

# Santa Barbara County Emergency Medical Services Agency Year in Review: 2018





## Executive Summary

The Santa Barbara County Public Health Department is proud to share this inaugural issue of the *Santa Barbara County EMS Agency Year in Review*, providing an overview of the EMS Agency and EMS System activity for the 2018 calendar year. Enclosed you will find a description of the EMS Agency and EMS System, as well as EMS System performance data.

2018 was marked by the tail end of the Thomas Fire, followed abruptly by one of the worst natural disasters Santa Barbara County has experienced, the 1/9 Debris Flow. During this tragic event, EMS providers triaged over 1,000 potential patients as residents were rescued from the debris field and brought to a collection point. Ambulances from various counties provided mutual aid, supporting evacuation efforts and the 9-1-1 system as Carpinteria and Summerland were isolated from local hospitals. The teamwork and flexibility demonstrated by these providers to adapt to a dynamic incident substantiates the strength of this EMS System. During the incident, the EMS Agency staff worked continuously to support the Mass Casualty Incident, the Emergency Operations Center, the Public Health Department Operations Center, shelter operations, and the subsequent evacuations of assisted living and skilled nursing facilities. In the months following the 1/9 Debris Flow, the EMS Agency staff continued to support home health, skilled nursing and independent living individuals during the subsequent evacuations.

2018 was also marked by accomplishments of key EMS Agency objectives designed to improve access to appropriate and timely care.

- Initiated comprehensive three phase EMS System Review
- Cardiac Arrest survival rates continued to exceed the national average by 30%
- Purchased and deployed 10 advanced cardiac arrest training manikins to EMS provider agencies
- Expanded naloxone (Narcan®) training to additional law enforcement agencies
- Designated Santa Ynez Valley Cottage Hospital as an Acute Stroke Ready Hospital
- Provided free behavioral wellness support to EMS providers and their families
- Implementation of disaster planning, training, and exercises to increase disaster readiness of healthcare, long term care providers, and their patients
- Received EMS Disaster Response Vehicle and communication equipment from a Homeland Security Grant
- Exceeded previous 2017 Influenza Vaccine administrations during free *Community Flu Shot Clinic*

### EMS System Review

The three phase EMS System Review, facilitated by international EMS experts Fitch & Associates, was designed to provide a roadmap for implementing key EMS System enhancements. This comprehensive review included data analysis, fiscal analysis and a series of stakeholder conversations with representatives from over 30 agencies in 15 different disciplines. Phase 1 was a series of stakeholder meetings and data analysis of the EMS System, answering 10 questions and completing an 8-point Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. Phase 2 continued stakeholder engagement, as we discuss targeted enhancements to address the Phase 1 findings. Fitch & Associates were also asked to present best practices as a part of the solution set. Phase 3 will be a roadmap to implementation enhancements identified in Phase 3. The Phase 1 report was released in September, 2018 and is available on our [website](#). Phase 2 and 3 will be complete in 2019.

### Awards

- *American Heart Association's (AHA) Mission Lifeline® STEMI Gold Award*: This award recognizes the EMS System's providers for meeting or exceeding the AHA's patient care guidelines. Through the hard work of the hospitals and field providers, the EMS System again received the award.
- *Promising Practice Award*: This award recognizes the Santa Barbara County Disaster Healthcare Partners Coalition. It was awarded to the Disaster Response & Preparedness Unit by the CA Department of Public Health.

Thank you for the opportunity to share the successes of the EMS Agency and our EMS providers.

Nick Clay  
EMS Agency Director

Angelo Salvucci, MD  
EMS Agency Medical Director



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# EMS Agency Overview

The Santa Barbara County EMS Agency is a part of the Public Health Department's Community Health Division and is statutorily responsible for the planning, oversight and medical control of the EMS System. The EMS System is a healthcare system, *EMS is healthcare*. The EMS Agency is responsible for developing and maintaining a healthcare system that is readily available to all residents in all parts of Santa Barbara County. The EMS Agency is staffed with healthcare practitioners, with the medical oversight and authority of a physician. The Agency's responsibility ranges from credentialing of EMS providers and training institutions, to establishing oversight and procedures for 911 medical calls, to medical care provided by paramedics and emergency medical technicians at the scene of an emergency, to designating emergency and specialty receiving centers and assuring patients are transported to the most appropriate hospital. This means the EMS Agency is responsible for, but not limited to the following: Managing the ambulance agreement, designating hospitals qualified to receive patients and specialty patients, establishing patient care protocols and dispatch answering protocols, provider certification/accreditation, training institution accreditation, disaster management and continuous data monitoring to assure quality patient care is provided throughout the EMS System.

The EMS System is comprised of various provider types, including fire departments, law enforcement, ambulance services, hospitals, and other provider agencies. These providers respond 24 hours a day, seven days a week, serving a diverse geography comprised of wilderness, rural, agricultural lands, California coastline, as well as large urban areas. The EMS Agency Director acts as the Medical Health Operational Area Coordinator (MHOAC), who is statutorily responsible for ensuring the community need for Public Health, Environmental Health, EMS and Mental Health services are supported during a disaster. The MHOAC program is part of a regional and statewide network of EMS Agencies coordinated by the State.

In line with the Public Health Department's vision of *Healthy people, healthy community, healthy environment*, the EMS Agency is committed to ensuring *Community Access & Education, Provider Safety & Support, and Clinical Excellence*. This is accomplished through community outreach and education events, from Hands-Only CPR training for the public and distributing children's bicycle helmets, to hosting EMS provider education events and developing a robust Quality Improvement program.

To accomplish its goals, the EMS Agency is organized into three (3) main units: EMS Systems, Clinical Systems of Care, and Disaster Preparedness & Response. These three (3) functions work independently to execute tasks and projects in their respective areas, but often come together to meet the needs of the Agency & System.

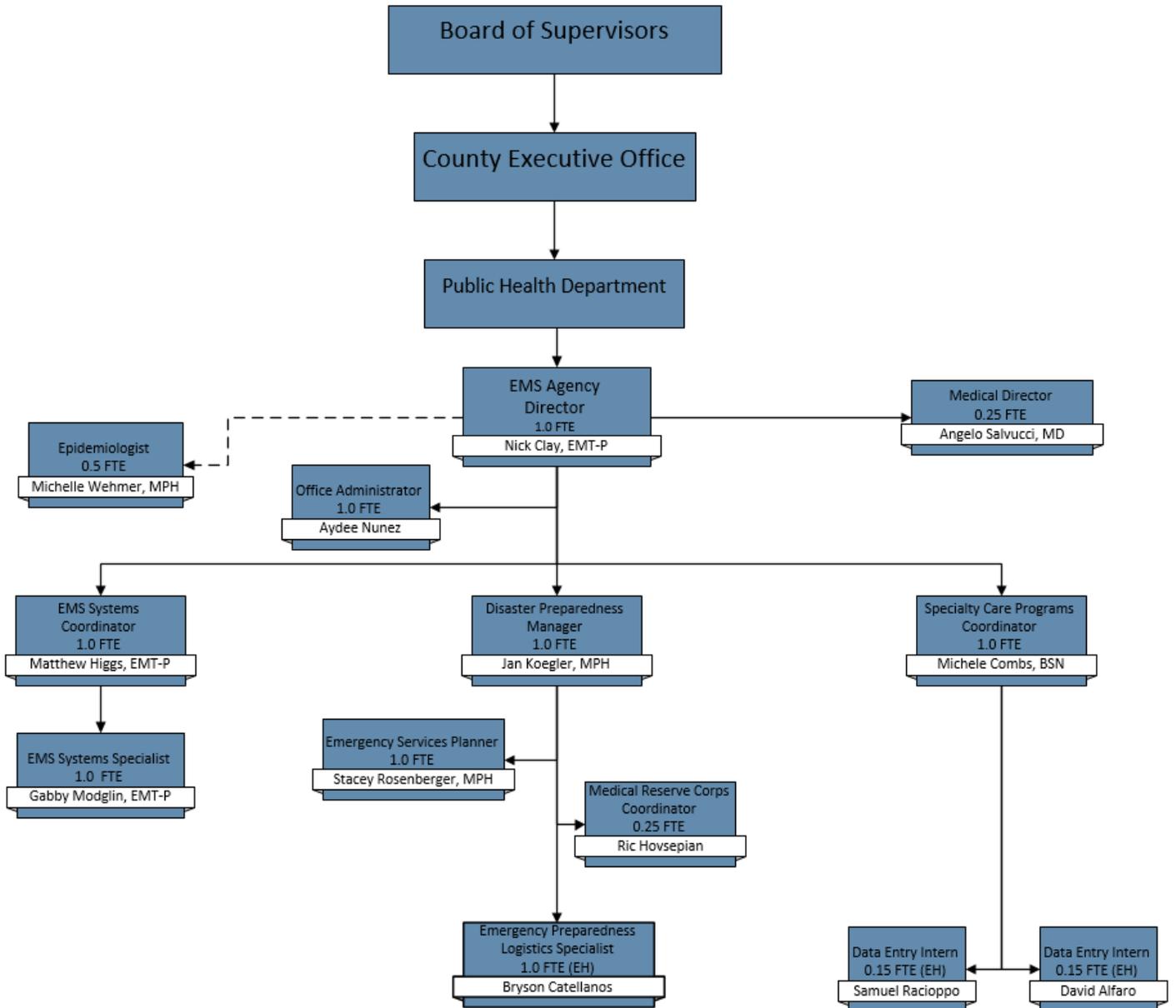
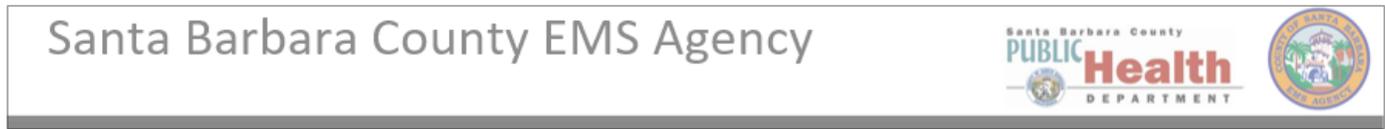
## EMS AGENCY FUNDING

### Fiscal Year 17/18

In Fiscal Year (FY) 17/18 the Santa Barbara County EMS Agency budget was \$2,043,500. The Agency's budget is a mix of service fees, provider charges, grant funding, traffic violation fine collections and a small amount of general fund. The EMS Agency also administers the Maddy & Richie Funds. The Maddy Fund provides reimbursement to physicians, surgeons and hospitals for the cost of uncompensated care. The Richie Fund is a supplemental assessment to support pediatric trauma care in the County, providing reimbursement to physicians, surgeons and hospitals for the cost of uncompensated pediatric care. In FY17/18 the EMS Agency dispersed \$533,462 from the Maddy Fund, including \$144,616 to the Richie fund to settle physician and hospital claims.



