Data Report: Emergency Medical Services and Injury Calendar Years 2014 and 2015

Emergency Medical Services Authority
California Health and Human Services Agency

EMSA #R001-2017

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This report was funded through the Centers for Disease Control, Preventive Health and Health Services Block Grant, FFY 2017. Additional traffic data support was provided through the National Highway Traffic Safety Administration, California Office of Traffic Safety, California EMS CEMSIS Data Information System Grant, FFY 2017.

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Introduction

The Emergency Medical Services Authority (EMSA) is pleased to release the annual Emergency Medical Services (EMS) Data Report: Emergency Medical Services and Injury for calendar years (CY) 2014 and 2015. EMSA is committed to generating reports that can be of use to the Local Emergency Medical Services Agencies (LEMSAs), local providers, and other partners such as hospitals, governmental agencies, and other health care entities. The LEMSAs reporting data to the California EMS Information System (CEMSIS) encompass populations that represent approximately 45% (17,762,731) of California's total population of 39,144,818 [1]. While the data reflects only a portion of 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 2014 and CY 2015. 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. For data from CY 2013 and 2014, please see report #R001-2016.

This report is to evaluate data quality, demonstrate the importance of a data process, and to compare the California EMS Information System (CEMSIS) data with the LEMSA's internal data analysis. This report begins at a basic level but the intent is to increase the reporting capability as the quality and quantity of data improve.

HISTORY AND BACKGROUND

Data collection for EMS in California is decentralized with the LEMSAs collecting and organizing the data to best meet their specific needs or resources. This focus on local control is unique to California; other states generally have a direct relationship with the local data submittal process. The LEMSAs have contractual relationships with the 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 to advance quality data.

EMS Systems Quality Improvement regulations have been established to define the requirements for LEMSAs, EMS service providers, and base hospitals in their role as part of the EMS system (CCR, Title 22, Division 9, Chapter 12). These requirements include, but are not limited to, the implementation of an EMSA approved EMS Quality Improvement program (EMS QI) and the use of defined indicators to assess the local EMS system as found in EMSA #166, Appendix E: "EMS System Quality Improvement Guidelines".

[1] *United States Census Bureau. (n.d.). Retrieved March 30, 2017, from https://www.census.gov*

Vision

The intent of CEMSIS is to provide a means to study trends and variations in EMS systems and practices. To accomplish this, 100% of local participation from both LEMSAs and providers is required. It is estimated that full data entry into CEMSIS will catalog over 6.5 million EMS (911 and emergency calls) events per year[2]. EMSA will use this data to promote high quality emergency medical care in California through activities such as:

- healthcare quality programs that monitor 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.

Receipt of all EMS data allows linkage of specialty care data for stroke, STEMI, and Emergency Medical Services for Children (EMSC), as well as supporting efforts for future Health Information Exchange (HIE) projects.

The National Emergency Medical Services Information System (NEMSIS) implemented an updated data standard (Version 3.4) that will provide an improved, nationally standardized tool for more detailed data collection and analysis. While this new version may provide an avenue for improved data, the primary data quality issue in California appears to be at the point of data entry in the field. As data collection processes and efforts continue to grow and improve, EMSA's ability to trend key EMS issues over time will promote stronger relationships among all stakeholders across the care spectrum for EMS patients and improve the local data entry processes. Future reports will incorporate feedback received from LEMSAs or other stakeholders from this document.

EMSA plans to re-open the EMS System Quality Improvement regulations for amendments to implement the enacted legislation AB503, AB1129, AB1223, and SB19 (effective January 2016) and revise Quality Improvement regulations (Chapter 12). This will help address, AB 503, which states that EMSA will set "minimum standards for the implementation of data collection, including system operation, patient outcome, and performance quality improvement."

EMSA has made data quality and analysis a priority over the past four years. Stakeholders in the EMS system have engaged in discussions with EMSA regarding modifications to data collection and evaluation. In addition, EMSA formed an Executive Data Advisory Group (EDAG) consisting of three LEMSA administrators and three medical directors to develop a cooperative strategy for improving EMS data and its application of services. EMSA looks forward to continuing to work with stakeholders to develop useful, quality data to improve EMS system effectiveness.

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[2] Galindo, L. (Ed.). (n.d.). Local EMS Agency - EMS Plan Submissions. Retrieved April & May, 2017, from http://www.emsa.ca.gov/LEMSA_EMSPlan_Submissions

Methodology

In CY 2014 and 2015, EMSA collected data from 21 (64%) of the 33 LEMSAs through CEMSIS V2.2.1. The data were collected by the local EMS providers within specific geographical service areas then submitted from the LEMSA 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®. Participating LEMSAs are able to access their data using this application at any time to view their data and run reports. LEMSAs may only view their own data and do not have access to view data from other LEMSAs.

Based on the EMS Plans that LEMSAs submit every year, it is estimated that California receives 6.5 million EMS calls every year. In 2014, 27% of EMS calls were submitted into CEMSIS and 41% in 2015.

The increase between CY 2014 and 2015 is due to LEMSAs submitting data into CEMSIS, who were not submitting data previously.

This report is not intended to provide in-depth statistical information. A report with more statistical depth is dependent on more and improved data being submitted.

The source of all data comes from CEMSIS V2.2.1, transactional and cube. The data in this report were run from March 30, 2017 to April 19, 2017.

LEMSA Data Submissions					
LEMSA	**Expected Annual Calls***	**CY 2014 Incidents**	**CY 2015 Incidents**	**Population****	**Expected Annual Response/1,000 Population**
Alameda County EMS Agency	270,153	0	27,688	1,638,215	165
Central California EMS Agency	280,798	179,340	197,237	1,740,687	161
Contra Costa County EMS Agency	145,929	90,135	99,414	1,126,745	130
Coastal Valleys EMS Agency	57,336	N/A	N/A	589,795	97
El Dorado County EMS Agency	12,716	3,173	2,420	184,452	69
Imperial County EMS Agency	18,797	N/A	N/A	180,191	104
Inland Counties Emergency Medical Agency	306,898	341,668	406,472	2,160,302	142
Kern County EMS Agency	105,361	N/A	N/A	882,176	119
Los Angeles County EMS Agency	2,575,472	N/A	N/A	10,170,292	253
Marin County EMS Agency	16,786	14,846	14,170	261,221	64
Merced County EMS Agency	43,920	N/A	N/A	268,455	164
Monterey County EMS Agency	38,795	30,535	33,079	433,898	89
Mountain Valley EMS Agency	79,029	60,933	62,914	638,858	124
Napa County EMS Agency	27,883	15,234	15,457	142,456	196
North Coast EMS Agency	21,004	22,282	29,732	227,572	92
Northern California EMS Agency	10,709	10,101	10,637	102,772	104
Orange County EMS Agency	521,143	165	313,626	3,169,776	164
Riverside County EMS Agency	244,933	N/A	N/A	2,361,026	104
Sacramento County EMS Agency	268,732	41	35,552	1,501,335	179
San Benito County EMS Agency	6,252	2,937	3,218	58,792	106
San Diego County EMS Agency	859,246	N/A	N/A	3,299,521	260

LEMSA Data Submissions					
LEMSA	**Expected Annual Calls***	**CY 2014 Incidents**	**CY 2015 Incidents**	**Population****	**Expected Annual Response/1,000 Population**
San Francisco County EMS Agency	150,920	28,662	31,404	864,816	175
San Joaquin County EMS Agency	68,990	N/A	N/A	726,106	95
San Luis Obispo County EMS Agency	14,720	18,666	14,185	281,401	52
San Mateo County EMS Agency	61,631	N/A	N/A	765,135	81
Santa Barbara County EMS Agency	66,266	514	42,923	444,769	149
Santa Clara County EMS Agency	227,755	N/A	N/A	1,918,044	119
Santa Cruz County EMS Agency	18,000	32,617	33,334	274,146	66
Sierra-Sacramento Valley EMS Agency	137,800	113,754	146,130	1,178,511	117
Solano County EMS Agency	31,683	N/A	N/A	436,092	73
Tuolumne County EMS Agency	11,349	N/A	N/A	53,709	211
Ventura County EMS Agency	75,928	108,019	112,577	850,536	89
Yolo County EMS Agency	15,718	18,666	19,596	213,016	74
Grand Totals:	**6,792,652**	**1,092,288**	**1,651,765**	**39,144,818**	

*Taken from LEMSA EMS Plans (Table 8); numbers may potentially include non-911 calls.
**Taken from the United State Census Bureau, 03-27-2017
N/A is defined as no data submitted into CEMSIS.

The LEMSAs that currently submit data into CEMSIS began submitting data into CEMSIS in different years.

Year	LEMSA
2013	El Dorado County EMS Agency
	Inland Counties Emergency Medical Agency
	Monterey County EMS Agency
	Mountain Valley EMS Agency
	Napa County EMS Agency
	North Coast EMS Agency
	Northern California EMS Agency
	San Francisco County EMS Agency
	San Luis Obispo County EMS Agency

Year	LEMSA
2014	Central California EMS Agency
	Contra Costa County EMS Agency
	Marin County EMS Agency
	San Benito County EMS Agency
	Santa Cruz County EMS Agency
	Sierra-Sacramento County EMS Agency
	Ventura County EMS Agency
	Yolo County EMS Agency

Year	LEMSA
2015	Alameda County EMS Agency
	Sacramento County EMS Agency
	Santa Barbara County EMS Agency

Year	LEMSA
2016	Orange County EMS Agency

Data presented in this report was collected in CEMSIS based on the Version 2.2.1 standards from NEMSIS. Local agencies obtain data from their providers and send their data to CEMSIS on a voluntary basis; in return, the LEMSAs gain access to five pre-created reports. LEMSAs that use ImageTrend® software have access to digital analytic tools for creating comprehensive reports on their own data. To both improve local data quality and to prepare California EMS for health information exchange, EMSA and local agencies have adopted new national data standards (NEMSIS Version 3.4), which became the default standard on January 1, 2017.

The data in this report are extracted from CEMSIS, which is maintained by ICEMA, the EMSA data system contractor. The data are obtained from 21 LEMSAs that submit data from approximately 195 providers. There are more EMS providers (approximately 877)

within the state of California but not all providers submit data into CEMSIS. The CEMSIS system offers two regions for data collection and storage: a transactional region and a cube region or online analytical processing. The data for this report were pulled from the transactional region because the data generated by that tool are more robust. LEMSAs submit data to this system on their own schedule, so that data could be submitted daily, annually, or on any other schedule in between. For this reason the report reflects data for CY 2014 and 2015 because submissions for those calendar years have largely stabilized and are most likely to have been completed by the end of CY 2016. The next report will be for the period of CY 2015 and 2016. EMSA expects to generate reports annually.

The data submitted into CEMSIS for this report, which were sent from the providers to the LEMSAs, were generated using both electronic and paper systems. AB503 now requires data collection to be submitted in a format consistent with the most recent NEMSIS data collection system. This will be reflected in the CY 2016 and 2017 report. The LEMSAs and the providers may use any electronic data system they prefer; this means there is often a significant degree of data mapping that must occur to move the data successfully from the provider to the LEMSA, from the LEMSA to CEMSIS, and successfully pass the validation tests for ImageTrend®. For this report period, differences in data definitions existed. It is unknown to what degree this difference in definitions impact the data. This report reflects only simple frequencies and does not address any duplicate counts. All data from this report were run from March 30, 2017 to April 18, 2017.

SELECTED DATA ELEMENTS

This report presents 50 tables and charts based largely on the use of 16 data elements in the NEMSIS Version 2.2.1 standard. The data elements are listed below.

Data Element Name	Data Element Code	Accepts Null Values
Type of Service Requested	E02_04	No
CMS Defined Service Level	E07_34	Yes
Agency Organizational Type (Provider Type)	D01_08	Yes
Cause of Injury	E10_01	Yes
Dates: Arrived on Scene	E05_06	Yes
Dates: Left Scene	E05_09	Yes
Dates: Arrived at Destination	E05_10	Yes
Primary Impression	E09_15	Yes
Incident/Patient Disposition	E20_10	No
Procedures	E19_03	Yes
Gender	E06_11	Yes
Patient Race	E06_12	Yes
Patient Ethnicity	E06_13	Yes
Patient Age	E06_14	Yes
Patient Age Units	E06_15	Yes
Primary Payment Method	E07_01	Yes

Source: NEMSIS Version 2.2.1

Data Evaluation Areas (DEA)

EMSA has developed regional data to allow LEMSAs to get a sense of how the local areas are doing in comparison to a larger regional area. This is useful because LEMSAs submitting data are only able to see their own data on ImageTrend® or their CEMSIS specific software. Organizing data into regions allows LEMSAs to evaluate their services relative to regional data and provides a mechanism for LEMSAs to view and address regional needs.

The DEAs used in this report are based on the Regional Trauma Coordinating Committees.

Northern California Region: Coastal Valleys EMS Agency, North Coast EMS Agency, Northern California EMS Agency, Sierra-Sacramento Valley EMS Agency, Sacramento County EMS Agency, El Dorado County EMS Agency, San Joaquin County EMS Agency, Napa County EMS Agency and Yolo County EMS Agency.

