

Emergency Medical Services Data Report Calendar Year 2019



Emergency Medical Services Authority
California Health and Human Services Agency



ACKNOWLEDGEMENTS

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MESSAGE FROM THE DIRECTOR

I am proud to present the Emergency Medical Services Authority's (EMSA) sixth annual Emergency Medical Services (EMS) Data Report for 2019. The Annual EMS Data Report promotes collaboration, creates points for discussion on data quality, encourages data submissions, and provides a general description of statewide emergency medical services. Additionally, the report builds on the EMS Authority's existing efforts of working with the Local Emergency Medical Agencies (LEMSA) to increase and improve EMS data capacities, to standardize the collection of prehospital data, to study the efficacy of the EMS systems, and to continue to improve EMS data collection across California.

On January 1, 2017, the data standard changed for the entire nation when NEMSIS transitioned to the most current version, 3.4. This is our third report since the implementation of version 3.4 in 2017, and we have seen a significant increase in both EMS data submission and LEMSAs participation. The available data for EMS has yielded better information on patient care due to this version being compatible with Health Level 7 (HL7) and based on International Classification of Disease (ICD) 10.

For high quality services to be delivered with high efficiency, all aspects of the EMS system must work together, mutually reinforcing and supporting each other for the benefit of the patient. The EMS Authority, through standard setting, consensus building, and leadership, plays a central role in improving the quality of emergency medical services available for all Californians.

Although this report still focuses on descriptive data, it provides us with significant information. We are in discussion with various partners and vendors to determine how to best display our growing California EMS Information System (CEMSIS) data. Our goal is to develop worthwhile and timely data reports for use at the state and local levels.



Dave Duncan, MD
Director

INTRODUCTION

The EMS Authority is pleased to release the annual EMS Data Report for calendar year (CY) 2019. LEMSAs who are currently reporting data to CEMSIS encompass populations that represent approximately 73% (29,039,055) of California's total population of 39,512,223¹. While the data does not capture all emergency services provided to the state's total population, it does provide insight into the services provided. These preliminary reports serve to evaluate our data quality and availability for analysis.

PURPOSE

The purpose of this report is to provide a general description of statewide emergency medical services provided in CY 2019. It is an effort to meet EMSA's mandate to annually report on the effectiveness of EMS systems and related impact on death and disability (HSC 1797.121). HSC 1797.103 (f) further identifies that one of the required elements of an EMS system is data collection and evaluation. EMSA's intent is to address these mandates via data collection from the LEMSAs.

This report will evaluate data quality and demonstrate the importance of submitting and processing data. Currently the data collected serves to provide an image of the EMS system, the number and types of patients being cared for, and the EMS and hospital institutions and individuals who are providing that care. As more data becomes available to EMSA, that image will sharpen. As the reliability of the data improves, answers to questions about the quality of the care provided to EMS patients - those essential to all EMS patient advocates - will be possible. And finally, EMSA's concurrent effort to integrate EMS data with existing data streams drawn from the spectrum of medical care – Health Information Exchange (HIE) promises to answer to questions about the impact of EMS care on patient outcomes. EMSA's converging data objectives will, together, allow California to at last measure the value that EMS adds to the health care system.

¹ United States Census Bureau. (n.d.). Retrieved July 16, 2020, from <https://www.census.gov>.

BACKGROUND

Data collection for EMS in California is decentralized with LEMSAs collecting and analyzing data to meet local needs or resources. This focus on local management is unique to California; other states generally have a direct relationship with the data submittal process statewide. LEMSAs have contractual relationships with EMS providers that address issues such as training and data entry that impact the data collection process. The data collection process in California emphasizes the importance of collaboration among EMSA, LEMSAs, and the providers so that essential questions about California's EMS system can be answered.

MISSION AND VISION

The mission of EMSA is to prevent injuries, reduce suffering, and save lives by developing standards for, and administering an effective statewide coordinated system of, quality emergency medical care and disaster medical response that integrates public health, public safety, and healthcare.

EMSA's vision is to be a lead EMS systems throughout California in a collaborative endeavor to advance the quality, safety, and satisfaction of healthcare in local communities.

EMSA has taken an innovative approach to fulfill this mission and vision by promoting participation and supporting LEMSAs with local control in accepting data directly from their local providers. This local control underscores the importance of data collaboration amongst EMSA, LEMSAs, and the providers to achieve real knowledge about EMS in our state. EMSA fosters such collaboration through various work groups and stakeholder events.

To date, the crowning achievement of the partnership between EMSA, the LEMSAs, and the EMS provider agencies is CEMSIS, a common data language allowing all system participants to evaluate and improve the EMS care available to all of California's citizens.

In under a decade, California has gone from having roughly three dozen incompatible data systems, and virtually no ability to reliably quantify even the amount of EMS care provided in our state, to a single data standard that is understood and supported by all system participants. While not all California EMS data is collected within the CEMSIS data repository, this goal is well within reach. And all those who have worked so hard to make that achievement a reality deserve the gratitude of all Californians.

Already EMSA is finding ways of using this data to promote high quality emergency medical care in California through activities such as:

- healthcare quality improvement programs that are based on patient care outcomes;
- agency collaboration across jurisdictional boundaries;
- local, regional, and state-level public health surveillance; and
- increased public awareness of emergency medical services in California.

METHODOLOGY

There are 33 LEMSAs within the State of California and in CY 2019, EMSA collected some form of data from 32 LEMSAs (97%). From these 32 LEMSAs, CEMSIS received data from approximately 454 local EMS providers. The data presented in this report was collected in CEMSIS based on version 3.4 standards from the National Emergency Medical Services Information System (NEMSIS).

LEMSAs obtain data from local EMS providers within their specific geographical service areas and submit that data to Inland Counties Emergency Medical Agency (ICEMA), which has a contractual relationship with EMSA to serve as the agent for CEMSIS using the software application ImageTrend®. This data is submitted on a voluntary basis; In return, the LEMSAs gain access to digital analytic tools for creating comprehensive reports on their own data, via Biospatial, a free dashboard.

EMSA continues to use the most current NEMSIS data standard version 3.4, until the newest version 3.5 is available. NEMSIS announced that version 3.5 is underway, and the data dictionary, which was finalized November 2019, is available on their website. The change to NEMSIS version 3.5 is necessary to correct errors in version 3.4 and expand data elements related to the disposition of patients and incidents in the EMS System. Software vendors are expected to undergo compliance testing of the new version and will continue to test every year for compliance with the most current version of NEMSIS/CEMSIS.

To improve local data quality, EMSA and local agencies will adopt new national data standards by transitioning from NEMSIS version 3.4 to NEMSIS version 3.5. We are anticipating the transition to start in the first quarter of 2021; however, the exact timing is still being determined.

To standardize data collection statewide, we are using specific lists for the following NEMSIS elements:

- Providers Primary Impression (eSituation.11)
- Providers Secondary Impression (eSituation.12)
- Cause of injury (eInjury.01) and
- Incident/Patient Disposition (eDisposition.12).

CEMSIS

CEMSIS began as a demonstration project for improving EMS data across California and continues to offer a secure, centralized data system for collecting data about individual emergency medical service requests, patients treated at hospitals, and EMS provider organizations. CEMSIS uses the national standard, NEMSIS, to collect patient care information resulting from an emergency 9-1-1 call for assistance. Health and Safety Code, Section 1797.227 requires the most current version of NEMSIS to be used to collect EMS data.

CEMSIS PARTICIPATION

Since transitioning to NEMSIS version 3.4 in January 2017, EMSA has seen an increase in the number of LEMSAs voluntarily participating in submitting data to CEMSIS each year.

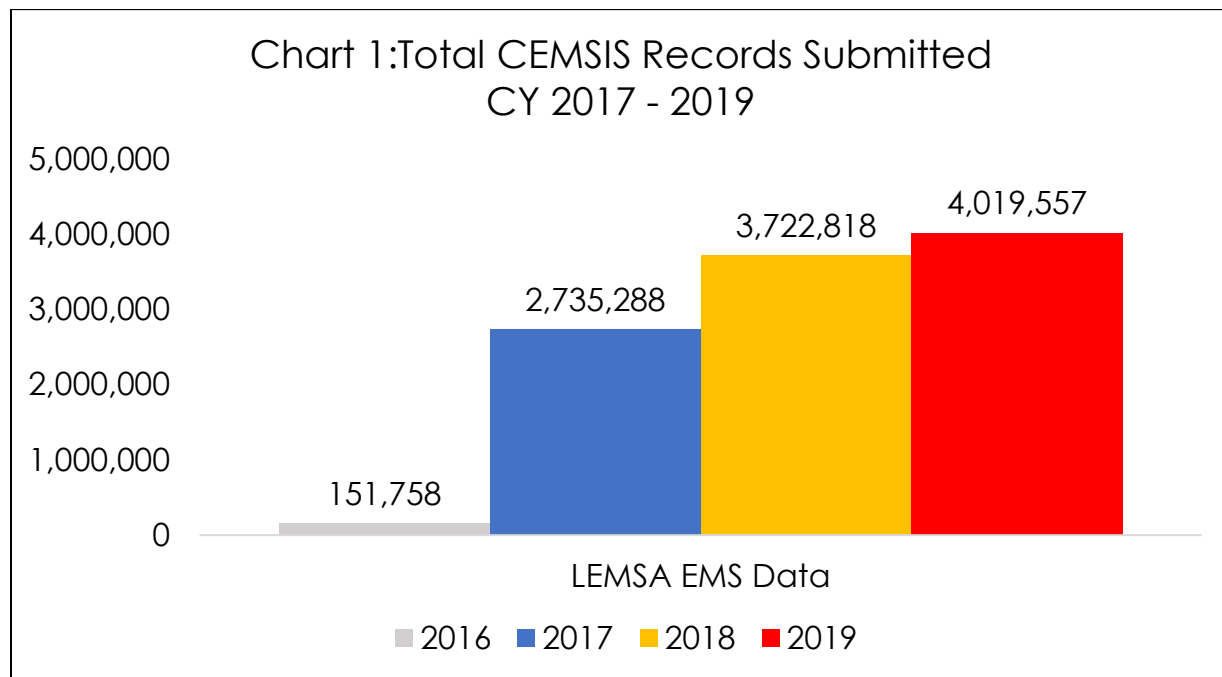
LEMSAs began submitting data into CEMSIS in different years, with 24 out of the 33 LEMSAs submitting data into CEMSIS between January and December CY 2017. Between January CY 2018 and December CY 2019, 32 LEMSAs participated at some level in the submission of EMS data. One LEMSA, Los Angeles County EMS Agency, is currently in the testing stage to submit version 3.4 data into CEMSIS.