# EMS Agency Organizational Chart (as of July, 2019)





## Meet the Agency



### **Nick Clay, Paramedic: Director**

*Nick joined the EMS Agency in 2017, after providing management and operations support for over 40 passenger cruise vessels in the Holland America Group fleet. Prior to that, Nick progressed through the ranks to Operations Manager of American Medical Response, Ventura County. He earned his paramedic license in 2003 and keeps it current. Nick resides in Ventura with his family and enjoys woodworking in his spare time.*



### **Angelo Salvucci, MD, FACEP, FAEMS: Medical Director**

*Dr. Salvucci has been an emergency physician in the community for over 35 years and the EMS medical director since 1990. He is responsible for providing medical control and assuring medical accountability throughout the planning, implementation and evaluation of the EMS system. He is past chair of the California State EMS Commission and president of the EMS Medical Directors Association of California. Dr. Salvucci has been proud to speak nationally and internationally about the successes and accomplishments of Santa Barbara County EMS, of which there are many. He enjoys family, friends, exercise, the outdoors, wine and travel.*



### **Matthew Higgs, Paramedic: EMS Systems Coordinator**

*Matt has 19 years of experience in Emergency Medical Services working as an EMT, Paramedic, Field Training Officer, Operations Supervisor, and currently as EMS Systems Coordinator for the Santa Barbara County EMS Agency since 2015. Matt completed his B.S. in Emergency Medical Care at Loma Linda University and has been an American Heart Association instructor in BLS, ACLS, and PALS. In addition to his EMS experience Matt has served in the United States Air Force Reserves for 19 years.*



### **Jan Koezler, MPH: Emergency Preparedness Manager**

*Jan has 15 years of experience as the manager of the Santa Barbara County Public Health Emergency Preparedness Program. In that role she oversees the integration of public health, hospital, EMS, outpatient, home health, long term care, and Medical Reserve Corps into county-wide disaster plans, annual trainings, exercises, and response operations. Jan has a master's degree in public health from UCLA.*



### **Michele Combs, RN: Specialty Care Systems Coordinator**

*Michele has been a RN for 22 years. She earned her BSN from CSU Dominguez Hills. Michele joined the EMS Agency in 2015 and oversees STEMI, Stroke, Trauma, Cardiac Arrest and other clinically related programs. In this role, she is able to analyze trends and look for opportunities for training and education, to improving patient outcomes. Michele continues to work with patients in the Critical Care department at a local hospital. In her spare time, she enjoys spending time with family and traveling.*



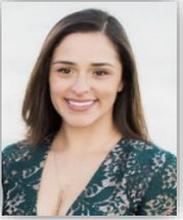
### **Michelle Wehmer, MPH: Epidemiologist**

*Michelle earned her Master's degree from the Fielding School of Public Health at the University of California Los Angeles. She is an epidemiologist for the Santa Barbara County (SBC) Public Health Department, working closely with the PHD community health programs and EMS Agency. In her EMS role, she identifies trends within the county's prehospital and trauma center data in hopes of improving patient outcomes. In her spare time, she roots for the Dodgers and plans for her next Halloween costume.*



**Stacey Rosenberger, MPH: Emergency Services Planner**

*Stacey is responsible for coordinating the Santa Barbara County Disaster Healthcare Partners Coalition. During the 2017 Thomas Fire and 1/9 Debris Flow, Stacey worked in the Medical & Health Branch at the Santa Barbara County Emergency Operations Center and the Public Health Department Operations Center communicating with healthcare facilities, arranging transportation for essential staff and working to distribute N-95 masks. Stacey earned her Master's degree in public health from Loma Linda University.*



**Gabriela Modglin, Paramedic: EMS Systems Specialist**

*Gabby joined the EMS Agency in 2019 from AMR/Gold Coast Ambulance. Her professional career quickly flourished from a field paramedic, to a field training officer/preceptor, and finally Operations Supervisor for Gold Coast Ambulance, Ventura County. Additionally, Gabby continues to work as Adjunct Faculty for Ventura College School of Prehospital and Emergency Medicine. She earned her paramedic license in 2013 keeps it current. Gabby resides in Ventura with her family, and enjoys camping in her spare time.*



**Richard Hovsepian: Medical Reserve Core Coordinator**

*A native of suburban Philadelphia, Ric moved to Santa Barbara in 2008. Ric currently manages over 100 medical volunteers as the Coordinator of the Santa Barbara County Medical Reserve Corps. Ric is a proud member of the Salvation Army Advisory Board, as he believes in giving back to the great Santa Barbara community. A graduate of Villanova University, Ric's hobbies and interests include cycling, motorcycle rides, motorsports and surfing. He lives with his wife and two adorable Jack Russell Terriers.*



**Bryson Castellanos: Emergency Preparedness Logistics Specialist**

*Bryson joined the Emergency Preparedness team in 2019. As the Emergency Preparedness Logistics Associate, he utilizes his background in quality analytics related to surgical supplies, sterility standards, and instrument inventory to prepare and serve the community in an efficient manner during emergencies. He earned his B.S. in Biology in 2013 from the California State University, Long Beach. Bryson grew up in Ventura and loves hiking or backpacking with his dog, Duke, in his spare time.*



**Aydee Nunez: Office Administrator**

*Aydee joined the EMS Agency in 2017, after working for the Department of Social Services as an Eligibility Worker. She is responsible for applying CA Title 22 regulations and procedures as they pertain to EMT initial and renewal certifications. In her spare time, she enjoys chasing waterfalls within California State Parks.*



COLLECTIVELY THE EMS AGENCY STAFF HAS OVER 150 YEARS OF  
EXPERIENCE SERVING THE COMMUNITY.



## EMS System Standing Committee Overview

The Santa Barbara County EMS Agency is committed to collaborating with EMS System providers, partnering to maintain the high quality standard of care provided regularly to the community. Committee members are committed to evaluating current system data and making policy adjustments to improve patient outcomes.

### Standing Committees

- *Continuous Quality Improvement (CQI) Committee*
  - This committee coordinates and monitors the quality of prehospital care and overall prehospital quality improvement activities for Santa Barbara County Committee.
- *Contract Compliance Committee (CCC)*
  - An advisory committee to the SBCEMSA regarding EMS System provider contract compliance
- *Emergency Medical Advisory Committee (EMAC)*
  - An advisory committee to the SBCEMSA on all aspects of the EMS System. The Committee is comprised of representatives from all EMS providers and partner agencies
- *Medical Director Committee*
  - An advisory committee to the SBCEMSA Medical Director, comprised of EMS System provider medical directors
- *STEMI (ST Elevation Myocardial Infarction) System Committee*
  - The committee reviews the appropriateness of STEMI care provided throughout the STEMI system and reviews patient outcomes to identify system issues for improvement
- *Trauma System Committee*
  - The committee reviews the appropriateness of trauma care provided throughout the trauma system and reviews patient outcomes to identify system issues for improvement.
- *Stroke System Committee*
  - The committee reviews the appropriateness of Stroke care provided throughout the stroke system and reviews patient outcomes to identify system issues for improvement
- *Cardiac Arrest Management (CAM) Committee*
  - The committee reviews the appropriateness of cardiac arrest care provided throughout the EMS system and reviews patient outcomes to identify system issues for improvement.
- *Dispatch Managers Committee*
  - The committee reviews the performance of the area dispatch centers, related to EMS calls provided throughout the Santa Barbara County.

### Ad-Hoc Committees

- *Policy Review Sub-Committee*
  - This committee reviews and provides input for the revision of existing policies and the creation of new policies that require additional attention beyond the scope that can be reviewed at EMAC.
- *Field Treatment Protocol Review Committee*
  - This committee reviews and provides input for the revision of field treatment protocols.
- *Out of Hospital Executive Committee (OHEC)*
  - This committee provides an open forum for EMS system participant executives to discuss operational issues.

