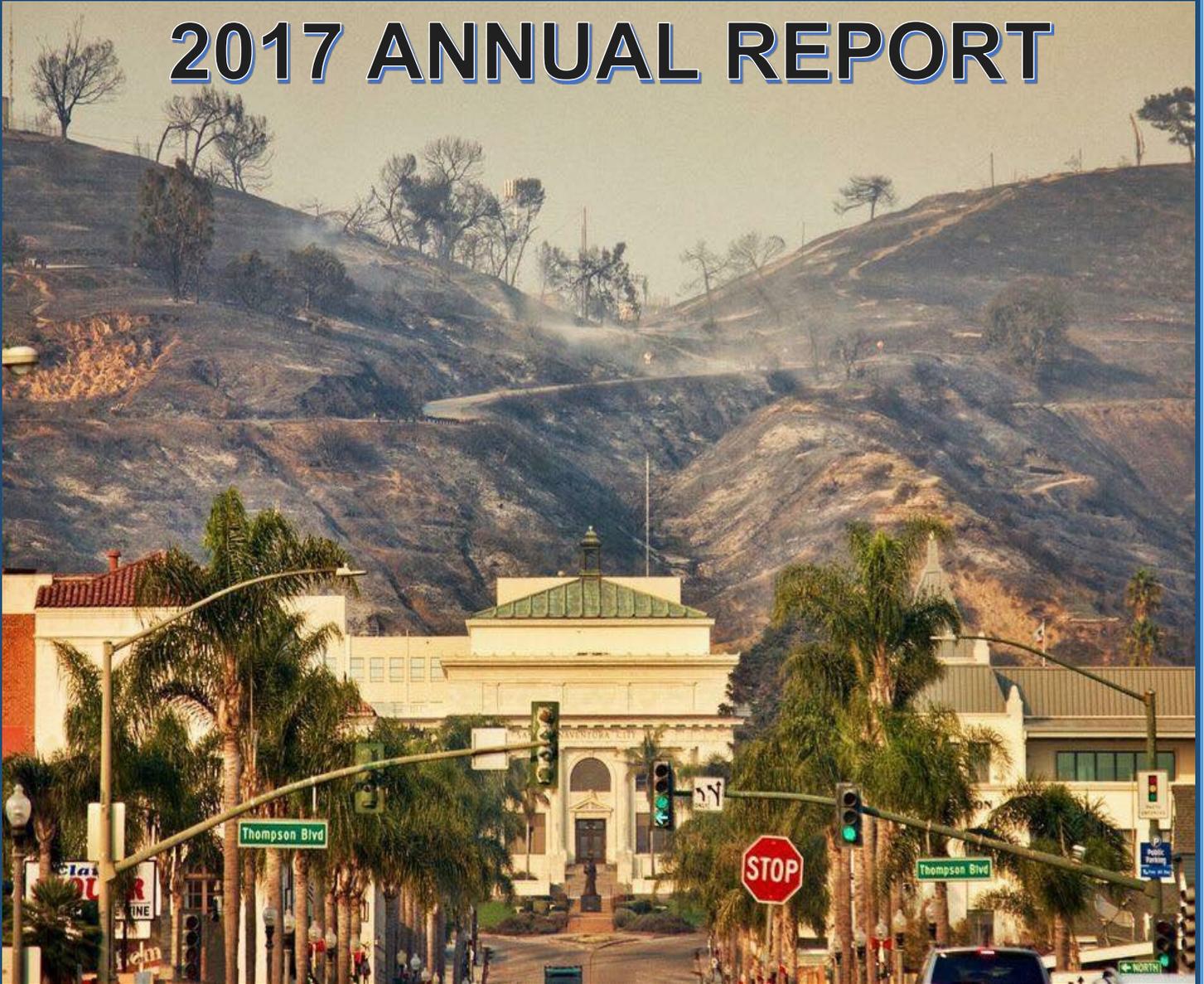




Ventura County Public Health Emergency Medical Services Agency

2017 ANNUAL REPORT



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 2017 Annual System Report, reviewing the operations and performance of the Ventura County EMS Agency and the EMS System.

2017 proved to be a successful year for EMS culminated by the devastating effects of the Thomas Fire in December. In February, we sponsored the highly successful Master the Disaster training symposium with over 600 attendees. In the spring, the EMS Agency collaborated with Ventura County Fire Department to develop the Stop the Bleed program, which trains county employees in basic trauma care. In partnership with the County Executive Office, we coordinated the placement of 19 bleeding control stations in various county maintained facilities. In July, the new State of California EMT regulations were implemented, resulting in a number of certification and education program changes. In response to a dramatic increase in opioid overdoses, we developed policies and procedures and implemented a law enforcement use of naloxone (Narcan) program, which resulted in the training of over one hundred law enforcement personnel. Through the assistance of the Ventura County Behavioral Health Department and Project Safer, a number of overdose reversal kits have been deployed to local law enforcement agencies. In October, VCEMS designated Los Robles Regional Medical Center in Thousand Oaks and St. John's Regional Medical Center in Oxnard as Thrombectomy Capable Acute Stroke Centers (TCASC). These specially equipped and staffed stroke centers provide rapid identification and treatment of high risk large vessel occlusions. On December 4th, Ventura County experienced the worst wildfire in our recent history as the devastating Thomas Fire ravaged much of the western county. This unprecedented event challenged all of our emergency services systems for weeks and recovery will be ongoing for years. The EMS Agency staff provided support and coordination at the incident command post, emergency operations center, and various shelters, and coordinated the countywide medical/health needs. We also supported several evacuation efforts, provided continuous communication with our medical partners and stakeholders through the VC Health Care Coalition and distributed over 700,000 N95 masks due to the air quality issues. We are proud that our EMS system responded to the extraordinary challenges with professionalism, proficiency and perseverance and continued to provide our residents and visitors with high quality emergency medical care under extremely demanding circumstances.

We appreciate each and every member of our EMS community and we know that 2018 will bring additional challenges and inevitable changes. With the continuing collaboration of our system stakeholders, we are confident that our system will continue to be the best EMS system 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 850,000. 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.

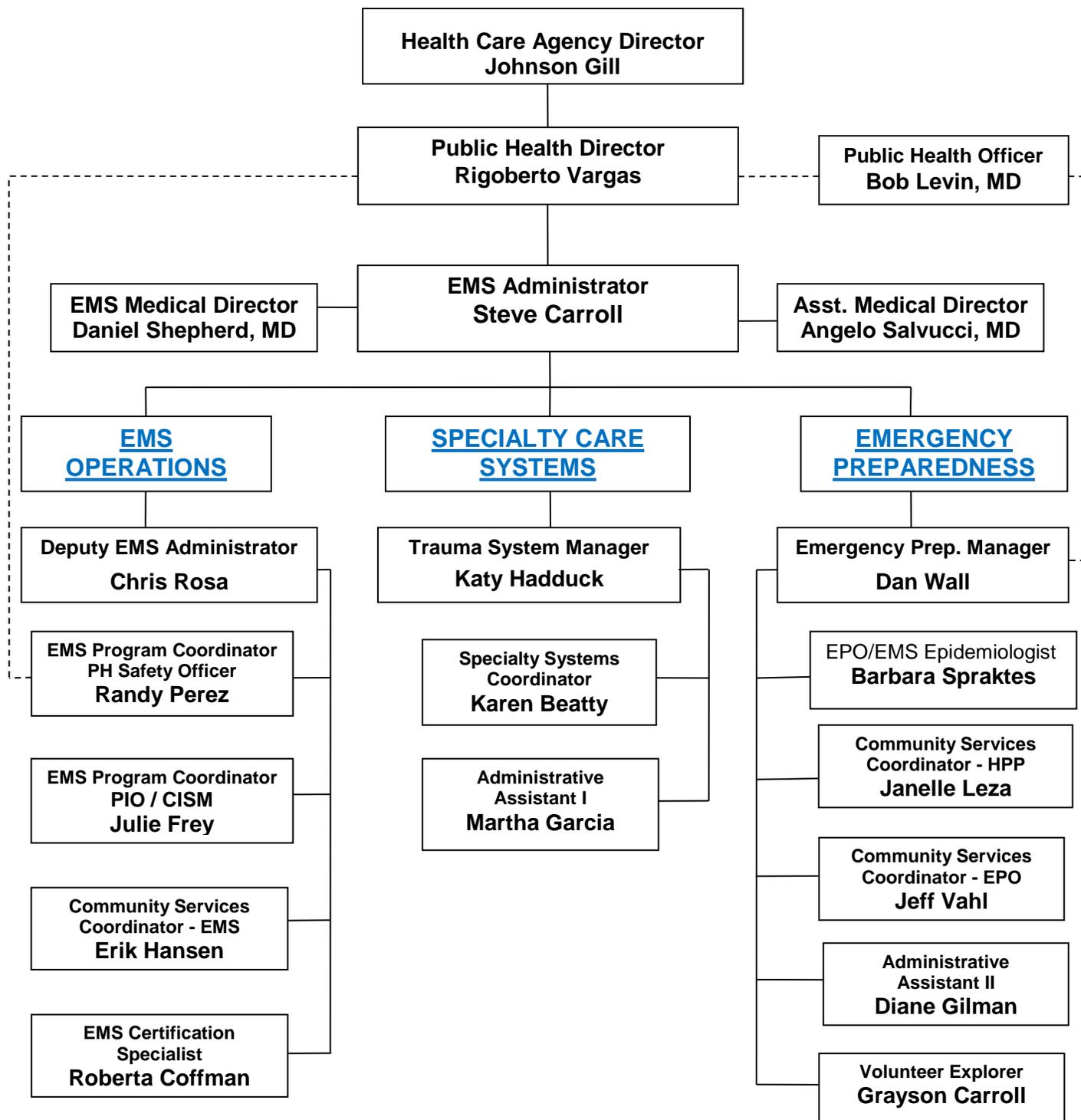
In FY 17-18, Ventura County EMS Agency had an annual budget of \$4,849,897, which includes a mix of service fees, provider charges and penalties, traffic fine collections, grant funding and county general funds. The EMS Agency also provides administration of the Maddy Fund, which reimburses physicians and emergency rooms for a portion of uncompensated care with traffic fine funding. \$1,664,290 was dispersed from the Maddy Fund in 2017 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 EMS Certification Specialist.