There are two CEMSIS participation statuses:

- LEMSAs who participate and submit some form of NEMSIS version 3.4 data into CEMSIS
- LEMSAs who are currently in the testing stage to submit NEMSIS version 3.4 data into CEMSIS

CEMSIS RECORDS SUBMITTED

Since adopting NEMSIS version 3.4 in 2016, and becoming the default national data standard on January 1, 2017, CEMSIS has successfully received close to 11 million EMS incident records submitted by LEMSAs to date. This includes over 150,000 records from CY 2016, over 2.7 million records from CY 2017, almost 3.8 million records from CY 2018, and over 4 million records for CY 2019. Based on these numbers, we saw an impressive 1,702% increase in record submission between CY 2016 and 2017, a 36% increase between CY 2017 and 2018, and an 8% increase in record submission between CY 2018 and 2019. CEMSIS has already received nearly 2 million records for CY 2020.



CEMSIS data is used to study variations in local data quality and local capacity including, but not limited to, quality improvement programs and ambulance patient offload time.

When fully operational, with 100% LEMSAs and local participation, it is anticipated that CEMSIS will receive approximately 6 million records each year. EMSA is working with the LEMSAs who are currently in the testing stages to get their data included in the state data system.

DATA ANALYSIS

Data presented in this report was collected in CEMSIS based on the NEMSIS version 3.4 EMS data standards. The charts and graphs have been grouped into three different categories:

- **EMS Responses:** This includes all calls including interfacility transfer, medical transport, 911 Response (Scene), intercept, mutual aid, etc.
 - Calculated by incident years 2018 and 2019
- **911 EMS Responses:** This includes any calls that required an emergent or immediate response to an incident location, regardless of method of notification (e.g., 9-1-1, direct dial, walk-in, flagging down, air ambulance scene flight).
 - “Type of Service Requested” select 911 Response-Scene and Basic Life Support (BLS) 911 Response-Scene
 - Calculated by incident years 2018 and 2019
- **911 EMS Transports:** Same criteria as 911 EMS Response, with an additional criterion.
 - “Type of Service Requested” select 911 Response-Scene and BLS 911 Response-Scene
 - “Incident Patient Disposition” select Patient Treated and Transported
 - Calculated by incident years 2018 and 2019

These criteria are used throughout the charts and graphs unless otherwise stated. The data sets in this report were run between July 10, 2020, and July 17, 2020.

LIMITATIONS OF ANALYSIS

The analysis of the data in this report is descriptive only and not intended to provide statistical information. Collaboration between LEMSAs and EMSA in the development of data validation tools will ultimately result in reporting with more statistical depth. After review of the data in CEMSIS, EMSA found several discrepancies between some data elements and the values that were chosen by the EMS providers. One example is “NOT” values, which inhibit meaningful analysis and usefulness of the data. It is not known if these values are due to provider input or other data quality issues. Analysis is also limited as this report does not represent all of California.

There are more than 700 total public and private EMS ambulance service providers within the state of California; however, not all providers are able to submit data into CEMSIS.

MAPPING

Most of the data submitted to CEMSIS is data mapped to the NEMSIS data elements and values. EMS data submission is typically a two-step process; data is first mapped from EMS providers to a LEMSA, then from a LEMSA to CEMSIS. Disparate data mapping will negatively impact data quality.

SELECTED DATA ELEMENTS

This report presents 13 tables and related charts comprised of both National and State data elements in the NEMSIS version 3.4 software application. National data elements are required to be collected at the LEMSA level and submitted to the state. While State data elements are recommended to be collected at the "State" level. The data elements used in this report are listed below:

Data Element Number	Data Element Name	Accepts NOT Values
eDisposition.12	Incident/Patient Disposition	No
eDisposition.21	Type of Destination	Yes
eResponse.05	Type of Service Requested	No
ePatient.13	Gender	Yes
ePatient.14	Race	Yes
ePatient.15	Age	Yes
ePayment.50	CMS Service Level	Yes
dAgency.09	Primary Type of Service	No
dAgency.13	Organizational Type	No
eInjury.01	Cause of Injury	Yes
eResponse.15	Level of Care of This Unit	No
eDisposition.16	EMS Transport Method	Yes
eSituation.11	Providers Primary Impression	Yes

NOT VALUES

The NEMESIS version 3.4 data standard has four usage levels indicating when the data element is expected to be collected:

- **Mandatory:** Must be completed and does not allow for “NOT” values
- **Recommended:** Does not need to be completed and allows “NOT” values
- **Optional:** Does not need to be completed and does not allow for “NOT” values
- **Required:** Must be completed and allows for “NOT” values

Most of the data elements in this report have a *Required* status, meaning the system will accept “NOT” values. The “NOT” values include:

- Not Applicable
- Not Recorded
- Not Reporting
- Not Available
- Not Known



EMERGENCY
MEDICAL SERVICES
ANNUAL REPORT
SECTION 1: LEMSA EMS DATA
CALENDAR YEAR 2019

LEMSA EMS DATA

In building the current report EMSA drew from two sources. The first source is information provided by LEMSAs in their EMS Plan Submissions. The second source is electronic data sent by LEMSAs to EMSA's CEMSIS data repository. These dual sources help to determine the degree to which the data submitted within the EMS Plans agrees with that received by EMSA's data repository. EMSA works with LEMSAs to determine the sources of discrepancies.

According to the most recent LEMSA EMS plans submitted to EMSA, it is estimated that California EMS providers receive over 6 million EMS calls every year.

The total EMS Responses submitted in CY 2019 are presented throughout this report.

LEMSA	EMS responses reported in LEMSA EMS Plan	EMS Responses derived from CEMSIS CY 2019	Submission Rate
Alameda	271,685	255,232	94%
Central California	324,314	191,641	59%
Coastal Valleys	64,904	63,375	98%
Contra Costa	124,763	147,631	118%
El Dorado	12,719	12,319	97%
Inland Counties	308,666	537,788	174%
Imperial	18,797	11,789	63%
Kern	112,305	201,224	179%
Los Angeles	1,795,925	N/A*	0%
Marin	20,316	21,051	104%
Merced	71,099	31,160	44%
Monterey	40,595	275	1%
Mountain Valley	96,112	85,026	88%

Napa	21,603	18,561	86%
NorCal	8,692	10,968	126%
North Coast	16,480	29,219	177%
Orange	623,708	508,199	81%
Riverside	292,596	419,166	143%
Sacramento	183,073	240,799	132%
San Benito	7,347	3,856	52%
San Diego	587,359	103,738	18%
San Francisco	204,571	134,338	66%
San Diego	587,359	103,738	18%
San Francisco	204,571	134,338	66%
San Joaquin	111,204	134,560	121%
San Luis Obispo	27,283	36,609	134%
San Mateo	45,591	105,945	232%
Santa Barbara	73,025	82,680	113%
Santa Clara	239,606	229,819	96%
Santa Cruz	24,018	44,505	185%
Sierra-Sacramento Valley	149,255	167,157	112%
Solano	69,677	60,211	86%
Tuolumne	13,713	7,782	57%
Ventura	76,405	99,954	131%
Yolo	22,438	22,980	102%
Grand Total:	6,059,844	4,019,557	66%

*N/A is defined as no data submitted into CEMSIS

In CY 2019, LEMSAs CEMSIS electronic submissions numbered approximately 2,040,287 fewer than those documented within the LEMSAs' EMS Plans, at a submission rate of 66%.

LEMSA 911 EMS REPORTED DATA

911 EMS Response is a type of service requested for a specific EMS event, which can be ALS or BLS.

LEMSA	Count
Alameda	249,968
Central California	175,844
Coastal Valleys	55,668
Contra Costal	137,730
El Dorado	10,642
Inland Counties	467,292
Imperial	8,607
Kern EMS	186,706
Los Angeles	N/A*
Marin	20,994
Merced	25,726
Monterey	N/A*
Mountain Valley	76,964
Napa	15,739
NorCal	8,073
North Coast	23,896
Orange	347,893
Riverside	383,493
Sacramento	189,000
San Benito	3,504
San Diego	47,269
San Francisco	115,728
San Joaquin	109,551
San Luis Obispo	34,700

San Mateo	105,925
Santa Barbara	75,611
Santa Clara	228,267
Santa Cruz	39,377
Sierra-Sacramento Valley	147,356
Solano	41,733
Tuolumne	6,286
Ventura	87,641
Yolo	21,378
Grand Total:	3,448,561

LEMSA POPULATION

The 33 LEMSAs represent all 58 counties in the State of California. The United States Census Bureau estimated that California's population in 2019 was approximately 39,512,223.