## Santa Barbara County EMS Agency Board of Supervisors Proclamations

- May 15<sup>th</sup>, 2018: EMS Week and EMS For Children Day
  - Celebrating and appreciating EMS professionals and highlighting the special requirements in EMS to care for children
- June 5<sup>th</sup>, 2018: CPR & AED Awareness Week
  - Recognizing the importance of Hands-Only CPR and early use of an automatic external defibrillator (AED) in enhancing cardiac arrest survival



# EMS Systems Overview

The EMS Systems unit is responsible for the day-to-day oversight of the EMS System. Activities include, certifying EMS personnel, authorizing EMS training programs and continuing education providers, evaluating system performance, administering the patient documentation system, and providing regulatory and contractual oversight. The EMS System is a mixture of fire, law, private transport, hospitals and allied partners such as rangers and volunteer response organizations.

## Fire Agency First Responders

- Carpinteria-Summerland Fire Protection District
- Montecito Fire Protection District
- Santa Barbara County Fire Protection District
- Santa Barbara City Fire Department
- Lompoc Fire Department
- Santa Maria Fire Department
- Guadalupe Fire Department



## Law Enforcement Agencies

- Santa Barbara Sheriff's Officer (Narcan®, AED, Search & Rescue and EMD Dispatch)
- Santa Barbara City Police Department (EMD Dispatch)
- UCSB Police Department (Narcan®)
- Santa Barbara County Probation Department
- Santa Maria Police Department (Dispatch)
- Lompoc Police Department (Dispatch)
- Guadalupe Police Department
- California Highway Patrol



## EMS Transport Agencies

- American Medical Response
- CALSTAR Air Medical Services
- Santa Barbara County Fire Protection District

## Hospitals

- Santa Barbara Cottage Hospital
- Goleta Valley Cottage Hospital
- Santa Ynez Valley Cottage Hospital
- Lompoc Valley Medical Center
- Marian Regional Medical Center

## Allied Partners

- Santa Barbara County Parks Division
- California State Parks
- Santa Barbara City Harbor Patrol
- National Forest Service
- Department of Behavioral Wellness

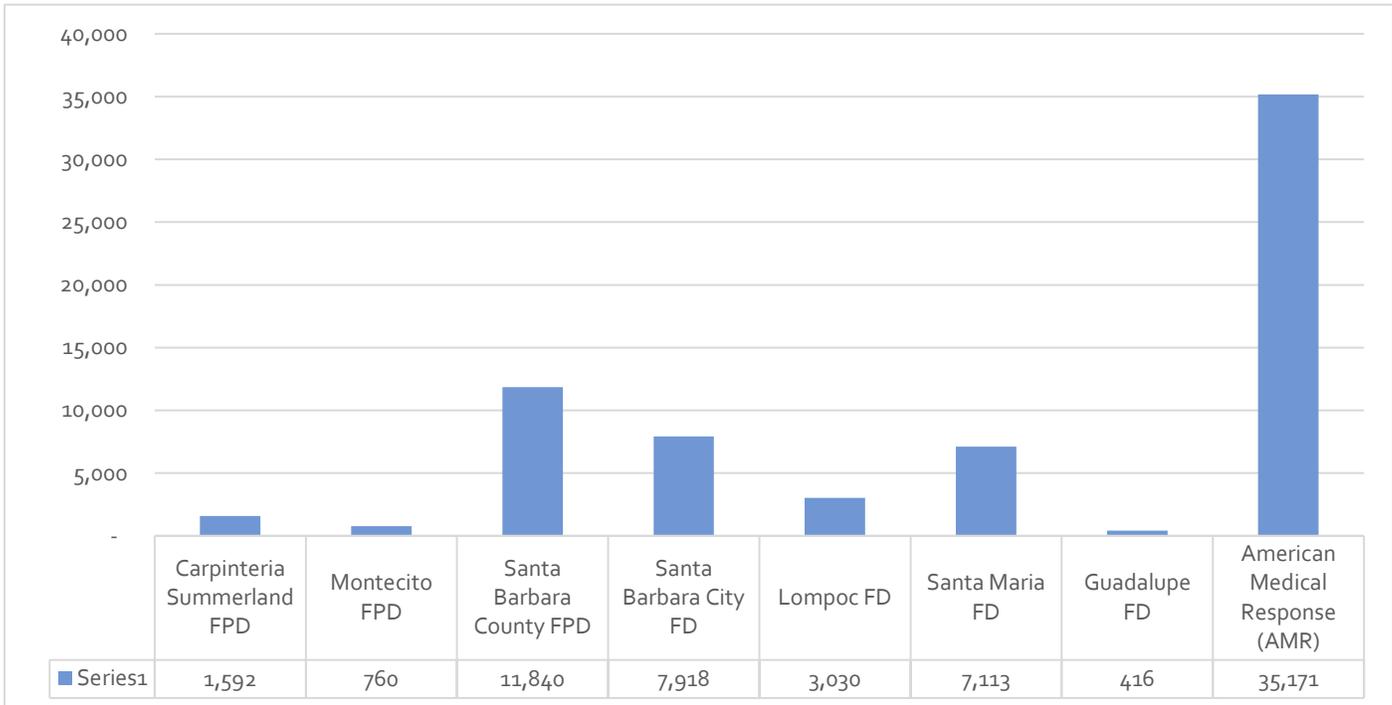




## Prehospital Data

### Prehospital Providers' Incident, Response and Patient Care Record Count

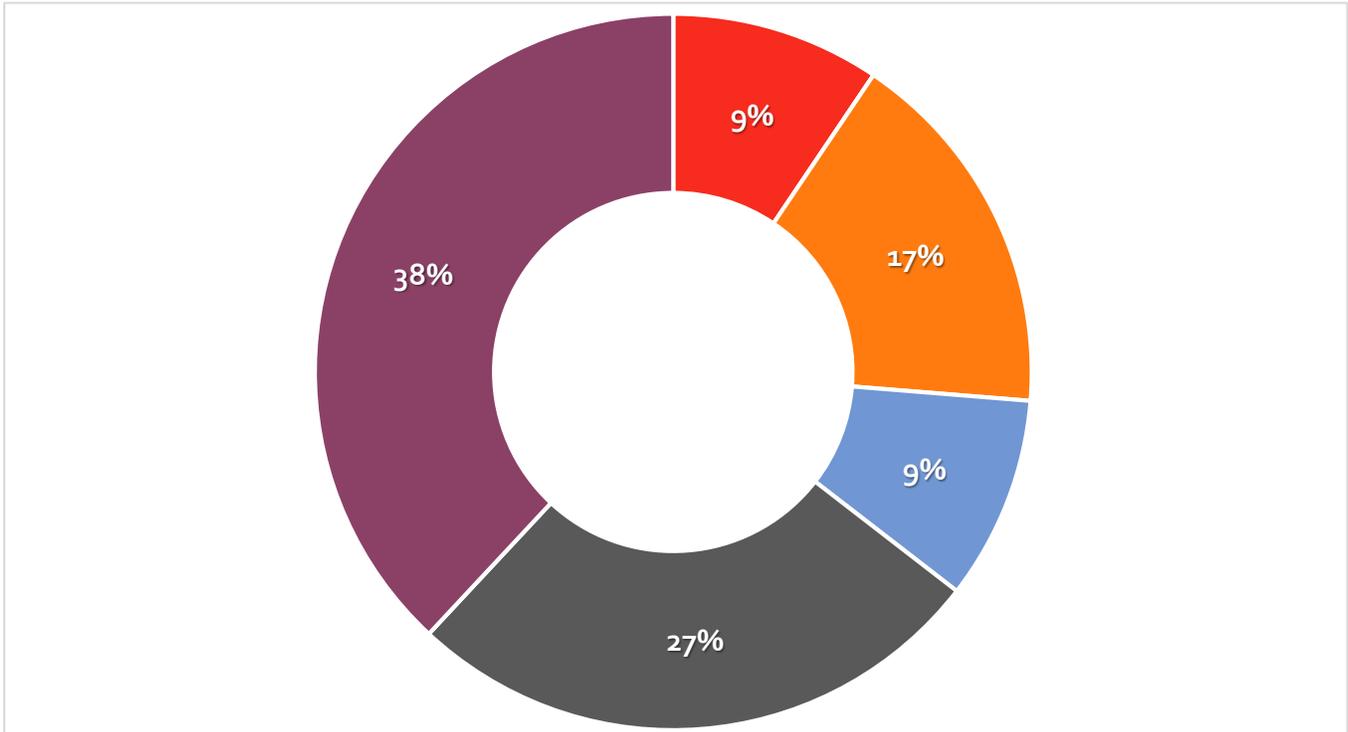
The chart below provides the number of EMS incidents by prehospital EMS Agency. Each time an agency is dispatched or assigned to an EMS call-for-service, an incident number is assigned for that call. All data for the 2018 calendar year is from the patient care record (PCR) system, managed by the EMS Agency.





## Response Disposition by Agency

This chart represents the disposition of each response and/or patient interaction. A response disposition is the term used to categorize how a responding unit ended a 9-1-1 call. Data is collected for the 2018 calendar year from the Patient Care Record (PCR) system managed by the EMS Agency



**■ Patient Treated, Transported by this EMS Unit**

EMS provider acted in a primary caregiver role and transferred primary caregiver role to another EMS provider.

**■ Assessed/Treated, Transferred Care**

EMS provider acted in a primary caregiver role and transported patient to a receiving facility.

**■ Assisted Another EMS Unit with Treatment/Assessment on Scene or During Transport**

EMS provider did not act in a primary EMS caregiver role during the patient encounter.

**■ Refusal/AMA**

EMS provider assessed patient, provided medical advice to transport to a receiving facility, patient decided Against Medical Advise (AMA); OR the patient refused assessment by the caregiver.

**■ Cancelled**

EMS provider was cancelled prior to making patient contact.