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 2017 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 2017



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 PSFA Naloxone Program coordination
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 Stop the Bleed Program coordination
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
Roberta Coffman	EMS Certification Specialist	Roberta.Coffman@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

The Ventura County Emergency Medical Services Agency (EMSA), in partnership with Ventura County Behavioral Health and the Project Safer Educational Foundation initiated the Public Safety First Aid (PSFA) Naloxone Administration Program. The PSFA Naloxone Administration Program allows law enforcement first responders to administer naloxone to persons exhibiting signs and symptoms of an opioid overdose.

Deaths from drug overdoses are now the leading cause of injury death in the United States, surpassing motor vehicle accidents by 50%. Opioids—prescription and illicit—are the main driver of drug overdose deaths. Opioids were involved in 33,091 deaths in 2015, and opioid overdoses have quadrupled since 1999. The Project



SAFER Educational Foundation, a non-profit organization established to provide quality education to reduce harms associated with the use of alcohol and other drugs, provides a



robust community education about the dangers of opioid use and the availability of naloxone for community use in certain high risk situations. However, a gap was identified where the community is unable or reluctant to give naloxone and law enforcement arrive prior to Emergency Medical Services personnel.

Providing law enforcement with the knowledge and the tools to reverse opioid overdoses in the field can reduce the time between when an overdose victim is discovered and when they receive lifesaving assistance. Opioids cause death by slowing, and eventually stopping the person's breathing. When administered, naloxone restores respiration within two to five minutes, and may prevent brain injury and death. Naloxone works on overdoses caused by opioids, which includes prescription painkillers and street drugs like heroin.



In 2017, EMSA and our partners authorized and trained 117 law enforcement personnel to carry and administer naloxone under specific circumstances as directed by the applicable policies, procedures and protocols.



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 2017, the CISM Coalition responded to 87 requests for service.



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 Stop the Bleed Program



Stop the Bleed is a national awareness campaign and call-to-action. Stop the Bleed is intended to cultivate grassroots efforts that encourage bystanders to become trained, equipped, and empowered to help in a bleeding emergency before professional help arrives.

Uncontrolled bleeding is a major cause of preventable deaths. Approximately 40% of trauma-related deaths worldwide are due to bleeding or its consequences, establishing hemorrhage as the most common cause of preventable death in trauma. A person who is bleeding can die from blood loss within five minutes, so quickly stopping the bleeding is critical. The ability to recognize life-threatening bleeding and the ability to intervene effectively can save a person's life. Whether a bleeding injury is the result of a shooting or a home accident, one person who is on the scene, at the right time, and who has the right skills can make a life or death difference.



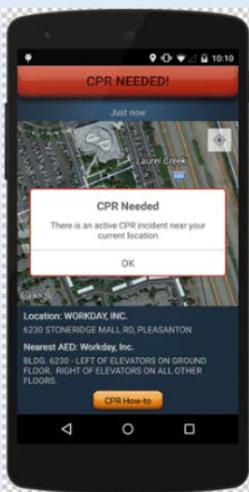
The Ventura County Emergency Medical Services Agency (VCEMS), in partnership with the County CEO's office and Ventura County Fire Protection District, launched the Ventura County Stop the Bleed Program. The program consists of educating the public in lifesaving skills required in the first few minutes of major trauma and strategically locating "Bleeding Control Kits" in government buildings throughout Ventura County.

In 2017, VCEMS and our partners trained nearly 100 Ventura County staff and County Supervisors. The program was well received and garnered full support from the Board. With the support of government administrators and partner agencies VCEMS will launch the educational portion of the campaign in 2018 with the goal of teaching 400 County employees and expanding our partnerships to local agencies and hospitals to reach additional sectors of the community.

PulsePoint Mobile Application (App)

The Ventura County Fire Protection District (Fire District), in partnership with the Ventura County Emergency Medical Services Agency (EMSA), participate in the Ventura County PulsePoint Program, a mobile app that alerts registered users whenever a cardiac arrest occurs in a public place nearby. 2017 saw a significant growth of App followers to 13,673. 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 2017, over 7,000 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 735 AEDs throughout Ventura County. Over 145 AEDs are placed in government buildings and vehicles, and another 590 provided by public and private businesses and organizations for the protection of their patrons and community.



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. New regulations were passed in 2017 that significantly expand the scope of practice for an EMT, in addition to the requirements for the initial and ongoing cognitive and psychomotor skills training of an EMT. Educational materials and policies are in the process of being developed at the local EMS Agency level, and programs will be required to implement these new training requirements in 2018.

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 - 2017	
EMT Certifications	459
EMT Re-Certifications	395
Authorized EMT ALS Assist Active in the VCEMS System	218
Paramedic Accreditation	20
Paramedic Re-Accreditation	92
Authorized Level I Active in VCEMS System	20
Authorized Level II Active in VCEMS System	216
MICN Authorization	19
MICN Re-Authorization	65
Active MICNs in VCEMS System	145

EMS Education Programs

VCEMS Authorized Prehospital Training Programs - 2017	
EMT – Initial and Refresher	8
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>

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 responded to assist 148 hospice patients in 2017, with only 31 of these patient contacts resulting in a transport to the hospital.

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.

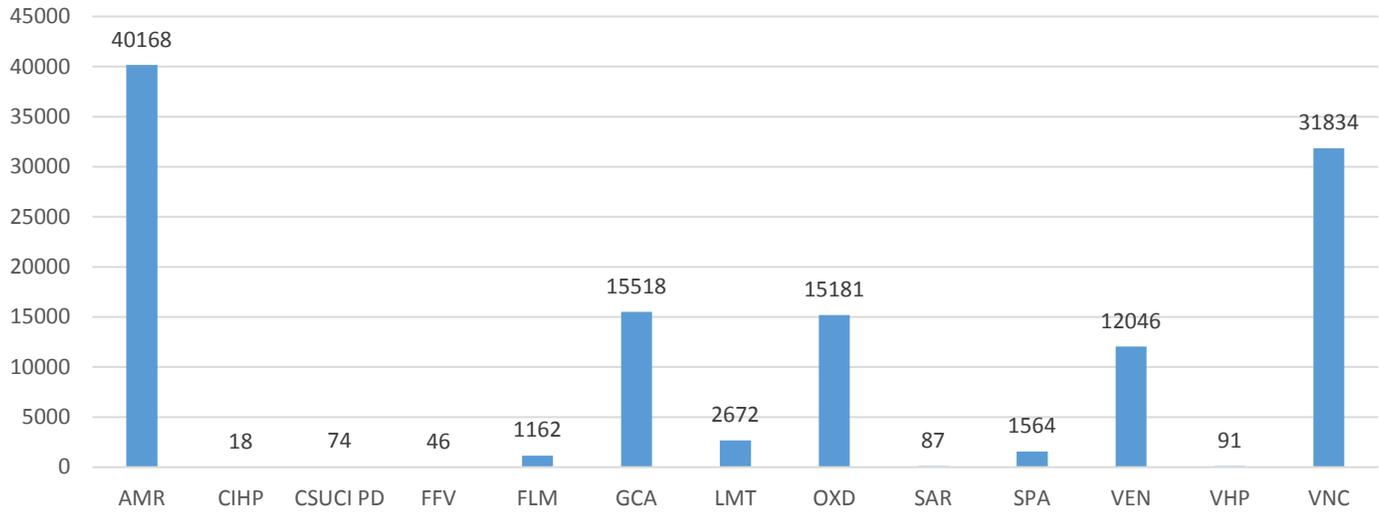
This is being accomplished by improving patient compliance with directly observed treatment (DOT), increasing the percentage of patients who complete the full course of treatment for TB and identifying and treating side-effects and mal-absorption issues early, with physicians as needed.

