



Ventura County Public Health Emergency Medical Services Agency



2019 ANNUAL REPORT



VENTURA COUNTY
PUBLIC HEALTH
A Department of Ventura County Health Care Agency

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The Ventura County Emergency Medical Services (EMS) system and all of our stakeholders work together every day to deliver safe, efficient and high quality emergency medical care to our community. EMS is a highly coordinated system of public-private partnerships, providing Ventura County with round the clock access to emergency medical care and transport. Ventura County EMS Agency (VCEMS) is pleased to provide our 2019 Annual System Report, reviewing the operations and performance of VCEMS and the Ventura County EMS System. In 2019, our EMS system providers responded to nearly 70,000 emergency medical responses, resulting in over 46,000 ambulance transports.

This year, VCEMS developed Stroke and STEMI Plans to formalize our long established systems of care. In accordance with State EMS Regulations, these plans define the roles and responsibilities of the specialty care centers and provide an organized, systematic approach to the treatment of Stroke and STEMI patients to reduce mortality and morbidity. We are fortunate to have such a dedicated team of hospital and prehospital personnel providing outstanding patient care in these specialty care systems.

In 2019, we also completed a full scale system evaluation conducted by Page, Wolfberg and Wirth. The final report recognizes and acknowledges significant benefits within our current EMS system and provided a number of recommendations for future consideration. "The system enjoys many structural advantages such as centralized dispatch with EMD, robust quality improvement, a strong clinical focus, experienced providers, cutting edge community paramedicine programs, excellent cooperation between stakeholders and a relatively strong socioeconomic population base." The final report is available for review at our website at: http://www.vchca.org/images/public_health/EMS/20191112---Final-Ventura-Report---Version-2.0---Sent-to-County.pdf

Other noteworthy events in 2019 include:

- 10th Annual Master the Disaster training symposium in February with over 600 attendees.
- Collaborated with EMS stakeholders to expand the Stop the Bleed program countywide.
- Continued collaboration with our Ventura County Behavioral Health partners in the Ventura County Opioid Abuse Suppression Taskforce (COAST) grant program.
- Completion of the VCEMS Emergency Services Unit (ESU1), which involved refurbishing a surplus jail transport bus for use as a multipurpose emergency unit for mass casualty incidents, medical events, large scale evacuations or rehab assignments.

2020 has already proven to be more challenging than ever expected with the worldwide COVID-19 pandemic impacting all aspects of our lives. We will highlight these challenges and our systems' accomplishments in our next report. We appreciate each and every member of the EMS System and recognize the challenges and risks you take every day to provide care to our community. Thank you and stay safe.

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 19-20, Ventura County EMS Agency had a budget of \$5,097,540, 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. \$1,536,189 was dispersed from the Maddy Fund in 2019 to settle the hospital and physician claims and for pediatric trauma funding.

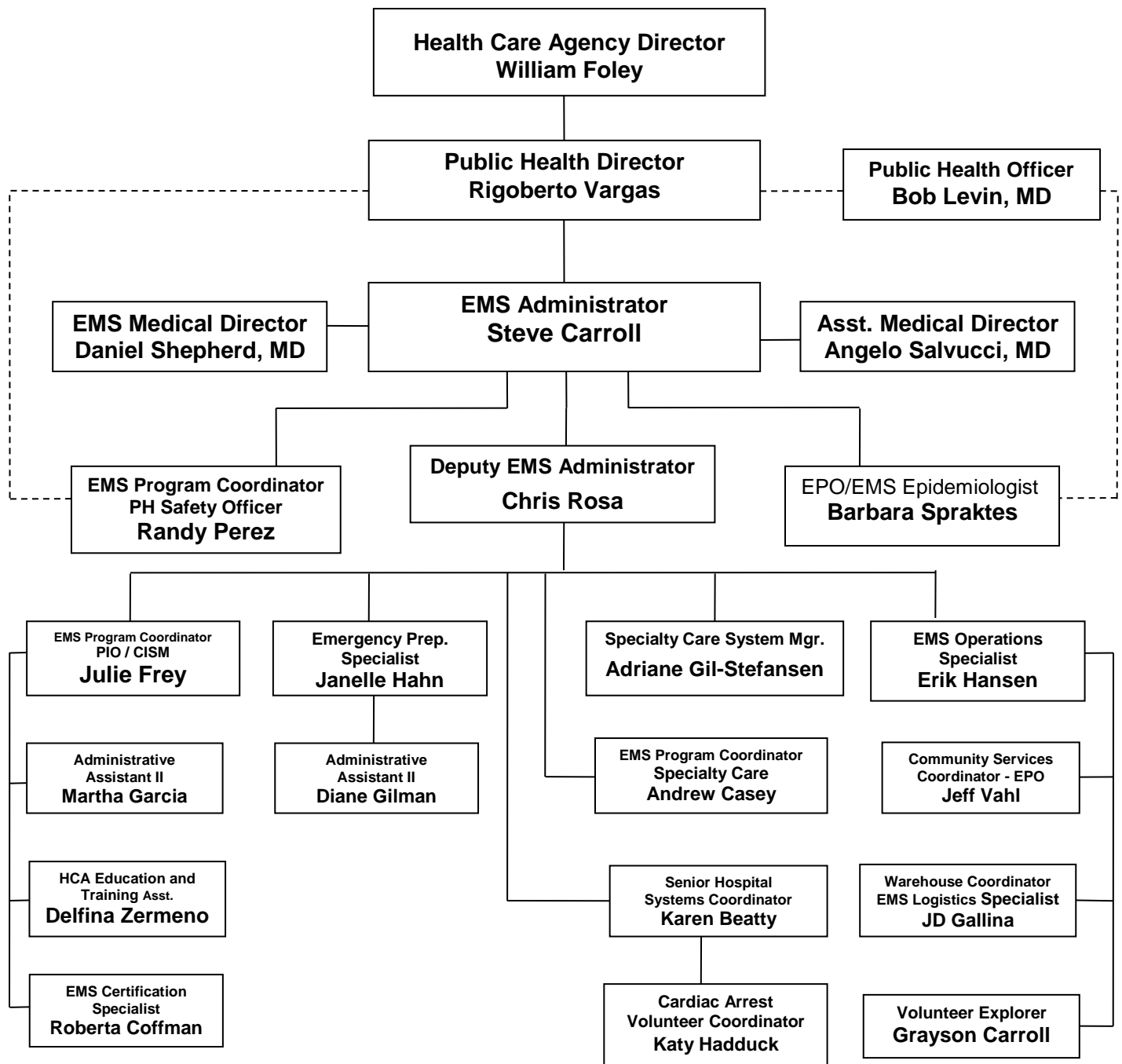


The EMS Agency is staffed with 16 full-time personnel, a half-time medical director and an assistant medical director. In addition to the medical directors, positions include EMS Administrator, Deputy Administrator, Specialty Care Systems Manager, Senior Hospital Systems Coordinator, EMS Operations Specialist, Emergency Preparedness Specialist, Epidemiologist, three Program Administrators, Community Services Coordinator, EMS Logistics Specialist, two Administrative Assistants, one HCA Education and Training Assistant 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 2019 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

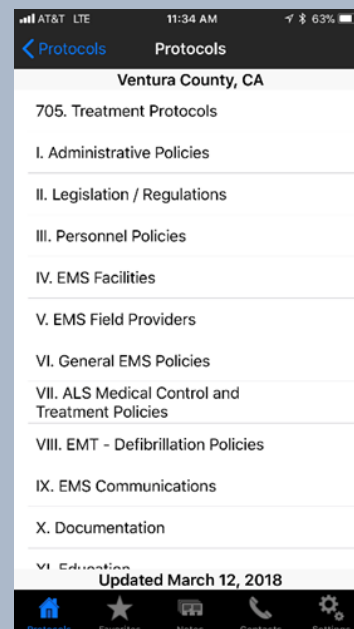


EMS Agency Staff Responsibilities

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
Adriane Stefansen, Paramedic	Specialty Care Systems Manager	adriane.stefansen@ventura.org 805-981-5307	<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
Karen Beatty, RN, EMT	Senior Hospital Systems Coordinator	Karen.beatty@ventura.org 805-981-5309	<ul style="list-style-type: none"> Trauma and hospital systems preparedness oversight Facilitates medical/health disaster preparedness and training efforts Coordinates community preparedness initiatives
Andrew Casey, Paramedic	EMS Program Coordinator/ Specialty Care	Andrew.casey@ventura.org 805-981-5311	<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
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
Janelle Hahn, MPPA	Emergency Preparedness Specialist	Janelle.leza@ventura.org 805-981-5335	<ul style="list-style-type: none"> Coordination of HPP, PHEP, Pan Flu Grants Ventura County Health Care Coalition Coordinator Health care facilities' emergency contacts database Coordinate preparedness outreach with partner agencies
Erik Hansen, EMT	EMS Operations Specialist	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
JD Gallina, EMT	EMS Logistics Specialist	JD.Gallinal@ventura.org 805-981-5301	<ul style="list-style-type: none"> Countywide medical/health logistics coordination HCA Department Operations Center coordination Disaster preparedness outreach
Diane Gilman	EMS Administrative Assistant II	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 II	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
Delfina Zermeno	HCA Education and Training Assistant	Delfina.Zermeno@ventura.org 805-981-5301	<ul style="list-style-type: none"> Certification, accreditation and authorization of personnel Maintain database for EMTs, Medics and MMCI program 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 and MMIC program Provide administrative support

VCEMS Mobile Application

Ventura County EMS Agency continues to contract with Acid ReMap, LLC to maintain a mobile application that makes the prehospital policies and procedures manual available 24/7 via smartphone to EMS system providers at no cost. The password-protected application is frequently updated and is only available to active participants within the VCEMS system and is available on iOS (Apple) and Android platforms.



Public Safety First Aid – Naloxone Administration Program

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



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.

In 2019, EMSA and our partners authorized and trained 613 additional law enforcement personnel, completing our goal of training all law enforcement agencies in Ventura County. Increasing the total number of personnel to 1068 authorized 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.

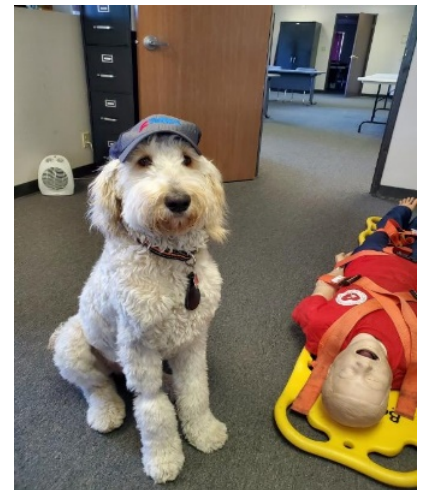
The CISM Coalition meets monthly to discuss the countywide coordination efforts, review defusing/debriefing activity, and continue disaster response planning efforts among participating agencies.

In 2019, the CISM Coalition responded to 237 requests for service.

Say hello to Oakley.....

In July, American Medical Response (AMR) introduced the county's first responders to Oakley, their new comfort dog. Oakley is a 1 year old Golden Doodle. His job is simple, give love to emergency personnel who have suffered a traumatic incident through the course of their job. If you see Oakley, you will also meet his handler, Nicole Gonzales. Nicole has spent a year preparing Oakley for his first certification test in September 2020.

A big thank you to AMR for sharing Oakley with all first responders and hospital personnel throughout the county.



Ventura County Stop the Bleed Program



STOP THE BLEED
SAVE A LIFE

A class designed to learn and apply lifesaving care during traumatic events, natural disasters, and active attacker threats.

PROGRAM OBJECTIVES:

- Provide training for lifesaving care
- Respond to high stress situations
- React/activate the 911 system
- Control major bleeding



For more information visit:
www.dhs.gov/stopthebleed
www.bleedingcontrol.org
www.firstcareprovider.org
www.vchca.org/ems/stopthebleed



Ventura County Stop the Bleed Program
 Tel: 805-981-5301
 Email: stopthebleed@ventura.org





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.

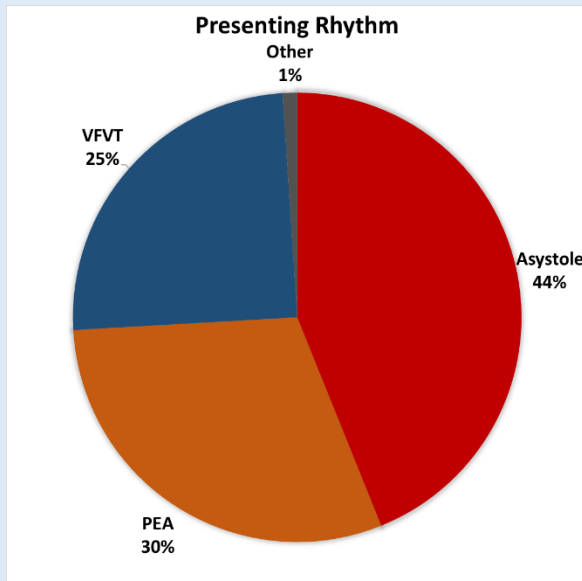
Uncontrolled bleeding is a major cause of preventable deaths. Approximately 40% of trauma-related deaths worldwide are due to bleeding or its consequences, establishing hemorrhage as the most common cause of preventable death in trauma. A person who is bleeding can die from blood loss within five minutes, 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 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 2019, VCEMS and our partners trained nearly 250 Ventura County employees and community members. The program continues to be well received. With the support of government administrators and partner agencies VCEMS will continue to expand our partnerships with local agencies and hospitals to reach additional sectors of the community.