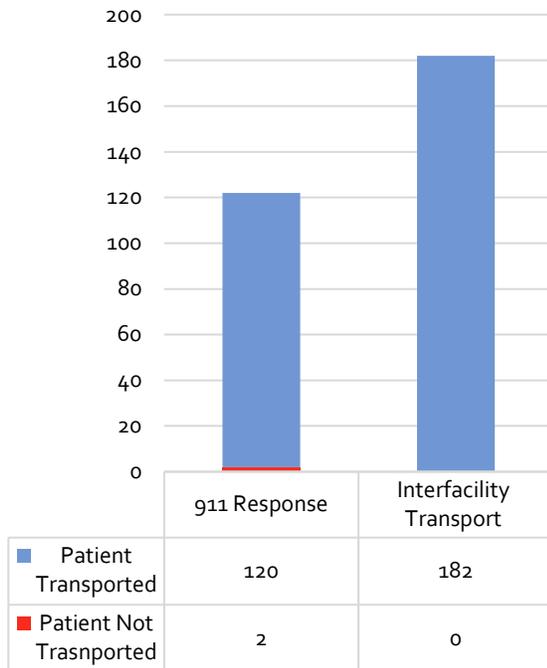


## Air Transport Data

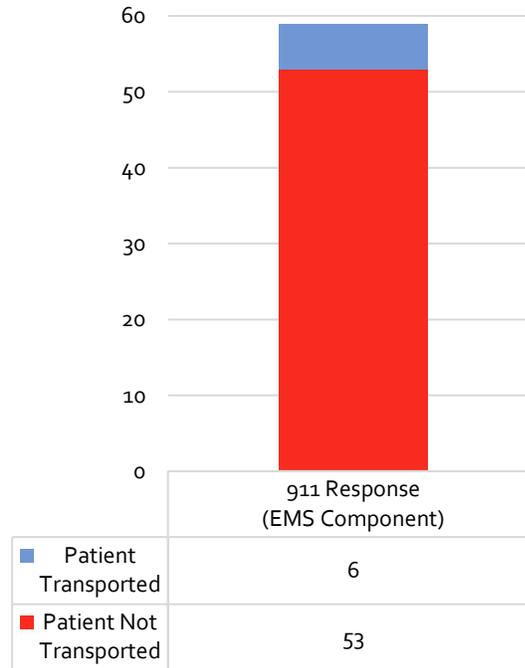
There are two air transport providers in the County, CALSTAR 7 and County Fire/Sheriff Air Rescue Unit. CALSTAR 7 is classified as an air ambulance, staffed with a minimum of one (1) flight nurse and one (1) flight paramedic. This unit provides the highest level of prehospital and inter-facility patient care in the County. The County Fire/Sheriff Air Rescue Unit is classified as a rescue aircraft, capable of hoist rescues and flying to the Islands for medical aid or rescue. The unit is staffed with a minimum of one (1) paramedic with advanced rescue and medical training. Data is collected for the 2018 calendar year from the Patient Care Record (PCR) system managed by the EMS Agency.

### Aircraft Utilization

CALSTAR



Fire/Sheriff Air Rescue Unit(s)



There are multiple aircraft available for dispatch from the Fire/Sheriff Air Rescue unit, all responses captured in the PCR system are reported here. Additionally, it is critical to note the Fire/Sheriff Air Unit conducted hundreds of air rescues during the 1/9 Debris Flow. No patient care records were required or recorded for those transports.

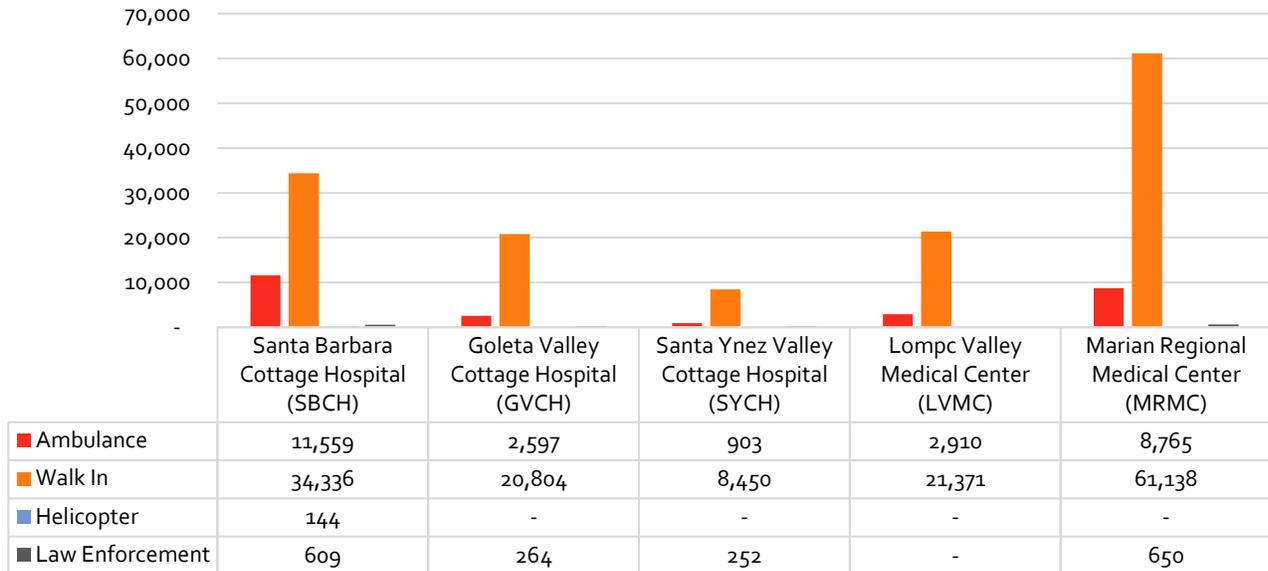




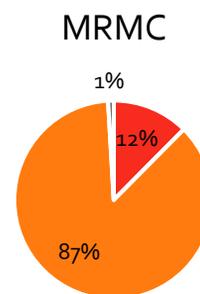
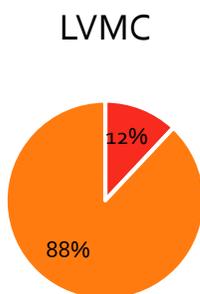
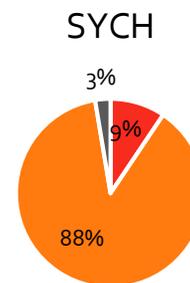
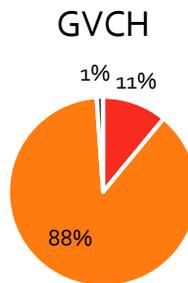
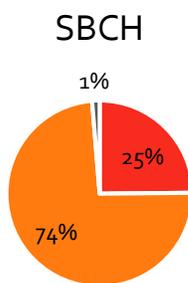
## Hospital Data

Hospital data is submitted by each hospital in the County to the EMS Agency, and represents all patients received through the Emergency Departments. Every hospital in the County is designated by the EMS Agency as a Receiving Hospital for ambulances, as well as a Base Hospital, providing medical direction to prehospital providers. Data is collected from each receiving hospital and provided to the EMS Agency.