In 2017, Community Paramedics assisted an average of 6 patients per month (some patients were seen multiple times a day). This number includes 11 new patients who entered the program throughout the year.



Ventura County EMS System Volume

Medical Responses by Agency - 2017



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

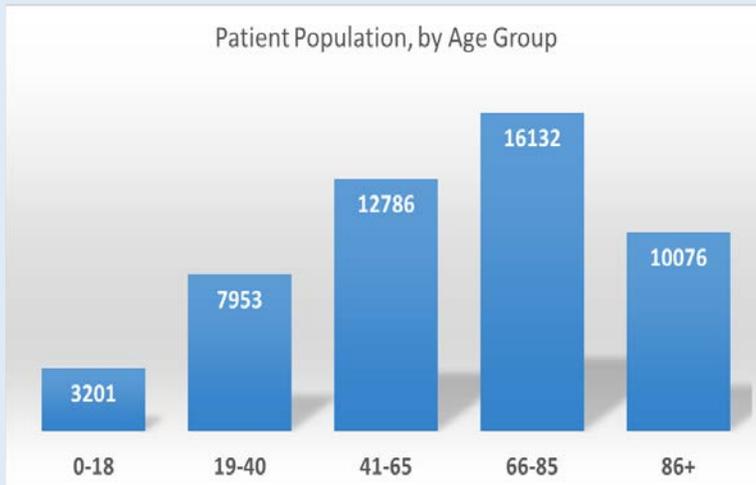
SAR = Ventura County Sheriff's Air Unit / SAR

VEN = Ventura City Fire Department

VHP = Ventura Harbor Patrol

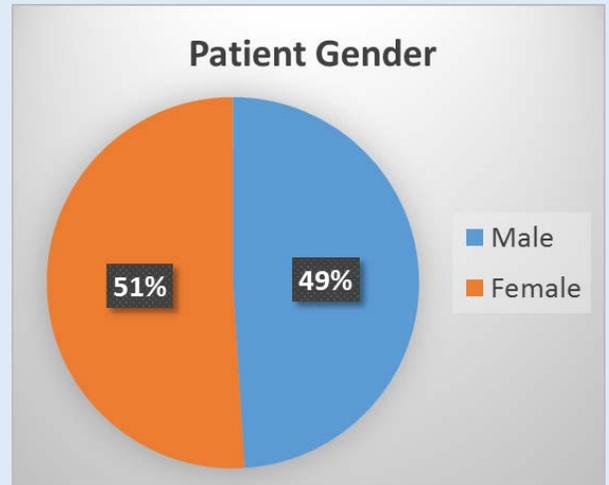
Patient Demographics (transported only) - 2017

Patient Population, by Age Group



Median Age - 63

Patient Gender



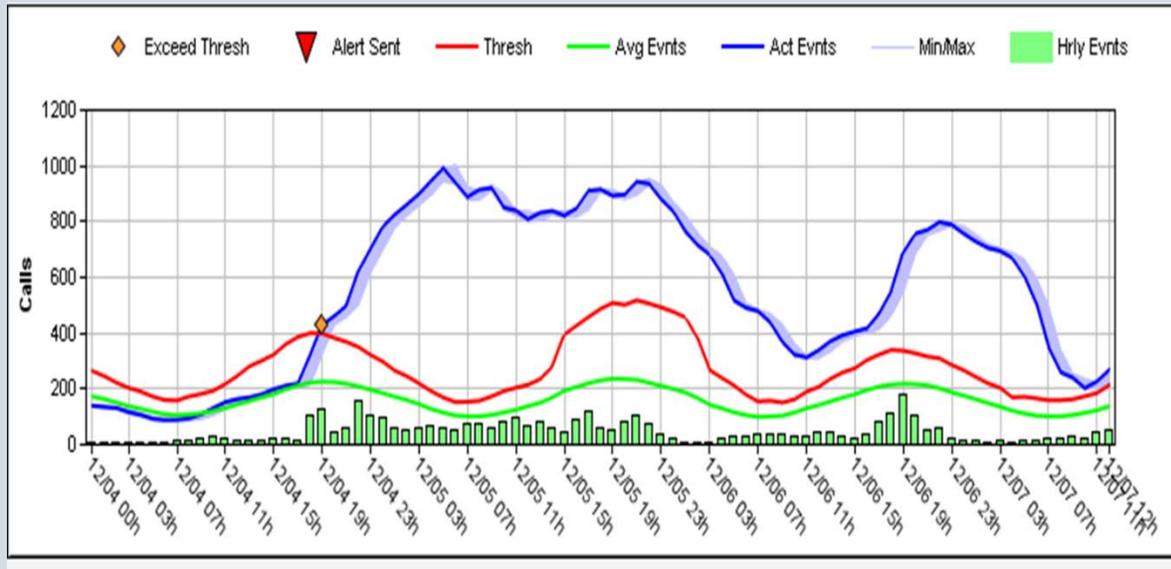
Medical Responses by Agency and Patient Demographic data is collected through the ImageTrend Electronic Patient Care Reporting System posted within the Ventura County EMS system and may differ slightly from other data sources due to collection process variances.

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. All Fire and EMS resources in Ventura County are dispatched by FCC. This regionalized operation results in increased coordination and communication among response partners, reduced duplication, and closest unit response to emergencies regardless of geographic jurisdiction. FCC is the only Emergency Medical Dispatch (EMD) provider in Ventura County. EMD is a program designed to provide predetermined medical protocols/medical instructions to victims and bystanders before the arrival of first responders. EMD trained personnel use Medical Priority Dispatch Systems ProQA Dispatch Software to help emergency dispatchers move smoothly through case entry and key questioning.

During the Thomas Fire in December 2017, FCC managed an astonishing volume of telephone and radio calls, coordinated numerous requests for immediate assistance, processed countless resource requests and worked hard to maintain sufficient resources countywide to handle other emergency responses. FCC personnel's commitment and dedication is commendable and their perseverance undoubtedly saved lives during this devastating event.

Fire/EMS events dispatched by FCC during the Thomas Fire:



All Fire/EMS Dispatch Events December 4 – December 7

Quality Assurance - ProQA helps FCC 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. All high risk calls and routine random sample calls from each dispatcher are reviewed for quality assurance by the medical professionals at the Ventura County Fire Department EMS Division.

Emergency Medical Dispatch



Ventura County Fire Communications Center



Countywide Emergency Medical Dispatch Activity by Call Type

PROBLEM TYPE	2017 TOTAL INCIDENTS	PROBLEM TYPE	2017 TOTAL INCIDENTS
ABDOMINAL PAIN	1485	HEAT / COLD EXPOSURE	96
AIRCRAFT EMERGENCY	28	HEMORRHAGE / LACERATION	1635
ALLERGIES / ENVENOMATION	450	JUVENILE BEHAVIORAL TRANSPORT	112
AMBULANCE ONLY	303	LIFT ASSIST	484
ANIMAL BITES / ATTACKS	142	MEDICAL ALARM	2329
ASSAULT	1654	MOTORCYCLE COLLISION	160
ASSIST OTHER AGENCY MEDICAL	58	MUTUAL AID - MEDICAL	31
BACK PAIN	734	OBVIOUS OR EXPECTED DEATH	199
BEHAVIORAL EMERGENCY	1439	OVERDOSE / POISONING	1747
BREATHING PROBLEMS	5466	PENETRATING WOUNDS	11
BURNS / EXPLOSIONS	46	PREGNANCY RELATED EMERGENCY	163
CARDIAC / RESP ARREST	1002	REMOTE RESCUE	75
CHEST PAIN	4061	SICK PERSON	8688
CHOKING	355	STABBING	151
INHALATION EXPOSURE / HAZMAT	83	STEMI TRANSPORT	85
CONVULSIONS / SEIZURES	2623	STROKE (CVA)	1542
DIABETIC PROBLEMS	1083	STROKE TRANSPORT	34
ELECTROCUTION / LIGHTNING	9	TRAFFIC COLLISION	5477
ENTRAPMENT NON VEHICLE	67	TECHNICAL RESCUE	22
EYE PROBLEMS / INJURIES	50	TRAUMA TRANSFER	83
FALLS	9959	TRAUMATIC INJURIES	2014
GUNSHOT	142	UNCONSCIOUS / FAINTING	4890
HEADACHE	328	UNKNOWN PROBLEM	5295
HEART PROBLEM	745	WATER RESCUE	94
TOTAL 2017 MEDICAL RELATED RESPONSES - 67748			

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 and one BLS rescue.