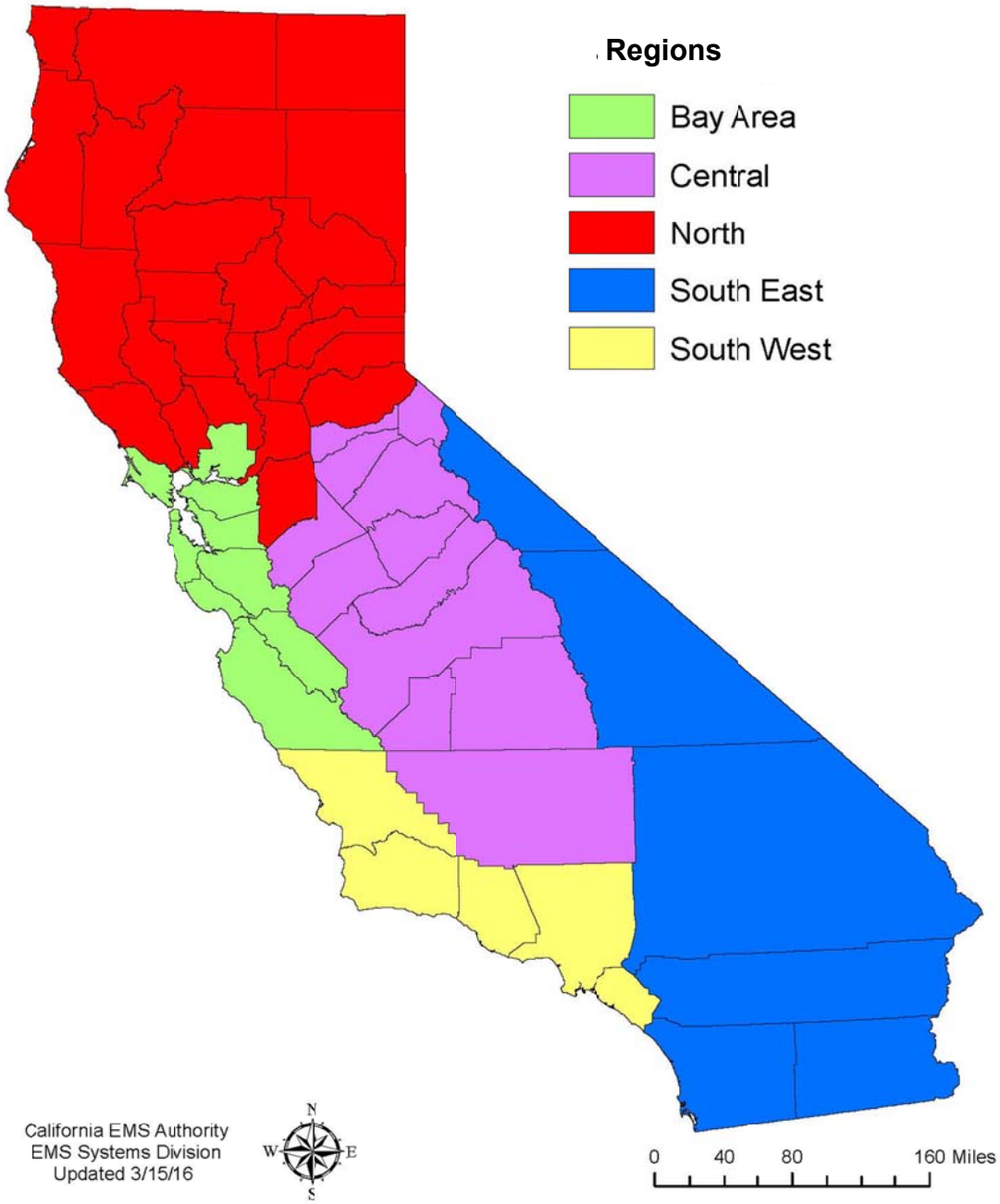
Bay Area Region: Solano County EMS Agency, Contra Costa County EMS Agency, San Francisco County EMS Agency, San Mateo County EMS Agency, Alameda County EMS Agency, Santa Clara County EMS Agency, Santa Cruz County EMS Agency, San Benito County EMS Agency, Monterey County EMS Agency and Marin County EMS Agency.

Central California Region: Central California EMS Agency, Mountain Valley EMS Agency, Tuolumne County EMS Agency, Merced County EMS Agency and Kern County EMS Agency.

South Eastern California Region: Inland Counties Emergency Services Agency, Riverside County EMS Agency, San Diego County EMS Agency and Imperial County Emergency Medical Agency.

Southern Region: San Luis Obispo County EMS Agency, Santa Barbara County EMS Agency, Ventura County EMS Agency, Los Angeles County EMS Agency and Orange County EMS Agency.

California Data Evaluation Areas



Data Analysis

Data that is organized in this report are coordinated with stakeholder interest. This includes data categories as follows:

- Traffic and Non-Traffic: This supports efforts to collect data to increase highway safety.
- Age: This supports efforts to collect data for the EMSC program, which funds EMS services aimed at patients 0 through age 14 years. The report also organized data for patients aged 64 and over to support public health efforts aimed at older persons. Finally, the report organized the data to reflect service to persons up to age 26 to support the Affordable Care Act (ACA) which allows parents to keep dependents on their health care plans until age 26.
- Demographics: This provides data by race, ethnicity, and gender in addition to age. Ethnicity and race seem to have large numbers of “null” values so it is unclear how useful the data is for these elements. Gender has a much smaller number of “null” values and reflects almost an even split between females and males.
- Primary Source of Payment: This supports data analysis related to the Affordable Care Act. It is expected that the source of payment will shift to Insurance and Medi-Cal (Medicaid), reflecting impact of the ACA.

Limitations of Analysis
This report uses descriptive statistics. The data and analysis are limited because of the high number of unknown or null values that occur within the variables utilized in this report.

Null Values
The NEMSIS version 2.2.1 standard has three status levels for data: Mandatory, Required, and Optional. *Mandatory* means that a value MUST be entered, but the value cannot be a Null; *Required* means that a value MUST be entered and that value can be a Null; *Optional* allows Null values or blank entries. Most of the data elements in this report have a *Required* status, meaning the system will accept Null values. In 2.2.1, the null values include:

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

Null values found in a high number of records 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.

The matrix below indicates the tables where there are unknown or null value counts. The values include *Calls Cancelled*.

Data Element Name	Data Element Code	Null Count 2014	Percent	Null Count 2015	Percent	Location
Type of Service Requested*	E02_04	3,096	.3%	5,633	.3%	Table 1.1
CMS Defined Service Level	E07_34	455,976	48%	881,257	61%	Table 1.2
Provider Type	D01_08	19,670	2%	21,262	3%	Table 1.3
Cause of Injury	E10_01	30,613	64%	33,999	52%	Table 3.1
Primary Impression	E09_15	461,883	42%	555,545	34%	Table 5.1
Procedures	E19_03	557,524	28%	959,446	30%	Table 5.8
Incident/Patient Disposition*	E20_10	4,286	.4%	7,360	.4%	Table 5.9
Gender	E06_11	167,733	15%	257,512	16%	Table 6.1
Patient Race	E06_12	754,381	69%	1,019,503	62%	Table 6.3
Patient Ethnicity	E06_13	605,741	55%	831,780	60%	Table 6.5
Age	E06_14	166,057	15%	253,796	15%	Table 6.7
Primary Payment Method	E07_01	779,911	71%	1,051,456	64%	Table 6.8

Data elements that do not accept Null Values.
***NOTE**: Total Calls for 2014 and 2015 are **1,092,288** and **1,654,767,** respectively*

Cancelled Calls
The number of unavailable calls may include a large percentage of cancelled calls. It appears that many of these calls coded as *Not Available* represent cancelled calls.

Duplicates
This report did not select out duplicate values; for example, two records for a single patient encounter, one from a first responder and one from a transport provider. This is a national issue and one that will likely take some time to resolve.

Data Definitions
The EMS data collection system in CY 2014 and 2015 did not mandate a specific data dictionary, which may impact the accuracy and quality of the data in CEMSIS.

Data Mapping
The EMS data collection system for CY 2014 and 2015 allows a certain amount of data element mapping in order to facilitate the movement of the data from the LEMSA provider's vendor software to the ImageTrend® software, which may impact data quality.

Electronic Patient Care Records (ePCRs)
The transition from paper to ePCRs is an on-going process. Most of the EMS providers within the LEMSAs have updated their processes to an electronic data collection format; however, as of January 2016, about 30% of the local provider services are still using paper reports and it is not clear when they will be able to transition to a fully electronic system. Use of paper charts increases the opportunity for data errors.

Data Profile

Type of Service Requested (E02_04) - All EMS Calls

The EMS data for CY 2014 and 2015 shows a 51% (*562,477)* increase in calls from CY 2014 to CY 2015 (*1,092,288 to 1,654,765*). Of these calls, 911 calls increased 49% (*456,736*) from 2014 to 2015 (*935,390 to 1,392,126*). Interfacility Transfers (Scheduled) increased 89% (*55,329)* from 2014 to 2015 (62,377 *to 117,706*). See page 15 for more information.

CMS Service Levels (E07_34)

More than 50% of the service levels were coded as not available with *455,976* of 954,932 in 2014 and *881,255* of *1,446,544* in 2015. This represents an increase of *491,279* over the two year period due to additional LEMSAs submitting data. CMS Service Levels indicate how the patient was transported, for example with BLS, ALS, or by air service. CMS Service Levels do not include Cancelled Calls from Incident Patient Disposition. See page 16 for more information.

Provider Types (D01_08)

Fire Department runs reported increased >100% (*220,106* to *485,566*) from 2014 to 2015. In CY 2014, 23% (220,106) of provider data were Fire (EMS services by public) while 73% (*698,125*) were private. In CY 2015, 34% (*485,566)* were Fire and 62% (*902,745*) were private. Provider Types do not include Cancelled Calls from Incident Patient Disposition. See page 17 for more information.

Average Scene Time (E05_06, E05_09, and E05_10)

The average statewide scene time from arrived on scene to left scene is 16 minutes, and time from left scene to destination arrival is 15 minutes. These figures are very similar for both 2014 and 2015. The data derived from Average Scene Time are reliable due to completeness and reliability (e.g. data from Computer Aided Dispatch). See page 18 for more information.

Cause of Injury (E10_01)

Cause of Injury is somewhat confusing because only patients who are noted both as having a possible injury (E09_04) **and** are also noted as having a traumatic injury (Primary Impression E09_15 **or** Secondary Impression E09_16) are included in the count. Of all the calls that met the Cause of Injury criteria, there were 15,352 traffic injuries in 2014 (32,856 non-traffic) and 26,839 traffic injuries in 2015 (62,209 non-traffic). Most of the traffic injuries in both years were motor vehicle traffic accidents (24% and 31%) while most of the non-traffic accidents were falls (31% and 43%). Cause of Injury does not include Cancelled Calls from Incident Patient Disposition. See page 22 for more information.

Primary Impression (E09_15)

The count of null values for Primary Impression approached one-third of the incidents counted (*306,802* in 2014 and *332,375* in 2015). More troubling is the fact that the number of unknown primary impression rose 8% (*25,573*) over the one year from CY 2014 to CY 2015; however, it should be noted that the overall percent of calls that were coded unknown fell about 10% from 34% in 2014 to 24% in 2015. This decrease is encouraging; however, the percentage is still of concern and may be indicative of a need for training at the local level for providers. Primary Impression does not include Cancelled Calls from Incident Patient Disposition. See page 36 for more information.

Incident/Patient Disposition (E20_10)

The counts of null values for Incident Patient Disposition had counts of 4,286 in CY 2014 and 6,789 in CY 2015. It is unclear why this is the case and EMSA is researching the matter. Generally, the Incident Patient Disposition shows that a significant amount of patients (47% in 2014 and 49% in 2015) are transported by EMS but not with an indication of transport by ALS or BLS. The next most frequent disposition is transported by EMS (ALS) (16% in 2014 and 13% in 2015). The number for calls cancelled were 13% for 2014 and 2015. Calls where a patient was not transported was around 10% (103,934 in 2014 and 141,493 in 2015). See page 44 for more information.

Primary Payment (E07_01)

Null values were high in this data element as well, increasing 32% from 2014 to 2015 (*588,245 to 777,538*). The null values for this data element were 66% of the total in 2014 and 57% of the total in 2015. It is not clear why the count of this data element is skewed towards the unknown values. Of the values available, there is an increase in persons covered by insurance, Medi-Cal (Medicaid), and Medi-Care. This may be a result of the Affordable Care Act. Primary Payment does not include Cancelled Calls from Incident Patient Disposition. See page 50 for more information.

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EMS Annual Report

Calendar Years 2014 and 2015

SERVICES AND PROVIDERS

Type of Service Requested

Between CY 2014 and 2015, the total number of EMS calls submitted into CEMSIS statewide increased 51% (1,092,288 to 1,654,765). This increase is due to LEMSAs submitting data into CEMSIS in CY 2015. *911 Response (Scene)* represented 86% (935,390) and 84% (1,392,126) in the type of service requested for CY 2014 and 2015. This is predictable since calling 911 or the local emergency number activates immediate assistance from the police, fire department, and/or ambulance.

Interfacility Transfer (Scheduled) and *Interfacility Transfer (Unscheduled),* combined, was the second most common type of service requested. This is also unsurprising as patient transfers between facilities or between facilities and a specialty care resource have increased as a result of regionalization, specialization, and facility designation by payers[3].

Although *Not Available* had a low count for CY 2014 and 2015 (3,096 and 5,633), it should not be accepted for this data element.

Definitions for Types of Services Requested can be located in Appendix A on page 50.

Table 1.1 All EMS Calls - Type of Service Requested
Calendar Years 2014 and 2015

Type of Service Requested	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
911 Response (Scene)	935,390	86%	1,392,126	84%	-2%
Intercept	307	<.01%	526	<.01%	0%
Interfacility Transfer (Scheduled)	62,377	6%	117,706	7%	1%
Interfacility Transfer (Unscheduled)	22,994	2%	28,818	2%	0%
Medical Transport	47,975	4%	91,288	6%	1%
Mutual Aid	930	<.01%	1,048	<.01%	0%
Standby	18,292	2%	16,311	1%	-1%
Other*	927	<.01%	1,309	<.01%	0%
Not Available	3,096	0.3%	5,633	<.01%	-1%
Total EMS Calls	**1,092,288**	**100%**	**1,654,765**	**99%**	

**Other includes values of ≤ 1%: Community Paramedicine, Flag-down/Walk-in Emergent, Flag down/Walk-in Non-emergent, Intercept, and Mutual Aid.*

[3] N. (2006, April). Guide for Interfacility Patient Transfer. Retrieved April, 2017, from https://www.ems.gov

CMS Service Level

The most common *CMS Service Level* was *ALS, Level 1* for both CY 2014 and 2015. The second most common CMS service level in 2014 was *ALS, Level 2* (19%; 179,106) while in 2015, it was *ALS, Level 1 Emergency* (8%; 109,463).

BLS and *BLS, Emergency* had a smaller count for EMS calls compared to ALS. The most likely reason for the decline in BLS numbers may be that many emergency response agencies appear to be moving away from BLS and towards ALS because doing so offers the opportunity to provide a more complete level of care and also allows for a higher level of billing.

Not Available represented 48% and 61% for CY 2014 and 2015, respectively (455,976 and 881,255). The large percentage of *Not Available* makes it difficult to create a meaningful analysis. It is unknown why there is a large count for *Not Available* in *CMS Service Level.*

Definitions for *CMS Service Level* can be found in Appendix A on page 50.

Table 1.2: All EMS Calls - CMS Service Level
Calendar Years 2014 and 2015

CMS Service Level	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
ALS, Level 1	251,940	26%	269,443	19%	-8%
ALS, Level 1 Emergency	23,178	2%	109,463	8%	5%
ALS, Level 2	179,106	19%	74,864	5%	-14%
BLS	38,777	4%	91,953	6%	2%
BLS, Emergency	1,300	<.01%	2,988	<.01%	0%
Fixed Wing (Airplane)	80	<.01%	334	<.01%	0%
Paramedic Intercept	10	<.01%	8,422	<.01%	0%
Rotary Wing (Helicopter)	220	<.01%	517	<.01%	0%
Specialty Care Transport	4,345	<.01%	7,305	<.01%	0%
Not Available	455,976	48%	881,255	61%	13%
Total EMS Calls	**954,932**	**100%**	**1,446,544**	**100%**	

This table excludes Cancelled calls.