### Emergency Department Patient Visits for 2018



■ Ambulance ■ Walk In ■ Helicopter ■ Law Enforcement



■ Ambulance  
■ Walk In  
■ Law Enforcement

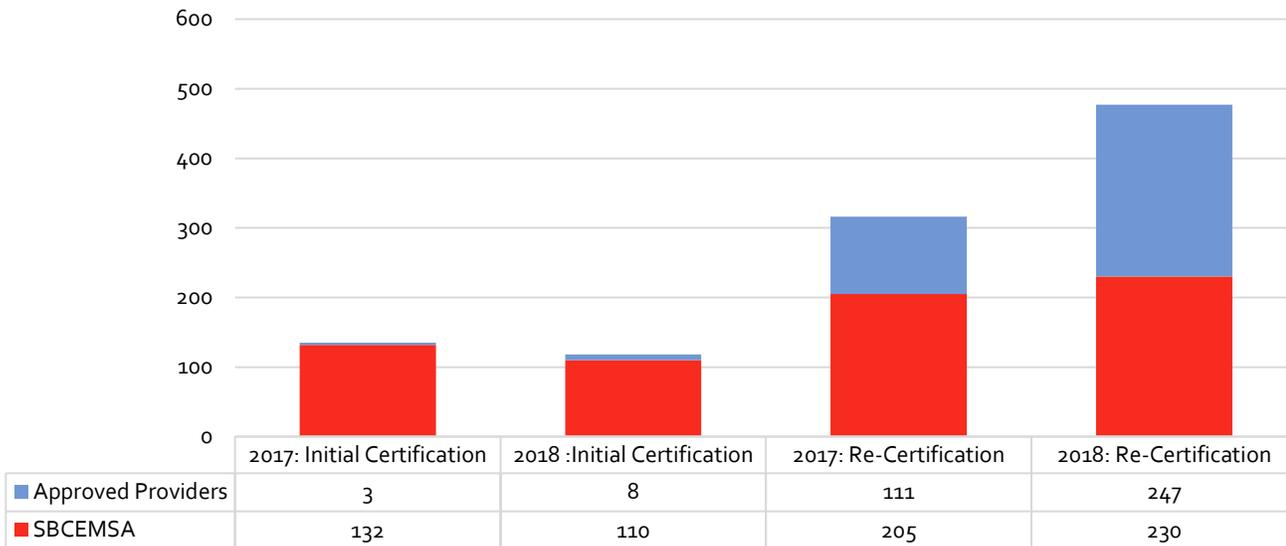


## EMS Field Personnel Information

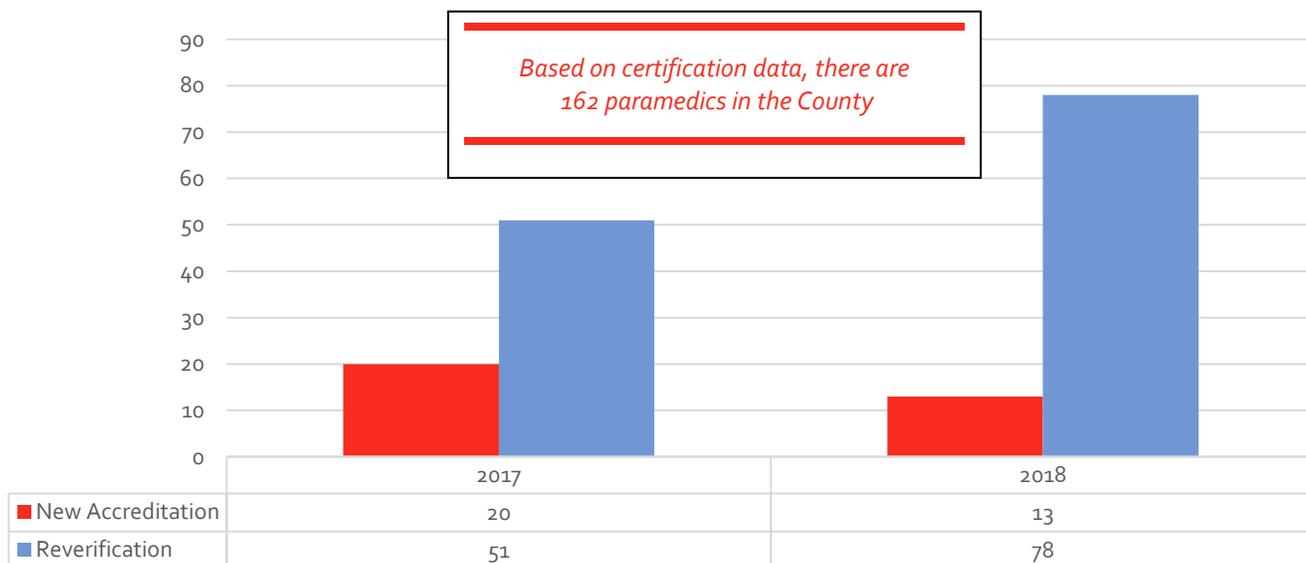
The Santa Barbara County EMS Agency is responsible for the initial certification and re-certification of Emergency Medical Technicians (EMTs) and for the accreditation and reverification of Paramedics. EMTs can certify and recertify in a variety of ways, with the Local EMS Agency, or an approved provider (e.g., fire departments certify fire personnel) or in another county. The number of EMT certifications for the Santa Barbara County EMS Agency does not reflect the number of active or working EMTs in the County. This is a result of EMTs being able to certify in any County and work in another. Paramedics are required to accredit with the Local EMS Agency of the county in which they are employed, and the number of accreditations and reverifications is an accurate representation of the number of paramedics working in the County. Both credentials are required to complete on-going training and recertify/verify every two (2) years, therefore the total number of paramedics in the County is the sum of both 2017 & 2018.

Certification and accreditation data is from California's certification database, MyLicense Office.

### 2017 and 2018 EMT Certifications



### 2017 and 2018 Paramedic Accreditations





## What's on Deck for EMS Systems in 2019?



### ***Develop and Distribute an EMS Phone Application***

- Our providers are mobile; they need a mobile tool to access policies and critical information
- The app is designed to give EMS providers access protocols and other important information in the field, such as access to key System information and reporting tools



### ***Purchase and Deploy First Watch***

- Data is a cornerstone of ensuring the EMS System stays current and adapts to changing trends
- First Watch is a data surveillance tool, providing real-time system information and assist in provider contract performance oversight and clinical quality improvement



### ***Expand the Law Enforcement Narcan® Program***

- The County's law enforcement agencies are key partners in the fight against opioid overdoses and have been eager and willing to gain training and approval to deploy Narcan® with their officers
- Changes to the current policy will allow more law enforcement agencies to participate in the Narcan® program



### ***Expand Bystander CPR & Automated External Defibrillator (AED) Programs***

- Early defibrillation (with an AED) and bystander CPR are proven ways to increase survival in cardiac arrest
- The EMS Agency will engage with a variety of partners to gain an accurate list of AEDs in the County, and update data repositories. We hope to use this information to help encourage local businesses and public areas to deploy publicly-accessible AEDs. Additionally, we will look to broaden the reach and coordinate the various hand-only CPR education opportunities in the County.

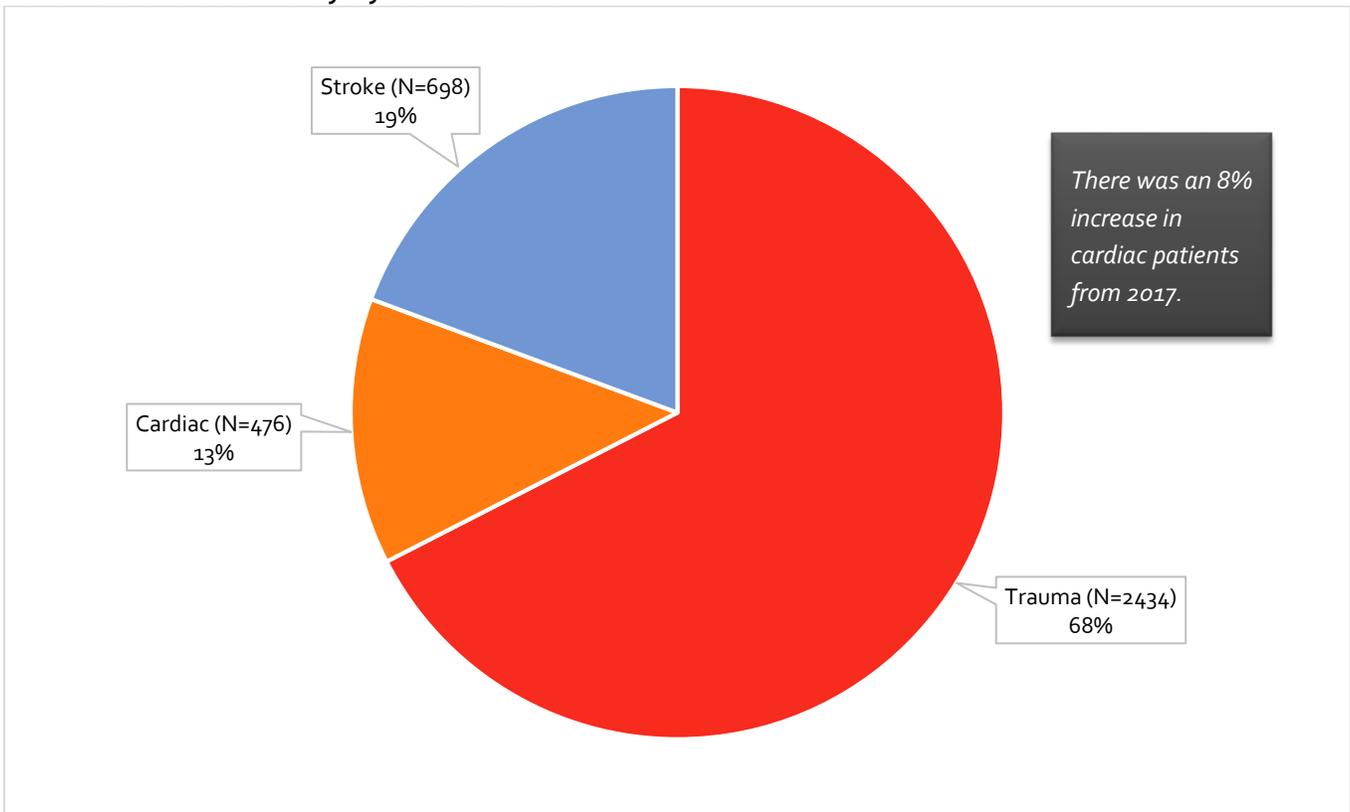


# Specialty Care Systems Overview

The Specialty Care Programs unit is responsible for the management of the Specialty Care Systems, which include prehospital protocols and care, patient care review, hospital performance review, and inter-facility movement of patients. A Specialty Care Center is a receiving hospital that has dedicated specialized resources, medical care personnel, and equipment to care for one of three (3) types of special patients, Trauma, Cardiac (STEMI and Cardiac Arrest), and Stroke patients. The EMS Agency is responsible for designating these specialty care centers, allowing ambulances to divert these special patients to the most appropriate receiving facility.