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 12 ALS engines, 20 BLS engines, 3 BLS ladder trucks and 1 ALS squad.



Ventura County EMS System Provider Agencies

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 2017, there was one instance in Area 3 where the 90% requirement was not met, which was a minor variance that did not represent a material breach according to the contract terms. All other areas were fully compliant with the 90% requirement in 2017.

2017 Response Time Compliance

All Exclusive Operating Areas (EOA)

	LMT 1	AMR 2	AMR 3	AMR 4	AMR 5	GCA 6	AMR 7	Average
JAN	96.27%	93.54%	91.74%	90.70%	94.42%	93.20%	95.55%	93.63%
FEB	95.60%	92.34%	93.66%	92.13%	92.76%	94.55%	94.99%	93.72%
MAR	92.47%	92.68%	91.62%	91.34%	91.49%	95.12%	95.03%	92.82%
APR	95.11%	93.63%	92.11%	90.94%	94.41%	94.14%	94.51%	93.55%
MAY	94.76%	95.94%	93.11%	90.93%	92.45%	93.26%	94.19%	93.52%
JUN	90.74%	94.27%	92.71%	91.43%	92.75%	95.31%	95.60%	93.26%
JUL	95.79%	94.49%	91.93%	92.35%	92.31%	94.69%	93.86%	93.63%
AUG	94.68%	94.92%	90.85%	92.49%	92.82%	94.00%	93.90%	93.38%
SEP	94.30%	94.76%	91.85%	90.63%	92.70%	94.08%	93.33%	93.09%
OCT	96.00%	92.94%	88.98%	92.05%	91.54%	93.17%	92.30%	92.43%
NOV	97.58%	96.33%	91.02%	91.70%	91.30%	93.36%	93.36%	93.52%
DEC	96.61%	91.96%	91.96%	92.44%	90.94%	92.63%	93.51%	92.86%
Average	94.99%	93.98%	91.80%	91.59%	92.49%	93.96%	94.18%	93.28%

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, Mira Monte, Oak View, Casitas Springs and the Hwy. 33 and Hwy. 150 corridors.

2017		EOA1				
		08:00	15:00	20:00	30:00	45:00
Total Volume	2,096	1,512	421	107	6	50
At-Scene Time Not Documented	3	3	0	0	0	0
Compliant - Time Extension	122	122	0	0	0	0
Compliant - No Map	1	1	0	0	0	0
Gross Exceptions	277	227	35	15	0	0
Exemptions Requested	234	184	35	15	0	0
Exemptions Approved	172	125	33	14	0	0
Chargeable Late Responses	105	102	2	1	0	0
Compliance	94.99%	93.25%	99.52%	99.07%	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.

2017		EOA2				
		08:00	15:00	20:00	30:00	45:00
Total Volume	3,566	2,430	626	442	15	53
At-Scene Time Not Documented	11	8	2	1	0	0
Compliant - Time Extension	73	73	0	0	0	0
Gross Exceptions	440	369	38	33	0	0
Exemptions Requested	243	207	20	16	0	0
Exemptions Approved	226	191	19	16	0	0
Chargeable Late Responses	214	178	19	17	0	0
Compliance	93.98%	92.67%	96.96%	96.15%	100.00%	100.00%

American Medical Response Exclusive Operating Area 3 Compliance

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

2017		EOA3				
		08:00	15:00	20:00	30:00	45:00
Total Volume	7,310	5,945	1,287	78	0	0
At-Scene Time Not Documented	30	29	1	0	0	0
Compliant - Time Extension	246	246	0	0	0	0
Gross Exceptions	964	912	49	3	0	0
Exemptions Requested	377	354	21	2	0	0
Exemptions Approved	364	341	21	2	0	0
Chargeable Late Responses	600	571	28	1	0	0
Compliance	91.80%	90.40%	97.82%	98.72%	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.

2017		EOA4				
		08:00	15:00	20:00	30:00	45:00
Total Volume	11331	8884	2212	191	0	44
At-Scene Time Not Documented	47	44	3	0	0	0
Compliant - Time Extension	575	575	0	0	0	0
Gross Exceptions	1249	1186	58	5	0	0
Exemptions Requested	322	298	21	3	0	0
Exemptions Approved	297	273	21	3	0	0
Chargeable Late Responses	952	913	37	2	0	0
Compliance	91.59%	90.01%	98.33%	98.95%	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.

2017		EOA5				
		08:00	15:00	20:00	30:00	45:00
Total Volume	6,755	5,287	1,213	241	0	14
At-Scene Time Not Documented	16	11	5	0	0	0
Compliant - Time Extension	303	303	0	0	0	0
Gross Exceptions	777	741	34	2	0	0
Exemptions Requested	273	258	13	2	0	0
Exemptions Approved	269	254	13	2	0	0
Chargeable Late Responses	508	487	21	0	0	0
Compliance	92.49%	90.79%	98.27%	100.00%	100.00%	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.

2017		EOA6				
		08:00	15:00	20:00	30:00	45:00
Total Volume	16,284	13,180	2,670	359	48	27
At-Scene Time Not Documented	53	50	3	0	0	0
Compliant - Time Extension	99	99	0	0	0	0
Gross Exceptions	1,562	1,451	100	7	4	0
Exemptions Requested	592	539	48	4	1	0
Exemptions Approved	576	524	47	4	1	0
Chargeable Late Responses	986	927	53	3	3	0
Compliance	93.96%	92.97%	98.01%	99.16%	93.75%	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.

2017		EOA7				
		08:00	15:00	20:00	30:00	45:00
Total Volume	10,826	8,947	1,696	138	35	10
At-Scene Time Not Documented	28	27	1	0	0	0
Compliant - Time Extension	1,339	1,339	0	0	0	0
Gross Exceptions	1,304	1,184	115	5	0	0
Exemptions Requested	687	621	63	3	0	0
Exemptions Approved	673	609	61	3	0	0
Chargeable Late Responses	631	575	54	2	0	0
Compliance	94.18%	93.57%	96.82%	98.55%	100.00%	100.00%

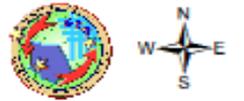


Ventura County Emergency Medical Services Agency Ambulance Service Areas



Legend
EOA Ambulance Zones

- 1
- 2
- 3
- 4
- 5
- 6
- 7



1 inch equals 7 miles

**County of Ventura
EOA Ambulance Zones**
Prepared by County of Ventura - IT Services Department - GIS Division
State Plane Coordinate System California Zone V - NAD 27
This map was compiled from records and computations
Published on : June 25, 2007