Provider Type

The most common *Provider Type* for CY 2014 and 2015 was *Private, Non-Hospital*. Based on the California Ambulance Zones[4], the majority of zones have a private ambulance company providing EMS transport exclusively and non-exclusively. The information from the California Ambulance Zones is based on the most recent EMS plan the LEMSAs have submitted.

Hospital increased >100% between CY 2014 and 2015. The change between the two years is large. This could be due to providers submitting data when they had not done so previously.

The count for *Fire Department* increased >100% between CY 2014 and 2015. This increase in the counts reflects four additional LEMSAs, Alameda County EMS Agency, Orange County EMS Agency, Sacramento County EMS Agency and Santa Barbara County EMS Agency, submitting data in CY 2014 and 2015.

Table 1.3: All EMS Calls - Provider Type
Calendar Years 2014 and 2015

Provider Type	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Community, Non-Profit	12,484	1%	13,620	1%	0%
Fire Department	220,106	23%	485,566	34%	11%
Governmental, Non-Fire	335	<.01%	486	<.01%	0%
Hospital	4,212	<.01%	22,865	2%	2%
Private, Non-Hospital	698,125	73%	902,745	62%	-11%
Not Available	19,670	2%	21,262	1%	-1%
Total EMS Calls	**954,932**	**100%**	**1,446,544**	**100%**	

This table excludes Cancelled calls.

[4] Little, L. (n.d.). EMS Systems Division - Transportation. Retrieved April, 2017, from http://www.emsa.ca.gov/Transportation

Average Scene Time

There is no official target goal at this time for *Time between Arrived on Scene and Left Scene* and *Time between left Scene and Arrived at Destination.*

The variables used in this table were Dates: Arrived on Scene (E5_06), Dates: Left Scene (E5_09) and Dates: Arrived at Destination (E5_10).

Table 1.4: Average Scene Time
Calendar Years 2014 and 2015

Average Scene Time	CY 2014	CY 2015
	Time in Mins.	Time in Mins
Time between Arrived on Scene and Left Scene	16	16
Time between Left Scene and Arrived at Destination	15	15

Of note: EMSA is currently working on measuring Ambulance Patient Offload Time (APOT). APOT data will measure the length of time from the arrival at the Emergency Department to the transfer of patient care.

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DATA EVALUATION AREAS (DEA)

To see all LEMSAs submitting data and their expected calls, see page 4.

All EMS Calls

The highest numbers of EMS calls reported to CEMSIS come from the South Eastern California Region at 31% and 25% in CY 2014 and 2015, respectively.

For the map of the DEAs, please see page 8.

Table 2.1: All EMS Calls - Data Evaluation Areas
Calendar Years 2014 and 2015

Region	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Northern California Region	183,248	17%	259,520	16%	-1%
Bay Area Region	199,732	18%	242,261	15%	-4%
Central California Region	240,273	22%	260,151	16%	-6%
South Eastern California Region	341,668	31%	406,456	25%	-7%
Southern Region	127,364	12%	482,015	29%	18%
Total EMS Calls	**1,092,285**	**100%**	**1,650,403**	**100%**	

Provider Type

Northern California Region

The Northern California Region includes Coastal Valleys EMS Agency, North Coast EMS Agency, Northern California EMS Agency, Sierra-Sacramento Valley EMS Agency, Sacramento County EMS Agency, El Dorado County EMS Agency, San Joaquin County EMS Agency, Napa County EMS Agency and Yolo County EMS Agency.

Of those LEMSAs, Coastal Valleys EMS Agency and San Joaquin County EMS Agency are not submitting EMS data into CEMSIS.

Based on all the EMS Plans from LEMSAs that currently submit data into CEMSIS for the Northern California Region, there are a total of 172 transport and non-transport providers reported by the LEMSAs in this region. Of the 172 providers, 35% are private and 65% are public.

Bay Area Region

The Bay Area Region includes Solano County EMS Agency, Contra Costa County EMS Agency, San Francisco County EMS Agency, San Mateo County EMS Agency, Alameda County EMS Agency, Santa Clara County EMS Agency, Santa Cruz County

EMS Agency, San Benito County EMS Agency, Monterey County EMS Agency and Marin County EMS Agency.

Of these LEMSAs, San Mateo County EMS Agency, Solano County EMS Agency, and Santa Clara County EMS Agency are not submitting EMS data into CEMSIS.

Based on all the EMS Plans from LEMSAs that currently submit data into CEMSIS from the Bay Area Region, there are a total of 92 providers reported by the LEMSAs in the Bay Area Region. Of the 92 providers, 29% are private and 69% are public.

Central California Region

The Central California Region includes Central California EMS Agency, Mountain Valley EMS Agency, Tuolumne County EMS Agency, Merced County EMS Agency and Kern County EMS Agency.

Of these LEMSAs, Tuolumne County EMS Agency, Merced County EMS Agency and Kern County EMS Agency are not submitting data.

Based on the EMS Plans from LEMSAs that currently submit data into CEMSIS for Central California Region, there are a total of 58 providers reported by the LEMSAs in this region. Of the 58 providers, 19% are private and 89% are public.

South Eastern California Region

The South Eastern California Region includes Inland Counties Emergency Medical Agency, Riverside County EMS Agency, San Diego County EMS Agency and Imperial County EMS Agency.

Of these LEMSAs, Riverside County EMS Agency, San Diego County EMS Agency and Imperial County EMS Agency are not submitting data into CEMSIS.

Based on the EMS Plans from LEMSAs that currently submit data into CEMSIS for South Eastern California Region, there are a total of 66 providers reported by the LEMSAs in the South Eastern California Region. Of the 66 providers, 24% are private and 76% are private.

Southern Region

The Southern Region includes San Luis Obispo County EMS Agency, Santa Barbara County EMS Agency, Ventura County EMS Agency, Los Angeles County EMS Agency and Orange County EMS Agency. Of these LEMSAs, Los Angeles County EMS Agency and is not submitting EMS data into CEMSIS.

Based on the EMS Plans from the LEMSAs that currently submit data into CEMSIS for the Southern Region, there are a total of 86 providers reported by the LEMSAs in this region. Of the 86 providers, 49% are private and 51% are public.

Table 2.2: Provider Types by Region
Calendar Year 2014

Provider Type	Region									
	Northern California		Bay Area		Central California		South Eastern California		Southern Region	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Community, Non-Profit	2,719	2%	0	0%	4,919	2%	4,846	2%	0	0%
Fire Department	25,412	15%	28,710	17%	30,373	13%	99,183	35%	36,261	33%
Governmental, Non-Fire	249	0%	0	0%	0	0%	86	0%	0	0%
Hospital	4,212	3%	0	0%	0	0%	0	0%	0	0%
Private, Non-Hospital	132,716	80%	139,395	83%	198,182	85%	175,823	63%	52,008	47%
Not Available	0	0%	0	0%	0	0%	0	0%	22,420	20%
Total EMS Calls	**165,308**	**100%**	**168,105**	**100%**	**233,474**	**100%**	**279,938**	**100%**	**110,689**	**100%**

Table 2.3: Provider Types by Region
Calendar Year 2015

Provider Type	Region									
	Northern California		Bay Area		Central California		South Eastern California		Southern Region	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Community, Non-Profit	3,063	1%	0	0%	4,912	2%	5,645	2%	4,912	1%
Fire Department	49,507	21%	25,818	15%	28,358	11%	130,381	39%	250,826	58%
Governmental, Non-Fire	362	<.01%	0	0%	6	<.01%	124	<.01%	0	0%
Hospital	22,865	10%	0	0%	0	0%	0	0%	0	0%
Private, Non-Hospital	159,692	68%	150,836	85%	220,956	87%	196,325	59%	153,600	35%
Not Available	0	0%	0	0%	0	0%	0	0%	23,524	5%
Total EMS Calls	**235,489**	**100%**	**176,654**	**100%**	**254,232**	**100%**	**332,475**	**100%**	**432,862**	**100%**

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CAUSE OF INJURY

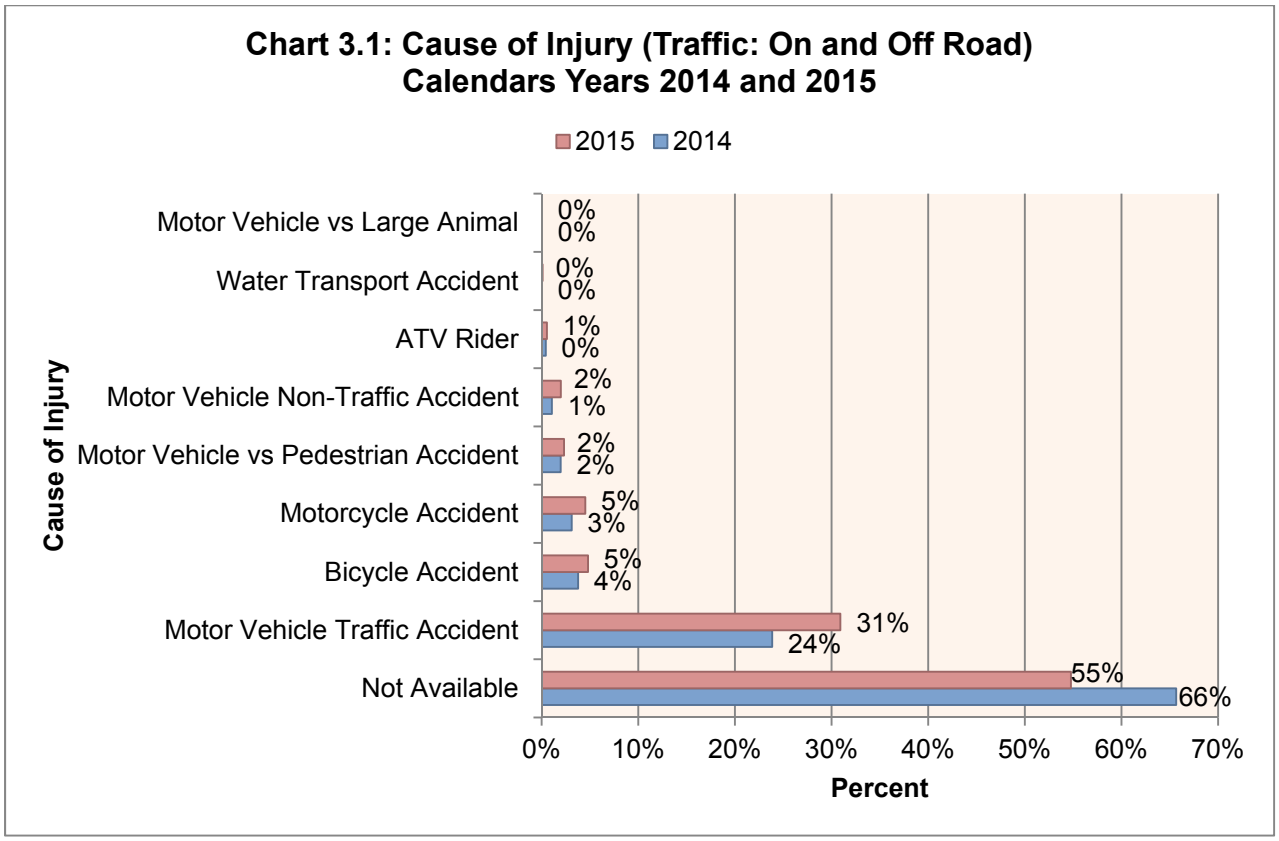
The counts in this section reflect only those patients for whom *Possible Injury* (E09_04) was selected **AND** *Primary* or *Secondary Impression* equals *Traumatic Injury*. Therefore, the total in this table reflects the counts of patients that were noted as YES for E09_04 in 2014 and 2015 **AND** *Traumatic Injury* was noted under either *Primary Impression* (E09_15) or *Secondary Impression* (E09_16). The percentage for *Not Available* did not have a *Cause of Injury* but had *Possible Injury* marked yes and had a *Primary* or *Secondary Impression* equals *Traumatic Injury.* All patients whose *Incident Patient Disposition* was cancelled are not included.

Traffic: On and Off Road

Based on a the Statewide Integrated Traffic Records System (SWITRS) 2013 Report for California, there were 156,909 injury collisions and 223,128 persons injured while 3,104 persons were killed in 2,583 fatal collisions.

The most common cause of injury in CEMSIS for CY 2014 and 2015 was *Motor Vehicle Traffic Accident* (10,672 and 18,347, respectively).

Not Available had the largest number of counts at 29,362 and 32,503 in CY 2014 and 2015.



Gender

Males had a higher count than *Females* in the overall count of *Cause of Injury (Traffic: On and Off Road)* for both CY 2014 and 2015. This is also consistent with CEMSIS Trauma data where a higher incidence of trauma injury for males is found. Based on Census data, *Females* represent 50.1% of California's population.

Table 3.2: Cause of Injury (Traffic: On and Off Road) Male
Calendar Years 2014 and 2015

Cause of Injury (Traffic: On and Off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	5,341	60%	9,239	59%	-1%
Motorcycle Accident	1,222	14%	2,352	15%	1%
Bicycle Accident	1,309	15%	2,153	14%	-1%
Motor Vehicle vs Pedestrian Accident	544	6%	864	6%	-1%
Motor Vehicle Non-Traffic Accident	294	3%	681	4%	1%
ATV Rider	160	2%	253	2%	0%
Water Transport Accident	12	<.01%	37	<.01%	0%
Motor Vehicle vs Large Animal	15	<.01%	15	<.01%	0%
Total Cause of Injury	**8,897**	**100%**	**15,594**	**100%**	

The most common cause of injury for *Males* and *Females* was *Motor Vehicle Traffic Accident. Females* had a higher count of *Motor Vehicle Traffic Accidents* in CY 2014 and 2015 (5,994 and 10,264, respectively) than *Males. Males* also showed a higher count for *Motorcycle Accident* for both CY 2014 and 2015 (1,222 and 2,352, respectively) as well as *Bicycle Accident* (1,309 and 2,153, respectively).