P.R.E.S.T.O. Study Update

The **PRE**diction of **S**udden death in **mu**lTi-ethnic **c**OMmunities **S**tudy represents five plus years of hard work from all of our EMS Stakeholders. We have tracked all Ventura County residents who suffered cardiac arrest and had resuscitation attempted since Feb 1, 2015. For each such case a blood sample is drawn by paramedics as specified in the protocol. This serves as the basis for the research conducted by the PRESTO group to improve the prediction of cardiac arrest by analysis of pre-hospital records, lifetime clinical history and analysis of the blood samples.



Bystander CPR: 54.7%

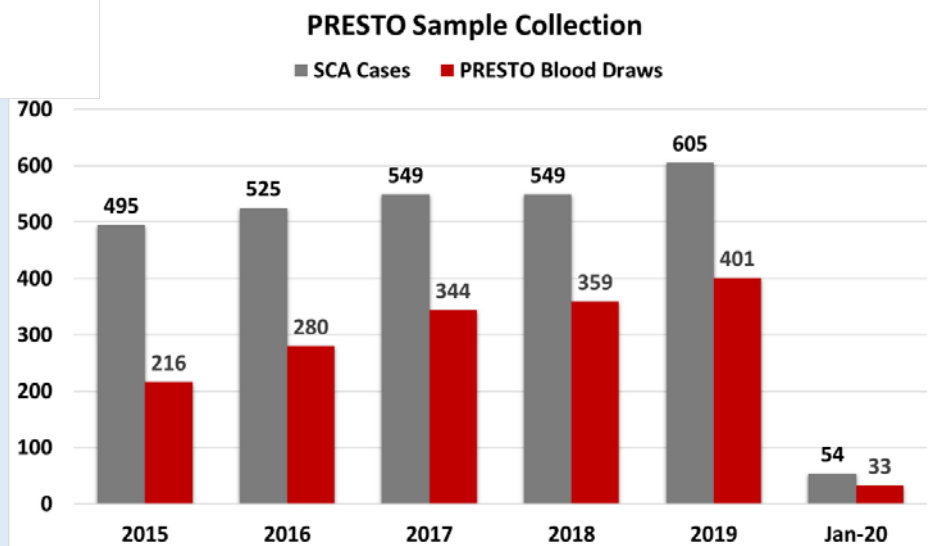
Response time: 5.8 ± 2.4 min

Response time > 4 min: 80.5%

Sustained ROSC: 29.4%

STHD: 15.1%

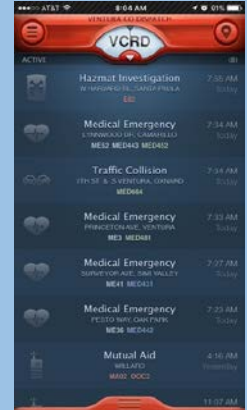
Performance Data for Feb 1, 2015-Jan 31, 2020



New Research Findings: Thanks to the established research infrastructure made possible by EMS stakeholders, the PRESTO group was able to perform a rapid analysis of the first 3 months of the pandemic. These results were published. In both Ventura County CA and Multnomah County OR, that participated in the study these trends were observed: Reduced survival from cardiac arrest, associated with a modest but significant increase in response time as well as a significant drop in bystander CPR. A detailed presentation will be made at Pre-hospital Services Committee.

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. 2019 saw a significant growth of App followers to 49,596. 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 PulsePoint app is available for iPhone and Android and can be downloaded from the iTunes Store and Google Play as "PulsePoint Foundation."



Hands Only "Sidewalk" CPR

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. Ventura County Emergency Medical Services (VCEMS), along with partner agencies host free Hands-Only "Sidewalk CPR" trainings at locations throughout Ventura County. 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. In 2019, over 9,173 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 849 AEDs throughout Ventura County. Over 149 AEDs are placed in government buildings and vehicles, and another 700 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.

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 - 2019	
EMT Certifications	456
EMT Re-Certifications	859
Paramedic Accreditation	56
Paramedic Re-Accreditation	164
Authorized Level I Active in VCEMS System	10
Authorized Level II Active in VCEMS System	248
MICN Authorization	17
MICN Re-Authorization	56
Active MICNs in VCEMS System	146

EMS Education Programs

VCEMS Authorized Prehospital Training Programs - 2019	
EMT – Initial and Refresher	6
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/ShowTraining/TrainingPrograms/GroupByTrainingProgramsTable.aspx>

VCEMS Emergency Services Unit



During the unprecedented wildfires that impacted Ventura County in 2017 and 2018, numerous medical facilities – including an acute care hospital – required evacuation or relocation of patients to areas outside of the fire zone. As part of the after-action review process, the need for a large format vehicle that would aid in the movement of many patients was identified. These vehicles, known around the country as ambulance busses or mass casualty busses, are capable of moving several victims at once, thereby saving time and reducing the need for additional ground ambulances, which are a limited resource during a mass casualty incident.

VCEMS staff began searching for a vehicle that was large enough to meet the need of the county with budget concerns in mind. Soon after the search began, an inmate transport bus, in excellent mechanical condition, was released for surplus by the Ventura County Sheriff's Department. VCEMS secured the bus from surplus and began the process to refurbish it into our Emergency Services Unit (ESU). Due to the fact that this bus was previously used for inmate transport, there was a significant amount of work needed to transform the interior and exterior of the vehicle into a large-format mass casualty emergency vehicle. VCEMS staff worked with the county's General Service Agency, Fleet Services Department on the desired layout and sought to leverage GSA's expertise to perform most of the work required. Utilizing a surplus vehicle and in-house refurbishment, saved the County several hundred thousand dollars compared to the cost of purchasing a new unit.

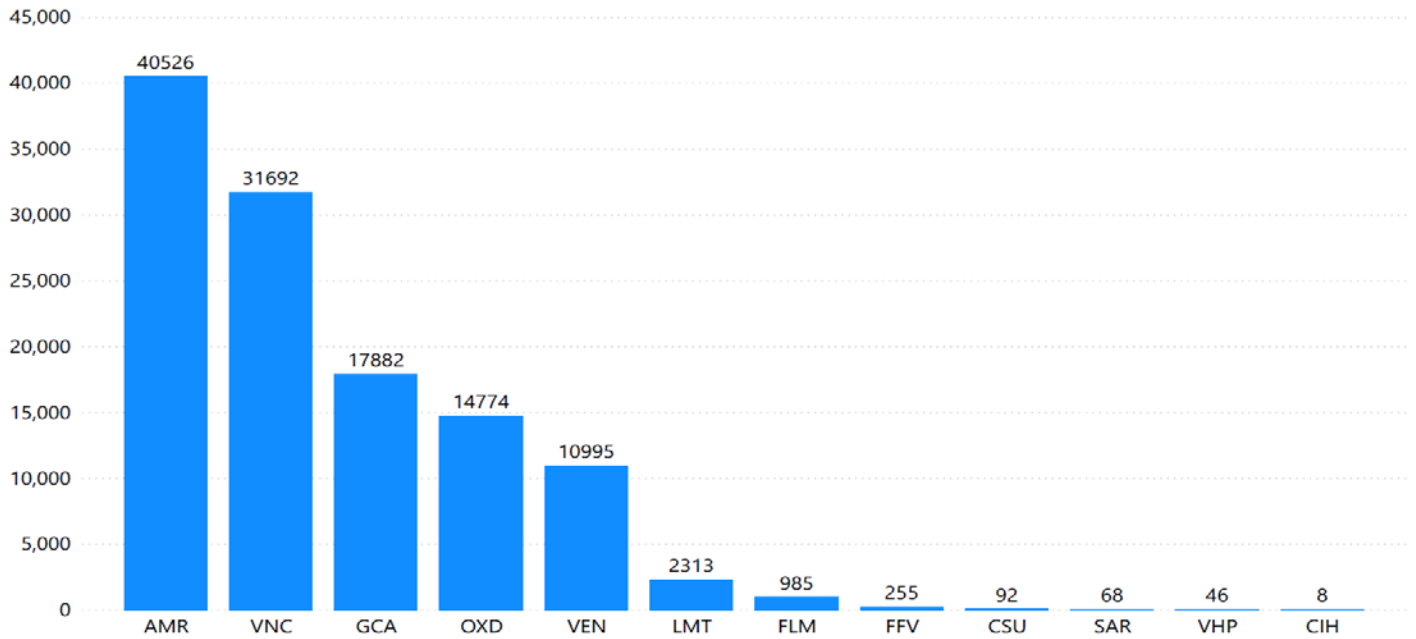


The design and capabilities of the vehicle are not limited to victim transport during a mass casualty incident or medical facility evacuation. Equipment was added that would allow the vehicle to not only be used for mass casualty evacuation, but to a variety of applications that include mass vaccination, medical commodity distribution, temporary sheltering of individuals, and rehabilitation/support of public safety personnel on large incidents such as a multi-alarm structure fire. The ESU is equipped with 8 wall mounted stretchers, one gurney, seating for at least 15 additional passengers, heating and air conditioning, loading ramp and two awnings. Homeland Security grant funding was utilized to purchase additional supplies and equipment for the bus. The ESU was placed into service in mid-2019 and is assigned the radio call sign of Emergency Services Unit – 1 (ESU1). The project represents a significant improvement in the county's emergency medical response capabilities and will significantly enhance our system's ability to support the needs of the citizens and visitors of Ventura County.



Ventura County EMS System Volume

Medical Responses by Agency - 2019



AMR = American Medical Response

FFV = Naval Base Ventura County Fire Dept.

LMT = Lifeline Medical Transport

VNC = Ventura County Fire Protection District

VHP = Ventura Harbor Patrol

CSUCI PD = Cal State University Channel Islands PD

FLM = Fillmore Fire Department

OXD = Oxnard Fire Department

SAR = Ventura County Sheriff's Air Unit / SAR

CIHP = Channel Islands Harbor Patrol

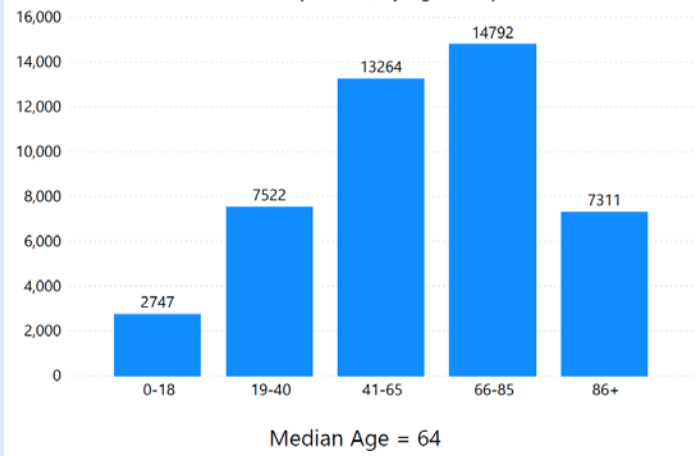
GCA = Gold Coast Ambulance

SPA = Santa Paula Fire Department

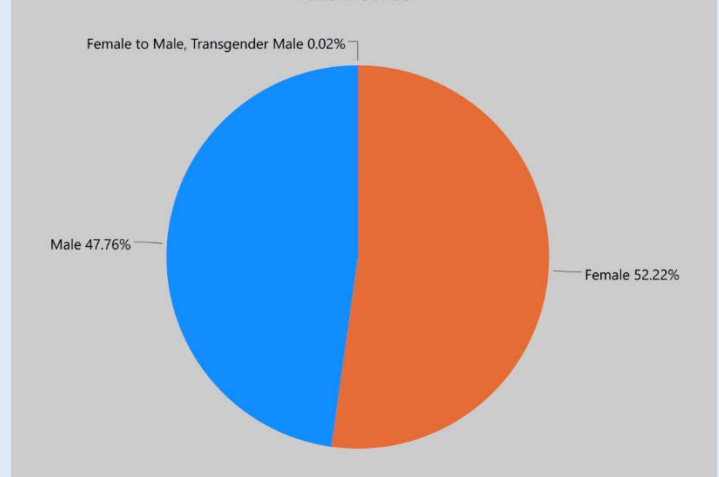
VEN = Ventura City Fire Department

Patient Demographics (transported only) – 2019

Patient Population, by Age Group



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.

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.