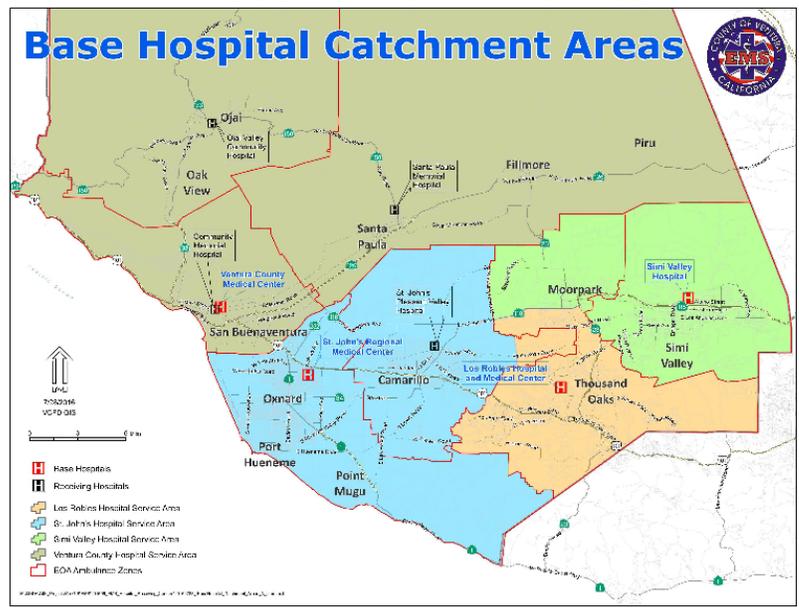


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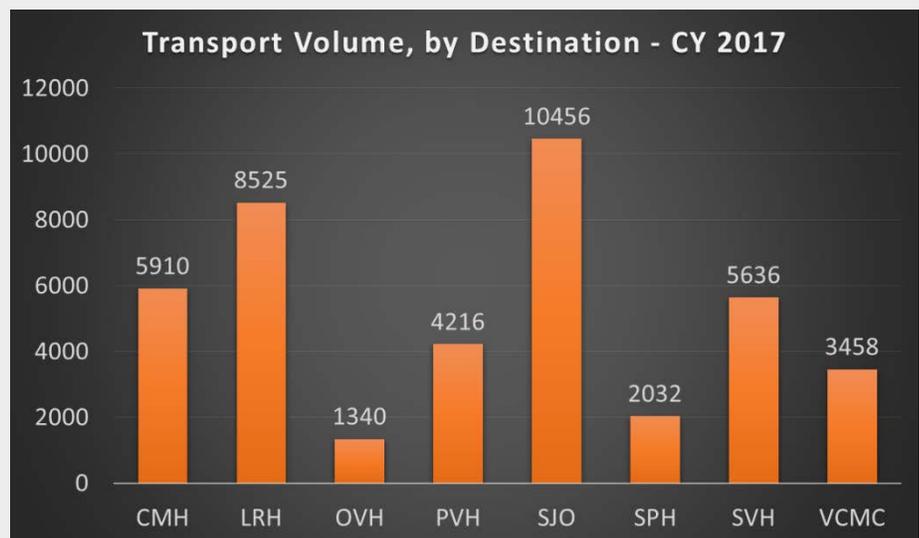
WARNING: The information contained herein was created by the Ventura County Geographic Information System (GIS), which is designed and operated solely for the convenience of the County and related contract entities. The County does not warrant the accuracy of this information, and no decision involving a risk of economic loss or physical injury should be made in reliance thereon.

Ventura County Base and Receiving Hospitals

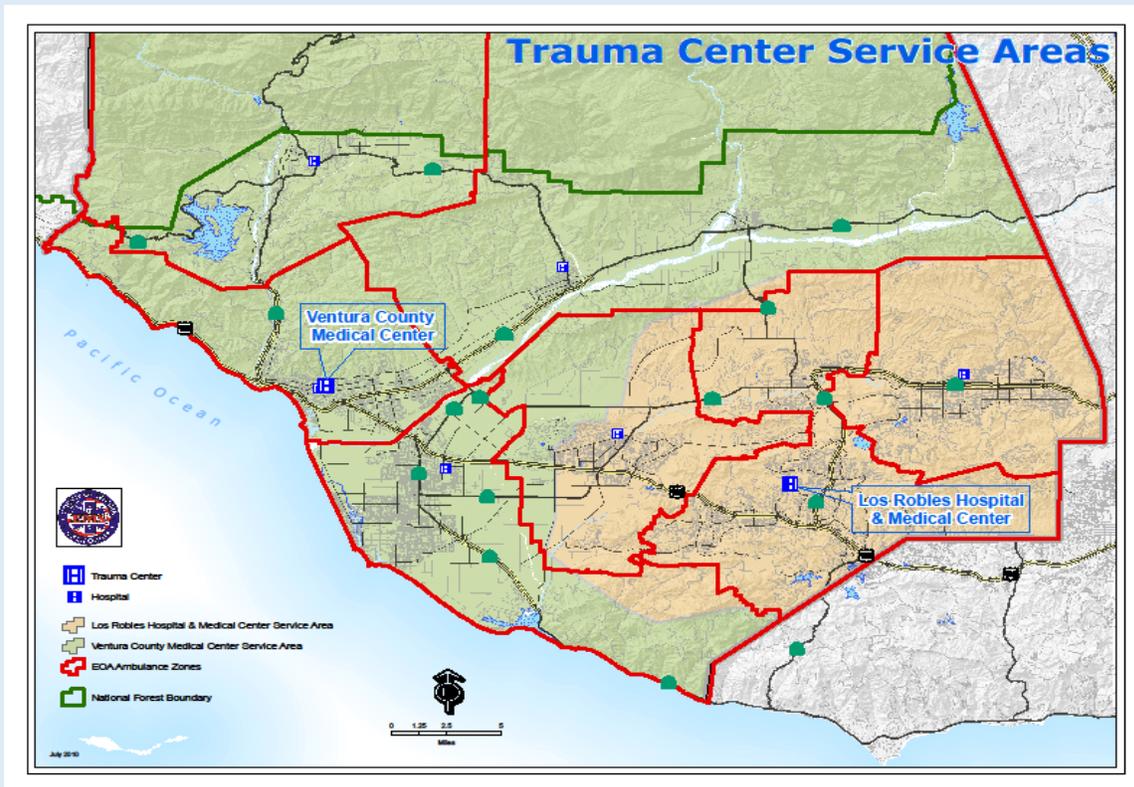
There are eight acute care hospitals in Ventura County, all of whom have emergency departments and receive ambulances with patients involved in prehospital incidents. Four of these hospitals are designated as Base Hospitals, providing oversight and direction to the county's prehospital providers. Hospitals 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
SJRMCM	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.

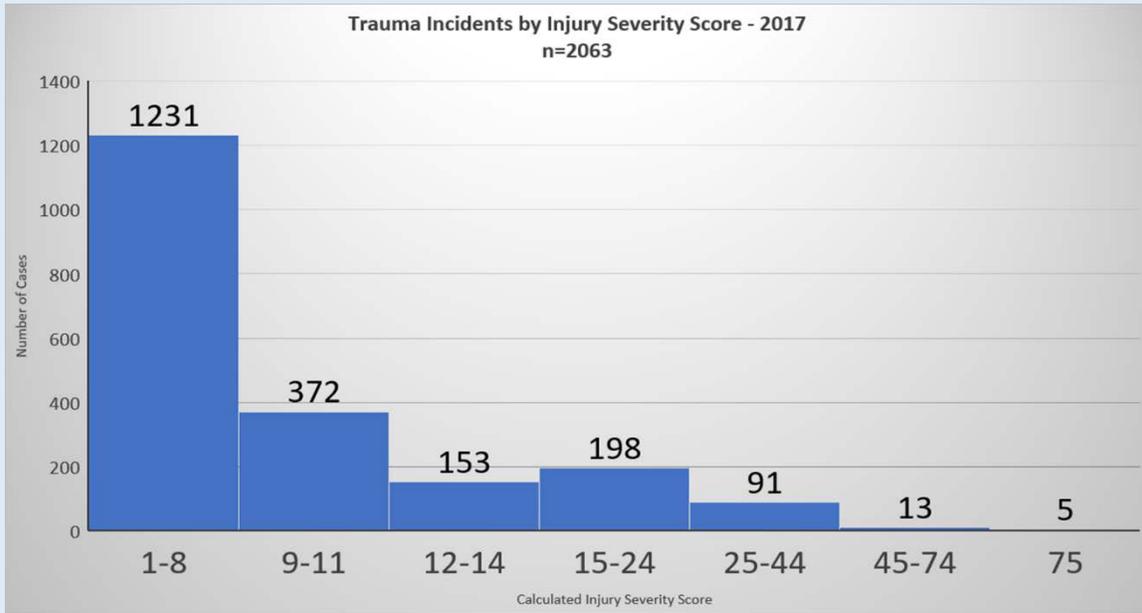
2017 Ventura County Trauma Destinations

Base Hospital Destination	Step 1 TOTAL 261	Step 2 TOTAL 196	Step 3 TOTAL 422
VCMC Trauma Base Hospital	165	156	271
VCMC	153	153	199
CMH	5	0	5
SPH	0	0	5
SJRCM	3	3	32
SJPV	1	0	4
OVH	1	0	7
HMNMH	2	0	17
Kern County Medical Center	0	0	1
Santa Barbara Cottage Hospital	0	0	1
LRHMC Trauma Base Hospital	96	40	151
LRHMC	94	38	147
SVH	1	0	2
Kaiser WH	0	0	0
Holy Cross	1	2	2