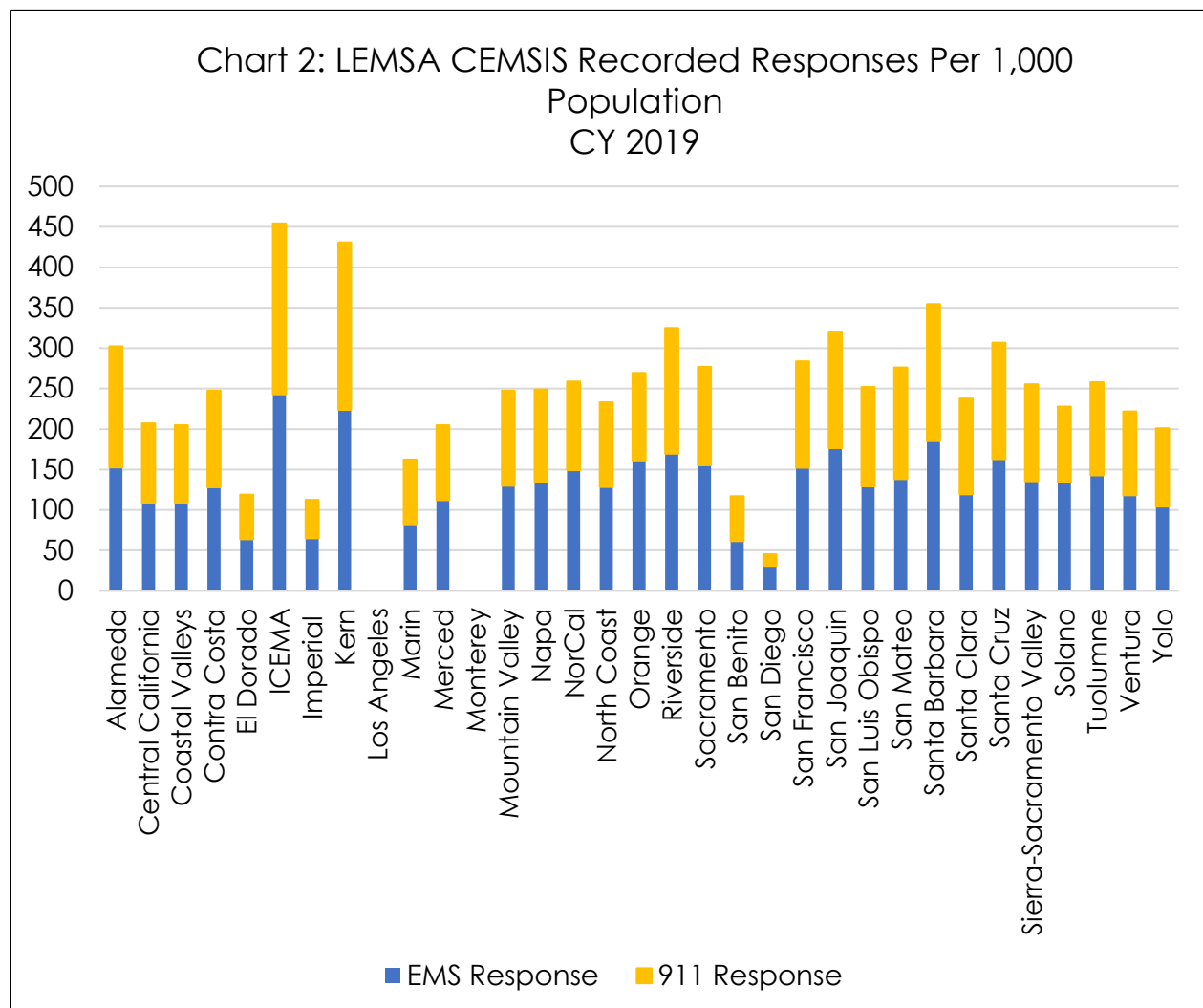
Several LEMSA service areas are based on their specific geographical locations and population sizes, resulting in these service areas covering multiple counties. These multicounty agencies are

- **Central California EMS Agency:** Fresno, Kings, Madera, and Tulare.
- **Coastal Valleys EMS Agency:** Mendocino and Sonoma.
- **Inland Counties Emergency Medical Agency (ICEMA):** Inyo, Mono, and San Bernardino.
- **Mountain-Valley EMS Agency:** Alpine, Amador, Calaveras, Mariposa, and Stanislaus.
- **North Coast EMS Agency:** Del Norte, Humboldt, and Lake.
- **Northern California (Nor Cal) EMS Agency:** Lassen, Modoc, Plumas, Sierra, and Trinity.
- **Sierra-Sacramento Valley EMS Agency:** Butte, Colusa, Glenn, Nevada, Placer, Shasta, Siskiyou, Sutter, Tehama, and Yuba.

Table 3: LEMSA Population CY 2019	
LEMSA	Population Count
Alameda	1,671,329
Central California	1,775,563
Coastal Valleys	581,085
Contra Costa	1,153,526
El Dorado	192,843
Imperial	181,215
Inland Counties	2,212,568
Kern	900,202
Los Angeles	10,039,107
Marin	258,826
Merced	277,680
Monterey	434,061
Mountain Valley	654,649
Napa	137,744
NorCal	73,511
North Coast	227,756
Orange	3,175,692
Riverside	2,470,546
Sacramento	1,552,058
San Benito	62,808
San Diego	3,338,330
San Francisco	881,549
San Joaquin	762,148
San Luis Obispo	283,111
San Mateo	766,573
Santa Barbara	446,499
Santa Clara	1,927,852
Santa Cruz	273,213

LEMSA	Population Count
Sierra-Sacramento Valley	1,231,552
Solano	447,643
Tuolumne	54,478
Ventura	846,006
Yolo	220,500
Grand Total:	39,512,223

LEMSA RESPONSES PER 1,000 POPULATION

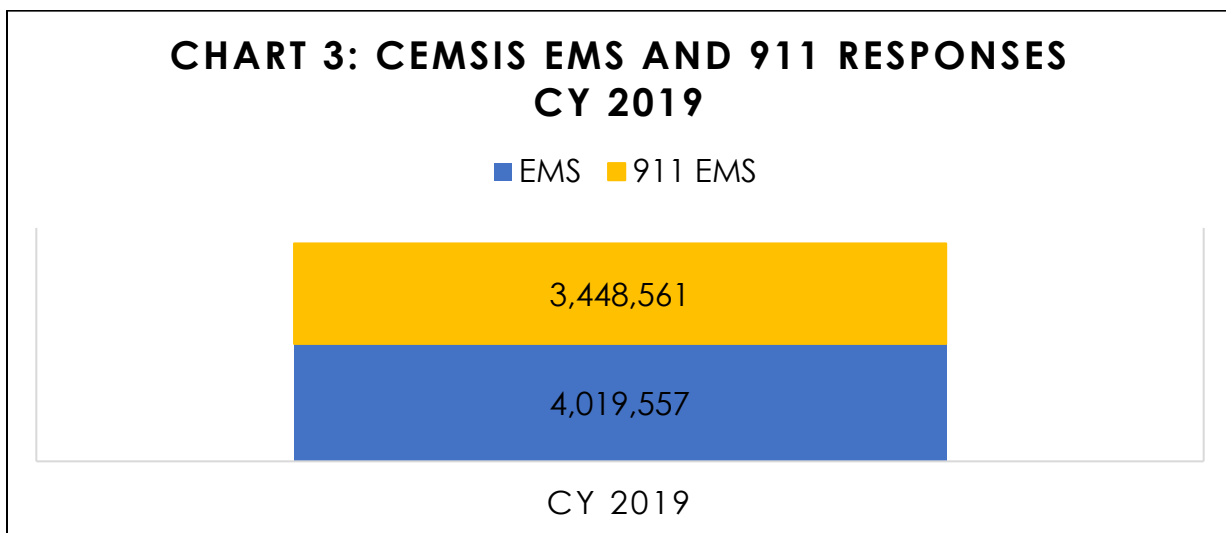




EMERGENCY
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SECTION 2: GENERAL DATA
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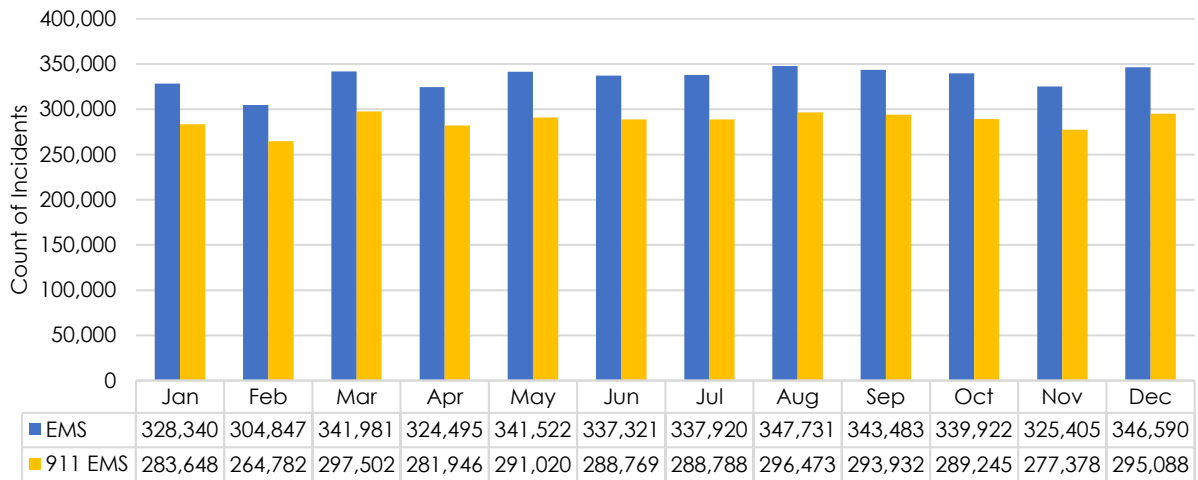
EMS & 911 RESPONSES

In CY 2019, there was an 8% increase in total EMS incident records submitted into CEMIS compared to those submitted in CY 2018. The total number of EMS calls submitted was 4,019,557 in CY 2019 and 3,722,818 in CY 2018, and were comprised of all calls including interfacility transfer, medical transport, mutual aid, etc. EMS and 911 Responses, including calls that requested an emergency or immediate response to an incident location represented 85% of all calls (3,164,689) in 2018 and 86% (3,448,561) in 2019.