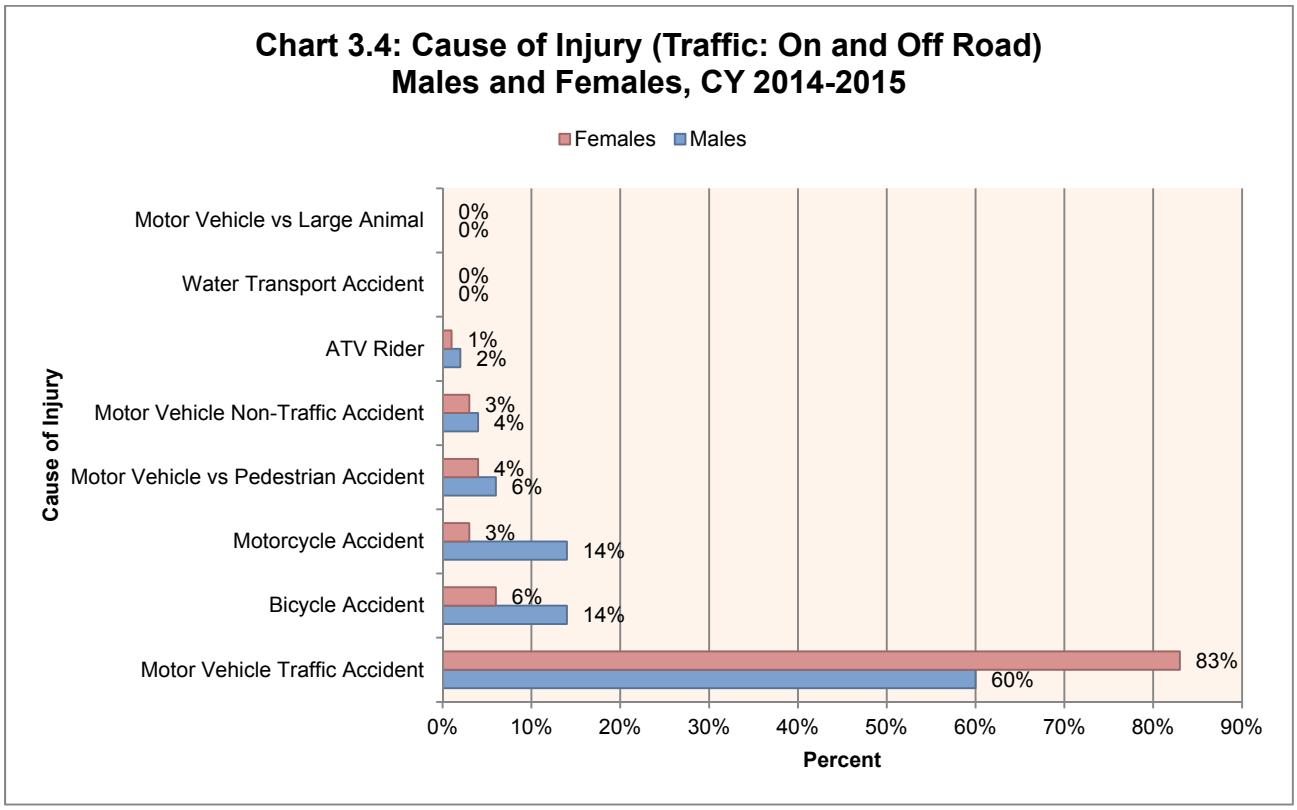
Table 3.3: Cause of Injury (Traffic: On and Off Road) Female
Calendar Year 2014 and 2015

Cause of Injury (Traffic: On and off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	5,994	84%	10,264	83%	-1%
Bicycle Accident	391	5%	693	6%	0%
Motor Vehicle vs Pedestrian Accident	345	5%	517	4%	-1%
Motor Vehicle Non-Traffic Accident	191	3%	510	4%	1%
Motorcycle Accident	191	3%	356	3%	0%
ATV Rider	34	<.01%	68	1%	1%
Water Transport Accident	8	<.01%	23	<.01%	0%
Motor Vehicle vs Large Animal	3	<.01%	4	<.01%	0%
Total Cause of Injury	**7,157**	**100%**	**12,435**	**100%**	

According to the National Highway Traffic Safety Administration (NHTSA), within California more men than women die each year in motor vehicle accidents. Men typically drive more miles than women and more often engage in risky driving practices including not using safety belts, driving while impaired by alcohol, and speeding[5]. Yet *Females* account for a higher percentage in *Motor Vehicle Traffic Accidents*.

The Insurance Institute for Highway Safety Loss Data Institute (IIHSHLDI) showed that 91% of motorcyclists killed in 2015 were *Males.* The Centers for Disease Control and Prevention (CDC) showed that males are more likely to be killed or injured on bicycles than females. In 2015, 85% of bicyclists/pedalcyclists killed and 80% injured were *Males*[6].

A statistical Chi Square test was performed by EMSA to determine if there is a statistically significant difference of the frequency *Cause of Injury: Traffic On and Off Road* in the outcomes by gender. Based on the Chi Square test, there is a statistically significant difference (p = .05) in the rates at which men and women experience *Cause of Injury: Traffic On and Off Road.*



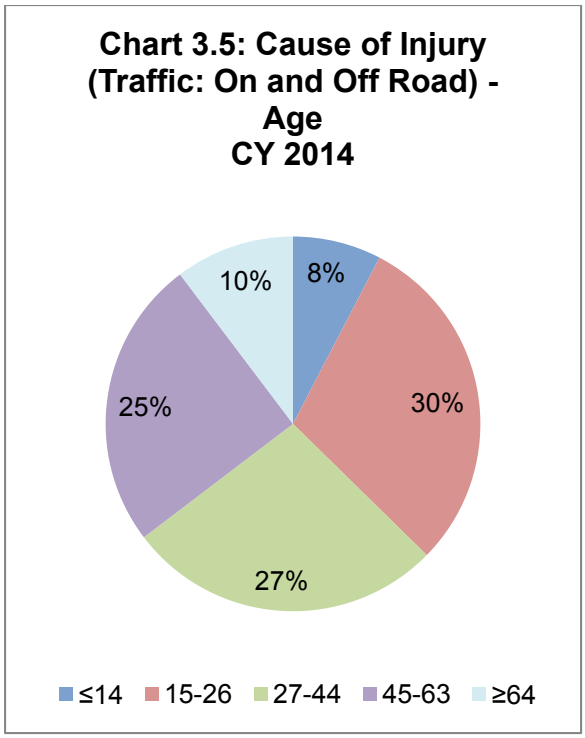
*Percentages are weighted averages for CY 2014 and 2015.

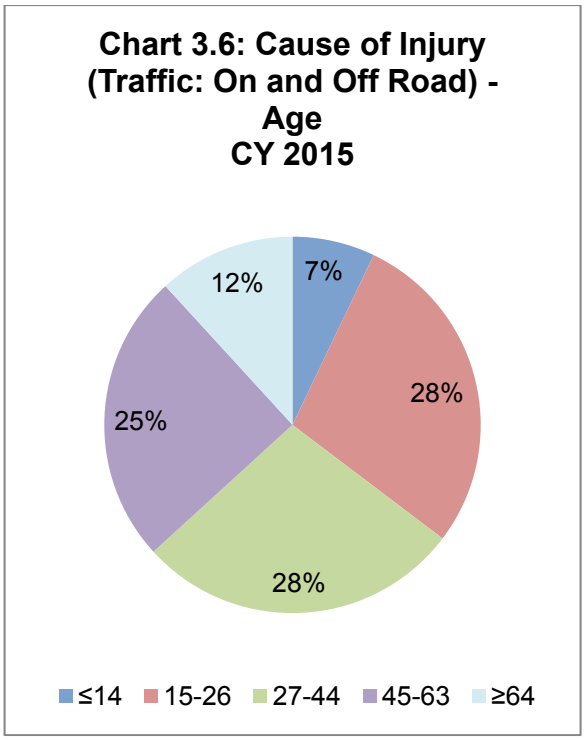
[5] Highway safety topics. (2017). Retrieved April, 2017, from http://www.iihs.org/iihs/topics

[6] N. (2017, March). Traffic Safety Facts 2015 Data: Bicyclists and Other Cyclists. Retrieved April 11, 2017, from https://crashstats.nhtsa.dot.gov

Patient Ages

The age range that had the largest percentage for *Cause of Injury (Traffic: On and Off Road)* was 15–26 years old in CY 2014, while the largest age range for CY 2015 showed both 15–26 and 27–44 years old. This age range is typically when teenagers start driving.





Age – Pediatrics (≤14)

Based on research by the Insurance Institute for Highway Safety, motor vehicle accidents are a leading cause of death for children younger than 13. Most of these injuries and deaths occur when the child is traveling as a passenger of a vehicle. Proper child restraint reduces fatalities and injuries.

According to the CDC, children (5–14 years), adolescents and young adults (15–24 years) have the highest rate of nonfatal bicycle-related injuries. Wearing a helmet and having the necessary safety precautions can reduce injury and death.

The most common cause of injuries for pediatrics (≤14 years old) was *Motor Vehicle Traffic Accident* for CY 2014 and 2015. The second most common was *Bicycle Accident.*

Table 3.7: Cause of Injury (Traffic: On and Off Road) Pediatrics ≤14 Years Old Calendar Years 2014 and 2015					
Cause of Injury (Traffic: On and Off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	857	66%	1,466	69%	3%
Bicycle Accident	208	16%	293	14%	-2%
Motor Vehicle vs Pedestrian Accident	123	9%	187	9%	-1%
Motor Vehicle Non-Traffic Accident	27	2%	69	3%	1%
Motorcycle Accident	46	4%	53	3%	-1%
ATV Rider	31	2%	42	2%	0%
Water Transport Accident	3	<.01%	6	<.01%	0%
Motor Vehicle vs Large Animal	0	<.01%	1	<.01%	0%
Total Ages	**1,295**	**100%**	**2,117**	**100%**	

Age – Adolescents (15–26)

According to the Insurance Institute for Highway Safety, in the United States, the fatal crash rate for 16 to 19 year olds is nearly 3 times the rate for drivers ages 20 and over. In 2014, 56% of the deaths of teenage passengers in passenger vehicles occurred in vehicles driven by another teenager. Among deaths of passengers of all ages, 14% occurred when a teenager was driving. Driving under the influence is also a factor for motor vehicle accidents. Drivers younger than age 21 are more likely to be involved in car accidents than older drivers.

The most common cause of injury for adolescents (15–26 years old) was *Motor Vehicle Traffic Accident* for CY 2014 and 2015. The next two most common causes of injury were *Bicycle Accident and Motorcycle Accident.*

Table 3.8: Cause of Injury (Traffic: On and Off Road) Adolescents 15–26 Years Old Calendar Years 2014 and 2015					
Cause of Injury (Traffic: On and Off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	3,694	73%	6,085	72%	-1%
Motorcycle Accident	435	9%	847	10%	1%
Bicycle Accident	412	8%	675	8%	0%
Motor Vehicle Non-Traffic Accident	165	3%	348	4%	1%
Motor Vehicle vs Pedestrian Accident	247	5%	326	4%	-1%
ATV Rider	77	2%	97	1%	0%
Water Transport Accident	6	<.01%	18	<.01%	0%
Motor Vehicle vs Large Animal	1	<.01%	5	<.01%	0%
Total Cause of Injury	**5,037**	**100%**	**8,401**	**100%**	

Age – Adults (27–44)

According to the Insurance Institute for Highway Safety, ages 27–30 had the highest rate of fatality with alcohol impaired driving.

This age range represents the workforce and as such, is on the road more frequently. Motor vehicle crashes were 2.4 times higher in rural areas than in urban areas on a rate of crash deaths per 100 million miles traveled. Other factors can include, but are not limited to, distracted driving, not wearing safety belts, and speed.

The most common cause of injury for adults 27–44 years old was *Motor Vehicle Traffic Accident.*

Table 3.9: Cause of Injury (Traffic: On and Off Road) Adults 27–44 Years Old Calendar Years 2014 and 2015

Cause of Injury (Traffic: On and Off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	3,399	73%	5,901	71%	-3%
Motorcycle Accident	446	10%	914	11%	1%
Bicycle Accident	385	8%	674	8%	0%
Motor Vehicle vs Pedestrian Accident	191	4%	362	4%	0%
Motor Vehicle Non-Traffic Accident	135	3%	334	4%	1%
ATV Rider	55	1%	107	1%	0%
Water Transport Accident	8	<.01%	17	<.01%	0%
Motor Vehicle vs Large Animal	8	<.01%	8	<.01%	0%
Total Cause of Injury	**4,627**	**100%**	**8,317**	**100%**	

Age – Adults (45–63)

This age range also represents the majority of the workforce in the United States. The most common cause of injury for adults 45–63 years old was *Motor Vehicle Traffic Accident.*

Table 3.10: Cause of Injury (Traffic: On and Off Road) Adults 45–63 Years Old Calendar Years 2014 and 2015

Cause of Injury (Traffic: On and Off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	2,914	69%	5,025	68%	-1%
Bicycle Accident	561	13%	949	13%	0%
Motorcycle Accident	391	9%	755	10%	1%
Motor Vehicle vs Pedestrian Accident	240	6%	335	5%	-1%
Motor Vehicle Non-Traffic Accident	107	3%	289	4%	1%
ATV Rider	27	1%	63	1%	0%
Water Transport Accident	3	<.01%	17	<.01%	0%
Motor Vehicle vs Large Animal	5	<.01%	5	<.01%	0%
Total Cause of Injury	**4,248**	**100%**	**7,438**	**100%**	

Age – Geriatrics (≥64)

According to the CDC, crashes start to increase among drivers ages 70–74. This trend has been attributed more to an increased susceptibility to injury and medical complications among older drivers rather than an increased risk of crash involvement. Age-related decline in vision and cognitive functioning as well as physical changes may affect the driving ability of older adults.