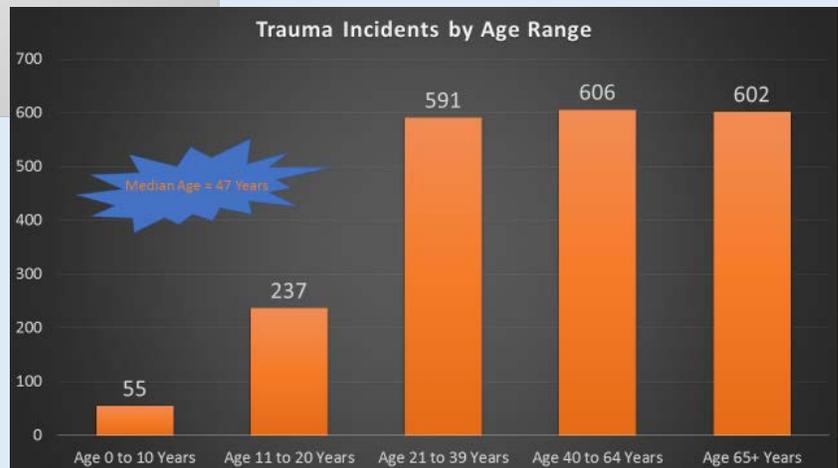
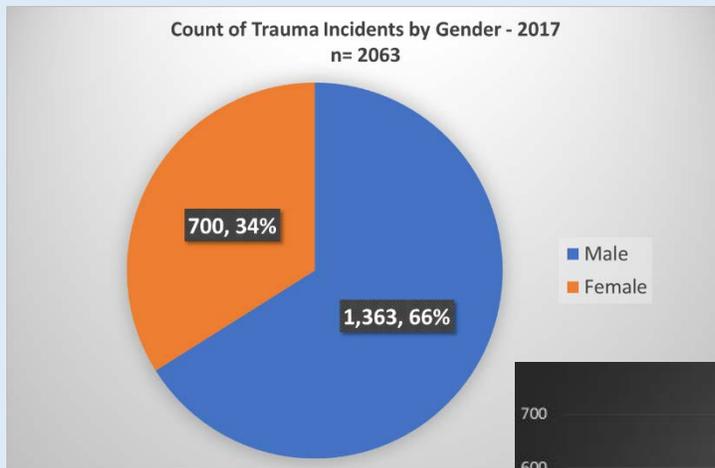
2017 Step 1-3 by Hospital	N
Ventura County Medical Center	505
Los Robles Hospital and Medical Center	279
St. John's Regional Medical Center	38
Henry Mayo Newhall Memorial Hospital	19
Community Memorial Hospital	10
Ojai Valley Hospital	8
St. John's Pleasant Valley Hospital	5
Santa Paula Hospital	5
Providence Holy Cross	5
Simi Valley Hospital	3
Kern County Medical Center	1
Cottage Hospital	1
TOTAL	879

2017 Step 4 by Hospital	N
St. John's Regional Medical Center	608
Los Robles Hospital and Medical Center	557
Community Memorial Hospital	431
St. John's Pleasant Valley Hospital	299
Ventura County Medical Center	283
Simi Valley Hospital	203
Ojai Valley Hospital	103
Santa Paula Hospital	71
Henry Mayo Newhall Memorial Hospital	4
West Hills Hospital	1
Kaiser Woodland Hills Hospital	1
TOTAL	2561

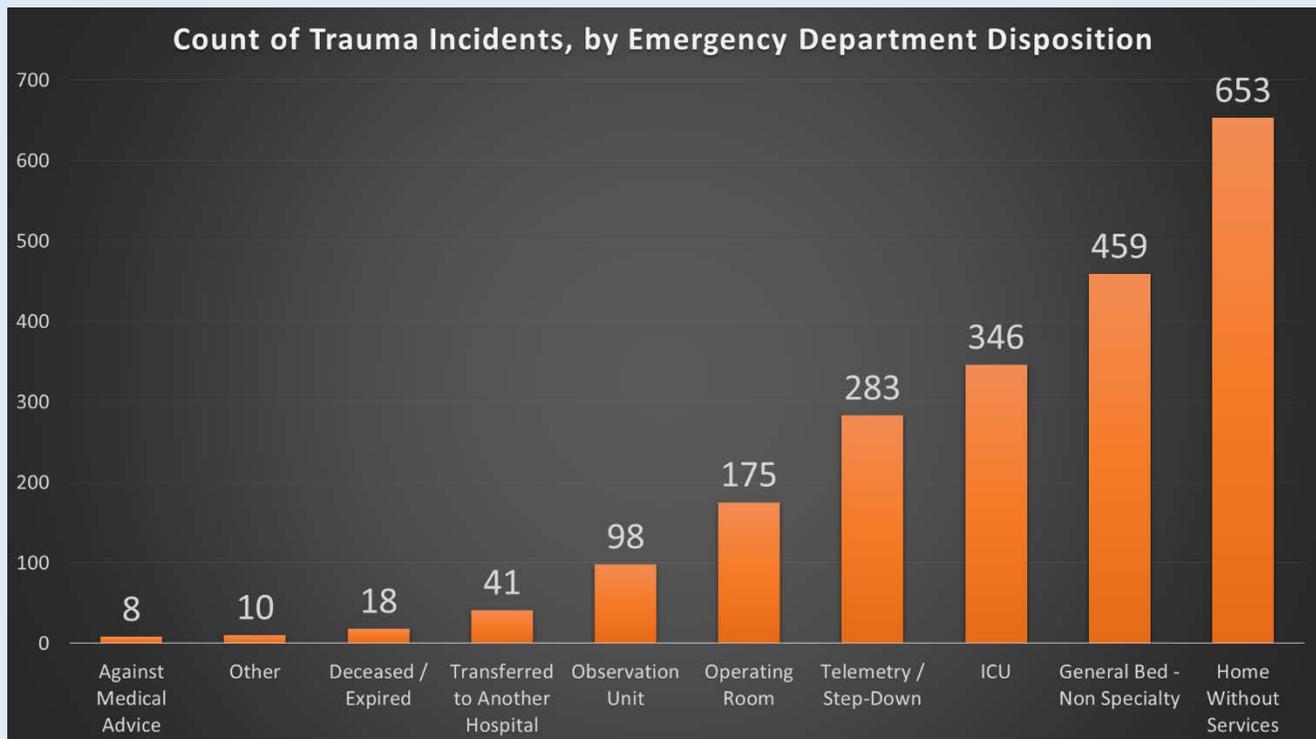
Ventura County Trauma System Statistics



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.



Ventura County Trauma System Statistics



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.

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 and currently has four STEMI Receiving Centers (SRC). 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 2017, Ventura County STEMI System received the Gold Plus Level recognition from the American Heart Association’s Mission Lifeline program. This represents the third year in a row where Ventura County has attained Gold level or higher. 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 2017

Criteria	County Performance Data
Total number of EMS STEMI Patients who received Percutaneous Cardiac Intervention	109
911 call to Percutaneous Cardiac Intervention	81 min (Goal < 90 min)
Positive EMS STEMI 12-Lead to Percutaneous Cardiac Intervention	68 min (Goal < 90 min)
Arrival at STEMI hospital to Percutaneous Cardiac Intervention	48 min (Goal < 90 min)
First Medical Contact to Percutaneous Cardiac Intervention	73 min (Goal < 90 min)



Stroke System

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

In 2017, Ventura County had 1397 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 Prehospital Stroke Scale (CPSS) 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. Based on this study, in October of 2017, we introduced county wide a **prehospital diversion** policy of suspected ELVO type stroke patients. This addition to our stroke triage system is designed to preferentially divert patients to a facility capable of performing mechanical thrombectomy. Paramedics perform a two-part screen: First, they screen for stroke using the (CPSS). Second, patients who are CPSS positive are screened for an ELVO using the VES. Patients who screen positive for both CPSS and VES are transported directly as an “ELVO Alert” to our CSC, or our Thrombectomy Capable Acute Stroke Center (TCASC), which is St. John’s Regional Medical Center. We had 79 “ELVO Alerts” from Oct-Dec and 34% were actual ELVOs. We are monitoring this system enhancement to determine the improved outcomes for patients with an acute stroke due to an emergent large vessel occlusion. 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 2017 our median time for this interval is 52 minutes. Our on-scene time is 13 minutes. 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 2017 our median time is 42 minutes.

Performance Data 2017

Criteria	County Performance Data
Total stroke patients	1397
Total number of ischemic strokes	859 (62%)
Total ischemic stroke patients who arrived by ambulance	444 (52%)
Total ischemic stroke patients who self-transported	353 (41%)
Total ischemic stroke patients who arrived by interfacility transport	62 (7%)
Percentage of ischemic stroke patients treated with IV tPA who arrived within 4.5 hours of time last known well.	100 (12%) (national average 1-7%)
Percentage of patients treated with IV tPA within 60 min.	92 (92%) (national average 50%)
Percentage of patients treated with IV tPA within 45 min. (new measure)	59 (59%) (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 2017, 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 2017 Mission Lifeline Gold Plus 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 2017, including one presented in Spanish. We have seen a decrease in secondary falls during 2017.

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.



Cardiac Arrest Management (CAM)

Cardiac Arrest Management (CAM) represents ten 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, and added the “PulsePoint” application to our cardiac arrest response in 2017.

Performance Data for 2017

ALL CARDIAC	
Presumed Cardiac Etiology	388
Bystander CPR Provided	52.6%
Survival to Hospital Discharge	12.1%
CARES National Benchmark for survival to Hospital Discharge	9.7%
UTSTEIN	
Bystander Witnessed, Shockable Rhythm	69
Bystander CPR Provided	82.6%
Survival to Hospital Discharge	44.9%
CARES National Benchmark for survival to Hospital Discharge	32.4%

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.