**Ventura County Fire
Communications Center**



Emergency Medical Dispatch

Countywide Emergency Medical Dispatch Activity by Call Type

PROBLEM TYPE	2019 TOTAL INCIDENTS	PROBLEM TYPE	2019 TOTAL INCIDENTS
ABDOMINAL PAIN	1589	HEAT / COLD EXPOSURE	95
AIRCRAFT EMERGENCY	15	HEMORRHAGE / LACERATION	1712
ALLERGIES / ENVENOMATION	429	JUVENILE BEHAVIORAL TRANSPORT	76
AMBULANCE ONLY	241	LIFT ASSIST	604
ANIMAL BITES / ATTACKS	114	MEDICAL ALARM	2486
ASSAULT	1616	MOTORCYCLE COLLISION	129
ASSIST OTHER AGENCY MEDICAL	156	MUTUAL AID - MEDICAL	215
BACK PAIN	727	OBVIOUS OR EXPECTED DEATH	134
BEHAVIORAL EMERGENCY	1591	OVERDOSE / POISONING	1698
BREATHING PROBLEMS	5893	PENETRATING WOUNDS	9
BURNS / EXPLOSIONS	35	PREGNANCY RELATED EMERGENCY	178
CARDIAC / RESP ARREST	1009	REMOTE RESCUE	80
CHEST PAIN	4081	SICK PERSON	9237
CHOKING	387	STABBING	134
INHALATION EXPOSURE / HAZMAT	104	STEMI TRANSPORT	76
CONVULSIONS / SEIZURES	2582	STROKE (CVA)	1659
DIABETIC PROBLEMS	1051	STROKE TRANSPORT	51
ELECTROCUTION / LIGHTNING	7	TRAFFIC COLLISION	5406
ENTRAPMENT NON VEHICLE	68	TECHNICAL RESCUE	21
EYE PROBLEMS / INJURIES	59	TRAUMA TRANSFER	50
FALLS	10776	TRAUMATIC INJURIES	1870
GUNSHOT	125	UNCONSCIOUS / FAINTING	5135
HEADACHE	354	UNKNOWN PROBLEM	4785
HEART PROBLEM	839	WATER RESCUE	59
TOTAL 2019 MEDICAL RELATED RESPONSES - 69769			

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 ALS squad.



Ventura City Fire Department

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



Ventura County Fire Department

Covers the cities of Simi Valley, Moorpark, Thousand Oaks, Camarillo, Port Hueneme, Ojai, Santa Paula and all unincorporated areas of Ventura County from 33 stations. Ventura County Fire Department provides services with 12 ALS engines, 19 BLS engines, 4 variable staffed engines, 4 BLS ladder trucks and 2 ALS squads.

Sheriff's Air Rescue



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.

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 14-19 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 5 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 / Harbor Patrol

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.



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 2019, all response areas were fully compliant with the 90% requirement.

2019 Response Time Compliance

All Exclusive Operating Areas (EOA)

	LMT 1	AMR 2	AMR 3	AMR 4	AMR 5	GCA 6	AMR 7	Average
JAN	98.38%	91.76%	93.49%	91.22%	90.07%	95.74%	91.72%	93.20%
FEB	96.55%	95.70%	93.54%	91.30%	92.76%	95.93%	90.69%	93.78%
MAR	96.02%	91.82%	93.74%	91.59%	93.33%	95.45%	92.39%	93.48%
APR	93.21%	94.44%	93.46%	92.78%	93.71%	96.45%	93.02%	93.87%
MAY	94.41%	94.07%	94.51%	93.26%	93.09%	96.69%	94.43%	94.35%
JUN	92.17%	91.79%	92.40%	93.20%	92.71%	97.34%	94.37%	93.43%
JUL	95.41%	93.66%	94.47%	92.72%	92.53%	97.22%	92.50%	94.07%
AUG	95.16%	96.05%	92.92%	92.28%	92.17%	96.70%	92.88%	94.02%
SEP	97.40%	93.03%	94.65%	92.72%	92.27%	95.40%	95.37%	94.41%
OCT	96.20%	95.74%	94.42%	91.58%	92.12%	95.51%	94.98%	94.36%
NOV	93.10%	95.83%	92.76%	91.63%	95.48%	94.76%	94.63%	94.03%
DEC	97.50%	96.90%	91.98%	92.47%	93.36%	95.45%	94.32%	94.57%
Average	95.46%	94.23%	93.53%	92.23%	92.80%	96.05%	93.44%	93.96%

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.

2019		EOA1				
		08:00	15:00	20:00	30:00	45:00
Total Volume	1,994	1,498	338	92	7	59
At-Scene Time Not Documented	5	5	0	0	0	0
Compliant - Time Extension	125	125	0	0	0	0
Compliant - No Map	0	0	0	0	0	0
Gross Exceptions	217	192	15	10	0	0
Exemptions Requested	170	145	15	10	0	0
Exemptions Approved	127	106	11	10	0	0
Chargeable Late Responses	90	86	4	0	0	0
Compliance	95.46%	94.26%	98.82%	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.

2019		EOA2				
		08:00	15:00	20:00	30:00	45:00
Total Volume	3,308	2,261	552	430	22	43
At-Scene Time Not Documented	10	7	2	1	0	0
Compliant - Time Extension	86	86	0	0	0	0
Gross Exceptions	320	260	35	25	0	0
Exemptions Requested	152	127	11	14	0	0
Exemptions Approved	140	115	11	14	0	0
Chargeable Late Responses	180	145	24	11	0	0
Compliance	94.23%	93.59%	95.65%	97.44%	100.00%	100.00%

American Medical Response Exclusive Operating Area 3 Compliance

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

2019		EOA3				
		08:00	15:00	20:00	30:00	45:00
Total Volume	7,756	6,153	1,479	87	0	37
At-Scene Time Not Documented	18	14	4	0	0	0
Compliant - Time Extension	214	214	0	0	0	0
Gross Exceptions	807	765	41	1	0	0
Exemptions Requested	322	297	25	0	0	0
Exemptions Approved	313	288	25	0	0	0
Chargeable Late Responses	494	477	16	1	0	0
Compliance	93.53%	92.25%	98.92%	98.85%	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.

2019		EOA4				
		08:00	15:00	20:00	30:00	45:00
Total Volume	11,892	9,275	2334	244	0	39
At-Scene Time Not Documented	18	13	4	1	0	0
Compliant - Time Extension	607	607	0	0	0	0
Gross Exceptions	1,116	1037	75	4	0	0
Exemptions Requested	222	205	15	2	0	0
Exemptions Approved	205	189	14	2	0	0
Chargeable Late Responses	911	848	61	2	0	0
Compliance	92.23%	90.86%	97.39%	99.19%	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.

2019		EOA5				
		08:00	15:00	20:00	30:00	45:00
Total Volume	6,574	5,184	1,227	158	0	5
At-Scene Time Not Documented	9	7	2	0	0	0
Compliant - Time Extension	246	246	0	0	0	0
Gross Exceptions	654	629	24	1	0	0
Exemptions Requested	196	186	9	1	0	0
Exemptions Approved	190	180	9	1	0	0
Chargeable Late Responses	464	449	15	0	0	0
Compliance	92.80%	91.34%	98.78%	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.

2019		EOA6				
		08:00	15:00	20:00	30:00	45:00
Total Volume	16,832	13,633	2,772	354	41	32
At-Scene Time Not Documented	30	29	1	0	0	0
Compliant - Time Extension	166	166	0	0	0	0
Gross Exceptions	1,132	1,025	99	7	1	0
Exemptions Requested	482	416	62	3	1	0
Exemptions Approved	468	404	61	3	0	0
Chargeable Late Responses	664	621	38	4	1	0
Compliance	96.05%	95.44%	98.63%	98.87%	97.56%	100.00%

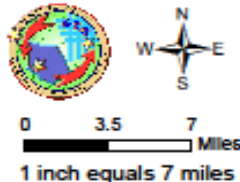
American Medical Response Exclusive Operating Area 7 Compliance

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

2019		EOA7				
		08:00	15:00	20:00	30:00	45:00
Total Volume	11,041	9,058	1,786	158	34	5
At-Scene Time Not Documented	18	13	4	1	0	0
Compliant - Time Extension	1,321	1,321	0	0	0	0
Gross Exceptions	1,305	1,161	131	11	2	0
Exemptions Requested	601	538	55	7	1	0
Exemptions Approved	592	529	55	7	1	0
Chargeable Late Responses	713	632	76	4	1	0
Compliance	93.44%	93.02%	95.74%	97.47%	97.06%	100.00%



Ventura County Emergency Medical Services Agency Ambulance Service Areas



County of Ventura EOA Ambulance Zones

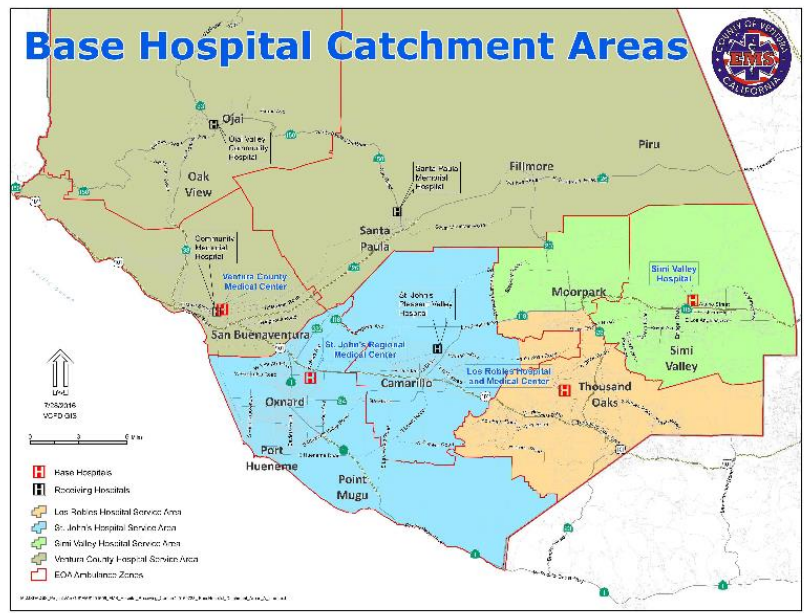
Prepared by County of Ventura - IT Services Department - GIS Division
State Plane Coordinate System California Zone V - NAD 27
This map was compiled from records and computations
Published on : June 25, 2007

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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.

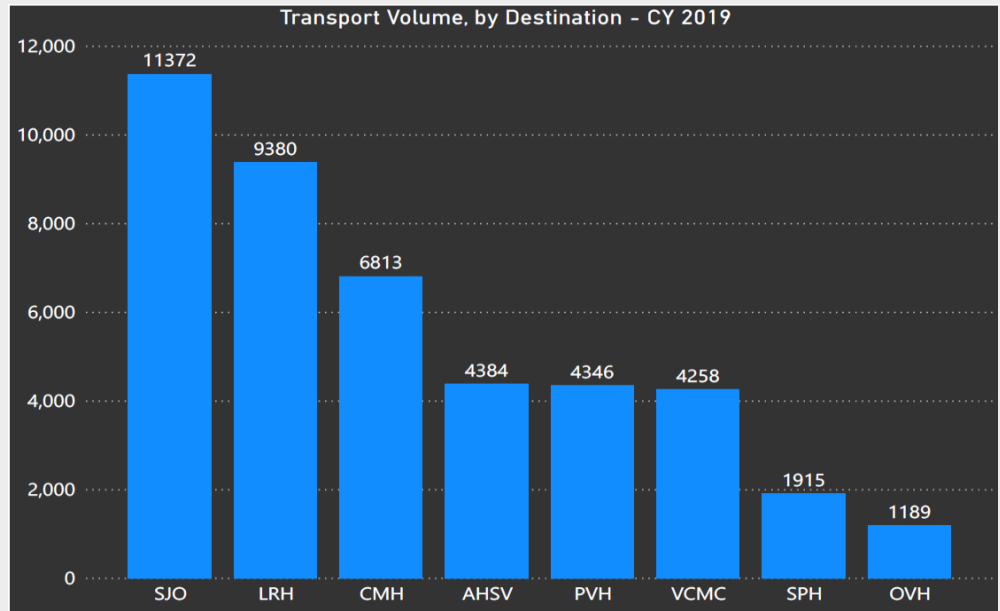
Ventura County Base and Receiving Hospitals

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.

