FirstWatch data surveillance software.

Ventura County's two Trauma Centers also actively participate in data collection, which helps to identify severity index scores on EMS patients. We can analyze this data and use it for injury prevention education in the community. Data measures are patient focused and implementation for improvement is timely and sustainable through the collaboration of our key stakeholders.

Public Health Emergency Preparedness Program (PHEP) Hospital Preparedness Program (HPP)

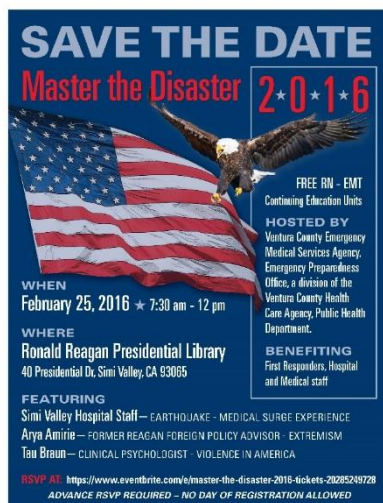


In response to the attacks of September 11, 2001 and the subsequent anthrax attacks later that year, public health and medical leaders became concerned about the low level of preparedness for bioterrorist attacks on the United States.

The Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness Program (PHEP) were created with funding provided to address gaps in medical and health preparedness. Ventura County has participated in the preparedness program since its inception in 2002.

The year Emergency Preparedness Office activity included the following:

- Master the Disaster 2016 (SEE BELOW)
- Invited to present at the National PREP conference in Texas on “coalition building”
- Facilitated activation of our Department Operations Center to track a “Myocardial” event
- Site visits to multiple coalition partners facilities for medical preparedness related assistance
- Hosted training “Bedside Credentialing Toolkit” for Public Health Nursing/MRC volunteers
- Host research interns from CLU - “Ventura County Youth in Disaster Preparedness”
- Provide a variety of presentations to the student nurses at local colleges and university
- Supporting the AOPA Fly-in at Camarillo Airport
- Staff participated in the Annual Health Care Coalition Conference in Washington DC
- Developed an online ESRI/ARC GIS platform for our situation report form with CDPH
- Staff attended and were trained on ICS level 300-400 in compliance with NIMSCAST
- Inventory of disaster supplies at all cities (MCI trailers), hospitals (surge trailers), and college campuses throughout the county



Master the Disaster 2016

In February 2016, Ventura County Emergency Medical Services Agency held the 6th annual “Master the Disaster” preparedness seminar. This event was attended by 550 first responders and medical facility staff.

Current events within the response sector require careful analysis to improve outcomes. This annual training symposium aims to do just that. The number of incidents that have occurred each year continue to allow for detailed post-incident analysis, which results in improved outcomes on subsequent events.

Ventura County Medical Reserve Corps



Our local Medical Reserve Corps unit boasts 80+ medical volunteers under the direction of EMS staff and the Ventura County Medical Reserve Corps Council. The Medical Reserve Corps (MRC) is a network in the U.S. of community-based units initiated and established by local

organizations to meet the public health needs of their communities. It is sponsored by the Office of the Assistant Secretary for Preparedness and Response (ASPR). The MRC consists of medical and non-medical volunteers who contribute to local health initiatives, such as activities meeting the Surgeon General's priorities for public health, and supplement existing response capabilities



in time of emergency. The MRC provides the structure necessary to pre-identify, credential, train, and activate medical and public health volunteers. MRC conducts monthly meetings and trainings, they have assisted at various event medical-aid stations and are developing processes to credential MRC volunteers to assist at operational area hospitals. If you are interested in joining the Ventura County MRC, please contact the EMS office at 805-981-5301.

California Health Alert Network (CAHAN)



The California Health Alert Network (CAHAN) is the State of California's web-based information and communications system available on a 24/7/365 basis for distribution of health alerts, dissemination of prevention guidelines, coordination of disease investigation efforts, preparedness planning, and other initiatives that strengthen state and local preparedness. CAHAN participants have the ability to receive alerts and notifications via e-mail, fax, and phone (cellular and landline).

- Rapid and secure communications system among state and local health agencies, health care providers, emergency management officials, and other emergency response partners
- Dissemination of announcements from local, state or federal public health authorities to inform health and medical service personnel of likely or imminent dangers to the health of their community
- Secure collaborative environment to develop and share information for emergency preparedness planning and response

If you are affiliated with a healthcare facility in the Ventura area and would like to sign up for CAHAN please contact the EMS office at 805-981-5301.