The Ventura County Medical Reserve Corps regularly conducts Point of Dispensing (POD) activities throughout the year. The Ventura County Medical Reserve Corps distributed flu vaccine to the residents and duty personnel at Navy Base Ventura County (NBVC) and the congregation of Our Lady of Guadalupe Church in Oxnard.



Ventura County Medical Reserve Corps

Thomas Fire Response

On December 4th 2017, the Thomas Fire broke out in the Santa Paula Canyon near Hwy 150. The firestorm was fed by heavy winds resulting in a rapid rate of spread. Ventura County Medical Reserve Corps Unit 959 was instrumental in providing medical, shelter, and logistical support during the incident. Over 60 positions were filled during the incident, each shift working between 8-12 hours. Santa Barbara County Medical Reserve Corps deployed to Ventura County for mutual aid. Ventura County MRC also deployed to assist Santa Barbara County as the fire pushed towards the north. Non-Pharmaceutical Points of Dispensing sites were staffed to provide support to medical facilities. Ventura County MRC trains monthly for a wide variety of emergencies. The skills members obtained through training really paid off when it came time to deploy. The hard work and dedication of the Ventura County MRC members is extraordinary and highly appreciated.



VCMC Fire/Life Safety Tours

The Ventura County Medical Reserve Corps Unit 959 worked with the Ventura County Health Care Agency and Emergency Medical Services to assist with the opening of the new hospital replacement wing at Ventura County Medical Center. This multi-level, multi-day response had been months in the making. From early planning efforts, to responding to staffing requests, the Medical Reserve Corps was a critical partner in preparation for this new facility to begin to care for patients. Training consisted of identifying fire protection features in the building, reviewing NFPA 101 (Life Safety Code), reviewing codes and regulatory requirements for fire detection, suppression systems, and portable fire extinguishers. The actual move day was a full activation of the VCMRC requiring medical specialties from our unit to assist in



staffing, moving, safety and a variety of other tasks. VCMRC also was tasked with assisting family members of patients with information and directions to reach their loved ones. The hospital administration lauded VCMRC for their support, and stated that they were "Instrumental in the successful movement of patients and transition from the old facility to the new facility".





2017 was an eventful year for medical and health preparedness and response. The Ventura County Health Care Coalition (VCHCC) started the year enthusiastically, with several activities in support of our vision to bring the medical and health community together. We worked with entities outside of our operational area to bring relevant courses – covering current issues and threats – to Ventura County (i.e. Joint Regional Intelligence Center trainings and the InfraGard’s Infrastructure Liaison Officer training). We organized group meetings in support of potential, new VCHCC committees for the Ojai Valley Medical and Health Providers, Dialysis Providers throughout the County of Ventura, and Behavioral Health Providers.

Additionally, we issued advisories and requested information from our Health Care Coalition (HCC) partners regarding the following events: an epinephrine shortage, two significant rain events, widespread cyber security threats, a criminal suspect search and stand-off in an area within our community where several VCHCC member facilities reside, and a gap in supply chain for Tamiflu/Osetamivir during the influenza season.

After closing out 2016 having conducted much research on the newly implemented Centers for Medicare and Medicaid Services (CMS) Emergency Preparedness Rule, the VCHCC spent much of 2017 conducting the following activities to assist our partners in meeting the rule: (1) released our Emergency Plan Template, a comprehensive binder – recognized by the Office of Inspector General with the U.S. Department of Health and Human Services – that helps planners build and/or improve upon their emergency plan; (2) hosted Disaster Readiness for Vulnerable Populations, a professional seminar and workshop to introduce the new rule and assist partners in building their plans to meet the rule; and (3) offered a range of trainings to educate our partners on the rule.

In 2017, the VCHCC was grateful to have been asked to present our experiences and best practices with our colleagues in the emergency management community throughout the state and nation at the following events: California Department of Public Health Emergency Preparedness Office (CDPH EPO) Emergency Preparedness Training Workshop, HealthInsight ESRD Network 18 Quality Conference, Ventura County Public Health Vital Records Annual Funeral Home Directors Meeting, and the National Healthcare Coalition Preparedness Conference. At a statewide conference, the VCHCC was presented with the 2017 Innovations Solutions Award from CDPH EPO and the California Emergency Medical Services Authority. Additionally, the VCHCC welcomed a visit from our Hospital Preparedness Program (HPP) Federal Project Officer with the U.S. Department of Health and Human Services who revered the VCHCC as “one of the higher functioning coalitions in the entire country.”

Staying true to our progressive stance, the VCHCC worked with CDPH to establish a statewide HCC conference call. Additionally, we worked with CDPH representatives to build a “Field to Local Health Department (LHD) Situation Status Report (SitRep)” in an ArcGIS platform. As a result of the efforts in Ventura County, several other jurisdictions within the State of California have since implemented the same Field to Local SitRep.

This newly implemented SitRep was put to the test during the 2017 community-based full-scale exercise (FSE) that the VCHCC facilitated on October 25, 2017. This exercise provided 200+ medical facilities and community partners in Ventura



County with an opportunity to assess capabilities and test communication plans, policies, and procedures during a simulated active attacker incident. This was the first time, in the history of Ventura County, that emergency planners coordinated an exercise with such a diverse range of discipline types. As this was conducted in alignment with the Statewide Medical and Health Exercise (SWMHE), we were fortunate to have three CDPH representatives in attendance. Having left a lasting impression, the Chief of Response noted that “this was the most [field to LHD/HCC] intel he had seen within a singular jurisdiction in such a short period of time”. This high amount of incoming and outgoing intel, the coordination, and all response efforts within this exercise would prepare us all for what was to come about one month later.

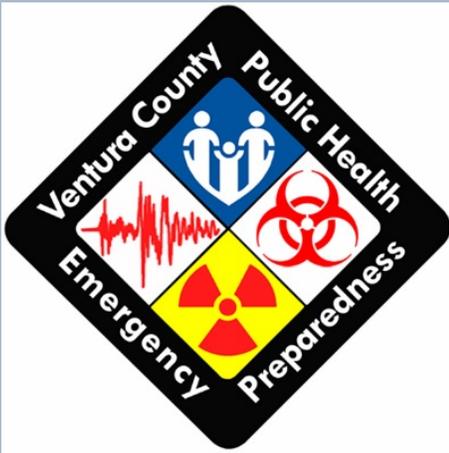
In the evening hours of December 4, 2017, fire broke out in two locations in Santa Paula; soon merging to become what the entire nation now knows as the Thomas Fire – the largest wildfire in California State history. Driven to the west by fierce Santa Ana winds at an unprecedented rate, the Thomas Fire was an immediate threat to life and property. Within the first hour of the fire, the VCHCC was in contact with the Medical Health Operational Area Coordinator (MHOAC) who provided the VCHCC Coordinator with incident information and intel to disseminate to the VCHCC partners. What we did not know in those initial hours was that such constant communication between the VCHCC and its partners would be maintained 24-hours a day for about the next two weeks. The VCHCC was lauded for its communication with the medical and health community as the intel provided to the VCHCC partners allowed them to prepare their staff/residents. Additionally, this situational awareness calmed their fears and allowed them to make informed decisions as to shelter-in-place or evacuate.

As the fire continued to burn, the entire county experienced poor air quality that took weeks to dissipate. Non-Pharmaceutical Intervention Points of Dispensing sites were staffed to provide N95 resource support to the VCHCC partners; assisting in the quality of care having been upheld throughout the weeks of the fire and subsequent weeks of smoke and poor air quality.

The medical and health community’s response to the fire was unprecedented. The successful response of the medical and health community was made possible by the community support and willingness to collaborate in both preparedness efforts as well as response activities. The VCHCC partners expressed their gratitude for the connections made with the rest of the community; a Vision upheld by the VCHCC since its inception.

Looking back with profound gratitude to the people and organizations that we serve, we are proud to be associated with this strong, caring community. A community who – in the face of multiple crises – came together to support each other in response and recovery; even in the midst of having been affected as victims in the same incident.

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 2017 Emergency Preparedness Office activity included the following:

- Master the Disaster 2017 (SEE BELOW),
- Facilitated activation of our Department Operations Center related to the "Thomas Fire",
- Site visits to coalition partners facilities for medical preparedness related assistance,
- Hosted shelter training for Public Health Nursing/MRC volunteers,
- Hosted three interns from CLU and Thousand Oaks C.I.T.Y. program,
- Providing presentations at the state and local level related to preparedness initiative,
- Supporting medical operations at the Camarillo Airport Airshow,
- Participated in the Annual Health Care Coalition Conference in Houston Texas,
- Continued to expand and develop new partners with the VC Health Care Coalition,
- Inventory of disaster supplies at all cities (MCI trailers), hospitals (surge trailers), and college campuses throughout the county

Master the Disaster 2017



In February 2017, Ventura County Emergency Medical Services Agency held the 9th annual "Master the Disaster" preparedness seminar. This event was attended by 650 first responders, STEM students and medical facility staff.