RESPONSES PER MONTH

Chart 4: CEMSIS EMS & 911 EMS Responses Per Month



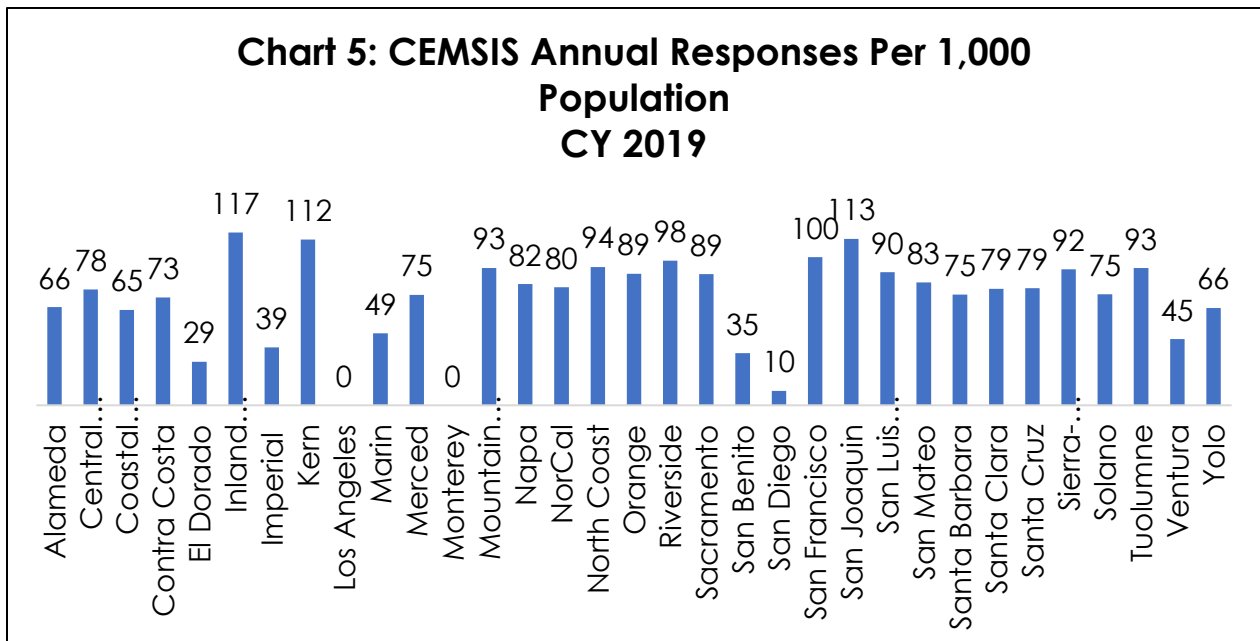
In CY 2019, CEMSIS received the highest total of EMS responses in August, and the highest total 911 responses in March.

Table 5: CEMSIS EMS & 911 EMS Responses Per Month by Percentage

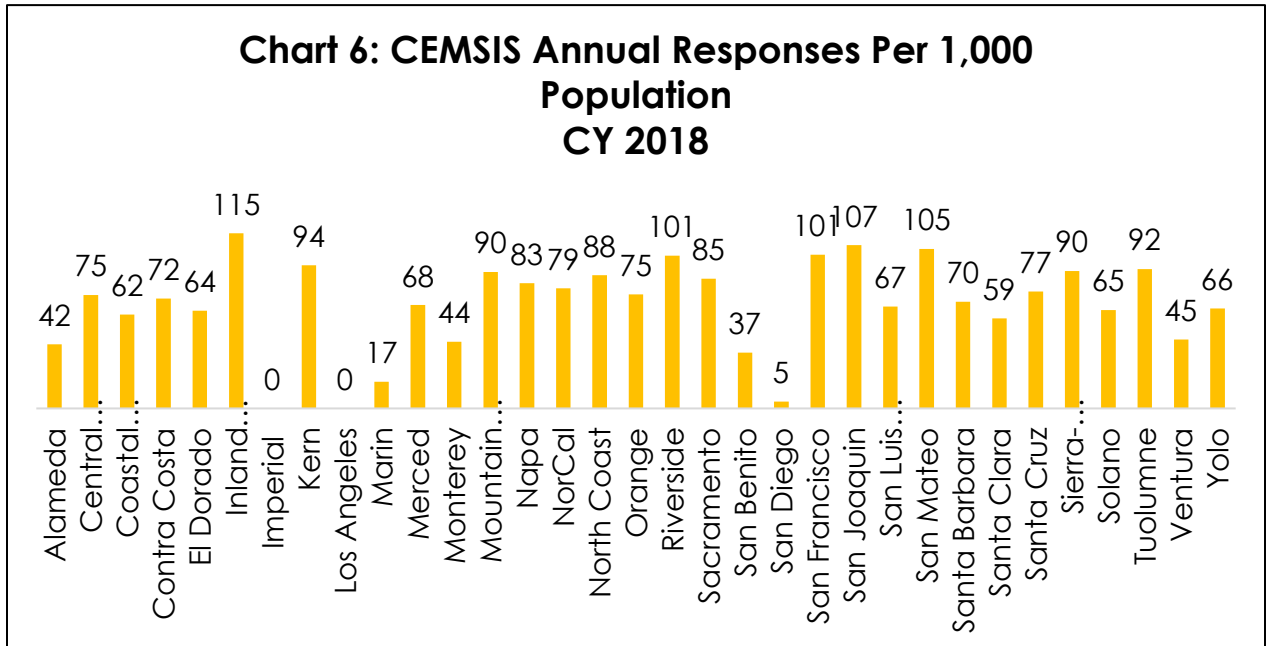
Month	EMS Count of Incidents	EMS %	911 EMS Count of Incidents	911 EMS %
January	328,340	8%	283,648	8%
February	304,847	8%	264,782	8%
March	341,981	9%	297,502	9%
April	324,495	8%	281,946	8%
May	341,522	8%	291,020	8%
June	337,321	8%	288,769	8%
July	337,920	8%	288,788	8%
August	347,731	9%	296,473	9%
September	343,483	9%	293,932	9%
October	339,922	8%	289,245	8%
November	325,405	8%	277,378	8%
December	346,590	9%	295,088	9%
Grand Total:	4,019,557	100%	3,448,571	100%

ANNUAL RESPONSES PER 1,000 POPULATION

Annual responses is defined as a 911 response in which the patient was treated, transported by an EMS unit, and had some form of patient contact within a calendar year.



The CY 2018 data report below has been added for comparative purposes.

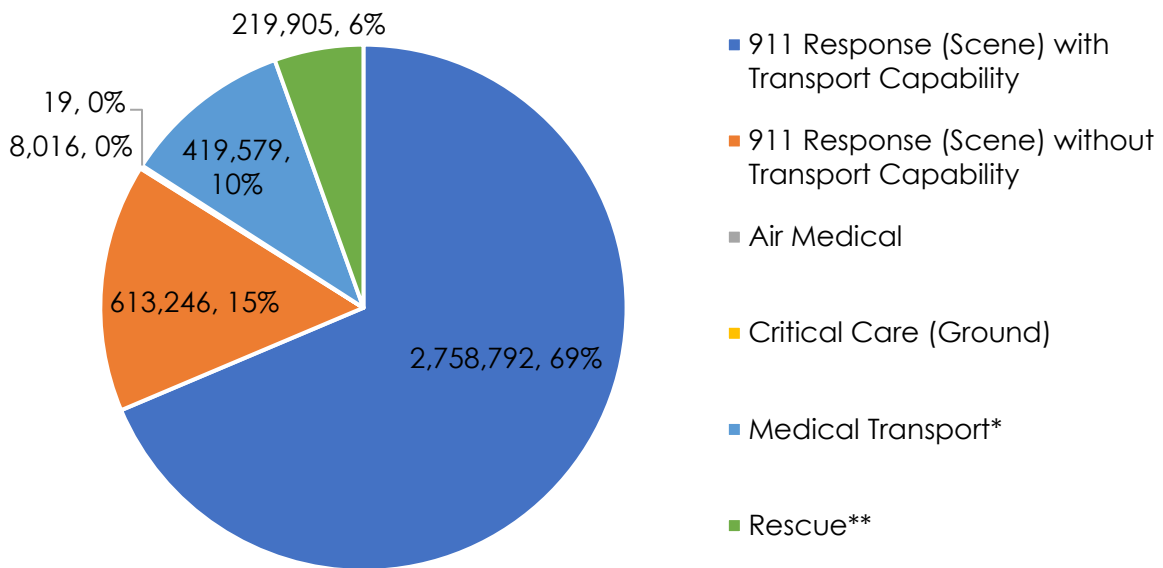


EMS SERVICES & PROVIDERS

PRIMARY TYPE OF SERVICE

EMS agencies whose primary service is to provide emergent or immediate response with patient transportation capabilities reported the most EMS calls in CY 2019.

**Chart 7:CEMSIS EMS CY 2019
Primary Type of Service**



**Medical Transport: Convalescent, Interfacility Transfer Hospital, and Nursing Home.*

***Rescue: Includes all incidents that involved a unit designated to provide specialized services and/or technical rescues such as extrication to gain access to the patient, fire suppression, High Angel Rescue, Ski/Snow Rescue, Farm Rescue, etc.*

TYPE OF SERVICE REQUESTED

The most common type of service requested response to the specific EMS events in CY 2019 was 911 Response (Scene), representing 3,448,561, or 86% of the 4,018,557 total EMS calls. This is predictable as the primary type of service reported in CY 2019 was largely 911 Response (Scene) related since calling 911 or the local emergency number activates immediate assistance from the police, fire department, and/or ambulance.

Interfacility Transport representing 358,918 or 9% of all calls, was the second most common type of service requested.

**Table 6: CEMSIS EMS Response CY 2019
Type of Service Requested**

Type of Service Requested	Count of Incidents
911 Response (Scene)	3,448,561
Interfacility Transport	358,918
Medical Transport	184,059
Public Assistance/Other Not Listed	13,167
Standby	7,291
Intercept	3,807
Mutual Aid	2,480
Not Reported	1,274
Grand Total:	4,019,557

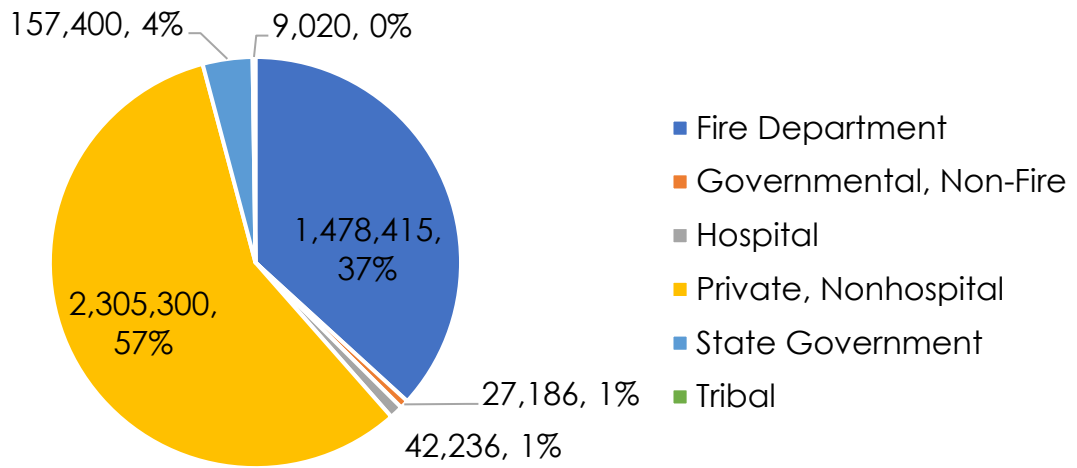
Public Assistance/Other Not Listed is defined as an EMS response in which the agency is providing non-traditional or EMS services not otherwise specified here (e.g., elderly or disabled patient assistance, public education, injury prevention, community paramedicine/mobile integrated healthcare, immunization programs).