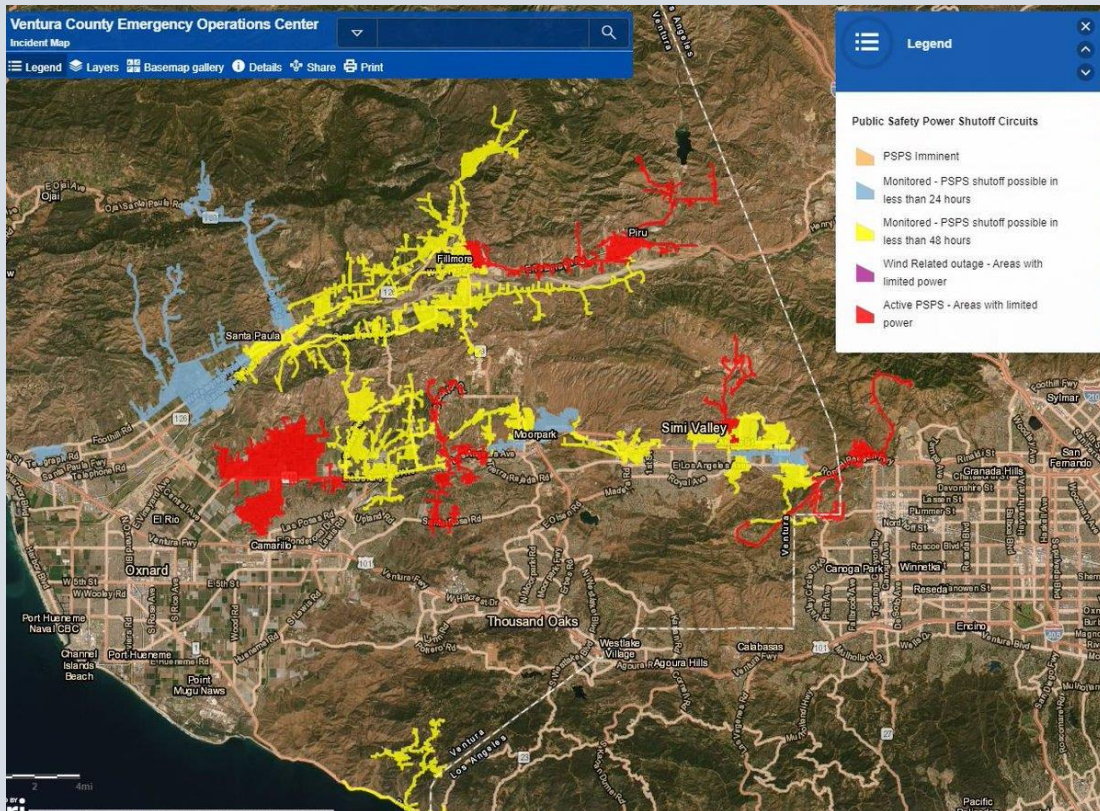
HOSPITAL CAPABILITIES	Receiving Hospital	Base Hospital	Level II Trauma Center	Acute Stroke Center	Thrombectomy Capable Acute Stroke Center	STEMI Receiving Center	Labor & Delivery
CMH	X			X		X	X
LRHMC	X	X	X	X	X	X	X
OVCH	Standby						
PVH	X			X			
SPH	X						X
AHSV	X	X		X		X	X
SJRMCM	X	X		X	X	X	X
VCMC	X	X	X	X			X



Incident Response and Coordination

Public Safety Power Shutoff - Following several major wildfires caused by electrical equipment failures in prior years, electrical utility providers began implementing what are collectively referred to as Public Safety Power Shutoff (PSPS) programs. A PSPS is initiated when heat and high winds align with terrain that are considered high-risk for wildfire. During a PSPS, electrical circuits are shut down ahead of a weather event that meet PSPS criteria, and those circuits are not re-energized until utility personnel can physically inspect electrical equipment and ensure it has not been damaged by wind. Although PSPS programs were formally implemented in late 2018, they were not widely adopted until the 2019 fire season.

As the coordinating agency for the countywide medical and health system during any significant incident or emergency, VCEMS worked closely with the Sheriff's Office of Emergency Services and County Human Services Agency to ensure that impacts to the med/health infrastructure and to the community were minimized as much as possible. During the numerous PSPS events throughout the month of October, the primary focus was to ensure that access to critical resources remained intact for the Disabilities and Access and Functional Needs (DAFN) population, and that impacts to the county's medical and health infrastructure were kept to a minimum. In all, there were six significant PSPS events for Ventura County during October 2019 resulting in outages that impacted several thousand households and numerous medical and health facilities. VCEMS staff, along with Public Health Nurses from Ventura County Public Health worked along side county emergency managers to communicate with DAFN and the chronically ill population to ensure they were not in distress and to offer access to needs such as critical transportation to cooling centers, medical appointments, etc.





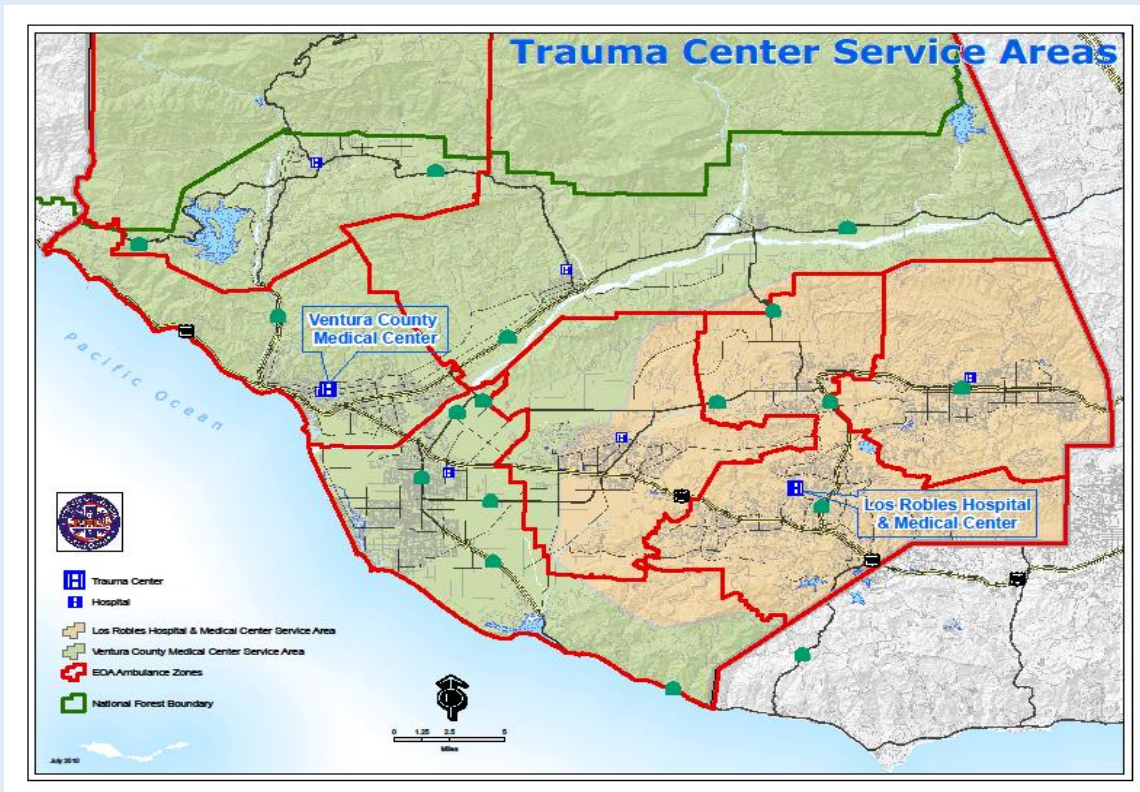
Easy Fire – On the morning of October 30th, a fire broke out in western Simi Valley. Due to high winds and low humidity, the fire spread quickly and was an immediate threat to several homes and businesses that are in the area. Firefighters were on scene quickly and began requesting additional resources to help suppress the fire. The county’s Emergency Operations Center was already activated for an ongoing PSPS, and the medical health branch was staffed by the VCEMS Duty Officer.

EOC personnel were able to quickly begin coordinating evacuations for the general public, and med/health staff were able to quickly contact a residential care facility to ensure they were prepared to shelter in place. As the fire continued to burn in a westerly direction, additional residential care facilities were contacted to ensure they were prepared to shelter in place. All facilities had already made the decision to relocate staff and residents to facilities outside of the county until the threat of fire passed. Additional medical and health stakeholders were contacted through the healthcare coalition communication channels, and key information was shared throughout the day. Ventura County Medical Reserve Corps volunteers were responded to evacuation shelters to assist shelter staff with shelter operations. Though fire personnel were engaged in firefighting activities for several days, the primary threats to medical and health infrastructure diminished by the evening hours of October 30th.

Maria Fire – Less than 24 hours later, on the evening of October 31st, Ventura County was impacted by a wildfire once again. The Maria Fire was ignited on South Mountain, between the City of Santa Paula and the unincorporated county area of Somis. The fire spread quickly due to high winds and dry conditions. VCEMS personnel were requested to the county emergency operations center to staff the medical and health branch. Messaging was sent out to healthcare coalition members to keep them apprised of the conditions and fire information. While there were no healthcare facilities directly impacted or threatened by the fire, VCEMS staff remained engaged in shelter support through the MRC as well as distribution of personal protective equipment to communities and agricultural workers impacted by smoke.



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.

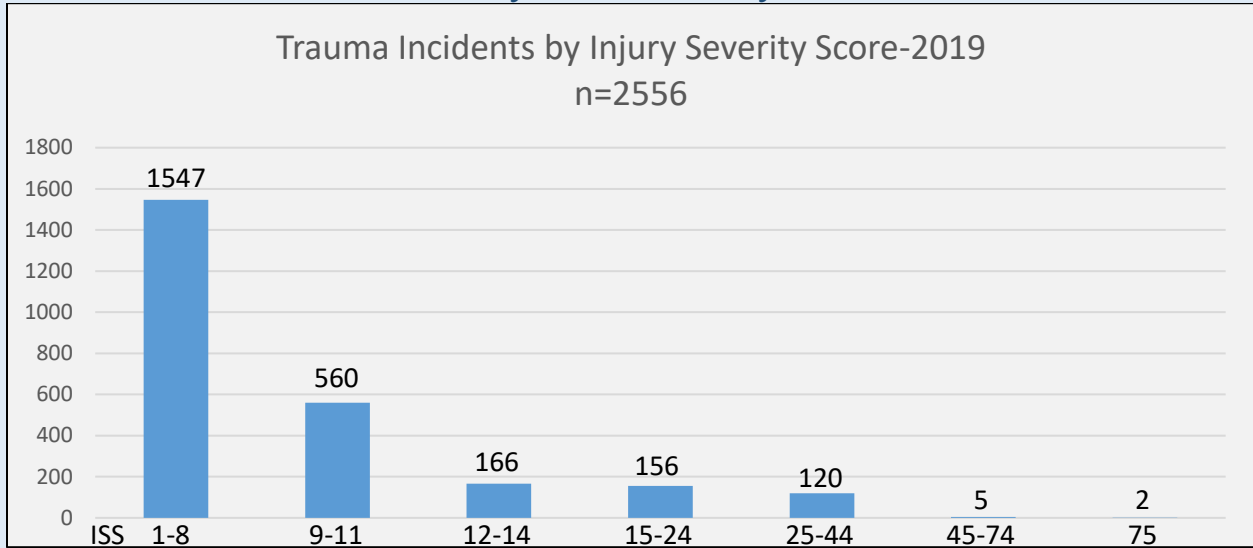
2019 Ventura County Trauma Destinations

Base Hospital Destination	Step 1 TOTAL 279	Step 2 TOTAL 292	Step 3 TOTAL 460
VCMC Trauma Base Hospital	182	215	271
VCMC	178	206	222
CMH	0	0	1
SPH	0	0	2
SJRM	2	5	9
SJPV	0	0	4
OVH	0	0	4
HMNMH	2	4	28
Kern County Medical Center	0	0	0
Santa Barbara Cottage Hospital	0	0	1
LRHMC Trauma Base Hospital	97	77	189
LRHMC	96	75	180
SVH	1	1	1
Northridge Medical Center	1	1	5
Holy Cross	0	0	3

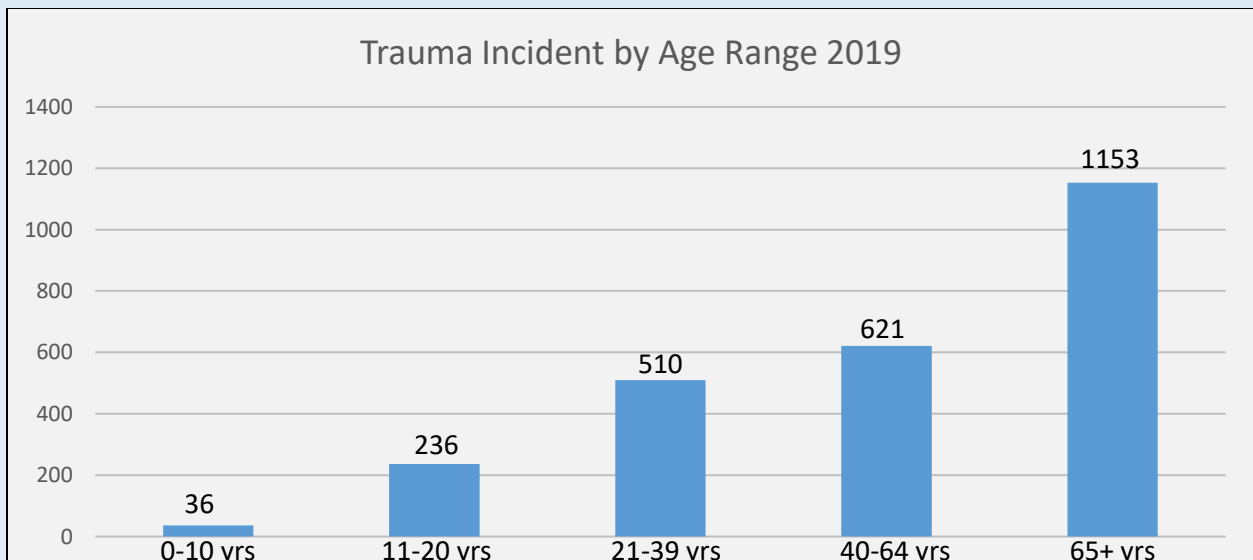
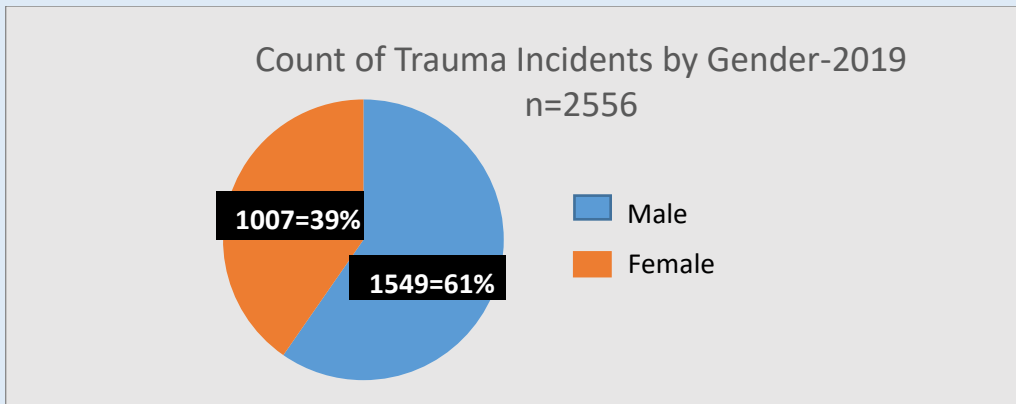
2019 Step 1-3 by Hospital	N
Ventura County Medical Center	606
Los Robles Hospital and Medical Center	351
St. John's Regional Medical Center	16
Henry Mayo Newhall Memorial Hospital	34
Community Memorial Hospital	1
Ojai Valley Hospital	4
St. John's Pleasant Valley Hospital	4
Santa Paula Hospital	2
Providence Holy Cross	3
Simi Valley Hospital	2
Kern County Medical Center	7
Cottage Hospital	1
TOTAL	1031