<b>Santa Barbara County Hospital Designations</b>			
<i>Hospital</i>	<b>Trauma System of Care</b>	<b>Cardiac System of Care</b>	<b>Stroke System of Care</b>
Santa Barbara Cottage Hospital	Level I Adult & Level II Pediatric Trauma Center	STEMI Receiving Center	Primary Stroke Center
Goleta Valley Cottage Hospital	No	No	No
Santa Ynez Valley Cottage Hospital	No	No	Acute Stroke Ready Hospital
Lompoc Valley Medical Center	No	No	Acute Stroke Ready Hospital
Marian Regional Medical Center	Level III Adult Trauma Center	STEMI Receiving Center	Primary Stroke Center

2018 Patient Volume by System of Care



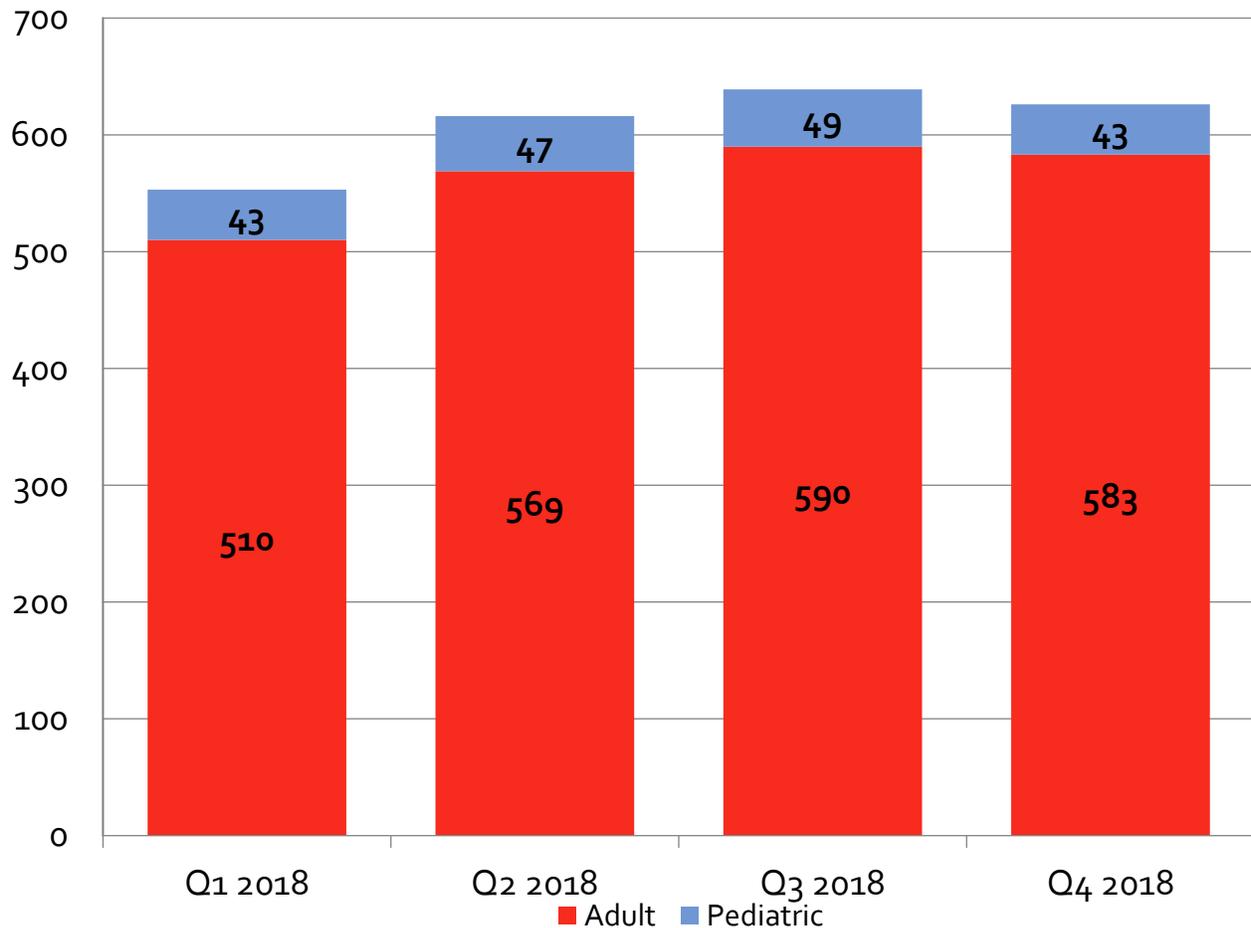


## Trauma System of Care

According to the [CDC](#) traumatic injuries continue to be the leading cause of death for individuals under 45 years of age in the United States. In 2005, the Santa Barbara EMS Agency created the County's Trauma System to increase traumatic injury survival rates, coordinate prehospital trauma patient care, and ensure access to appropriate trauma services. Since then, almost 30,000 trauma patients have been treated in Santa Barbara County's Trauma System. The County is well served by two (2) trauma centers, a Level III Trauma Center in the North, Marian Regional Medical Center, and Level I in the South, Santa Barbara Cottage Hospital. The primary difference between the two levels is breadth and availability of services for trauma patients. Santa Barbara Cottage Hospital is also designated as a Level II Pediatric Trauma Center. The Trauma System patient population represents about 8% of the total EMS System transports.

The below chart displays the total number of Trauma System patients by quarter, for the 2018 calendar year. Pediatric patients (ages 14 and younger) contributed to approximately 7.5% of trauma patients in 2018. All data from the Trauma One data registry, managed by the EMS Agency.

### Adult vs. Pediatric Patients by Quarter, 2018



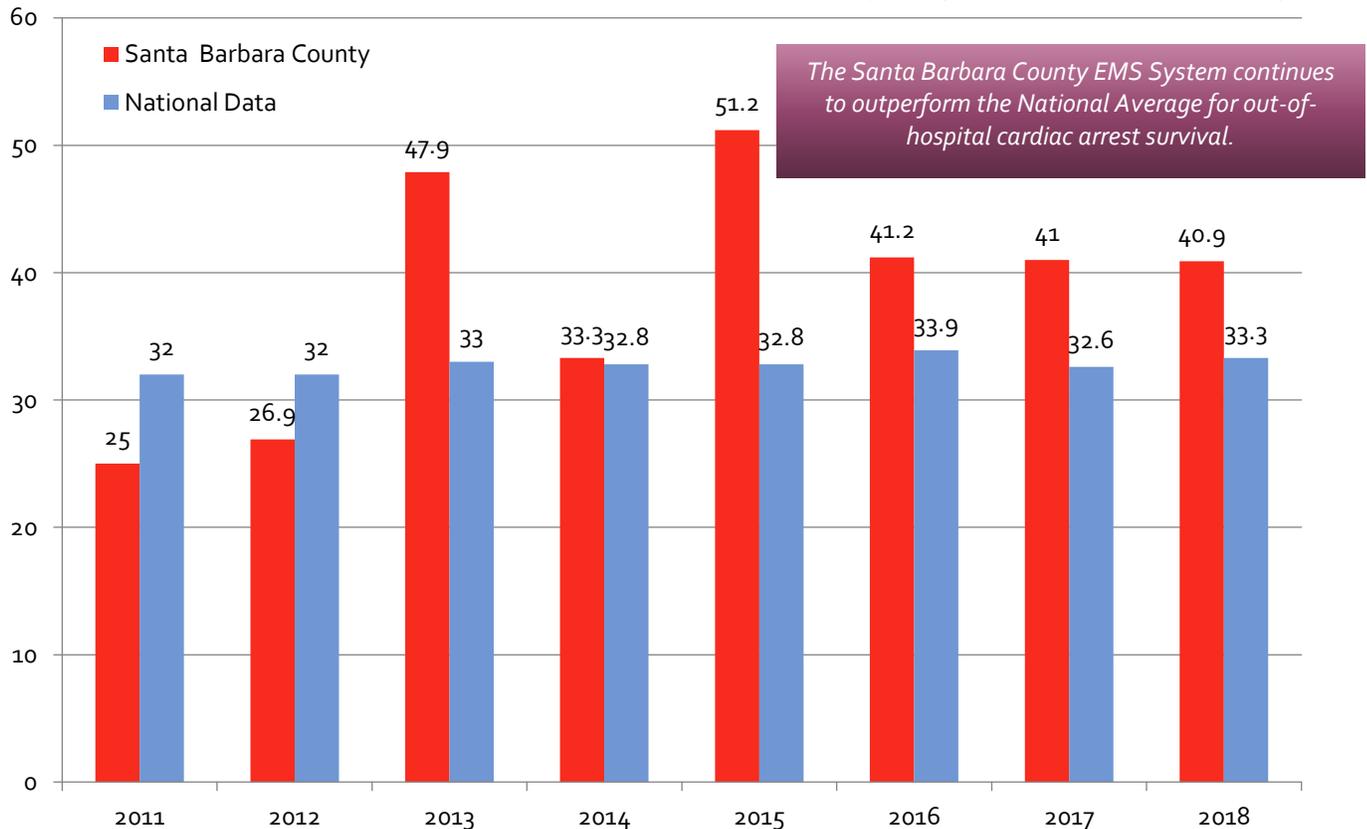


## Cardiac System of Care

Almost half of sudden cardiac deaths occur outside of a hospital (CDC), and in Santa Barbara County, heart disease is a leading cause of death (epidemiology report). In 2010, the STEMI System was implemented, and has now evolved into the Cardiac System of Care, specifically including cardiac arrest care. The term "STEMI" refers to a type of heart attack called "ST-Elevation Myocardial Infarction". The Cardiac Care System provides a coordinated approach to both heart attacks and cardiac arrest care, with specialized training for prehospital providers, specific patient care protocols and the designation of special cardiac receiving hospitals, called STEMI Receiving Centers (SRCs). This coordinated approach to care has increased the survivability of a sudden cardiac arrest and reduced the negative effects of a STEMI for Santa Barbara County patients. In 2014, the American Heart Association (AHA) released the Mission Lifeline STEMI award to prehospital providers. The Santa Barbara County EMS System has received the GOLD award every year, with the exception of 2014, when the SILVER award was the highest available award. All cardiac arrest patients who regain pulses are transported to one of the County's two (2) STEMI Receiving Centers, Marian Regional Medical Center and Santa Barbara Cottage Hospital. In 2012 & 2013 the EMS Agency, in collaboration with EMS providers, launched a new Cardiac Arrest Management (CAM) protocol to care for sudden cardiac arrest patients. As a result, the EMS System has outperformed the National Average for Sudden Cardiac Arrest Survival Rate every year since 2013.