EMS responses requesting the remaining services were significantly lower, representing either 5% or less than 1% of the total EMS calls in CY 2019.

PROVIDER TYPE

The provider type, or organizational structure from which EMS services were delivered (fire, hospital, county, etc.) The provider type is associated with the EMS Agency and the specific EMS Agency Number assigned to them.

Chart 8: CEM SIS EMS CY 2019 Provider Type



CMS SERVICE LEVEL

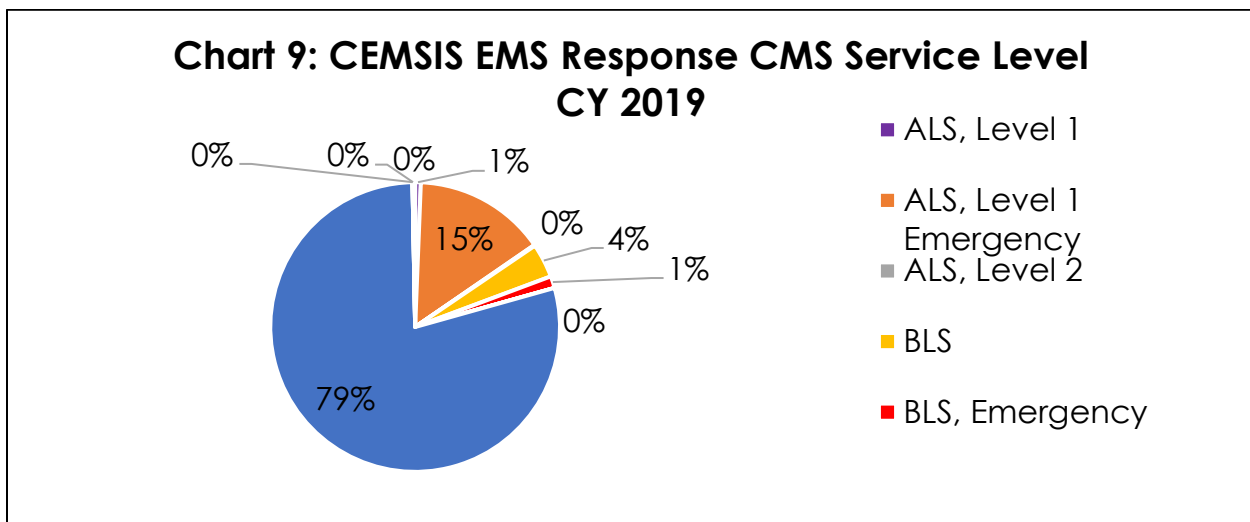
The most common Centers for Medicare and Medicaid Services (CMS) service level of care reported for the encounters for EMS calls was ALS (Advanced Life Support) Level 1 Emergency in CY 2019. The second most common CMS service level for CY 2019 was BLS.

**Table 7: CEMSIS EMS Response CMS Service Level
CY 2019**

CMS Service Level	Count of Incidents
ALS, Level 1	25,307
ALS, Level 1 Emergency	593,974
ALS, Level 2	3,981
BLS	153,141
BLS, Emergency	53,392
Fixed Wing (Airplane)	194
Paramedic Intercept	9
Rotary Wing (Helicopter)	4,498
Specialty Care Transport	7,233
Not Reported*	3,177,828
Grand Total:	4,019,557

*Not Reported includes Not Available and Not Recorded.

Not Reported represented 3,177,828 or 79% of the EMS responses in CY 2019.



RESPONSE UNITS LEVEL OF CARE

The level of care or license level (BLS or ALS) the response unit can provide is based on the unit's treatment capabilities for the specific EMS event regardless of patient need. For example, if a unit/crew is staffed with an EMT-Intermediate or EMT-Paramedic but the unit is either licensed or stocked at a BLS level, the

appropriate level of care is "BLS-Basic." This is because the care provided to patients is limited to BLS skills.

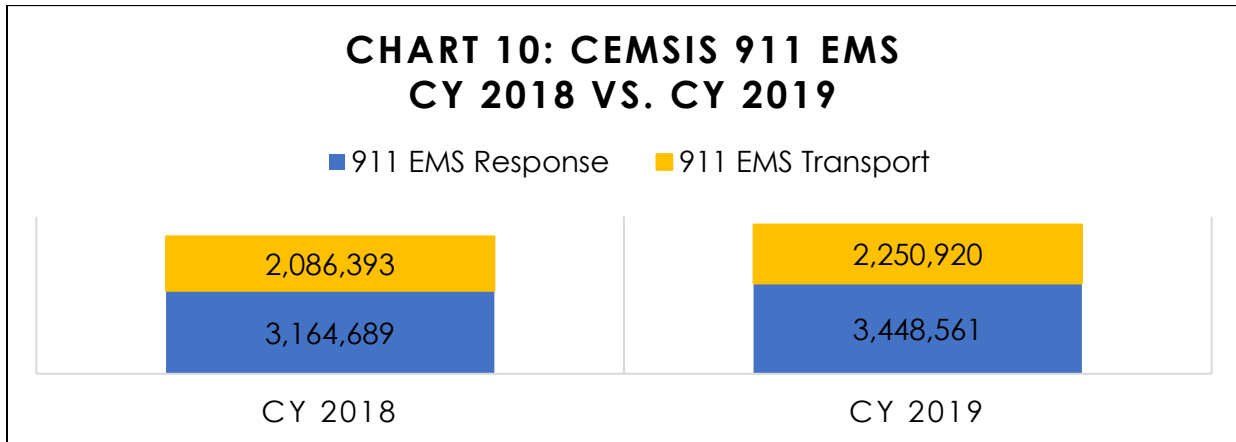
In CY 2019, the most common reported units' level of care was ALS-Paramedic, representing 2,999,100 or 75%. The second most common units' level of care was BLS-Basic EMT, representing 746,481 or 19%.

Table 8: CEMSIS EMS CY 2019 Response Units Level of Care	
Response Units Level of Care	Count
ALS-AEMT	9,207
ALS-Community Paramedicine	422
ALS-Intermediate	73,715
ALS-Nurse	26,647
ALS-Paramedic	2,999,100
ALS-Physician	62
BLS-AEMT	2,953
BLS-Basic /EMT	746,481
BLS-Community Paramedicine	646
BLS-First Responder/EMR	40,808
BLS-Intermediate	43
Specialty Critical Care	119,369
Not Reported	104
Grand Total:	4,019,557

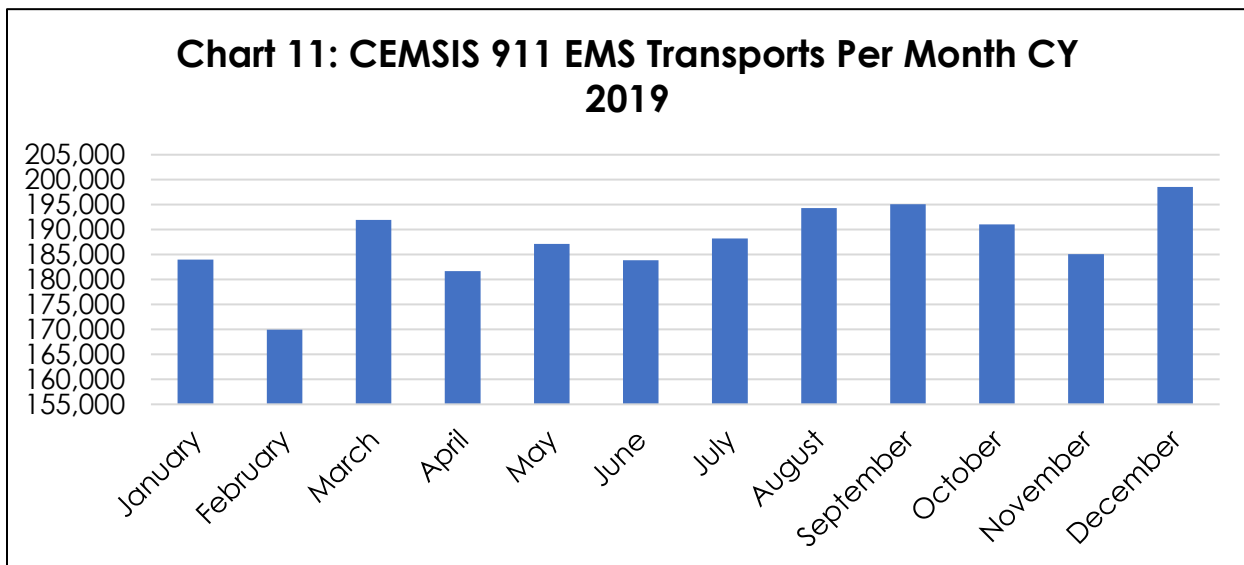
911 EMS TRANSPORTS

Out of the 3,448,561 reported 911 EMS Responses in CY 2019, 2,250,920, or 65%

had some form of patient contact such as the patient being treated and transported. In comparison to CY 2018, this represents an increase of 283,872 or 9% of total 911 EMS Responses, and 164,527 or 8% of 911 EMS Transports resulting in patient contact.



911 EMS TRANSPORTS PER MONTH



The highest total of 911 EMS Transports in CY 2019 was reported in December representing 198,519 or 9% and the lowest total reported was in February, representing 169,969 or 7%.

While most months consistently reported comparable totals, there were 22,004 transports representing an 12% increase between February and March followed by 10,293 fewer transports for a 5% decrease in incidents reported between March and April.