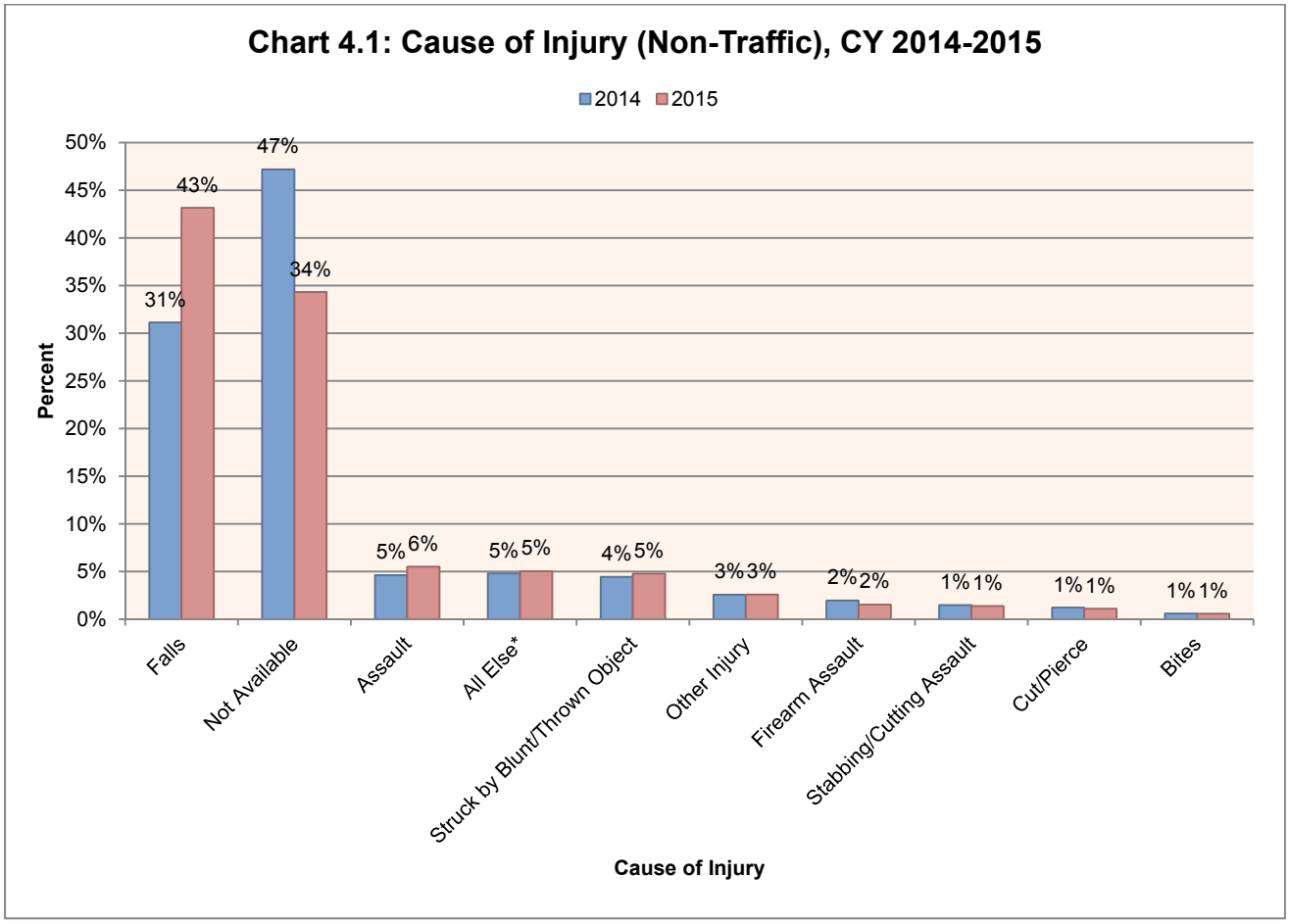
The most common cause of injury for persons ≥64 years old was *Motor Vehicle Traffic Accident.*

Table 3.11: Cause of Injury (Traffic: On and Off Road) Geriatrics ≥64 Years Old Calendar Years 2014 and 2015

Cause of Injury (Traffic: On and Off Road)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Motor Vehicle Traffic Accident	1,344	77%	2,713	77%	0%
Bicycle Accident	140	8%	271	8%	0%
Motor Vehicle Non-Traffic Accident	62	4%	180	5%	2%
Motor Vehicle vs Pedestrian Accident	87	5%	178	5%	0%
Motorcycle Accident	100	6%	156	4%	-1%
ATV Rider	7	<.01%	13	<.01%	0%
Water Transport Accident	1	<.01%	3	<.01%	0%
Motor Vehicle vs Large Animal	4	<.01%	1	<.01%	0%
Total Cause of Injury	**1,745**	**100%**	**3,515**	**100%**	

Non-Traffic
Each individual count for “All Else” was less than 1% of the values returned. A complete list of the Cause of Injury category “All Else” can be found on page 54 in Appendix B at the end of this report.

The most common cause of injury for non-traffic calls was *Falls* for both CY 2014 and 2015. *Falls* increased from 31% to 43%. This may be due to additional LEMSAs submitting data into CEMSIS in CY 2015.



*Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Cause of Injury* for the category *All Else* can be found on page 54 in Appendix B at the end of the report.

Gender

The most common cause of injury (non-traffic) was *Falls* for *Males* in 2014 and 2015 (8,460 and 17,321, respectively).

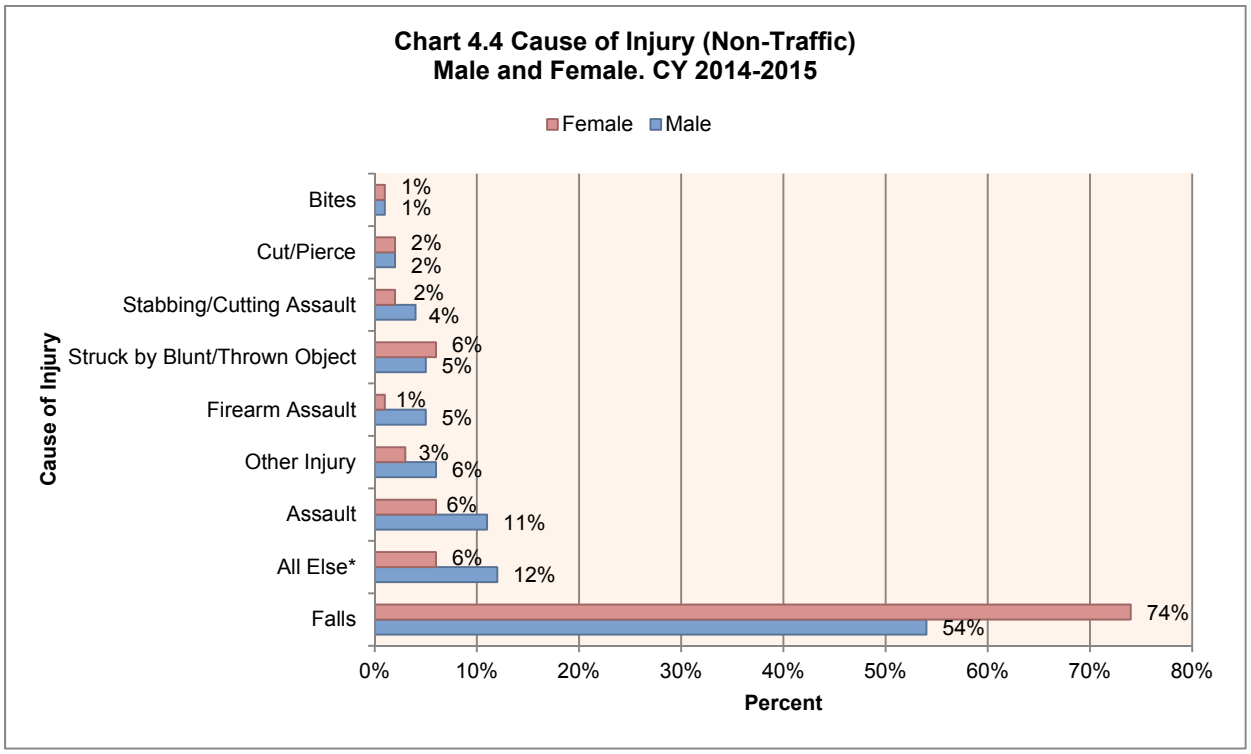
Table 4.2: Cause of Injury (Non-Traffic) Male Calendar Years 2014 and 2015					
Cause of Injury (Non-Traffic)	**CY 2014**		**CY 2015**		**Percent Change**
	Count	**Percent**	**Count**	**Percent**	
Falls	8,460	53%	17,321	55%	2%
Assault	1,945	12%	3,394	11%	-1%
All Else*	2,031	13%	3,314	10%	-2%
Struck by Blunt/Thrown Object	204	1%	2,958	9%	8%
Other Injury	1,012	6%	1,599	5%	-1%
Firearm Assault	953	6%	1,162	4%	-2%
Stabbing/Cutting Assault	746	5%	1,043	3%	-1%
Cut/Pierce	464	3%	653	2%	-1%
Bites	218	1%	308	1%	0%
Total Cause of Injury	**16,033**	**100%**	**31,752**	**100%**	

The most common cause of injury (non-traffic) was *Falls* for *Females* in 2014 and 2015 (10,919 and 23,485, respectively).

Table 4.3: Cause of Injury (Non-Traffic) Female Calendar Years 2014 and 2015					
Cause of Injury (Non-Traffic)	**CY 2014**		**CY 2015**		**Percent Change**
	Count	**Percent**	**Count**	**Percent**	
Falls	10,919	71%	23,485	77%	6%
Assault	941	6%	1,853	6%	0%
Struck by Blunt/Thrown Object	988	6%	1,567	5%	-1%
All Else*	964	6%	1,460	5%	-2%
Other Injury	582	4%	853	3%	-1%
Cut/Pierce	290	2%	385	1%	-1%
Firearm Assault	275	2%	299	1%	-1%
Stabbing/Cutting Assault	178	1%	262	1%	0%
Bites	151	1%	242	1%	0%
Total Cause of Injury	**15,288**	**100%**	**30,406**	**100%**	

Although the most common cause of injury (non-traffic) was *Falls*, *Females* had a higher count for *Falls* than *Males* for both CY 2014 and 2015. *Males* had a higher count in *Assault* and *Struck by Blunt/Thrown Object* than *Females.* In 2014, 1.2% of males (1.5 million males) and 1.1% of all females (1.5 million females) experienced one or more violent victimizations in the United States[7].

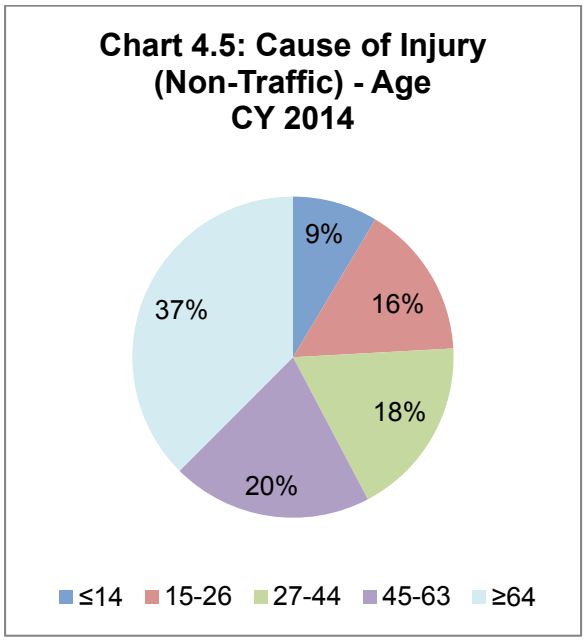
[7] Truman, J. L., Ph.D, & Morgan, R. E., Ph.D. (2016, October 20). Criminal Victimization, 2015. Retrieved April 11, 2017, from https://www.bjs.gov/

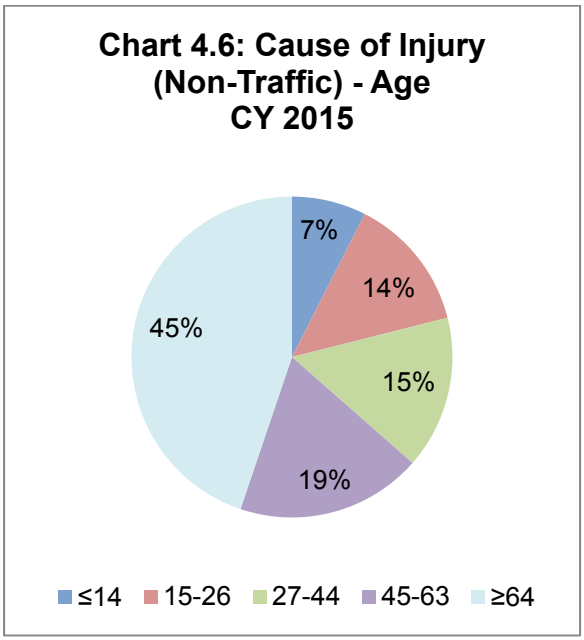


*Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Cause of Injury* for the category *All Else* can be found on page 54 in Appendix B at the end of the report.
*Percentages are weighted averages for CY 2014 and 2015.

Patient Ages

The age range with the largest percentage for *Cause of Injury (Non-Traffic)* was ≥64 years old. This age range is where you would see *Falls* among the elderly.





Age – Pediatrics (≤14)

The most common cause of injuries (non-traffic) to persons ≤14 years old was *Falls* for CY 2014 and 2015 (1,560 and 2,805, respectively). According to the CDC, falls are the leading cause of non-fatal injuries for all children ages 0 to 19.

Table 4.7: Cause of Injury (Non-Traffic) Pediatrics ≤14 Years Old Calendar Years 2014 and 2015

Cause of Injury (Non-Traffic)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Falls	1,560	55%	2,805	60%	5%
All Else*	442	16%	570	12%	-3%
Struck by Blunt/Thrown Object	243	9%	458	10%	1%
Other Injury	290	10%	436	9%	-1%
Assault	91	3%	135	3%	0%
Cut/Pierce	88	3%	114	2%	-1%
Bites	72	3%	86	2%	-1%
Stabbing/Cutting Assault	31	1%	52	1%	0%
Firearm Assault	20	1%	27	1%	0%
Total Cause of Injury	**2,837**	**100%**	**4,683**	**100%**	

Age – Adolescents (15–26)

The most common cause of injury (non-traffic) for persons between 15–26 years of age was *Falls* for CY 2014 and 2015 (1,254 and 2,414, respectively). The second and third most common cause of injury (non-traffic) was *Assault* and *Struck by Blunt/Thrown Object.* The Bureau of Justice Statistics (BJS), reported approximately 450,000 persons, ages 18–24, were victims of a violent crime such as an assault or struck by a blunt/thrown object in the United States between 2014 and 2015[8].

[8] Truman, J. L., Ph.D, & Morgan, R. E., Ph.D. (2016, October 20). Criminal Victimization, 2015. Retrieved April 11, 2017, from https://www.bjs.gov/

Table 4.8: Cause of Injury (Non-Traffic) Adolescents 15–26 Years Old Calendar Years 2014 and 2015					
Cause of Injury (Non-Traffic)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Falls	1,254	24%	2,414	28%	4%
Assault	887	17%	1,581	19%	1%
All Else*	729	14%	1,227	14%	0%
Struck by Blunt/Thrown Object	745	14%	1,151	14%	-1%
Other Injury	451	9%	635	7%	-1%
Firearm Assault	480	9%	608	7%	-2%
Stabbing/Cutting Assault	324	6%	446	5%	-1%
Cut/Pierce	209	4%	323	4%	0%
Bites	59	1%	93	1%	0%
Total Cause of Injury	**5,138**	**100%**	**8,478**	**100%**	

Age – Adults (27–44)

The most common cause of injury (non-traffic) for persons 27–44 years of age was *Falls* for CY 2014 and 2015 (3,799 and 7,124, respectively). The second and third most common cause of injury (non-traffic) was *Assault* and *Struck by Blunt/Thrown Object.* According to BJS, approximately 690,000 persons, ages 35–49, were victims of a violent crime nationwide in 2014 and 2015.