Current trends 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.

“Thomas Fire”

Medical Health System Summary

December 4, 2017

The Thomas Fire (VNC 17-0103156) started on the evening of December 4, 2017 outside the City of Santa Paula. The fire was fueled by dry vegetation and low humidity, coupled with high winds, resulting in a rapid rate of spread. At one point early in the fire, it was estimated that the fire was traveling approximately one acre per second. The fire burned for several weeks, ultimately consuming 281,893 acres (440 square miles) in both Ventura and Santa Barbara Counties and destroying more than 1,000 structures and causing 2 deaths, including one CalFire firefighter.

The EMS Duty Officer and EMS Agency staff responded to the command post in Santa Paula to assist with initial emergency coordination including the potential evacuation of Santa Paula Hospital. As the fire rapidly spread toward Ventura, EMS staff moved to the new command post at the Ventura County Fairgrounds. Additional staff were recalled to staff the medical/health branch at the County Emergency Operations Center. Emergency Preparedness and EMS staff coordinated with medical facilities in the impacted areas and with Red Cross for assistance with staffing of shelters. The Ventura County Healthcare Coalition activated our situation status reporting system to communicate with our medical/health partner agencies. An acute psychiatric hospital, the largest in the county, was destroyed by the fire on the first night, resulting in a need to re-locate approximately 60 psychiatric patients to like-facilities throughout the Southern California region. Two residential care facilities for the elderly were destroyed by the fire, and several others were forced to evacuate in the first few days of the incident. Although they were sheltered in place, three hospitals were placed on internal disaster, due to impacts from power outages and the threat of fire. As the fire made a push into the Ojai Valley, the local hospital elected to relocate many of its patients to a larger sister facility in the City of Ventura, resulting in the transport of dozens of patients by ambulance.



Thomas Fire - by the numbers...

- **281,893 Acres (440 Square Miles)**
 - 96,000 acres in first 48 hours
- **1,063 Structures Destroyed**
 - 777 Homes
 - 1 Acute Psychiatric Hospital
 - 2 Residential Care Facilities (RCFE)
- **94,000+ Evacuees**
- **8,500+ Emergency Personnel Assigned**
- **730,000+ N-95 Masks Distributed**
- **165,284 Emergency Notifications Sent Through VC Alert System**



“Thomas Fire”

For the next few weeks, EMS/EPO personnel continued to staff and monitor the Command Post, County EOC and a modified Department Operations Center at the EMS Agency to coordinate the continued operation of the Ventura County EMS System, to support the 24/7 Medical Health Operational Area Coordination (MHOAC) system, to manage the deployment of the Medical Reserve Corps and to coordinate the distribution of N95 masks to locations countywide. The medical and health response to the fire was unprecedented.



Numerous aspects of the medical health framework within the county were strained at several points throughout the multi-week response to this fire, especially the facilities in Ventura and the Ojai Valley.

Additional EMS related activities during the Thomas Fire included:

- Coordination of 3 ambulance strike teams to assist with possible evacuations.
- Managing resource orders for medical/health supplies through CDPH including additional N95 masks and bariatric cots for the shelters.
- Coordinating the distribution of 731,280 N95 masks to multiple Ventura County locations due to excessive smoke from the Thomas Fire.
- Coordinating the deployment of Medical Reserve Corps volunteers for numerous locations in Ventura and Santa Barbara Counties.
- Supported equipment and EMS/EPO personnel for each of the Town Hall meetings and the Local Assistance Centers.
- Provided routine situation updates to medical/health stakeholders through the Ventura County Healthcare Coalition.



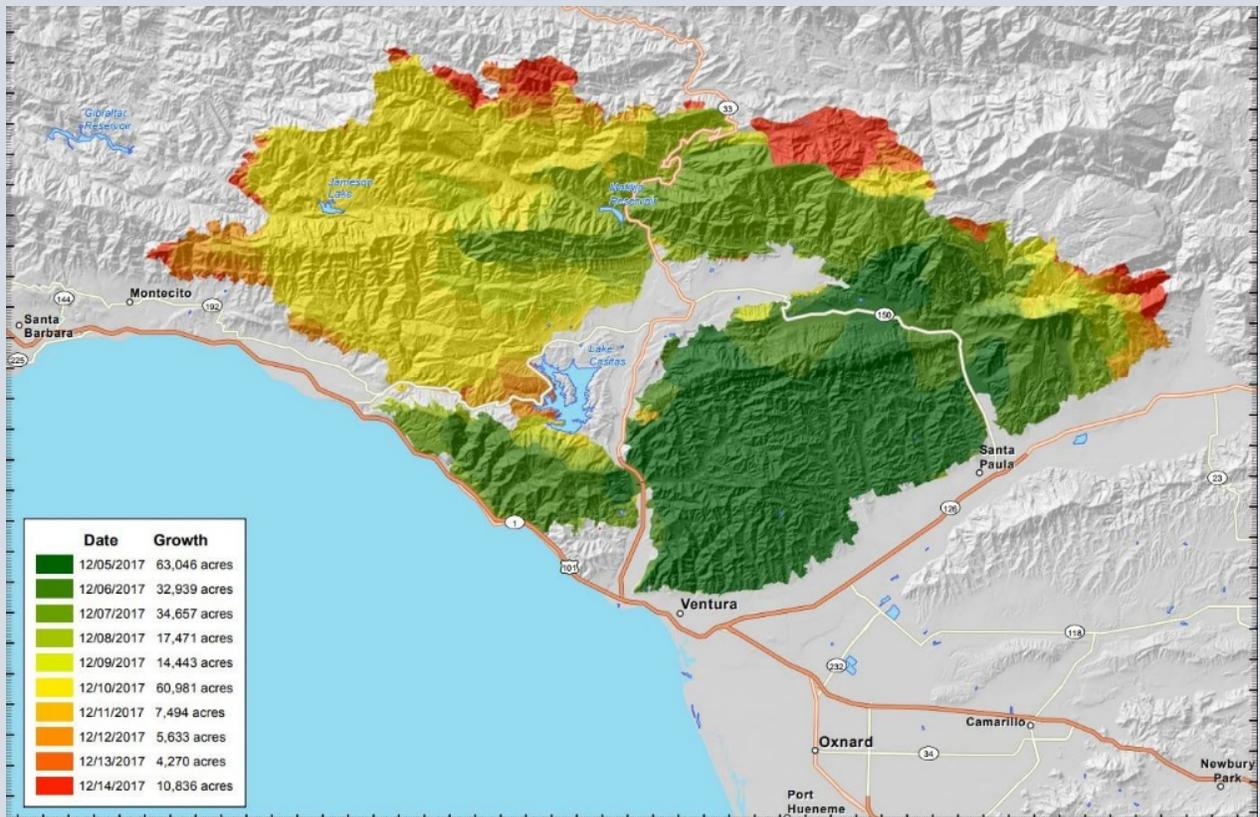
A Local Assistance Center was opened in Ventura on December 13th. Staffed by personnel from more than 40 city, county, state, federal and non-profit agencies, it served 1,950 families while it was open. The center offered assistance with health issues, housing, vital records, debris removal, and much more. Smaller centers operated in Ojai and Santa Paula. 13 community town hall meetings were held at locations around the county, primarily to address debris removal concerns and now, federal assistance programs.

“Thomas Fire”

In addition to response activities within Ventura County, VCEMS personnel responded as mutual aid to assist our colleagues in Santa Barbara County during their time of need. As the Thomas Fire pushed into the Santa Barbara area, the need to evacuate several medical/health facilities presented itself. VCEMS responded with a strike team of ambulances and support personnel to assist with that effort.



While the Thomas Fire was devastating and certainly tested every sector of our emergency response systems, our county’s multi-disciplinary, pre-event planning, training and coordination efforts proved to be instrumental in our ability to effectively navigate this extraordinary disaster.



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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Randy Perez, EMS Program Coordinator

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Roberta Coffman, EMS Certification Specialist

Grayson Carroll, EMS Agency Explorer

Dan Wall, Emergency Preparedness Manager

Barbara Spraktes, EMS/EPO Epidemiologist

Janelle Leza, Health Care Coalition Coordinator

Diane Gilman, Administrative Assistant II

Jeff Vahl, Community Services Coordinator

Photo Credits

Provider Agency photos - Robert Navarro

Ventura County EMS Agency

Stakeholder Agencies



VENTURA COUNTY
PUBLIC HEALTH



VENTURA COUNTY
HEALTH CARE AGENCY



VENTURA COUNTY EMERGENCY MEDICAL SERVICES AGENCY

A Division of Ventura County Public Health Department

A Department of Ventura County Health Care Agency