2019 Step 4 by Hospital	N
St. John's Regional Medical Center	626
Los Robles Hospital and Medical Center	653
Community Memorial Hospital	430
St. John's Pleasant Valley Hospital	276
Ventura County Medical Center	327
Simi Valley Hospital	234
Ojai Valley Hospital	76
Santa Paula Hospital	52
Henry Mayo Newhall Memorial Hospital	10
Santa Barbara Cottage Hospital	0
Kaiser Woodland Hills Hospital	5
TOTAL	2689

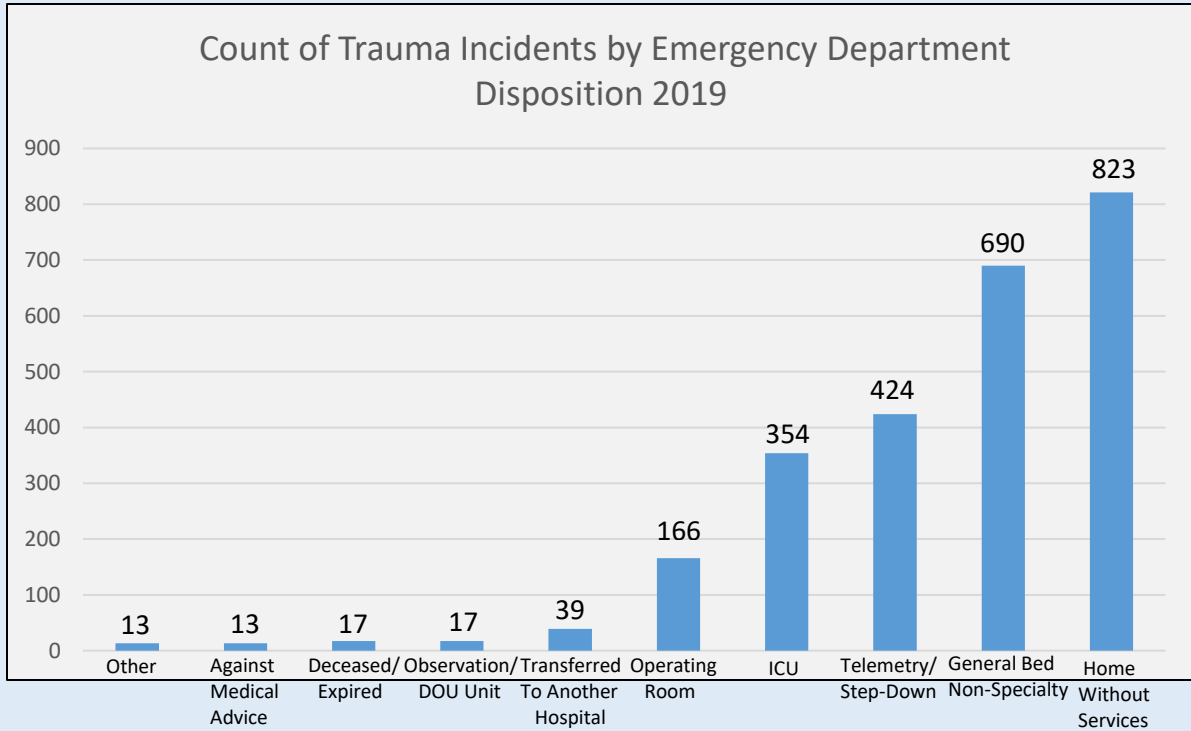
Ventura County Trauma System Statistics



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. (Note: 2556 represents total patients in the trauma registry at LRHMC and VCMC and will include walk-ins, out of county transports and patients that did not meet VCEMS Trauma Step criteria.)



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.

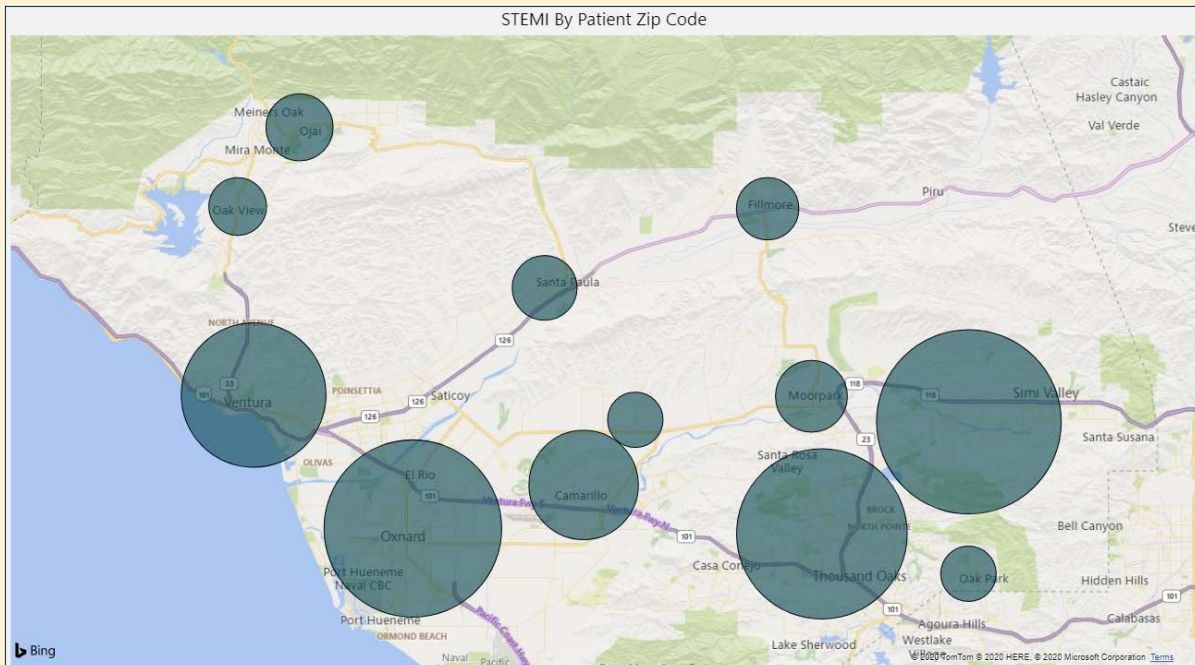
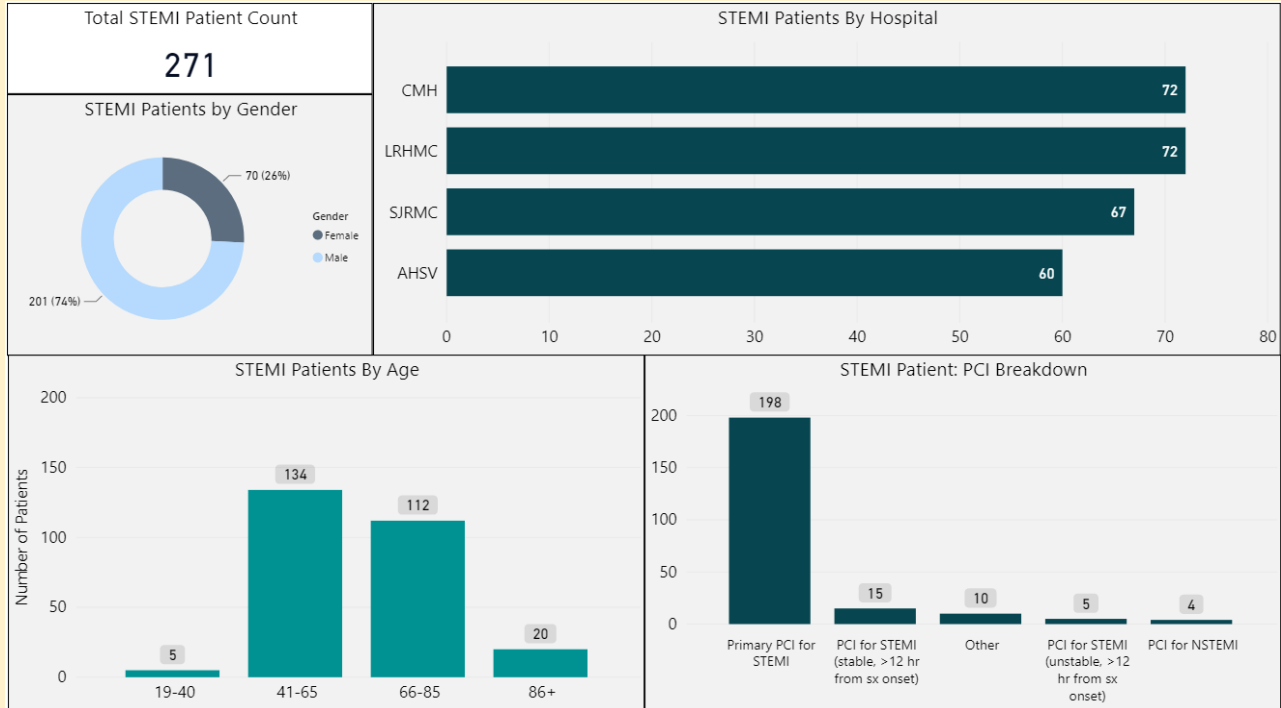
The Trauma Operational Review Committee (TORC) is a confidential, closed committee consisting of representatives from the local EMS agency, first responder and transport provider agencies, non-trauma hospitals and trauma centers in Ventura County. The committee provides a collaborative forum in which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

VCEMS STEMI SYSTEM



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 has 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). 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 2019, Ventura County's STEMI System received the *Gold Plus Level* recognition from the American Heart Association's Mission Lifeline program. This represents the fifth year in a row where Ventura County has attained Gold level or higher.