Table 4.9: Cause of Injury (Non-Traffic) Adults 27-44 Years Old Calendar Years 2014 and 2015					
Cause of Injury (Non-Traffic)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Falls	1,613	27%	2,999	31%	4%
Assault	1,128	19%	2,063	21%	3%
Struck by Blunt/Thrown Object	930	16%	1,257	13%	-2%
All Else*	770	13%	1,250	13%	0%
Other Injury	360	6%	569	6%	0%
Firearm Assault	481	8%	544	6%	-2%
Stabbing/Cutting Assault	368	6%	533	6%	-1%
Cut/Pierce	234	4%	287	3%	-1%
Bites	113	2%	141	1%	0%
Total Cause of Injury	**5,997**	**100%**	**9,643**	**100%**	

Age – Adults (45–63)

The most common cause of injury (non-traffic) for persons 46–63 years was *Falls* for CY 2014 and 2015 (3,799 and 7,124, respectively). The second and third most common cause of injury (non-traffic) was *Assault* and *Struck by Blunt/Thrown Object*. According to the BJS, approximately 579,770 persons, ages 50–64, were victims of a violent crime.

Table 4.10: Cause of Injury (Non-Traffic) Adults 45–63 Years Old Calendar Years 2014 and 2015

Cause of Injury (Non-Traffic)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Falls	3,661	55%	6,842	58%	4%
Assault	710	11%	1,320	11%	1%
All Else*	680	10%	1,182	10%	0%
Struck by Blunt/Thrown Object	683	10%	1,005	9%	-2%
Other Injury	277	4%	471	4%	0%
Firearm Assault	239	4%	257	2%	-1%
Stabbing/Cutting Assault	162	2%	250	2%	0%
Cut/Pierce	165	2%	218	2%	-1%
Bites	94	1%	154	1%	0%
Total Cause of Injury	**6,671**	**100%**	**11,699**	**100%**	

Age – Geriatrics (≥64)
The most common cause of injury (non-traffic) for persons ≥64 years was *Falls* for CY 2014 and 2015 (11,946 and 27,073, respectively).

According to the CDC, one out of four Americans aged ≥65 fall each year. Falls are the leading cause in injury and can lead to more serious injuries such as traumatic brain injuries or fractures.

Table 4.11: Cause of Injury (Non-Traffic) Geriatrics ≥64 years Old Calendar Years 2014 and 2015

Cause of Injury (Non-Traffic)	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Falls	11,354	92%	25,892	92%	1%
Struck by Blunt/Thrown Object	191	2%	718	3%	1%
All Else*	378	3%	582	2%	-1%
Other Injury	220	2%	347	1%	-1%
Assault	86	1%	202	1%	0%
Cut/Pierce	61	<.01%	99	<.01%	0%
Bites	35	<.01%	81	<.01%	0%
Firearm Assault	35	<.01%	45	<.01%	0%
Stabbing/Cutting Assault	39	<.01%	40	<.01%	0%
Total Cause of Injury	**12,399**	**100%**	**28,006**	**100%**	

PRIMARY IMPRESSION

The data reflect a large number of calls where no primary impression is noted by the field staff. This could be indicative of several things, including: lack of staff field training with ePCRs or other data collection tools, non-intuitive placement of the information in the text or narrative area of the ePCR, or issues related to the provider software when data are submitted to the LEMSA.

The most common primary impression was *Traumatic Injury* for CY 2014 and 2015 at 9% and 11%, respectively.

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the category *All Else* can be found on page 55 in Appendix B at the end of the report.

Table 5.1: Top 15 Most Common Primary Impressions
Calendar Years 2014 and 2015

Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Traumatic Injury	82,061	9%	151,666	11%	2%
Altered Level of Consciousness	47,311	5%	84,893	6%	1%
Syncope/Fainting	18,629	2%	77,567	6%	4%
Other	50,750	6%	75,627	5%	0%
Respiratory Distress	40,451	4%	69,097	5%	1%
Behavioral/Psychiatric Disorder	38,487	4%	69,085	5%	1%
Abdominal Pain/Problems	48,040	5%	67,803	5%	0%
Chest Pain/Discomfort	40,546	4%	60,771	4%	0%
Pain	41,767	5%	54,783	4%	-1%
Other Illness/Injury	12,431	1%	37,416	3%	1%
Weakness	20,368	2%	35,069	3%	0%
Seizure	19,824	2%	33,752	2%	0%
No Apparent Illness/Injury	12,300	1%	16,776	1%	0%
Diabetic Symptoms (Hypoglycemia)	14,835	2%	11,500	1%	-1%
Cardiac Rhythm Disturbance	10,257	1%	11,328	1%	0%
All Else*	109,841	12%	195,240	14%	2%
Not Available	306,802	34%	332,375	24%	-10%
Total Primary Impressions	**914,700**	**100%**	**1,384,748**	**100%**	

This table excludes Cancelled calls.

Selected Stroke/STEMI EMS Primary Impression

The *Primary Impressions* for this table were specifically selected for stroke/STEMI. Stroke is the fifth leading cause of death in the United States according to the CDC. Every year, approximately 735,000 Americans have a heart attack.

The most common primary impression was *Chest Pain/Discomfort* for CY 2014 and 2015.

A complete list of the category *All Else* can be found on page 56 in Appendix B at the end of the report.

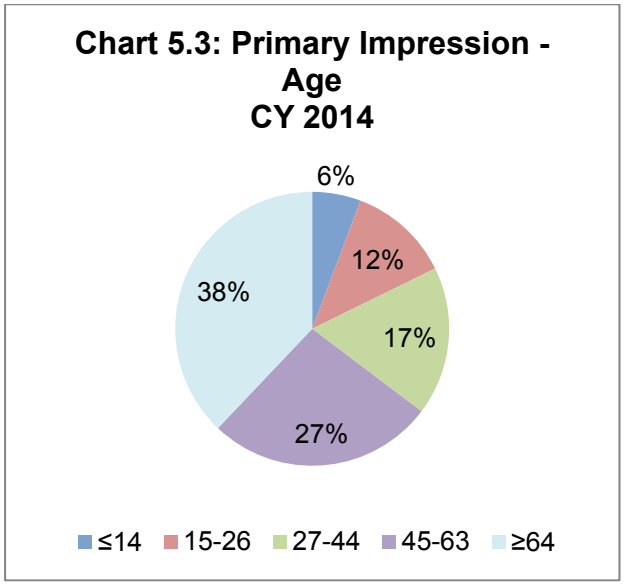
Table 5.2: Selected Stroke/STEMI EMS Primary Impression
Calendar Years 2014 and 2015

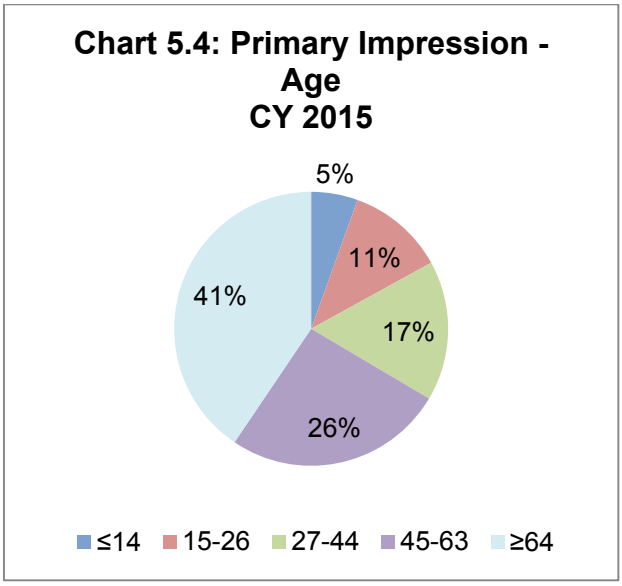
Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Chest Pain/Discomfort	40,546	7%	60,771	6%	-1%
Stroke/CVA	8,085	1%	13,912	1%	0%
Cardiac Arrest	7,011	1%	11,691	1%	0%
Cardiac Rhythm Disturbance	10,257	2%	11,328	1%	-1%
CHF (Congestive Heart Failure)	1,087	<.01%	1,404	<.01%	0%
TIA (Transient Ischemic Attack)	473	<.01%	538	<.01%	0%
All Else*	540,439	89%	952,729	91%	2%
Total Primary Impressions	**607,898**	**100%**	**1,052,373**	**100%**	

This table excludes Cancelled calls.

Patient Ages

The age range that has the largest percentage for *Primary Impression* was ≥64 years old.





Age – Pediatrics (≤14)

The most common primary impression for this age group was *Traumatic Injury* for CY 2014 and 2015. *Seizure* and *Other* are the second and third most common primary impressions.

There was a high percentage for *Seizure* for persons under 14 years old (12% in 2014 and 10% in 2015). It was the second most common primary impression, following *Traumatic Injury*. One reason is febrile seizures, which are common in young children. In addition, according to the CDC, about 1% of children aged 0–17 years have had a diagnosis of epilepsy or seizure disorder. When applied to the 2013 population, this is about 750,000 children aged 0–17 years. Children younger than 2 years of age are more likely to have epilepsy because risk factors are more common in the age group. Although the EMS transport may not match actual prevalence in the general population, it reflects some level of EMS transports.

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the category *All Else* can be found on page 57 in Appendix B at the end of the report.

Table 5.4: Top 15 Most Common Primary Impressions - Pediatrics ≤14 Years Old Calendar Years 2014 and 2015

Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Traumatic Injury	7,093	20%	11,640	20%	0%
Seizure	4,051	12%	7,521	13%	1%
Other	4,169	12%	5,677	10%	-2%
Respiratory Distress	3,037	9%	5,054	9%	0%
Behavioral/Psychiatric Disorder	1,947	6%	3,211	6%	0%
Pain	2,367	7%	2,795	5%	-2%
Other Illness/Injury	971	3%	2,512	4%	2%
Altered Level of Consciousness	1,319	4%	2,192	4%	0%
Syncope/Fainting	719	2%	2,173	4%	2%
Abdominal Pain/Problems	1,375	4%	2,166	4%	0%
No Apparent Illness/Injury	1,582	4%	2,025	3%	-1%
Fever	1,039	3%	1,836	3%	0%
Allergic Reaction	641	2%	1,310	2%	0%
Airway Obstruction	678	2%	708	1%	-1%
Poisoning/Drug Ingestion	488	1%	56	<.01%	-1%
All Else*	3,743	11%	7,458	13%	2%
Total Primary Impressions	**35,219**	**100%**	**58,334**	**100%**	

This table excludes Cancelled calls.

Age – Adolescents (15–26)

The most common primary impression for this age group was *Traumatic Injury* for CY 2014 and 2015. *Behavioral/Psychiatric Disorder* was the second most common primary impression.

There was a higher percentage in *Behavioral/Psychiatric Disorder* for persons 15–26 years old (13% in CY 2014 and 14% in 2015). Within California, 1 in 13 children suffers from a mental illness that limits participation in daily activities.[9]

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Cause of Injury* for the category *All Else* can be found on page 58 in Appendix B at the end of the report.

Table 5.5: Top 15 Most Common Primary Impressions - Adolescents 15-26 Years Old Calendar Years 2014 and 2015

Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Traumatic Injury	15,808	21%	27,192	22%	1%
Behavioral/Psychiatric Disorder	9,450	13%	16,923	14%	1%
Abdominal Pain/Problems	6,067	8%	8,125	7%	-2%
Pain	6,016	8%	7,631	6%	-2%
Altered Level of Consciousness	4,122	6%	7,229	6%	0%
Other	5,288	7%	7,110	6%	-1%
Seizure	3,823	5%	6,592	5%	0%
Poisoning/Drug Ingestion	2,407	3%	5,975	5%	2%
Syncope/Fainting	2,407	3%	5,593	5%	1%
Other Illness/Injury	1,324	2%	4,178	3%	2%
Respiratory Distress	1,957	3%	3,106	3%	0%
ETOH Abuse	1,112	2%	2,347	2%	0%
Chest Pain/Discomfort	1,701	2%	2,134	2%	-1%
No Apparent Illness/Injury	1,642	2%	2,117	2%	0%
Nausea/Vomiting (Unknown Etiology)	970	1%	1,665	1%	0%
All Else*	9,682	13%	14,143	12%	-2%
Total Primary Impressions	**73,776**	**100%**	**122,060**	**100%**	

This table excludes Cancelled calls.

[9] Mental Health Care in California: Painting a Picture. (2013, July). Retrieved April, 2017, from http://www.chcf.org/publications/2013/07/mental-health-california

Age – Adults (27–44)

The most common primary impression for this age group was *Traumatic Injury* for CY 2014 and 2015. *Behavioral/Psychiatric Disorder* was the second most common primary impression.

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Cause of Injury* for the category *All Else* can be found on page 59 in Appendix B at the end of the report.

Table 5.6: Top 15 Most Common Primary Impressions - Adults 27-44 Years Old Calendar Years 2014 and 2015

Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Traumatic Injury	17,110	16%	29,674	17%	1%
Behavioral/Psychiatric Disorder	11,761	11%	22,093	13%	2%
Abdominal Pain/Problems	11,016	10%	14,495	8%	-2%
Altered Level of Consciousness	6,599	6%	11,460	7%	0%
Other	7,610	7%	10,538	6%	-1%
Pain	8,180	8%	10,337	6%	-2%
Seizure	5,495	5%	8,619	5%	0%
Chest Pain/Discomfort	6,164	6%	8,400	5%	-1%
Syncope/Fainting	2,653	2%	7,712	4%	2%
Poisoning/Drug Ingestion	2,585	2%	6,429	4%	1%
Other Illness/Injury	1,947	2%	5,612	3%	1%
Respiratory Distress	3,205	3%	5,240	3%	0%
ETOH Abuse	1,861	2%	3,513	2%	0%
Nausea/Vomiting (Unknown Etiology)	1,709	2%	2,916	2%	0%
Weakness	1,966	2%	2,745	2%	0%
All Else*	17,947	17%	25,485	15%	-2%
Total Primary Impressions	**107,808**	**100%**	**175,268**	**100%**	

This table excludes Cancelled calls.

Age – Adults (45–63)

The most common primary impression for this age group was *Traumatic Injury* for CY 2014 and 2015. The second most common primary impression was *Chest Pain/Discomfort.*

According to the American Heart Association (AHA), heart disease, of which chest pain/discomfort is a symptom of an underlying cause, increases with age for men after 45 years of age and for women after 55 years of age.

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Cause of Injury* for the category *All Else* can be found on page 60 in Appendix B at the end of the report.