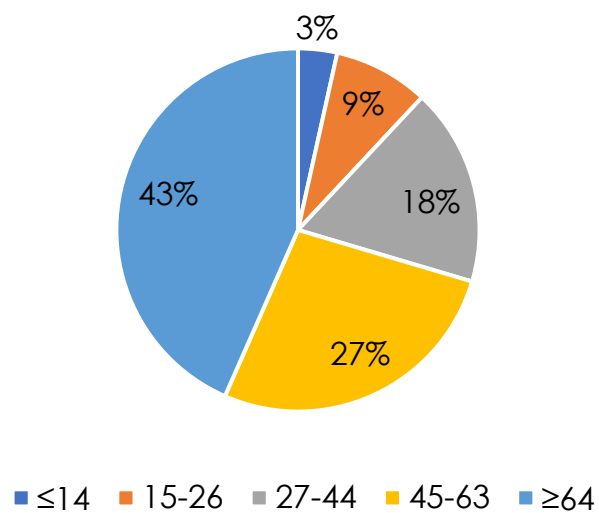
911 EMS TRANSPORTS BY AGE

The age ranges chosen here are based on the previous Annual EMS reports. Including Transports by Age supports efforts to collect data for the Emergency Medical Services for Children program, which provides funds to help improve EMS services for patients aged 0 through 14 years. It also organizes data for patients aged 64 and over to support public health efforts aimed at older persons.

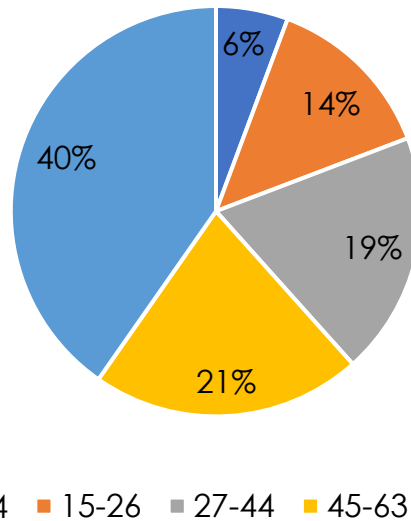
**Table 9: 911 EMS Transports by Age
CEMSIS CY 2019**

Age	Medical	Traumatic
≤14	53,043	15,330
15-26	129,313	36,522
27-44	268,596	51,751
45-63	411,736	57,587
≥64	661,619	108,747
Grand Total:	1,524,307	269,937

**Chart 12: 911 EMS Medical Transports by Age
CY 2019**



**Chart 13: 911 EMS Trauma Transports by Age
CEMSIS CY 2019**



Patients within the age range of ≥ 64 represented the highest count of both Medical and Trauma related 911 EMS Transports in CY 2019. Patients within the age range of 45-63 was the second highest reported for medical representing 411,736 or 27%; however, patients within the age range of 45-63 and 27-44 were relatively similar in totals for trauma transports.

911 EMS TRANSPORTS BY GENDER

The purpose for including information for demographics such as age, gender, race and ethnicity is to determine if there are populations that may underutilize or overutilize 911 emergency services due to cultural, financial, or other reasons. In this case, it may be hard to identify such populations because of the high number of "NOT" values. The high counts of *Not Reported*, *Not Available*, *Not Recorded*, or *Unknown (Unable to Determine)* limits the usefulness of demographic data.

Possible reasons why gender data has been reported as Unknown (Unable to Determine) may be specific barriers to obtaining this information, such as the responder was in fact unable to determine or identify the gender of the patient for various reasons, or the patient identifying as gender non-binary, etc.

The exact reason(s) for patient data being reported as unknown (unable to determine), not reported, not available, or not recorded is not known or notated

by the providers. Subsequently, the high counts of this information limit the analysis.

Table 10: 911 EMS Transports by Gender CEMSIS CY 2019		
Gender	Medical	Traumatic
Female	759,109	135,809
Male	765,782	134,129
Unknown (Unable to Determine)	1713	308
Not Reported*	666	61
Grand Total:	1,527,270	270,307

**Not Reported includes totals reported as Not Applicable and Not Recorded*

Unknown (Unable to Determine) and Not Reported data have been included in this chart due to it yielding viable incident age range data, and to support the grand total calculations.

Male patients represented the larger count for medical transports whereas female patients represented the larger count for trauma transports.

911 EMS MEDICAL TRANSPORTS BY AGE & GENDER

Male patients represented higher counts than Females in several age ranges; ≤14 age range represented 3,456 or 14% higher, 27-44 represented 22,207 or 18% higher, and 45-63 represented a 43,428 or 23% higher count of 911 EMS Medical Transports in CY 2019.

Male and Female patients within the age range of 15-26 had relatively similar total counts; however, Females represented 547 or 1% more than Males.

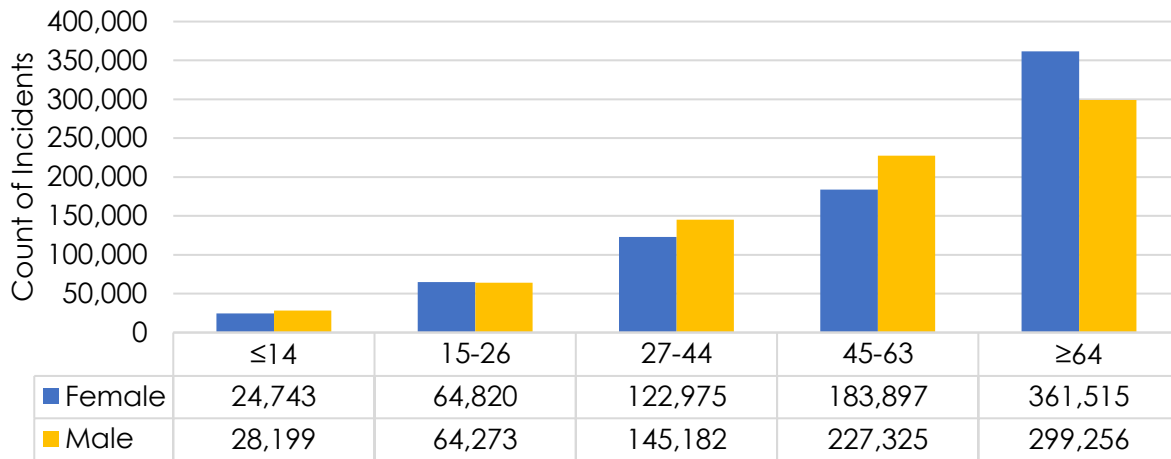
Female patients aged ≥64 represented 62,259 or 21% higher count than Males within the same age range.

Male and Female patients ≥64 represented a higher overall count for 911 EMS Medical Transports in CY 2019.

**Table 11: 911 EMS Medical Transports by Age & Gender
CEMSIS CY 2019**

Age Range	Female	Male	Unknown (Unable to Determine)	Not Reported*
≤14	24,743	28,199	85	15
15-26	64,820	64,273	179	42
27-44	122,975	145,182	364	82
45-63	183,897	227,325	399	127
≥64	361,515	299,256	658	212
Not Reported*	1,159	28	28	188
Grand Total:	759,109	765,782	1,713	666

Chart 14: 911 EMS Medical Transport by Age & Gender CEMSIS CY 2019



*Not Reported includes totals reported as Not Applicable and Not Recorded

For analytical purposes, Not Reported and Unknown (Unable to Determine) data has been excluded from this chart due to the lack of gender information and overall low incident counts.

Chart 15: 911 EMS Medical Transport by Age & Female Gender CEMSIS CY 2019

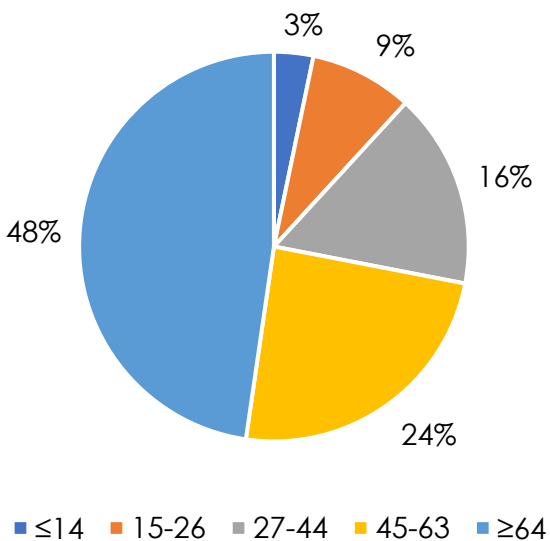
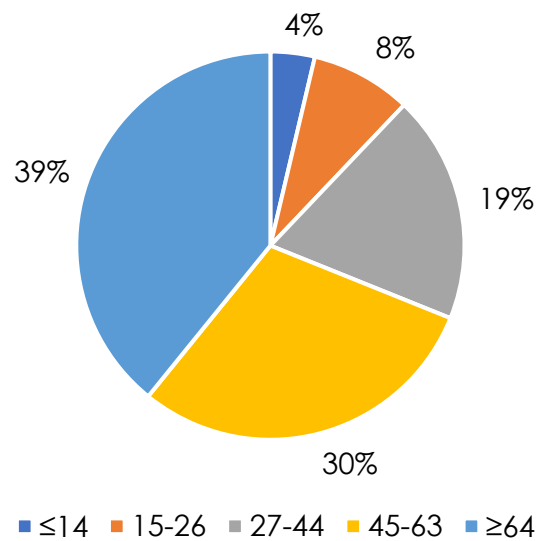


Chart 16: 911 EMS Medical Transport by Age & Male Gender CEMSIS CY 2019



911 EMS TRAUMA TRANSPORTS BY AGE & GENDER

Much like the 911 EMS Medical Transports data, Males represented higher counts in most of the age ranges; ≤14 represented 2,490 or 39% higher, 15-26 represented 6,939 or 47% higher, 27-44 represented 10,716 or 52% higher, and 45-63 represented 5,001 or 19% higher.