2019 STEMI PATIENT DATA

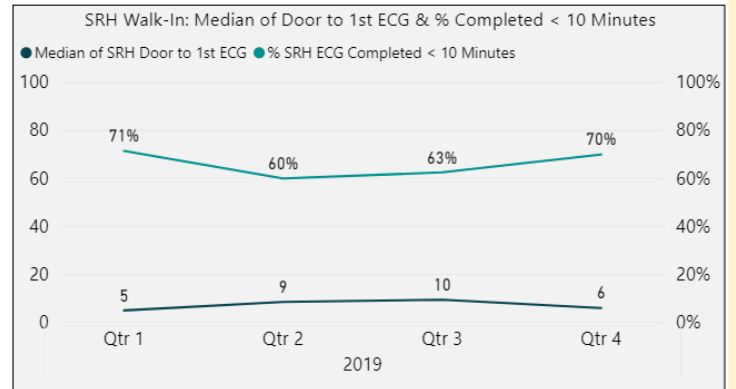
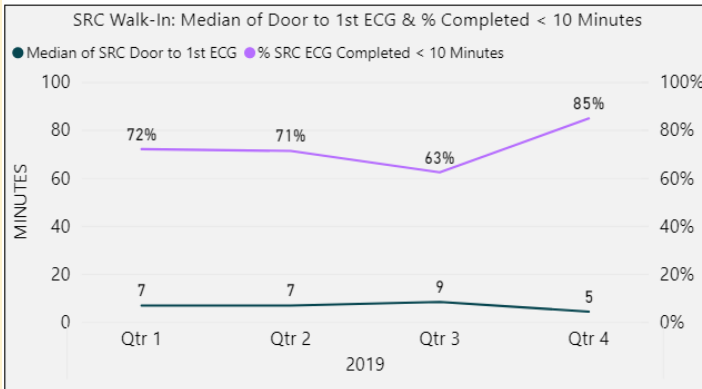
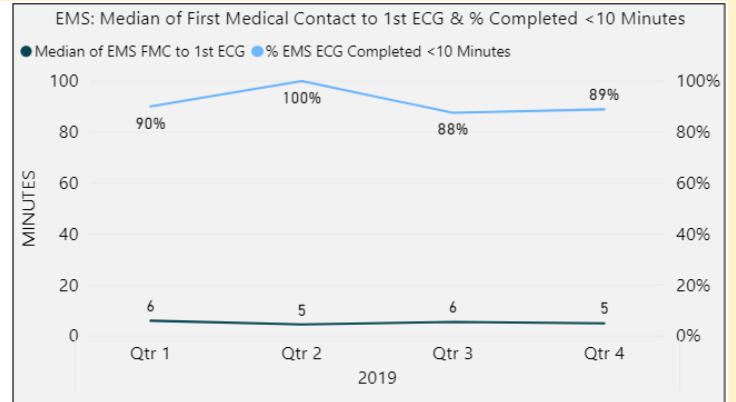
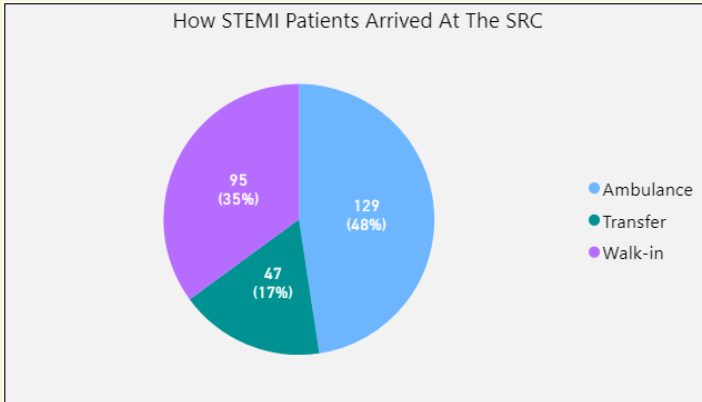


VCEMS STEMI SYSTEM

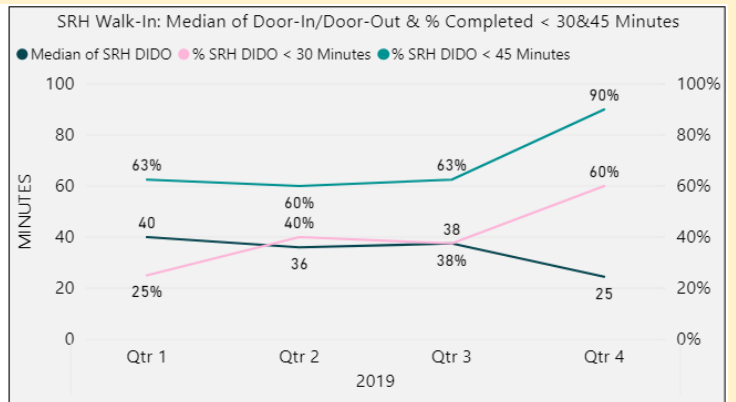
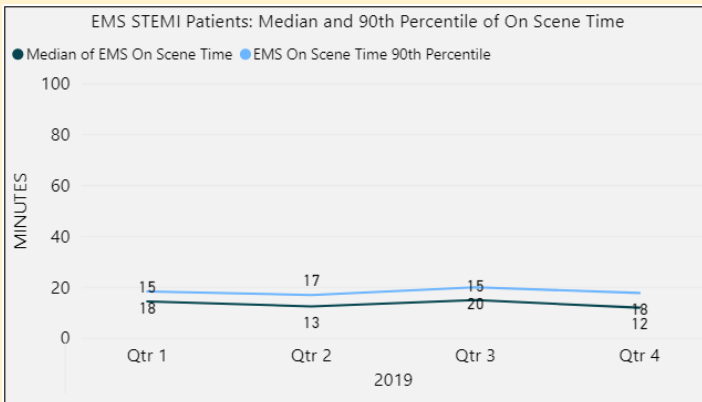


Patients arrive to STEMI Receiving Centers by Walk-In, EMS, or Transfer by EMS from an STEMI Referral Hospital (SRH). When a patient is a Walk-In at an SRH (not an SRC), then the patient is emergently transferred to an SRC by EMS. One of the key measures is time to recognition that a patient is having a STEMI. This is accomplished by performing a 12-Lead ECG for interpretation of the STEMI.

ECG DATA



EMS ON SCENE TIME & SRH DOOR IN – DOOR OUT (DIDO) TIMES

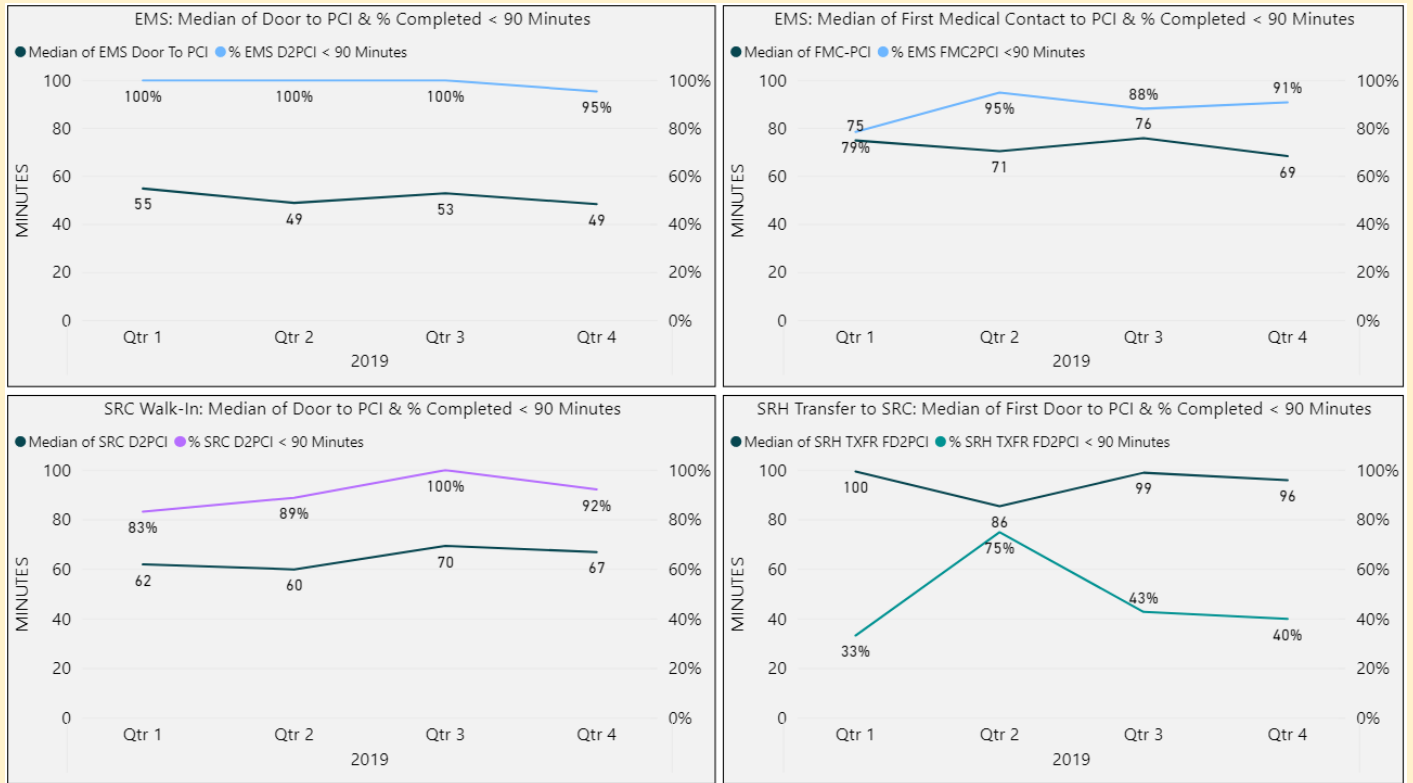




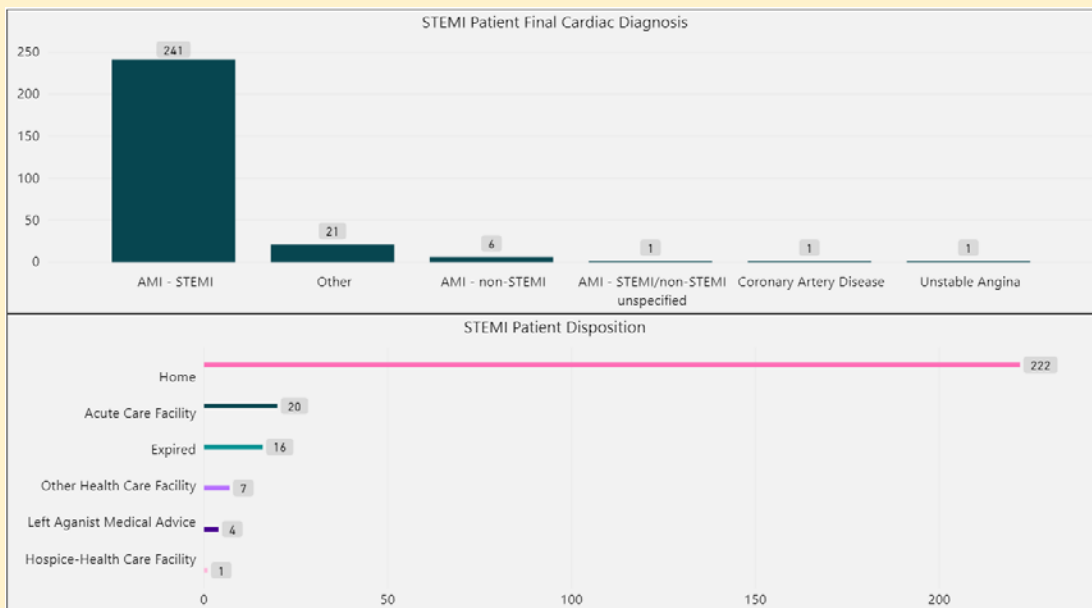
VCEMS STEMI SYSTEM

Once a STEMI is recognized, the goal is for the patient to receive timely Percutaneous Cardiac Intervention (PCI). PCI is a procedure to help restore blood flow to the heart and performed in a specialized Catheterization Lab, commonly referred to as a Cath Lab, at the SRC.