Table 5.7: Top 15 Most Common Primary Impressions - Adults 45–63 Years Old Calendar Years 2014 and 2015

Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Traumatic Injury	18,623	11%	33,326	12%	1%
Chest Pain/Discomfort	16,240	10%	23,213	8%	-1%
Altered Level of Consciousness	13,398	8%	22,676	8%	0%
Abdominal Pain/Problems	14,130	9%	19,698	7%	-1%
Behavioral/Psychiatric Disorder	11,156	7%	18,785	7%	0%
Other	13,216	8%	18,572	7%	-1%
Syncope/Fainting	4,114	2%	17,413	6%	4%
Respiratory Distress	10,678	6%	17,294	6%	0%
Pain	12,060	7%	15,412	6%	-2%
Other Illness/Injury	3,194	2%	9,203	3%	1%
Weakness	4,972	3%	7,848	3%	0%
Seizure	5,003	3%	7,674	3%	0%
Poisoning/Drug Ingestion	2,416	1%	6,626	2%	1%
ETOH Abuse	2,989	2%	6,023	2%	0%
Diabetic Symptoms (Hypoglycemia)	4,321	3%	4,143	2%	-1%
All Else*	28,070	17%	47,717	17%	0%
Total Primary Impressions	**164,580**	**100%**	**275,623**	**100%**	

This table excludes Cancelled calls.

Age – Geriatrics (≥64)

The most common primary impression for this age group was *Traumatic Injury* for CY 2014 and 2015. The second most common primary impression was *Altered Level of Consciousness* and *Respiratory Distress*.

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Cause of Injury* for the category *All Else* can be found on page 61 in Appendix B at the end of the report.

Table 5.8: Top 15 Most Common Primary Impressions - Geriatrics ≥64 Years Old Calendar Years 2014 and 2015

Primary Impression	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Traumatic Injury	27,483	12%	56,109	13%	1%
Syncope/Fainting	8,986	4%	44,774	10%	7%
Altered Level of Consciousness	22,215	10%	41,461	10%	0%
Respiratory Distress	21,895	9%	38,913	9%	0%
Other	20,899	9%	34,041	8%	-1%
Chest Pain/Discomfort	16,624	7%	26,823	6%	-1%
Abdominal Pain/Problems	15,744	7%	23,415	5%	-1%
Weakness	12,496	5%	22,811	5%	0%
Pain	14,381	6%	19,668	5%	-2%
Other Illness/Injury	5,091	2%	15,957	4%	2%
Stroke/CVA	5,587	2%	9,729	2%	0%
Behavioral/Psychiatric Disorder	4,320	2%	8,096	2%	0%
Cardiac Rhythm Disturbance	5,785	2%	7,003	2%	-1%
No Apparent Illness/Injury	4,710	2%	6,793	2%	0%
Diabetic Symptoms (Hypoglycemia)	8,375	4%	5,307	1%	-2%
All Else*	38,311	16%	69,460	16%	0%
Total Primary Impressions	**232,902**	**100%**	**430,360**	**100%**	

This table excludes Cancelled calls.

Procedures
There were an average of four procedures per patient in CY 2014 and 2015.

Each individual count of *All Else* was less than 1% of the values returned. A complete list of the *Procedures* for the category *All Else* can be found on page 62 in Appendix B at the end of the report.

Table 5.9: Top 15 Procedures Used
Calendar Years 2014 and 2015

Procedures	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Venous Access*	239,762	19%	321,841	18%	-1%
Cardiac Monitor	193,798	16%	223,258	13%	-3%
Pulse Oximetry	147,506	12%	209,041	12%	0%
Blood Glucose Analysis	141,795	12%	178,375	10%	-1%
Spinal Assessment - Deficits Noted	3,118	<.011%	170,126	10%	10%
Pain Measurement	133,215	11%	161,982	9%	-2%
12 Lead ECG-Obtain & Transmitted	99,622	8%	140,881	8%	0%
Spinal Immobilization*	41,262	3%	54,587	3%	0%
Other	18,833	2%	50,055	3%	1%
Airway*	29,703	2%	42,760	2%	0%
Assessment-Adult	29,945	2%	37,425	2%	0%
Wound Care	12,305	1%	16,483	1%	0%
Temperature Measurement	54,413	4%	12,670	1%	-4%
Restraints-Physical	10,441	1%	12,312	1%	0%
Splinting	9,241	1%	12,277	1%	0%
All Else	64,664	5%	106,899	6%	1%
Total Primary Impressions	**1,229,623**	**100%**	**1,750,972**	**100%**	

*Combined values; see page 62 for a full list.
This table excludes Cancelled calls.

Patient Incident Disposition

The most common Incident/Patient Disposition was *Treated, Transported by EMS* in CY 2014 and 2015.

Patient Not Transported is of great significance to track, since these can be patients at high risk for a poor outcome. This category represents 10% in CY 2014 and 9% in 2015.

No specific disposition was selected for this data element for CY 2014 and 2015 injuries (4,286 and 6,789, respectively). *Not Available* was very low for this data element (0.4%). However, this data element does not accept null values.

Note: *Cancelled* does not have a standard definition because there is no mandate to use the same data dictionary.

Table 5.10: Incident/Patient Disposition
Calendar Years 2014 and 2015

Incident/Patient Disposition	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Cancelled	137,356	13%	208,295	13%	0%
No Patient Found	18,672	2%	26,212	2%	0%
Treated, Transferred Care	85,704	8%	158,932	10%	2%
Treated, Transported by EMS	517,176	47%	804,502	49%	1%
Treated, Transported by EMS (ALS)	173,736	16%	211,815	13%	-3%
Treated, Transported by EMS (BLS)	33,382	3%	42,157	3%	-1%
Patient Not Transported*	110,550	10%	195,403	12%	2%
All Else**	11,426	1%	660	<.01%	-1%
Not Available	4,286	0.4%	6,789	0.4%	0%
Total EMS Calls	**1,092,288**	**100%**	**1,654,765**	**100%**	

*Patient Not Transported includes values: Fatality on Scene, No Treatment Required and Patient Refused Care

**All Else includes values of ≤ 1%: Standby; No Patient Contact; Ambulance Assist only, Treated and Released, Treated, Transported by Law Enforcement, Treated, Transported by Private Vehicle, and Unable to Locate Patient/Scene

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DEMOGRAPHICS

The purpose for including race and ethnicity information is to determine if there are populations that may underutilize or over utilize 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 Available” codes. The high counts of *Not Available* or “nulls” limits the usefulness of demographic data.

Gender

Based on Census data, *Females* represent 50.3% of California’s population.

Table 6.1: All EMS Calls by Gender
Calendar Years 2014 and 2015

Gender	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Female	451,107	50%	675,690	49%	-1%
Male	419,875	46%	638,438	47%	0%
Not Available	34,137	4%	56,055	4%	0%
Total EMS Calls	**905,119**	**100%**	**1,370,183**	**100%**	

This table excludes Cancelled calls.

Table 6.2: 911 Calls by Gender
Calendar Year 2014 and 2015

Gender	CY		CY		Percent Change
	Count	Percent	Count	Percent	
Female	385,020	50%	561,049	49%	-1%
Male	352,683	46%	525,534	46%	0%
Not Available	30,077	4%	48,589	4%	0%
Total 911 Calls	**767,780**	**100%**	**1,135,172**	**100%**	

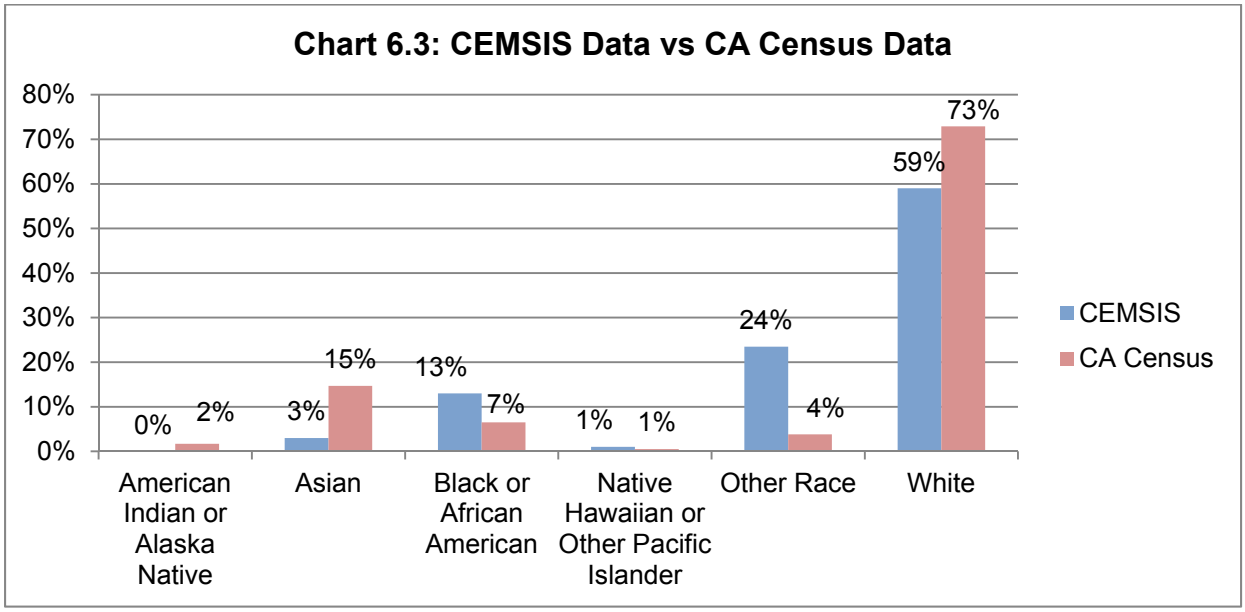
This table excludes Cancelled calls.

Race

Data on race are included to determine if there are populations which do not tend to call 911. This may reflect refugee or immigrant populations or other groups who may not use the EMS for a variety of reasons. This is included to help EMSA comply with the legislative mandate to provide data reflecting level of emergency medical services statewide.

Based on Census data, California's population consists of a majority of *White* 72.9%, *Asian* 14.7%, *Black or African American* 6.5%, and *Native Hawaiian or Other Pacific Islander* .5%, *American Indian and Alaska Native* 1.7%, and *Other Race* 3.8%.

When compared, *Asian* is not as represented in the CEMSIS data compared to the state census. *Other Race* and *Black or African American* were represented at a higher percentage than in the state census.



*CEMSIS Data was taken from a weighted average from CY 2014 and 2015.

Table 6.3: All EMS Calls by Race
Calendar Year 2014 and 2015

Race	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
American Indian or Alaska Native	2,018	0%	2,653	0%	0%
Asian	14,875	2%	19,770	1%	0%
Black or African American	64,225	7%	80,825	6%	-1%
Native Hawaiian or Other Pacific Islander	3,498	<.01%	4,027	<.01%	0%
Other Race	123,158	14%	143,996	11%	-3%
White	303,070	34%	365,879	27%	-7%
Not Available	388,524	43%	745,809	55%	12%
Total EMS Calls	**899,368**	**100%**	**1,362,959**	**100%**	

This table excludes Cancelled calls.

Table 6.4: 911 Calls by Race Calendar Years 2014 and 2015					
Race	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
American Indian or Alaska Native	1,676	<.01%	2,154	<.01%	0%
Asian	11,886	2%	15,990	1%	0%
Black or African American	57,239	7%	71,328	6%	-1%
Native Hawaiian or Other Pacific Islander	3,008	<.01%	3,363	<.01%	0%
Other Race	103,042	13%	122,720	11%	-3%
White	261,187	34%	311,349	28%	-7%
Not Available	326,250	43%	603,184	53%	11%
Total 911 Calls	**764,288**	**100%**	**1,130,088**	**100%**	

This table excludes Cancelled calls.

Ethnicity

Data on Ethnicity are included to determine if there are populations which do not tend to call 911. This may reflect refugee or immigrant populations or other groups who may not use the EMS for a variety of reasons. This is included to help EMSA comply with the legislative mandate to provide data reflecting level of emergency medical services statewide.

Based on Census data, Hispanic or Latino represents 38.8% of California's population.

Table 6.5: All EMS Calls by Ethnicity
Calendar Years 2014 and 2015

Ethnicity	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Hispanic or Latino	109,436	12%	126,825	9%	-3%
Not Hispanic or Latino	367,892	41%	417,611	31%	-10%
Other Race	69	<.01%	16	<.01%	0%
Not Available	420,748	47%	816,622	60%	13%
Total EMS Calls	**898,145**	**100%**	**1,361,074**	**100%**	

This table excludes Cancelled calls.

Table 6.6: 911 Calls by Ethnicity
Calendar Year 2014 and 2015

Ethnicity	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Hispanic or Latino	92,271	12%	107,333	10%	-3%
Not Hispanic or Latino	315,713	41%	351,905	31%	-10%
Other Race	64	<.01%	16	<.01%	0%
Not Available	355,127	47%	669,082	59%	13%
Total 911 Calls	**763,175**	**100%**	**1,128,336**	**100%**	

This table excludes Cancelled calls.

Note: Ethnicity will not be collected in NEMSIS V3.

Patient Age

Table 6.7: All EMS Calls by Patient Age Calendar Year 2014 and 2015					
Age	**CY 2014**		**CY 2015**		**Percent Change**
	Count	**Percent**	**Count**	**Percent**	
≤14	53,815	6%	75,900	5%	0%
15-26	104,058	11%	150,146	11%	0%
27-44	154,892	17%	221,027	16%	-1%
45-63	237,344	26%	348,490	25%	-1%
≥64	342,754	37%	545,382	39%	2%
Not Available	30,278	3%	49,851	4%	0%
Total EMS Calls	**923,141**	**100%**	**1,390,796**	**100%**	

* *This table excludes Cancelled calls.*

Note: the age range, 15–26 years old, facilitates analysis of the Affordable Care Act (ACA) data for persons who stay on their parent's healthcare, up to age 26.

Primary Method of Payment

The Affordable Care Act (ACA) appears to be driving an increase in Medicaid (Medi-Cal). The ACA did not become mandated until 2014 so EMSA expects patients with *Medicaid* to increase in subsequent years.

Based on Census data, 9.7% (3,807,252 of 38,250,017) of California's population did not have any type of health insurance. The majority of people (34,442,765) living in California had some form of health insurance. The large percentage of *Not Available* makes it difficult to create a meaningful analysis.

Table 6.8: Primary Method of Payment
Calendar Years 2014 and 2015

Primary Method of Payment	CY 2014		CY 2015		Percent Change
	Count	Percent	Count	Percent	
Insurance	148,303	17%	233,829	17%	1%
Medicaid	46,263	5%	98,361	7%	2%
Medicare	65,987	7%	139,919	10%	3%
Not Billed (for any reason)	605	<.01%	924	<.01%	0%
Other Government	8,159	1%	13,878	1%	0%
Self Pay	39,446	4%	101,202	7%	3%
Workers Compensation	793	<.01%	1,649	<.01%	0%
Not Available	588,245	66%	777,538	57%	-9%
Total EMS Calls	**897,801**	**100%**	**1,367,300**	**100%**	

This table excludes Cancelled calls.