Ventura County Health Care Coalition

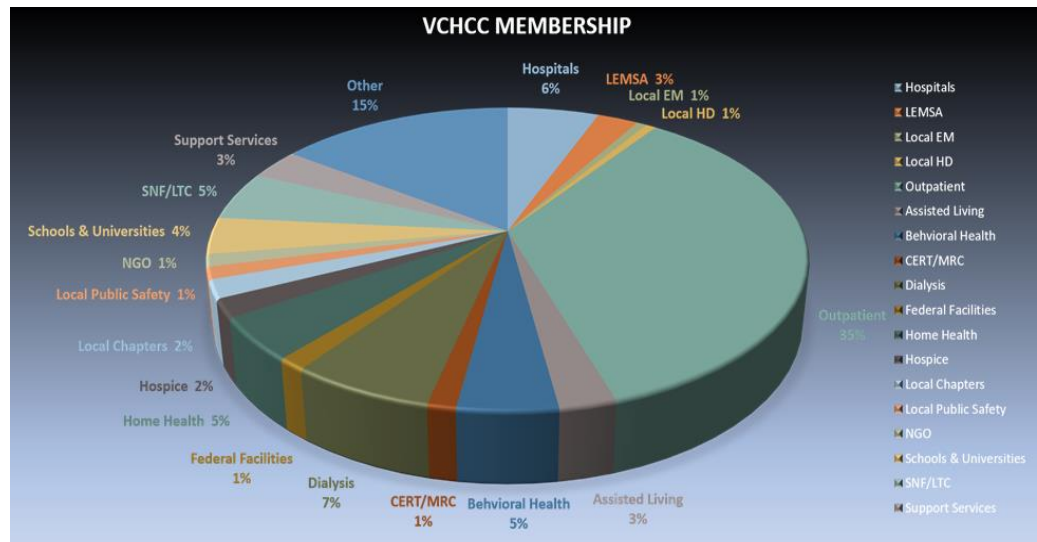
Since its inception in 2015, the Ventura County Health Care Coalition (VCHCC) has continued to grow exponentially in members and participating facilities. Much of the growth was a direct result of the outreach conducted which included: working on disaster caches throughout the County of Ventura, speaking at national conferences, establishing important relationships with key groups such as the HealthInsight ESRD Network 18, sitting on disaster committees, etc.

Early in 2016, Ventura County experienced a significant rain event that brought about a momentous milestone in the coalition’s evolution wherein many of VCHCC’s efforts had come to fruition. During the rain event, VCHCC queried all members and participating facilities in an effort to discover the integrity of the facilities. The intel provided was shared with Ventura County Emergency Medical Services Agency (EMSA) and Ventura County Sheriff’s Office of Emergency Services (OES) administration, to assist in the building of a common operating picture. The After Action Meeting and subsequent report/improvement plan resulted in the build of a Facility-to-Local Health Department Situation Status Report form (SitRep); the first of its kind in California! A few months after the implementation of the SitRep in Ventura County, several other counties in the State of California had already borrowed and adopted the form.

In 2016, VCHCC was very pleased to implement our Preparedness Outreach Meetings. Via these meetings, coalition participants are afforded the opportunity to have a team of subject matter experts – inclusive of a local ambulance provider – come to their facility to assist them with their disaster preparedness efforts.

2016 also saw VCHCC’s first funded initiatives vote wherein the voting members determined the coalition initiatives that they would like to see funded and implemented.

On September 16, 2016 the Centers for Medicare and Medicaid Services (CMS) published the new CMS



Emergency Preparedness Rule (previously referred to as Title 22). This requires that all CMS suppliers and providers meet the four core elements of the rule which include: Emergency Plan backed by a hazard vulnerability assessment/risk analysis, Communications Plan, Policies & Procedures, and Training & Testing. The Rule went into effect on November 16, 2016, however, CMS suppliers and providers were given until November 15, 2017 to reach compliance. VCHCC used the remaining months of 2016 to conduct research on the regulation and begin planning activities, trainings, and exercises for 2017 that would assist facilities in meeting the new Rule.

Ventura County Emergency Medical Services Agency

Prehospital Services Committee

The purpose of this committee shall be to provide input to the VC Emergency Medical Services (EMS) Medical Director and VC EMS administration on matters pertaining to emergency medical services, including, but not limited to, dispatch, first responders, ambulance services, communications, medical equipment, training, personnel, facilities, and disaster medical response. Membership is composed of two representatives, as appointed by the organization administrator from each of the following organizations:

Type of Organization	Member	Member
Base Hospitals	PCC	PLP
Receiving Hospitals	ED Manager	ED Physician
First Responders	Administrative	Field (provider of "hands-on" care)
Ambulance Companies	Administrative	Field (provider of "hands-on" care)
Emergency Medical Dispatch Agency	Emergency Medical Dispatch Coordinator (1 representative selected by EMD Agency coordinators)	
Air Units	Administrative	Field (provider of "hands-on" care)
Paramedic Training Programs	Director (1 representative from each program.)	

EMS Advisory Committee

The EMS Advisory Committee is a panel comprised of five members designated by the Board of Supervisors and two members designated by VCEMS. The EMS Advisory Committee reviews the ambulance contractor performance at least every two years and provides other EMS system evaluation and oversight as needed.

Nancy Merman	–	Representing District 1 Supervisor Steve Bennett
Diane Starzak	–	Representing District 2 Supervisor Linda Parks
Bob Taylor	–	Representing District 3 Supervisor Kelly Long
Ray Blackwell	–	Representing District 4 Supervisor Peter Foy
Joe Milligan	–	Representing District 5 Supervisor John Zaragoza
Audra Strickland	–	EMS Agency Appointed Representative
Daniel Shepherd, MD	–	EMS Agency Appointed Representative

Ventura County Emergency Medical Services Agency

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Karen Beatty, Specialty Systems Coordinator

Julie Frey, EMS Program Coordinator

Randy Perez, EMS Program Coordinator

Barbara Spraktes, EMS/EPO Epidemiologist

Janelle Leza, Health Care Coalition Coordinator

Diane Gilman, Administrative Assistant II

Erik Hansen, Community Services Coordinator

Martha Garcia, Administrative Assistant I

Jeff Vahl, Community Services Coordinator

Grayson Carroll, EMS Agency Volunteer Explorer

Heidi Popp, Management Assistant I

Debbie Haney, Administrative Assistant

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Provider Agency and FCC photos - Robert Navarro

Ventura County EMS Agency

Stakeholder Agencies



VENTURA COUNTY EMERGENCY MEDICAL SERVICES AGENCY
A Division of Ventura County Public Health Department
A Department of Ventura County Health Care Agency