STEMI PCI DATA



STEMI PATIENT DISPOSITIONS

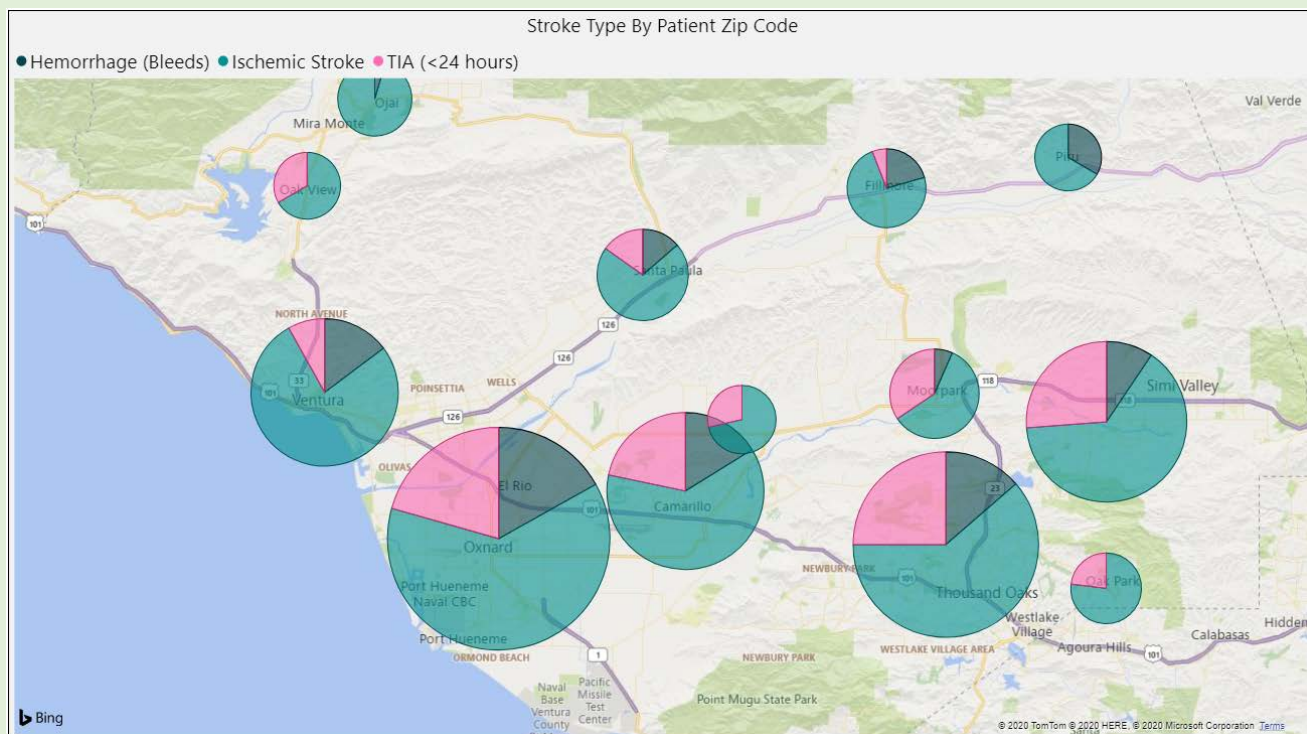
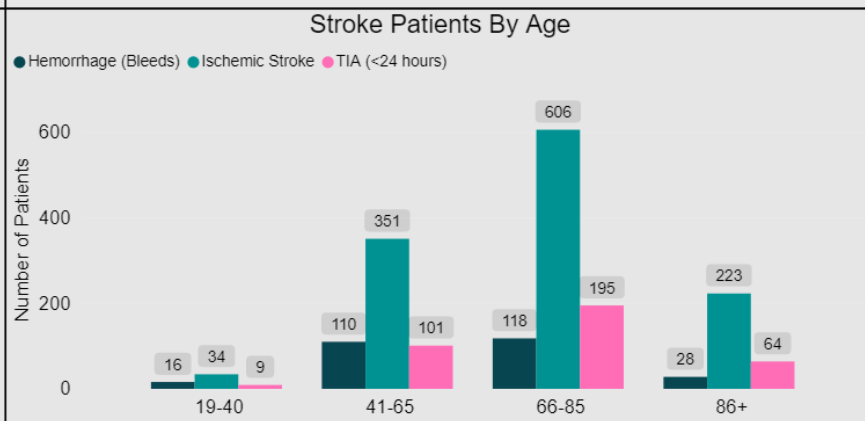
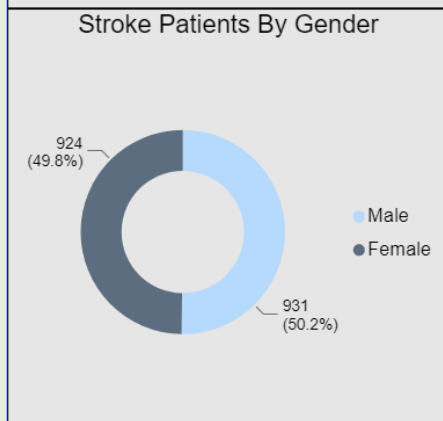
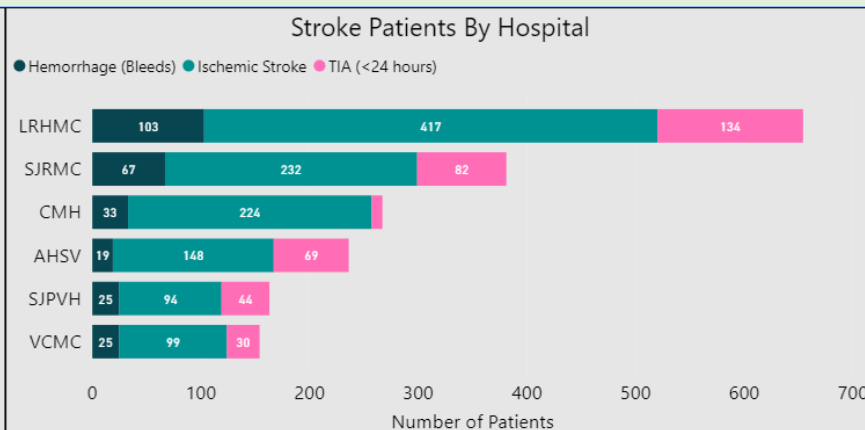
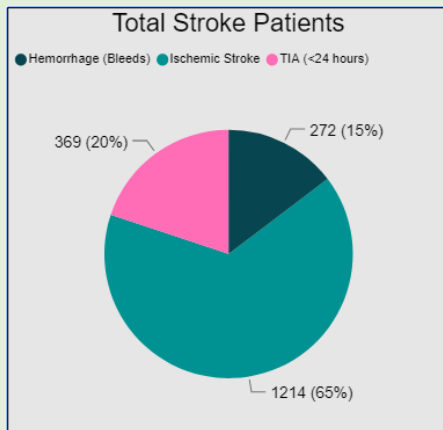




VCEMS STROKE SYSTEM

The Ventura County Stroke System is comprised of both pre-hospital providers (Paramedics and EMTs) and hospitals who specialize in the treatment of strokes. Strokes are the leading cause of serious disability and the 5th leading cause of death nationally.

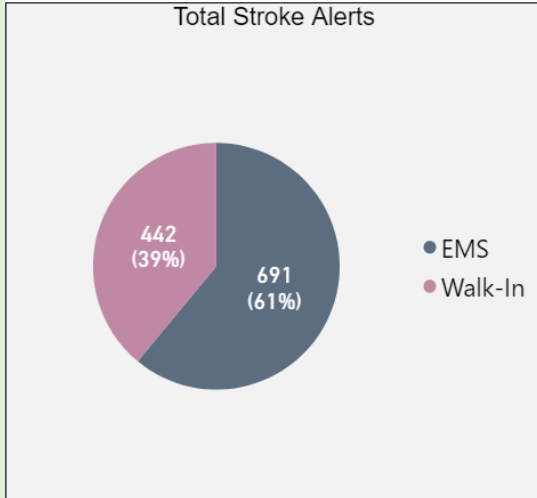
2019 STROKE PATIENT DATA



VCEMS STROKE SYSTEM

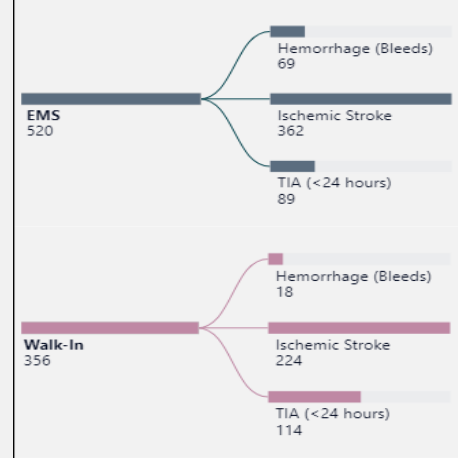


The primary objective of this system is to coordinate timely care of patients who have a stroke. Patients are directed as “Stroke Alerts” to Acute Stroke Centers or Thrombectomy Capable Acute Stroke Centers based on the results from 2 screening scales (Cincinnati Prehospital Stroke Scale and Ventura ELVO Score).



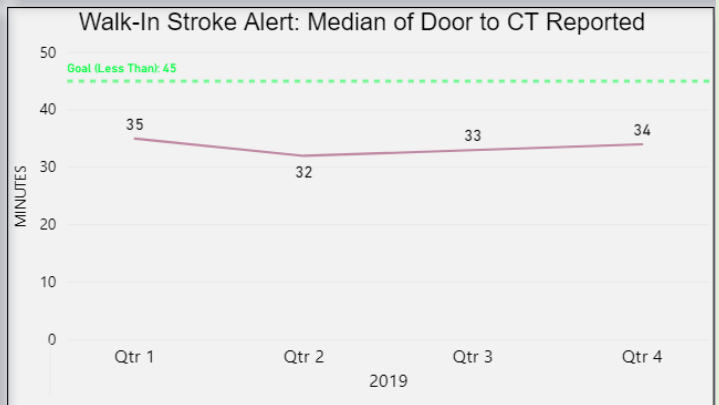
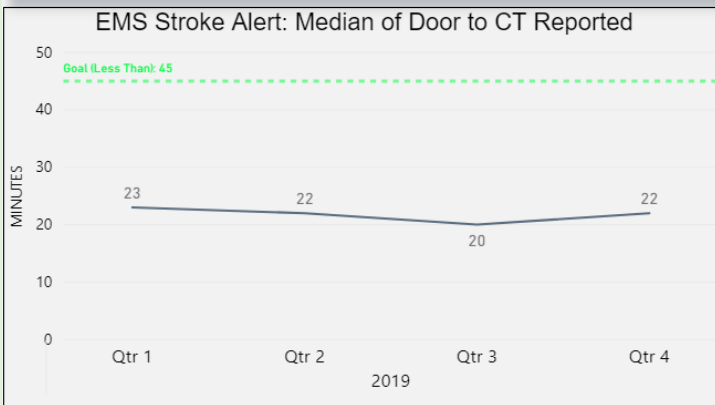
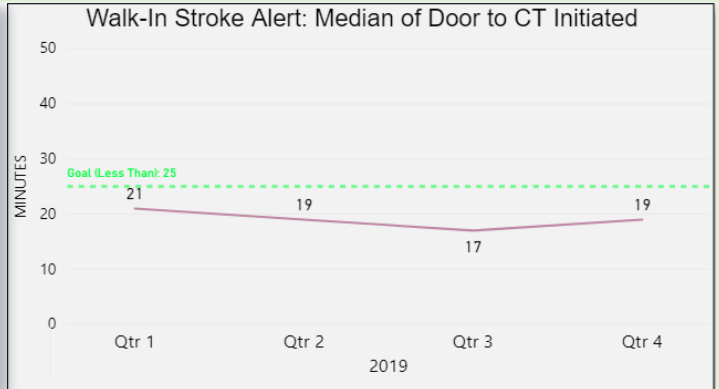
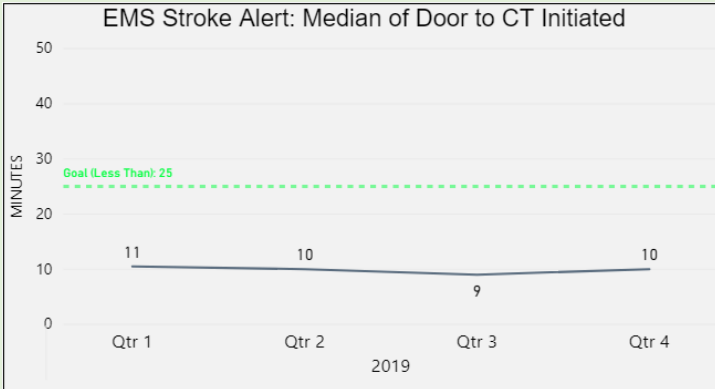
STROKE ALERTS

Stroke Alerts Diagnosed With A Stroke



The advantage of pre-hospital providers notifying the hospitals of a “Stroke Alert”, is it gives the hospital time to mobilize needed resources prior to the patient’s arrival. These patients are often brought directly to the CT Scanner upon arrival at the hospital. Patient Arrival (Door Time) to having a CT Initiated (CTI) and Reported (CTR) are key measures in our system’s performance to quickly identify stroke patients who are candidates for time sensitive treatments/interventions.

CT TIMES

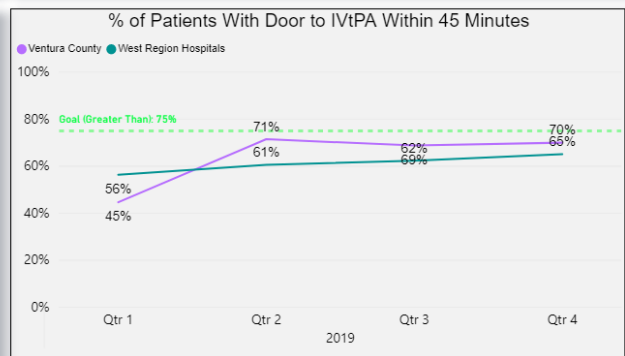
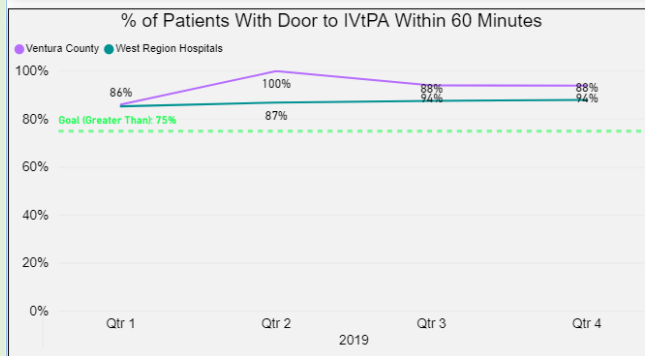
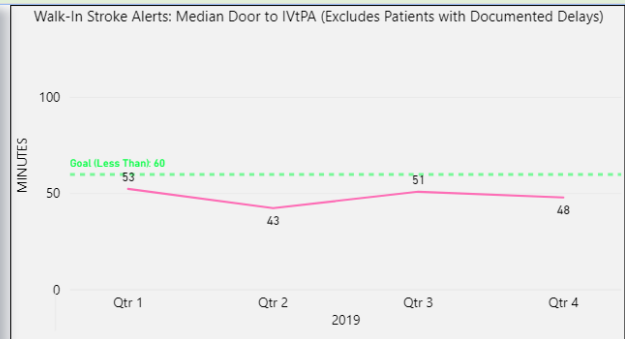
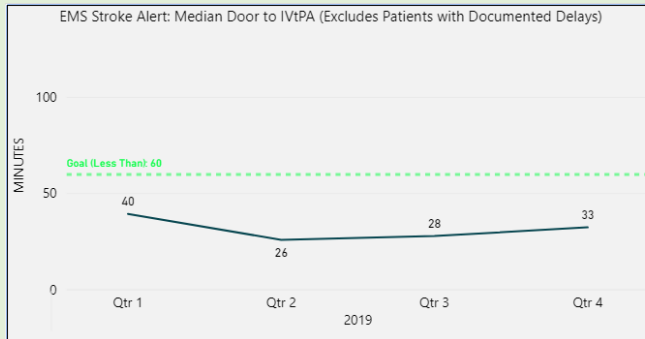