The below data is from the Santa Barbara County STEMI Registry and the Santa Barbara County Cardiac Arrest Registry to Enhance Survival (CARES) Registry, from calendar year 2018.

### Cardiac Arrest Survival (Utstein Survival Rate) Data for Santa Barbara County Compared to the National Average



2018 Cardiac Arrest Save Celebration



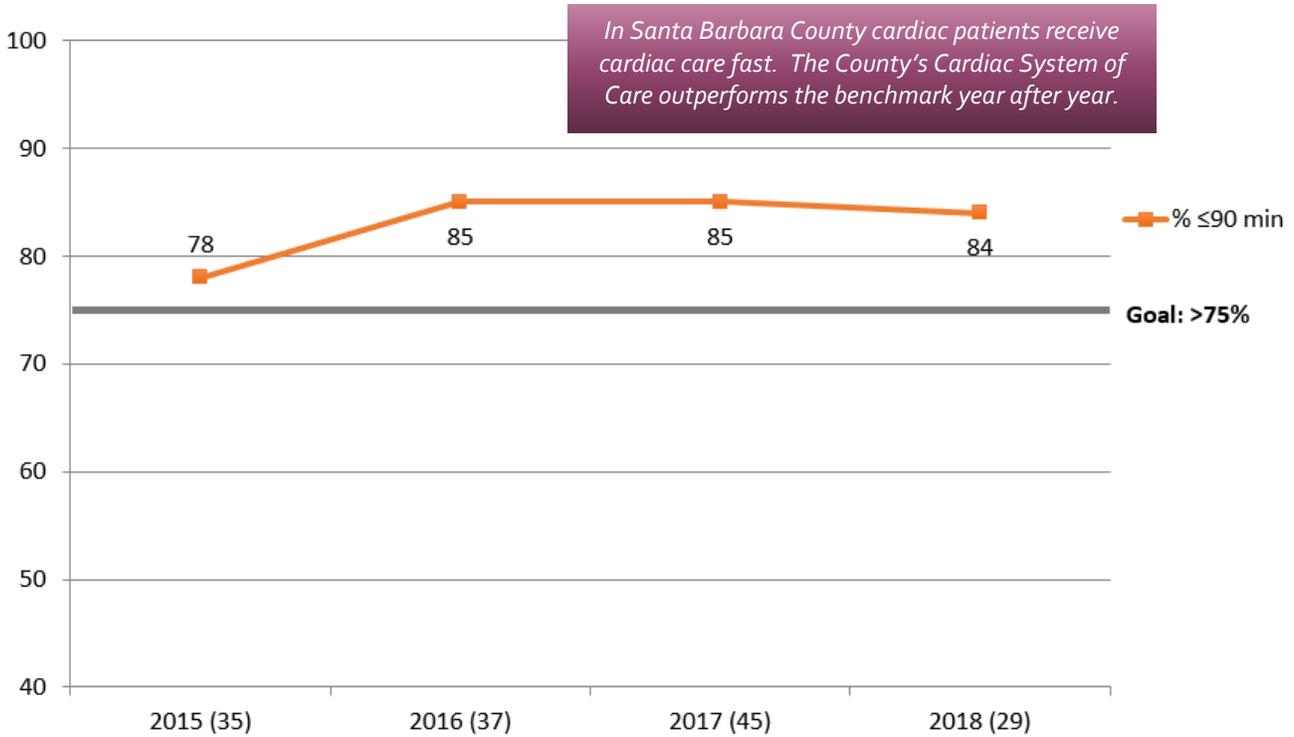
Hands-Only CPR Community Training (Left: AMR and Right: MRC)





## EMS Arrival to Blood Flow to the Heart

This graph demonstrates the EMS System's performance (orange line) on the most important patient care measurement in treating a recognized STEMI heart attack, time to regaining blood flow to the blocked artery in the patient's heart. This is also known as "First Medical Contact to Balloon" interval. Restoring blood flow to heart muscles reduces the amount of heart damage and improves heart function. The AHA has set the standard of achieving this within 90 minutes, 75% of the time. The Santa Barbara County EMS System consistently performs well above this benchmark.



Year	EMS Rating	Mission: Lifeline	Partner Organizations
2015	SILVER EMS	MISSION: LIFELINE	American Heart Association
2016	GOLD EMS	MISSION: LIFELINE	American Heart Association
2017	GOLD EMS	MISSION: LIFELINE	American Heart Association   American Stroke Association
2018	GOLD EMS	Mission: Lifeline	American Heart Association



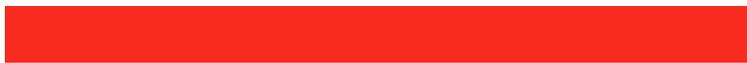
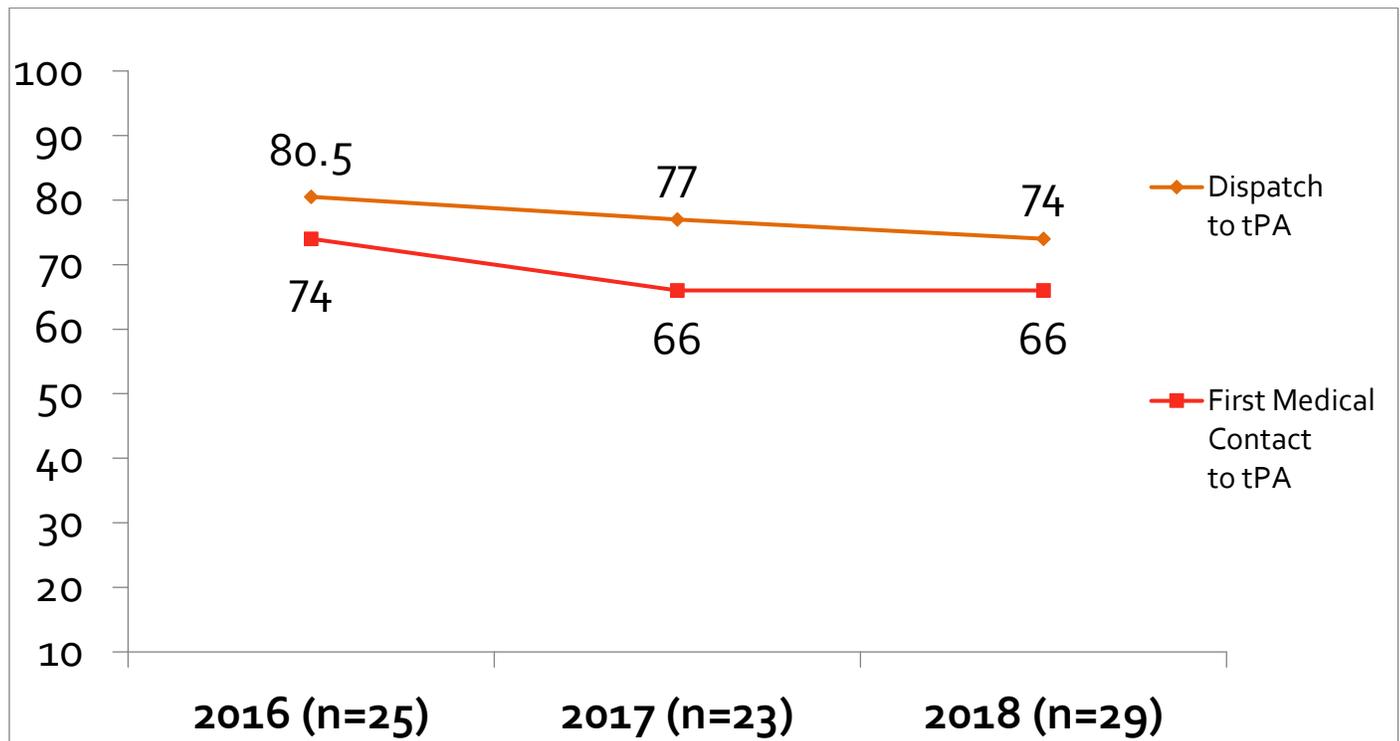
## Stroke System of Care

The Stroke System of Care was created in 2016. The signs and symptoms of a stroke can be hard to identify, as other illness processes can appear similar. Like both the STEMI and Trauma programs, the Stroke System looks collectively at the continuum of care - both prehospital and in-hospital. Patients who meet specific criteria are transferred to specific stroke centers, depending on the time of their symptom onset. The County has four (4) designated Acute Stroke Centers with differing capacities. An Acute Stroke Ready Hospital (ASRH) is a certified hospital that provides diagnostic and pharmacological stroke care in anticipation of transferring the patient to a Primary Stroke Center (PSC). Lompoc Valley Medical Center and Santa Ynez Cottage Hospital are ASRHs. A PSC is a hospital that is certified by an accrediting healthcare organization, such as The Joint Commission. Marian Regional Medical Center and Santa Barbara Cottage Hospital are PSCs. In addition, Santa Barbara Cottage Hospital has a neuroendovascular program – to remove blood clots from cerebral arteries to treat large strokes – and is in the process of becoming certified by The Joint Commission as a Comprehensive Stroke Center.