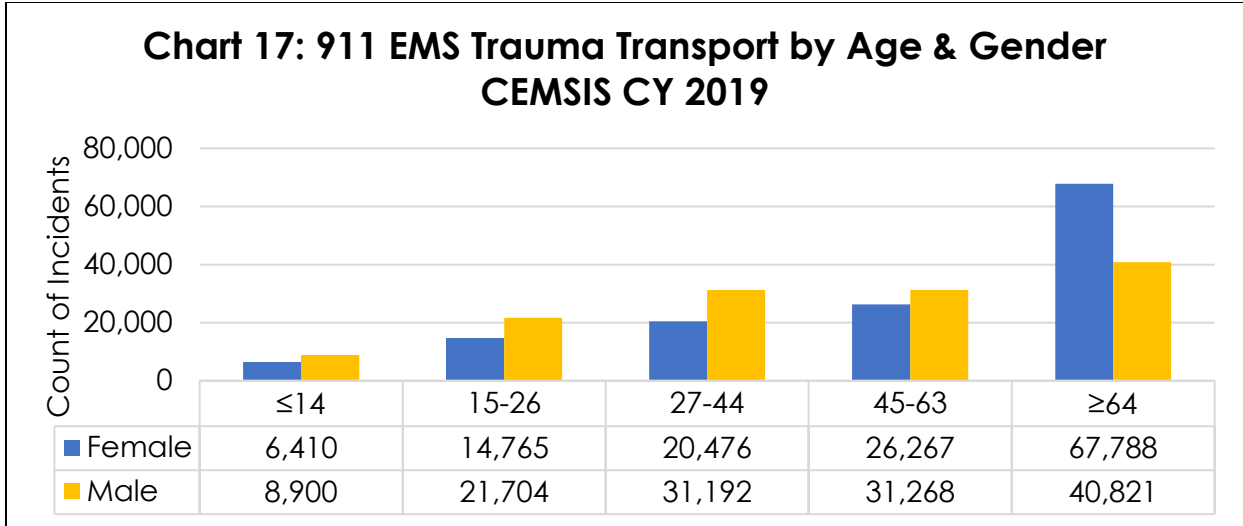
Females within the age range of ≥64 represented 67,788 or 66% higher count than Males ≥64.

Male and Females ages ≥64, represented higher overall counts for their gender and age ranges.

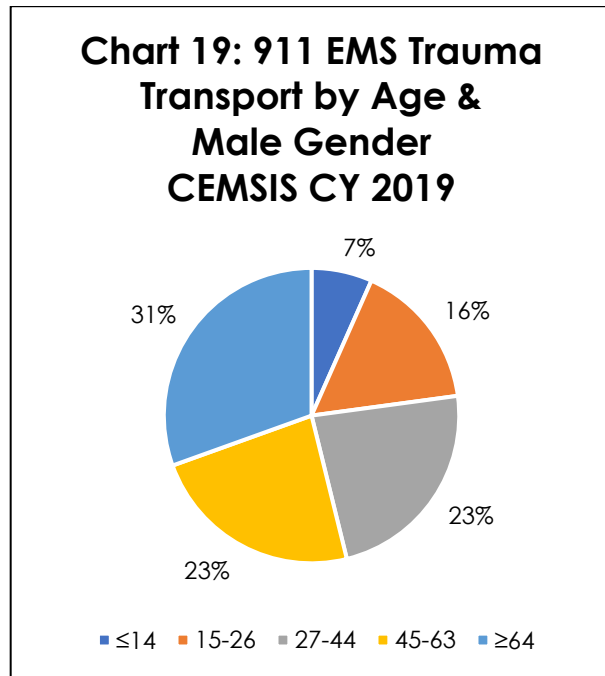
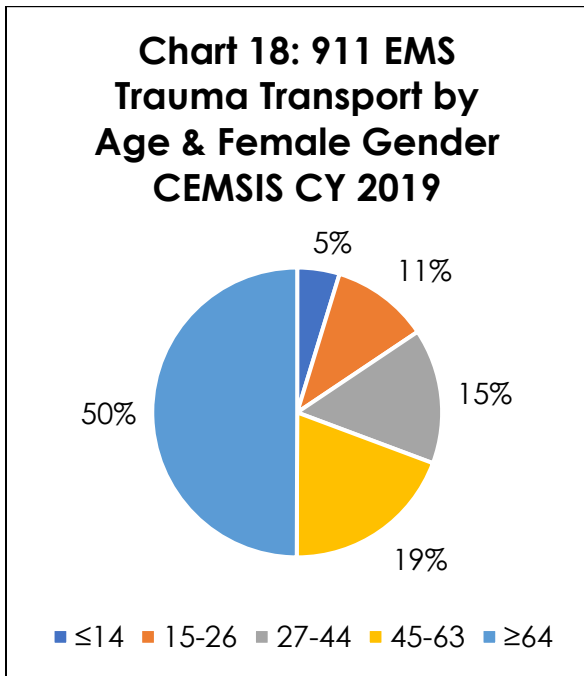
**Table 12: 911 EMS Trauma Transports by Age & Gender
CEMSIS CY 2019**

Age Range	Female	Male	Unknown (Unable to Determine)	Not Reported
≤14	6,410	8,900	18	3
15-26	14,765	21,704	50	7
27-44	20,476	31,192	69	16
45-63	26,267	31,268	45	8
≥64	67,788	40,821	125	22
Not Reported	103	244	1	5
Grand Total:	135,809	134,129	308	61

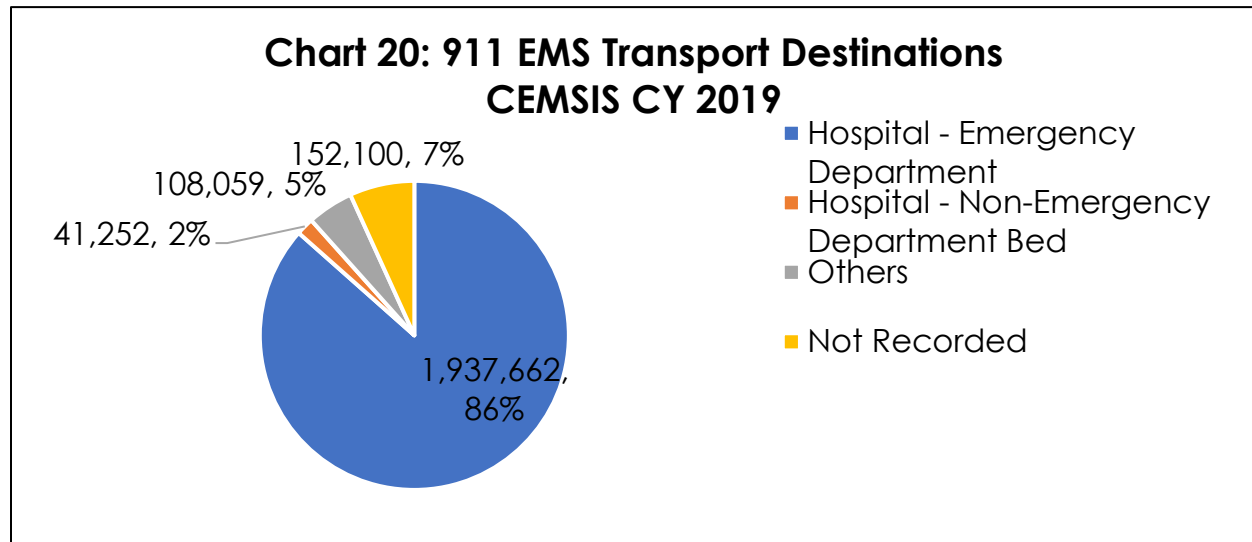
*Not Reported includes totals reported as Not Applicable and Not Recorded



For analytical purposes, Not Reported and Unknown (Unable to Determine) data has been excluded from this chart due to the lack of gender information and overall low incident counts.



911 EMS TRANSPORT DESTINATIONS



*Others includes Other EMS Responder (Air) and (Ground), Not Applicable, and Not Reported.

For analytical purposes, this chart excludes Freestanding Emergency Department, Medical Office/Clinic, Morgue/Mortuary, Nursing Home/Assisted Living Facility, Police/Jail, and Urgent Care due to the low-level overall totals reported.

911 EMS Responses reporting the patient transported to a local hospital's emergency department makes up the highest percentage of transport destinations in CY 2019. There were 188,663 or 11% more transports than in CY 2018.

911 EMS METHOD OF TRANSPORT

**Table 13: 911 EMS Method of Transport
CY 2019**

EMS Method of Transport	Count
Air Medical-Fixed Wing	216
Air Medical-Rotor Craft	5,095
Ground-Ambulance	1,938,858
Ground-ATV or Rescue Vehicle	55
Ground-Bariatric	1,312

Ground-Mass Casualty Bus/Vehicle	136
Ground-Other Not Listed	6,507
Ground-Wheelchair Van	17
Water-Boat	75
Not Reported*	298,649
Grand Total:	2,250,920

*Not Reported includes Not Applicable and Not Recorded.

911 EMS Responses reporting the patient being treated and transported by Ground-Ambulance represented 1,938,858 or 86% of the total 911 EMS Transports in CY 2019.

911 EMS RESPONSE BY INCIDENT DISPOSITION

Incident Patient Disposition	Incident Count
Assist, Agency	123,628
Assist, Public	29,391
Assist, Unit	46,433
Canceled (Prior to Arrival at Scene)	258,008
Canceled on Scene (No Patient Contact)	257,057
Canceled on Scene (No Patient Found)	92,279
Patient Dead at Scene-No Resuscitation Attempted (With Transport)	14
Patient Dead at Scene-No Resuscitation Attempted (Without Transport)	17,360
Patient Dead at Scene-Resuscitation Attempted (With Transport)	46
Patient Dead at Scene-Resuscitation Attempted (Without Transport)	12,174
Patient Evaluated, No Treatment/Transport Required	73,840
Patient Refused Evaluation/Care (With Transport)	576

Patient Refused Evaluation/Care (Without Transport)	58,883
Patient Released (AMA)	172,679
Patient Treated, Released (per protocol)	10,643
Patient Treated, Transported by Another EMS Unit	0
Patient Treated, Transported by Law Enforcement	4,831
Patient Treated, Transported by Private Vehicle	3,371
Patient Treated, Transported by this EMS Unit	1,748,986
Standby-No Services or Support Provided	8,089
Standby-Public Safety, Fire, or EMS Operational Support Provided	26,914
Transport Non-Patient, Organs, etc.	61
*Other	503,317
Grand Total:	3,448,580

**Other refers to other values that are not a part of the CEMSI/NEMSI values.*

We are aware there are additional values in CEMSI that are currently not listed in the NEMSI data dictionary such as; Mutual Aid Tx & Transport, Cancelled (Prior to Dispatch), and Patient Treated, Released with Referral, etc. and are working towards resolving this matter.