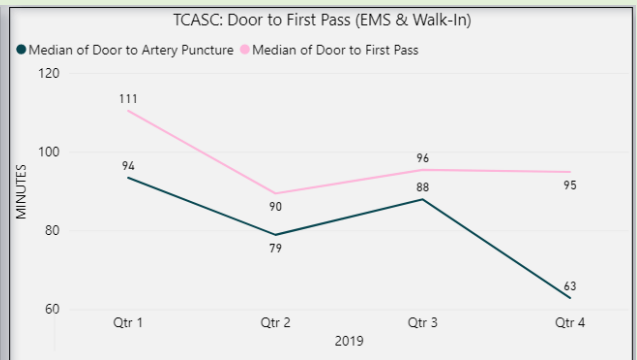
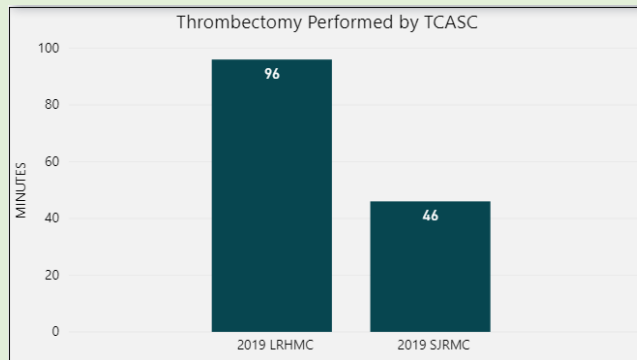
VCEMS STROKE SYSTEM

Treatment for strokes is time sensitive. If a stroke is identified within specific time parameters, there is potential to treat with medication administration (IVtPA) and/or mechanical thrombectomy (clot removal for Large Vessel Occlusions). IVtPA is a medication administered at specialized Acute Stroke Centers. Mechanical thrombectomy for Large Vessel Occlusions is performed at Thrombectomy Capable Acute Stroke Centers (TCASC).

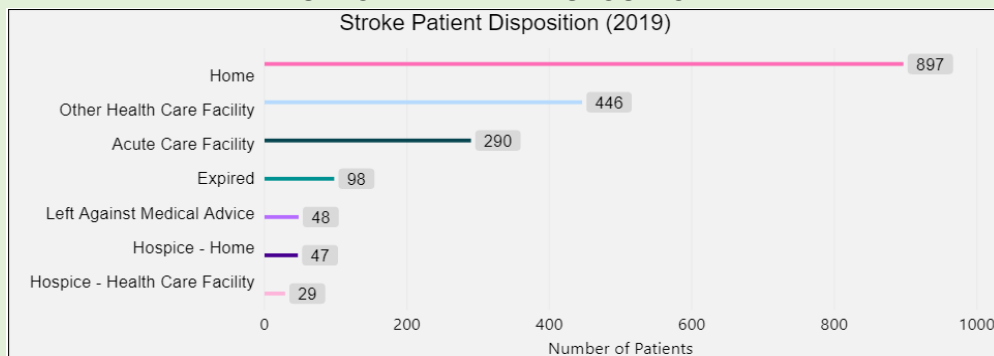
STROKE TREATMENT-IVtPA



STROKE TREATMENT-MECHANICAL THROMBECTOMY



STROKE PATIENT DISPOSITION



Cardiac Arrest Management (CAM)



Cardiac Arrest Management (CAM) represents twelve years of hard work from all 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 using the “Pulse Point” application to our cardiac arrest response.

Performance Data for 2017 - 2019

ALL CARDIAC	2017	2018	2019
Presumed Cardiac Etiology	388	362	419
Bystander CPR Provided	52.6%	51.5%	55.1%
Survival to Hospital Discharge	12.1%	15.2%	12.6%
<i>CARES National Benchmark for survival to Hospital Discharge</i>	9.8%	9.5%	9.8%
UTSTEIN			
Bystander Witnessed, Shockable Rhythm	70	66	63
Bystander CPR Provided	81.4%%	68.2%	74.6%
Survival to Hospital Discharge	44.3%	50%	49%
<i>CARES National Benchmark for survival to Hospital Discharge</i>	32.9%	32.4%	33.4%

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 IQVIA Get With The Guidelines Registry (GWTG) for our Stroke Program, Cardiac Arrest Registry to Enhance Survival (CARES) for our Sudden Cardiac Arrest Program, Trauma Registry for our Trauma System, and Get With The Guidelines-Coronary Artery Disease (GWTG-CAD) for our STEMI data. Countywide EMS providers use the Image Trend 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.

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

The American Heart Association awarded our EMS Agency, along with 10 other first responder agencies, the 2019 Mission Lifeline Gold Plus Level Award for outstanding performance in STEMI data measures. By reviewing our Sudden Cardiac Arrest data, we maintained our survival rate percentages above the CARES national benchmark, and we increased our bystander CPR to 75% from 68% in 2018.

We follow the American Heart Association (AHA) recommendations for the care of our Stroke patients. We exceed the benchmarks for many of the measures put forth by the AHA.

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 2019, including one presented in Spanish. We have seen a decrease in secondary falls during 2019.

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 First-Watch 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.

Following suit with the previous two years, 2019 continued to test our community's resilience. The Ventura County Health Care Coalition (VCHCC) first quarter meeting focused on the disasters experienced in the final months of 2018; discussing after-action components to aid in improvement planning and providing direct input to the VCHCC response plan.



Due to the disasters in November, the 2018 Statewide Medical and Health Exercise (SWMHE) was postponed to January 2019. This community-based, full-scale exercise made vital connections between the VCHCC partners and the programs within the Ventura County Public Health (VCPH) Department that would be involved in an emerging infectious disease outbreak. Through the course of the exercise, participating sites



learned of their Title 17 Section 2500 requirement to report cases of communicable disease to the local health department and the process by which to do so; resulting in over one hundred medical/health partners registration within CalREDIE Provider Portal. Other first-time activities for many participating sites included registering to receive California Health Alert Network (CAHAN) alerts, participating in the Joint Information Center, and practicing the process for submitting a specimen to the VCPH laboratory. Participating sites' employees received education on non-pharmaceutical interventions and practiced the implementation of such within a simulated outbreak (e.g. donning appropriate personal protective equipment, increased hand hygiene, visitor limitations). The exercise required participating sites' administration to identify a succession plan considering a ten percent reduction in staffing due to employees contracting the infectious disease.

The beginning of the year was also marked with the compilation of a medical/health Hazard Vulnerability Analysis (HVA) – commonly referred to as a risk assessment – to provide a systematic approach to recognizing hazards that may affect the demand for services or the ability to provide those services. Utilizing the 2019 Ventura County Medical and HVA, the VCHCC partners voted on the hazard that they most wanted to test in the October 2019 SWMHE – earthquake. A Stakeholder Liaison group served an advisory role to the exercise design team to ensure the exercise was realistic, practical, and applicable to the variety of discipline-types. The exercise was registered with the Great California Shakeout and employees at participating sites practiced dropping, covering, and holding with patient care in mind. Participating sites were afforded the opportunity to elect the level at which they wanted to play in the exercise – selecting from no damage to the building, partial damage to the building, or significant damage to the building. The participants learned about the impacts an earthquake could have on their building and how damage to infrastructure could result in prolonged impacts to the services they provide. Participants utilized this exercise to review and inform their continuity of operations plans with infrastructure, personnel, and financial impacts in mind. The week prior to the exercise, a Public Safety Power Shutoff (PSPS) resulted in cancellation of some exercise activities. Thankfully, the exercise itself was successfully executed the following week.

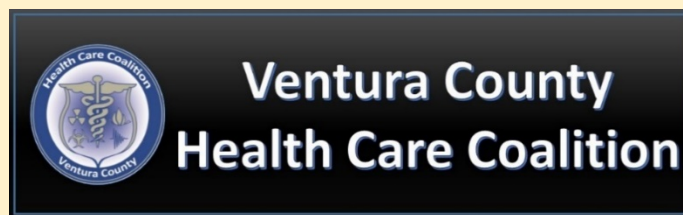
This was not the last PSPS event that we would see in 2019; however. The VCHCC collaborated with the health care coalition in Santa Barbara County to plan for vulnerable populations that may be impacted by future PSPS events, publishing a [planning guide for persons dependent on electricity](#). Within each PSPS event, the VCHCC collaborated with local governmental agencies and the licensing bodies from the California Department of Public Health and the California Department of Social Services to identify facilities that resided in the circuits that were at risk for de-energization. Contact was made with these facilities to warn them of the risk and discuss their plans should they lose power. During one PSPS event in November, our community endured yet another significant wildfire with two separate points of ignition resulting in the Easy Fire and the Maria Fire; both of which were successfully extinguished within a few days with minimal impact to the VCHCC partners.



Throughout 2019, the VCHCC and its partners continued to implement new and existing lessons learned from recent exercises and real events. Our tri-counties collaboration with the Emergency Preparedness Offices and health care coalitions of Santa Barbara and San Luis Obispo Counties extended to include the Medical Health Operational Area Coordinators from each county. This collaboration allows for increased information sharing and streamlined mutual aid should assistance be requested during disasters in neighboring counties. The VCHCC hosted two additional equipment points of dispensing, allowing for supplies to be redistributed to disaster caches throughout the county for increased community preparedness. Supported by the EMS Agency, the VCHCC engaged in planning with suppliers of vital resources – blood and transportation – to improve the coordination and distribution of these resources during times of emergency.

Since our inception in 2015, the VCHCC has experienced much growth in membership size and diversity. As such, the VCHCC Member Agreement and Situation Status Report (SitRep) underwent major revisions. Members now submit information in the agreement packet that allows the VCHCC to more efficiently and effectively provide assistance to our partners during disaster response. Additionally, the SitRep has been modified to accommodate the diverse services that our partners provide; allowing the VCHCC partners the ability to submit current status details that apply to their facility or agency practices.

We are entirely grateful for the strong working relationships that we have with the VCHCC partners and their commitment to those whom they serve.



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 also assisted at various event medical-aid stations. 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 occasionally 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 Naval Base Ventura County (NBVC), as well as the community members in Oxnard at the Center Point Mall.

In 2019, the Ventura County Medical Reserve Corps was also requested to assist with wild fire sheltering operations, mask distribution and medical training. The MRC was deployed with the American Red Cross to provide safety, shelter and care for community members that were directly impacted by the fires. The Ventura County Medical Reserve Corps continues to support local events such as emergency preparedness expos, hands only CPR, and the annual suicide prevention walk.



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.



In 2019, Emergency Preparedness Office activities included the following:

- Conducted the Master the Disaster 2019 training symposium,
- Activation of our Department Operations Center,
- Hosted Public Health Nursing training,
- Hosted three interns from CLU and Thousand Oaks C.I.T.Y. program,
- Providing presentations related to preparedness initiatives,
- Supporting countywide long-term recovery planning,
- Continued to expand and develop new partners with the VC Health Care Coalition,
- Hosted a local high school Public Health site visit, and
- Produced a [Disaster Service Worker training video](#).

Master the Disaster 2019



On February 27, 2019, Ventura County Emergency Medical Services Agency hosted Master the Disaster, the 10th annual preparedness seminar. This event was attended by over 600 first responders, medical/health professionals, and students.

This year's symposium took an inward focus; addressing topics such as self-care for those who are caregivers and medical professionals. Presentations such as [Burnout Busters for Your Personality Type](#) and [Responder Stress](#) provided attendees with takeaways to help them thrive amidst trauma experienced on the job and in their daily lives. The

day concluded with a panel of esteemed emergency management professionals from the Federal Emergency Management Agency, U.S. Health and Human Services, and U.S. Department of Homeland Security who provided insight regarding the future of preparedness.

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
Craig Stevens	–	Representing District 3 Supervisor Kelly Long
Bob Brooks	–	Representing District 4 Supervisor Bob Huber
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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Julie Frey, EMS Program Coordinator

Randy Perez, EMS Program Coordinator

Andrew Casey, EMS Program Coordinator

Erik Hansen, EMS Operations Specialist

Janelle Leza, Emergency Preparedness Specialist

Barbara Spraktes, EMS/EPO Epidemiologist

Diane Gilman, Administrative Assistant II

Martha Garcia, Administrative Assistant II

Jeff Vahl, Community Services Coordinator

JD Gallina, EMS Logistics Specialist

Delfina Zermeno, HCA Training/Education Asst.

Roberta Coffman, EMS Certification Specialist

Katy Hadduck, Volunteer Cardiac Arrest Coordinator

Grayson Carroll, EMS Agency Explorer

Photo Credits

Robert Navarro

LifeLine Medical Transport

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