The below data is from the Get With The Guidelines (GWTG) data registry, managed by the EMS Agency from the 2018 calendar.

### Time from EMS Dispatch & from arrival of EMS Personnel to clot dissolving medication administered

Tissue Plasminogen Activator (tPA) is a clot dissolving agent used to treat many strokes. The below graph displays the median time interval in minutes from dispatch and from the first EMS personnel arrival to the administration of tPA. Once administered, this medication begins to reestablish blood flow to the damaged part of the brain. It is one of the important early treatments for an acute stroke.



THIS CHART SHOWS HOW WE ARE CONTINUING TO IMPROVE STROKE CARE BY HELPING PATIENTS GET THIS TREATMENT EARLIER.



## What's on Deck for Specialty Systems of Care in 2019?



### ***Purchase and Deploy FirstPass***

- The EMS Agency is committed to utilizing clinical data to drive policy and protocol decisions.
- FirstPass will make real time clinical data available to providers and the Agency. In anticipation of this program, the CQI Committee will revamp data collection and review.



### ***STEMI Data Registry:***

- This data registry will bring the STEMI program data collection in-line with the other specialty systems of care.
- If successful in launching this project, the EMS Agency will have the ability to compare the County's performance against those of other areas.



### ***Enhancements to Stroke Care:***

- Santa Barbara Cottage Hospital applied to be a Comprehensive Stroke Center with The Joint Commission. Once verified the EMS Agency will designate them as a Comprehensive Stroke Center.
- This will be the only center of its kind delivering this level of stroke care between Los Angeles and Stanford .



### ***Scope of Practice Additions:***

- In 2019, the EMS Agency will add a new classification of "Flight Paramedic" as well as increase the standard scope of practice for both EMTs and Paramedics.
- These additions will result in positive changes to patients' outcome in the areas of shortness of breath, pain management and airway management.



# Disaster Preparedness & Response

The Disaster Preparedness and Response unit is charged with ensuring disaster readiness of public health, healthcare, and long-term care partners. This includes training, exercising, and response activities for the Public Health Department staff, and leadership of the Santa Barbara County Disaster Healthcare Coalition. The coalition membership of over 80 healthcare and long-term care agencies works collaboratively to assure the health and safety of our most vulnerable residents during disasters. To develop and maintain readiness, the coalition provides training, disaster planning assistance, and exercises, to assure a coordinated response between the EMS Agency, the public health department, and all members during disasters.

Another important support during community disaster response is the County's **Medical Reserve Corps**. Under the leadership of the public health department, these dedicated medical volunteers devote countless hours to training, exercises, and have a strong history of response to meet Santa Barbara County disaster needs.

The Public Health Emergency Preparedness Program operates under guidance from two federal grants: the Public Health Emergency Preparedness Grant and the Hospital Preparedness Program. Major focus areas for these grants are provided below:

## PUBLIC HEALTH EMERGENCY PREPAREDNESS GRANT

The PHEP grant is funded by the Centers for Disease Control and Prevention (CDC). There are six (6) domains of the grant that we are required to focus on:

1. **Community Resilience:** Preparing for and recovering from emergencies
2. **Incident Management:** Coordinating an effective response
3. **Information Management:** Making sure people have information to take action
4. **Countermeasures and Mitigation:** Getting medicines and supplies where they are needed
5. **Surge Management:** Expanding medical services to handle large events
6. **Biosurveillance:** Investigating and identifying health threats

## HOSPITAL PREPAREDNESS PROGRAM GRANT

The HPP grant is funded by the US Department of Health & Human Services, Office of the Assistant Secretary for Preparedness and Response (ASPR). There are four (4) capabilities the grant focuses on enhancing:

1. **Foundation for Health Care Readiness**
  - Identify hazards and risks
  - Prioritize and address gaps through planning, training, exercising, and managing resources
2. **Health Care and Medical Response Coordination**
  - Plan and collaborate to share and analyze information
  - Manage and share resources
  - Coordinate strategies to deliver medical care to all populations during emergencies and planned events
3. **Continuity of Health Care Service Delivery**
  - Provide uninterrupted, optimal medical care to all populations despite impacts to health care system and infrastructure
  - Ensure health care staff are prepared and well-equipped to provide care during disasters
  - Be able to simultaneously respond and initiate recovery plans to return to normal or improved conditions
4. **Medical Surge**
  - Deliver timely and efficient care to patients when the demand exceeds available supply
  - Share and analyze information to help maintain conventional surge response

## Major Activities in 2018

- Conducted four (4) evacuations of home health and skilled nursing facility patients in Thomas Fire debris flow areas.
- Developed the *Carpinteria and Summerland Disaster Healthcare Contingency Plan* in coordination with medical and health partners.
  - Utilized lessons learned from the 1/9 Debris Flow to coordinate medical care and support vulnerable populations in the event Summerland and Carpinteria are physically isolated from the County.
- *General Population Shelter Activation Plan*
  - Collaborative effort with the Department of Social Services, Behavioral Wellness, Public Health, and the Emergency Operations Center to ensure shelter operations are well supported and meet the needs of the sheltered individuals.
- Updated the Public Health Department's *Continuity of Operations Plan (COOP)*.



### Major Activities in 2018 (continued)

- Disaster Exercises:
  - Mass vaccination exercise providing 800 vaccinations to the public over a 4-hour period. Provides opportunity to test ability to respond to pandemics and other disease outbreaks when vaccinations are needed.
  - Countywide Medical Health & Disaster Exercise – Three (3) Day Power Outage with road closures
    - This exercise involved EMS Agency, Public Health Department, all of the HCC partners (including hospitals), the County Emergency Operations Center, Amateur Radio Emergency Services (ARES) and the County’s network of transport providers.
    - Approximately 60 healthcare facilities and agencies participated over the three day exercise.
    - Test ability to maintain health, safety, identification of vulnerable individuals, logistics, and emergency operations
  - Hospital and skilled nursing facility evacuation exercise: Marian Regional Medical Center and Extended Care
  - Intermediate care facility evacuation exercise
- Conduct monthly emergency planning meetings and trainings for Health Care Coalition partners.
- Enrolled and implemented ReddiNet for skilled nursing facilities to provide real time bed availability data needed for evacuations.

### Medical Reserve Corps

*The MRC is a national program to organize, credential and deploy medical volunteers in a disaster. The County’s MRC program recruits accredited medical volunteers, validates credentials; provides training, and deploying them as a part of a coordinated response to a disaster. These volunteers augment the County’s local disaster response professionals, and also play a role in operations centers. Nationally there are 190,000 medical volunteers in 900 local MRCs. Locally, the Santa Barbara County MRC has 190 volunteers, and hosts monthly training sessions, conducts training exercises. The MRC has responded to all recent disasters and teaches hands only CPR at community events. The Santa Barbara County MRC has a diverse set of practitioners, including, but not limited to: EMTs, paramedics, nurses, nurse practitioners, doctors and acupuncturists.*

### Major Activities in 2018

- (2017) Thomas Fire: Responded to Ventura and Santa Barbara shelters to support medical and functional needs
- 1/9 Debris Flow
  - Deployed variety of practitioners to the Emergency Operations Center to staff Call Center
  - Deployed acupuncturists to Provided acupuncture to staff in the Emergency Operations Center and at memorial events
  - Deployed nurses and EMT’s to American Red Cross Shelter to staff medical positions
- Subsequent Evacuations
  - Staffed medical positions in the American Red Cross Shelter
- Deltopia First Aid Tent
  - Augmented local response to planned MCI response
- Fiesta First Aid Tent
  - Supporting large community event
- Solstice First Aid Tent
  - Supporting large community event
- Isla Vista Halloween First Aid Tent
  - Augmented local response to planned MCI response
- Camp Fire
  - Requested MRC deployment, members were staged and ready, deployment cancelled



## What's on Deck for Disaster Preparedness and Response in 2019?

- Conduct Annual Hospital and Skilled Nursing Facility Evacuation Exercise
  - Lompoc Valley Medical Center and Lompoc Comprehensive Care Center identified as evacuating facilities for 2019 exercise.
- Coordinate with Office of Emergency Management on development of multi-day power outage contingency plan
- Develop and test adult and pediatric medical surge plans
- Finalize Disaster Healthcare Coalition Partners Response Plan
- Conduct Annual Medical & Health Disaster Exercise
  - Exercise will be conducted over three days in November 2019 and will follow the Statewide Medical & Health Exercise scenario of flooding.





## Closing Remarks

On behalf of the Santa Barbara County EMS Agency, the Public Health Department, and each of the provider agencies in the EMS System, we want to thank you for taking the time to read the *Santa Barbara County EMS Agency Year in Review: 2018*. This report is intended to provide insight into the complex world of Emergency Medical Services, highlighting the efforts of our providers.

In 2019, we look forward to receiving the results from phases 2 and 3 of the EMS System Review and presenting the findings to the County Board of Supervisors. In 2019 and beyond, the EMS Agency will continue to increase the use of electronic data to monitor the quality and effectiveness of EMS prehospital patient care delivery and implement improvements to assure the highest quality of medical care is available in the county. Our disaster preparedness efforts for 2019 will continue to build readiness through leadership of the Santa Barbara County Disaster Healthcare Coalition and the Medical Reserve Corps. We will continue to focus on disaster communication drills, trainings and exercises that enhance the County's readiness for evacuation, sheltering, and transportation, and long-term power outages.

We are honored and privileged to work with all of our partners to strengthen our capacity and to be a prepared and resilient county.

# SANTA BARBARA COUNTY EMS AGENCY PARTNER AGENCIES