911 EMS PRIMARY IMPRESSIONS

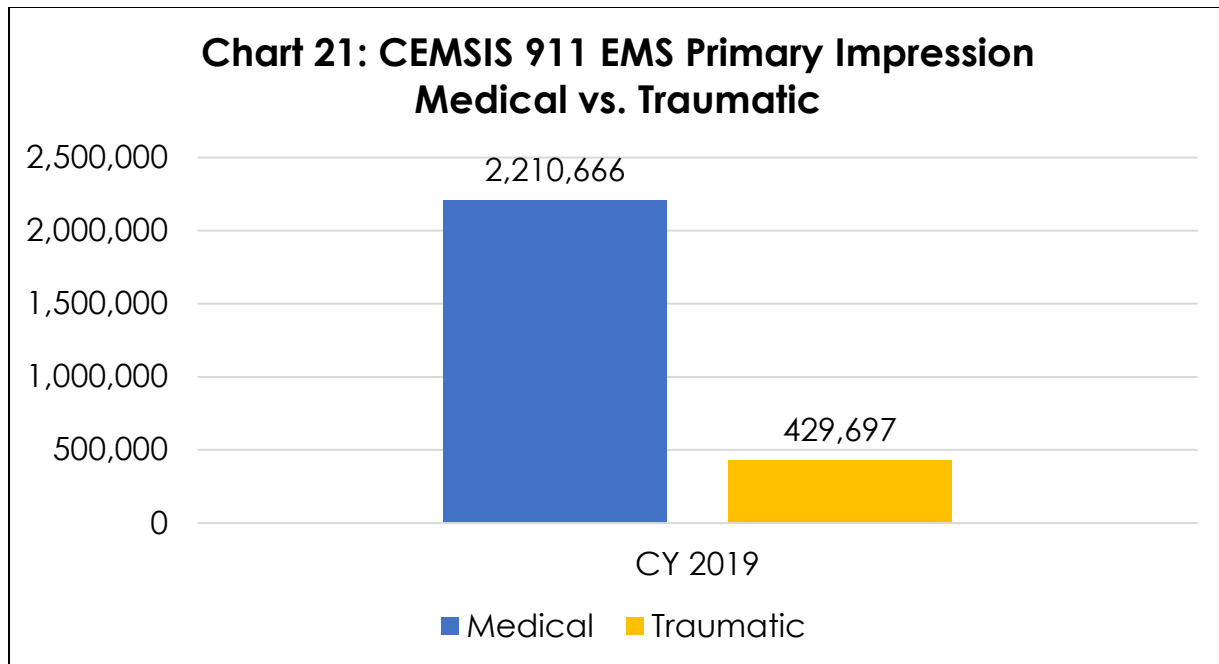
The data below does not include a significant amount of 911 EMS Responses where no primary impression was recorded by the responding EMS provider. No primary impression recorded could be indicative of several factors, including but not limited to: lack of staff field training on thoroughly completing ePCR or other data collection tools available, unintuitive placement of the information in the text or narrative area of the ePCR, or issues relating to the provider's software when data is being submitted to the LEMSA.

Table 15: Top 15 Primary Impressions CEMSI CY 2019	
Primary Impressions	Count
Traumatic Injury (T14.90)	429,698
General Weakness (R53.1)	193,884
Abdominal Pain/Problems (GI/GU) (R10.84)	150,296
Behavioral/Psychiatric Crisis (F99)	145,081
ALOC - (Not Hypoglycemia or Seizure) (R41.82)	132,421
Non-Traumatic Body Pain (G89.1)	121,696
Respiratory Distress/Other (J80)	113,580
No Medical Complaint (Z00.00)	91,143
Syncope/Near Syncope (R55)	83,946
Chest Pain - Suspected Cardiac (I20.9)	83,745
Seizure - Post (G40.909)	74,493
Dizziness/Vertigo (R42)	65,224
Pain/Swelling - Extremity - non-traumatic (M79.60)	58,748
Respiratory Distress/Bronchospasm (J98.01)	57,182
Alcohol Intoxication (F10.92)	56,854
Grand Total:	1,857,991

Not Reported including Not Recorded and Not Applicable, represented 23% or 808,217 of overall total of the primary impressions submitted into CEMSI for CY 2019.

The most common of the top 15 primary impressions was Traumatic Injury at 23% or 429,698.

Medical injuries represented 1,780,969 or 415% more than traumatic injuries reported in CY 2019.



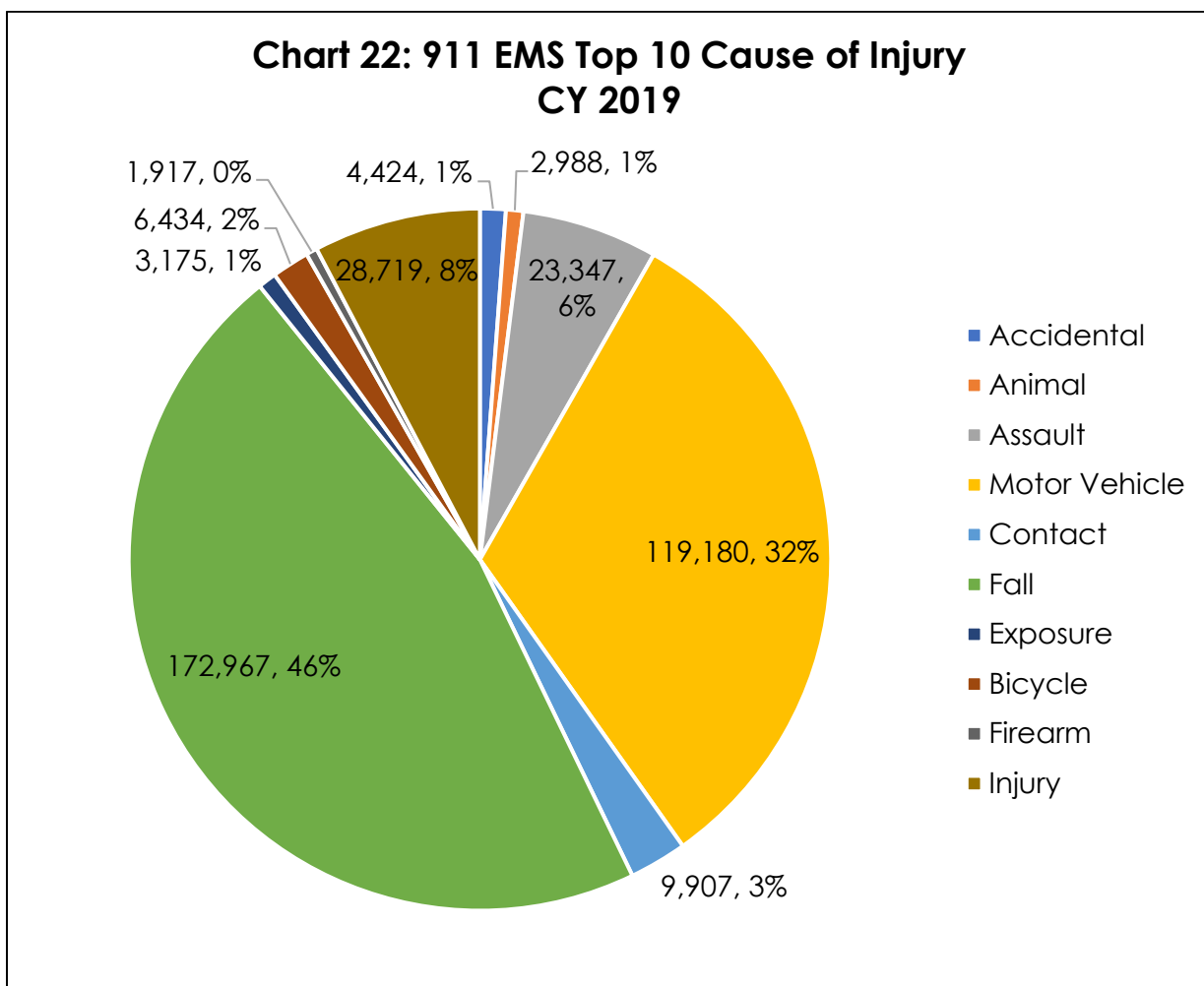
911 EMS TOP 10 CAUSE OF INJURY

In CEMSIS CY 2019, the overall total for 911 EMS Response Cause of Injuries reported by responders was 3,448,670; this total includes data that was Not Reported, Not Applicable, and Not Recorded in addition to all other injury descriptions related to the Trauma ICD-10 codes.

Due to the vast number of categories of reported and suspected external cause of injuries and the ability for responders to select multiple options per incident, it is difficult to provide a useful and in-depth analysis accurately categorizing the total cause of injuries reported in CEMSIS CY 2019. To provide an abbreviated analysis of the causes of injuries, we have organized the data into general categories:

- **Accidental** includes injuries suspected as happening by chance, unintentionally or unexpectedly such as hit or struck by another person, discharge of firearm, etc.
- **Animal** includes incidents reporting some form of contact with an animal resulting in bite, injury, death, etc.
- **Assault** includes injuries by bodily and blunt force, sexual assault, abuse, stabbing, etc.
- **Motor Vehicle** includes in auto-pedestrian crashes, machinery accident, motorcycle crash, traffic and non-traffic, car, and occupant crashes, etc.

- **Contact** includes injuries that patients received due to contact with various objects, machinery, vapors, undetermined items, etc.
- **Fall** includes injuries slipping, tripping, intentional, unintentional, falling from various levels, objects, and falls caused by another incident, etc.
- **Exposure** includes electrocution, fire, burn, smoke, excessive heat, drugs, materials, etc.
- **Firearm** includes suicide, accidental, intentional, assault, self-harm, etc.
- **Injury** includes intentional self-harm with explosion, assault, unspecified harm, various contacts, objects, etc.
- **Bicycle** includes injuries involving a crash, traffic, and non-traffic, fall, etc.



Injuries suspected as being caused by or involving the patient falling was the most common cause of injury in CEMIS CY 2019, representing 172,967 or 46% of the total 373,058 top 10 cause of injuries listed above. Motor Vehicle involved injuries represented the second highest reported, representing 119,180 or 32%.