APPENDIX A

GLOSSARY OF SELECTED TERMS

(Source: NEMSIS, unless otherwise noted)

Advanced Life Support, Level 1 (ALS1) ***related to CMS Service Level (E07_34)***
Advanced life support, Level 1 (ALS1) is the transportation by ground ambulance vehicle and the provision of medically necessary supplies and services including the provision of an ALS assessment or at least one ALS intervention. An advanced life support (ALS) assessment is an assessment performed by an ALS crew as part of an emergency response that was necessary because the patient's reported condition at the time of dispatch was such that only an ALS crew was qualified to perform the assessment. An ALS assessment does not necessarily result in a determination that the patient requires an ALS level of service. An ALS intervention is a procedure that in accordance with State and local laws is required to be done by an emergency medical technician-intermediate (EMT Intermediate) or EMT-Paramedic.

Advanced Life Support, Level 1 (ALS1) – Emergency ***related to CMS Service Level (E07_34)***
When medically necessary, the provision of ALS1 services, as specified above, in the context of an emergency response. An emergency response is one that initiates an immediate response when the ambulance provider or supplier is called. An immediate response is one in which the ambulance provider/supplier begins as quickly as possible to take the steps necessary to respond to the call.

Advanced Life Support, Level 2 (ALS2) ***related to CMS Service Level (E07_34)***
Advanced life support, level 2 (ALS2) is the transportation by ground ambulance vehicle and the provision of medically necessary supplies and services including (1) at least three separate administrations of one or more medications by intravenous push/bolus or by continuous infusion (excluding crystalloid fluids) or (2) ground ambulance transport, medically necessary supplies and services, and the provision of at least one of the ALS2 procedures listed below:

a. manual defibrillation/cardioversion,
b. endotracheal intubation,
c. central venous line,
d. cardiac pacing,
e. chest decompression,
f. surgical airway, or
g. intraosseous line.

Age (E06_14)
The patient’s age (either calculated from date of birth or best approximation)

Age Units (E06_15)
The units which the age is documented in (Hours, Days, Months, Years)

Basic Life Support (BLS) ***related to CMS Service Level E07_34***
Basic life support (BLS) is transportation by ground ambulance vehicle and the provision of medically necessary supplies and services, including BLS ambulance services as defined by the State. The ambulance must be staffed by an emergency medical technician-basic (EMT-Basic), qualified in accordance with State and local laws. These laws may vary from State to State or within a State. For example, only in some jurisdictions is an EMT-Basic permitted to operate the limited equipment onboard the vehicle, assist more qualified personnel in performing assessments and interventions, and establish a peripheral intravenous (IV) line.

Basic Life Support (BLS) – Emergency- ***related to CMS Service Level E07_34***
When medically necessary, the provision of BLS services, as specified above, in the context of an emergency response. An emergency response is one that initiates an immediate response at the time the ambulance provider or supplier is called. An immediate response is one in which the ambulance provider/supplier begins as quickly as possible to take the steps necessary to respond to the call.

CMS Service Level (E07_34)
The CMS service level for this EMS encounter**.**

Cause of Injury (E10_01)
The category of the reported/suspected external cause of the injury

Ethnicity (E06_13)
The patient's ethnicity as defined by the OMB (US Office of Management and Budget)

Fixed Wing (FW) Air Ambulance ***related to CMS Service Level E07_34***
Fixed Wing air ambulance is the transportation by a fixed wing aircraft that is certified by the Federal Aviation Administration (FAA) as a fixed wing air ambulance and the provision of medically necessary services and supplies.

Gender (E06_11)
The patient's gender

Paramedic Intercept (PI) ***related to CMS Service Level E07_34***
Paramedic Intercept services are ALS services provided by an entity that does not provide the ambulance transport. This type of service is most often provided for an emergency ambulance transport in which a local volunteer ambulance that can provide only basic life support (BLS) level of service is dispatched to transport a patient. If the patient needs ALS services such as EKG monitoring, chest decompression, or I.V. therapy, another entity dispatches a paramedic to meet the BLS ambulance at the scene or once the ambulance is on the way to the hospital. The ALS paramedics then provide services to the patient. This tiered approach to life saving is cost effective in many areas because most volunteer ambulances do not charge for their services and one paramedic service can cover many communities.

Primary Method of Payment (E07_01)
The primary method of payment or type of insurance associated with this EMS encounter.

Providers Primary Impression (E09_15)
The EMS personnel's impression of the patient's primary problem or most significant condition which led to the management given to the patient (treatments, medications, or procedures).

Rotary Wing (RW) Air Ambulance ***related to CMS Service Level E07_34***
Rotor Wing air ambulance is the transportation by a helicopter that is certified by the FAA as a rotary wing ambulance, including the provision of medically necessary services and supplies.

Specialty Care Transport (SCT) ***related to CMS Service Level E07_34***
Specialty care transport (SCT) is the inter-facility transportation of a critically injured or ill beneficiary by a ground ambulance vehicle, including the provision of medically necessary supplies and services, at a level of service beyond the scope of the EMT-Paramedic. SCT is necessary when a beneficiary's condition requires ongoing care that must be furnished by one or more health professionals in an appropriate specialty area, for example, emergency or critical care nursing, emergency medicine, respiratory care, cardiovascular care, or a paramedic with additional training. The EMT Paramedic level of care is set by each State. Care above that level that is medically necessary and that is furnished at a level of service above the EMT Paramedic level of care is considered SCT.

Type of Service Requested (E02_04)
The type of service or category of service requested of the EMS service responding for this specific EMS incident.

- **911 Response (Scene)*** - Emergent or immediate response to an incident location, regardless of method of notification (for example, 911, direct dial, walking, or flagging down)
- **Intercept*** – When one EMS Provider meets a transporting EMS unit with the intent of receiving a patient or providing a higher level of care Inter-facility Transfer – Transfer of a patient from one hospital to another hospital
- **Medical Transport*** – Transports that are not between hospitals or that do not require an immediate response
- **Mutual Aid*** – Request from another ambulance service to provide emergent or immediate response to an incident location
- **Standby*** – Initial request for service was not tied to a patient but to a situation where a person may become ill or injured

**Source: NASEMSO Data Managers Council National Element and Value Definition Project*

Type of Turn-around Delay (E02_10)
The turn-around delays, if any, associated with the EMS unit associated with the patient encounter.

APPENDIX B

LIST OF CAUSE OF INJURY (NON-TRAFFIC) FOR "ALL ELSE" CATEGORY

TABLES 4.1 to 4.10

Aircraft Related Accident
Caught in/between Objects
Chemical Poisoning
Child Battering
Drowning
Drug Poisoning
Electrocution (Non-Lightning)
Excessive Cold
Excessive Heat
Explosion
Fire and Flames
Firearm Injury (Accidental)
Firearm Self Inflicted
Foreign body entering eye/orifice
Hot Object/Substance
Housing/Dangerous Condition
Lightning
Machinery Accidents
Mechanical Suffocation
Neglect/Malnutrition
Non-Motorized Vehicle Accident (E848.0)
Overexertion
Pedestrian Traffic Accident
Radiation Exposure
Sexual Assault
Smoke Inhalation
Snowmobile Accident
Stabbing/Cutting Accidental (E986.0)
Struck by or Against
Unarmed Fight/Brawl
Venomous Stings (Plants, Animals)

LIST OF PRIMARY IMPRESSIONS FOR "ALL ELSE" CATEGORY

TABLE 5.1: Top 15 Most Common Primary Impressions

Abdominal Aortic Aneurysm
Airway Obstruction
Allergic Reaction
Asthma
Back Pain (Non-Traumatic)
Bowel Obstruction
Cancer
Cardiac Arrest
Cardiac Rhythm Disturbance
CHF (Congestive Heart Failure)
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
ETOH Abuse
Fever
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
Nausea/Vomiting (Unknown Etiology)
OB/Delivery
Obvious Death
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other OB/Gyn
Patient Assist Only
Pregnancy/OB Delivery
Respiratory Arrest
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Stroke/CVA
Substance/Drug Abuse
TIA (Transient Ischemic Attack)
Toxic Exposure
Unconscious
Unknown Problem
Vaginal Hemorrhage

TABLE 5.2: Selected STROKE/STEMI EMS Primary Impression

Abdominal Aortic Aneurysm
Abdominal Pain/Problems
Airway Obstruction
Allergic Reaction
Altered Level of Consciousness
Asthma
Back Pain (Non-Traumatic)
Behavioral/Psychiatric Disorder
Bowel Obstruction
Cancer
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diabetic Symptoms (Hypoglycemia)
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
ETOH Abuse
Fever
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
Nausea/Vomiting (Unknown Etiology)
No Apparent Illness/Injury
OB/Delivery
Obvious Death
Other
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other Illness/Injury
Other OB/Gyn
Pain
Patient Assist Only
Poisoning/Drug Ingestion
Pregnancy/OB Delivery
Respiratory Arrest
Respiratory Distress
Seizure
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Substance/Drug Abuse
Syncope/Fainting
Toxic Exposure
Traumatic Injury
Unconscious
Unknown Problem
Vaginal Hemorrhage
Weakness

TABLE 5.3: Top 15 Most Primary Impression - Pediatrics ≤14 years old

Abdominal Aortic Aneurysm
Airway Obstruction
Asthma
Back Pain (Non-Traumatic)
Bowel Obstruction
Cancer
Cardiac Arrest
Cardiac Rhythm Disturbance
Chest Pain/Discomfort
CHF (Congestive Heart Failure)
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diabetic Symptoms (Hypoglycemia)
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
ETOH Abuse
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
Nausea/Vomiting (Unknown Etiology)
OB/Delivery
Obvious Death
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other OB/Gyn
Patient Assist Only
Pregnancy/OB Delivery
Respiratory Arrest
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Stroke/CVA
Substance/Drug Abuse
TIA (Transient Ischemic Attack)
Toxic Exposure
Unconscious
Unknown Problem
Vaginal Hemorrhage
Weakness

TABLE 5.4: Top 15 Most Common Primary Impressions - Adolescents 15–26 Years Old

Abdominal Aortic Aneurysm
Airway Obstruction
Allergic Reaction
Asthma
Back Pain (Non-Traumatic)
Bowel Obstruction
Cancer
Cardiac Arrest
Cardiac Rhythm Disturbance
CHF (Congestive Heart Failure)
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diabetic Symptoms (Hypoglycemia)
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
Fever
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
OB/Delivery
Obvious Death
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other OB/Gyn
Patient Assist Only
Pregnancy/OB Delivery
Respiratory Arrest
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Stroke/CVA
Substance/Drug Abuse
Syncope/Fainting
TIA (Transient Ischemic Attack)
Toxic Exposure
Unconscious
Unknown Problem
Vaginal Hemorrhage
Weakness

TABLE 5.5: Top 15 Most Common Primary Impressions - Adult 27–44 Years Old

Abdominal Aortic Aneurysm
Airway Obstruction
Allergic Reaction
Asthma
Back Pain (Non-Traumatic)
Bowel Obstruction
Cancer
Cardiac Arrest
Cardiac Rhythm Disturbance
CHF (Congestive Heart Failure)
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diabetic Symptoms (Hypoglycemia)
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
Fever
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
No Apparent Illness/Injury
OB/Delivery
Obvious Death
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other OB/Gyn
Patient Assist Only
Pregnancy/OB Delivery
Respiratory Arrest
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Stroke/CVA
Substance/Drug Abuse
TIA (Transient Ischemic Attack)
Toxic Exposure
Unconscious
Unknown Problem
Vaginal Hemorrhage

TABLE 5.6: Top 15 Most Common Primary Impressions - Adults 45–63 Years Old

Abdominal Aortic Aneurysm
Airway Obstruction
Allergic Reaction
Asthma
Back Pain (Non-Traumatic)
Bowel Obstruction
Cancer
Cardiac Arrest
Cardiac Rhythm Disturbance
CHF (Congestive Heart Failure)
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
Fever
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
Nausea/Vomiting (Unknown Etiology)
No Apparent Illness/Injury
OB/Delivery
Obvious Death
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other OB/Gyn
Patient Assist Only
Pregnancy/OB Delivery
Respiratory Arrest
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Stroke/CVA
Substance/Drug Abuse
TIA (Transient Ischemic Attack)
Toxic Exposure
Unconscious
Unknown Problem
Vaginal Hemorrhage

TABLE 5.7: Top 15 Most Common Primary Impression - Geriatrics ≥64 Years Old

Abdominal Aortic Aneurysm
Airway Obstruction
Allergic Reaction
Asthma
Back Pain (Non-Traumatic)
Bowel Obstruction
Cancer
Cardiac Arrest
CHF (Congestive Heart Failure)
COPD (Emphysema/Chronic Bronchitis)
Dehydration
Diabetic Hyperglycemia
Diarrhea
Electrocution
Epistaxis (Non-Traumatic)
ETOH Abuse
Fever
G.I. Bleed
General Malaise
Headache
Heat Exhaustion/Stroke
Hypertension
Hyperthermia
Hypotension
Hypothermia
Hypovolemia/Shock
Inhalation Injury (Toxic Gas)
Migraine
Nausea/Vomiting (Unknown Etiology)
OB/Delivery
Obvious Death
Other Abdominal/GI Problem
Other Cardiovascular Problem
Other CNS Problem
Other Endocrine/Metabolic Problem
Other GU Problems
Other OB/Gyn
Patient Assist Only
Poisoning/Drug Ingestion
Pregnancy/OB Delivery
Respiratory Arrest
Seizure
Sepsis
Sexual Assault/Rape
Smoke Inhalation
Stings/Venomous Bites
Substance/Drug Abuse
TIA (Transient Ischemic Attack)
Toxic Exposure
Unconscious
Unknown Problem
Vaginal Hemorrhage

LIST OF PROCEDURES USED FOR "ALL ELSE" CATEGORY

TABLE I: Top 15 Procedures Used

12 Lead ECG-Transmitted
Activation-Advanced Hazmat Specialty Service/Response Team
Activation-Other Specialty Service/Response Team
Activation-Rescue Specialty Service/Response Team
Activation-Tactical or SWAT Specialty Service/Response Team
Airway – Manual
Airway-Bagged (via BVMask)
Airway-Bagged (via tube)
Airway-BiPAP
Airway-Bougie-Assisted Intubation
Airway-Change Tracheostomy Tube
Airway-Cleared, Opened, or Heimlich
Airway-Combitube
Airway-CPAP
Airway-Direct Laryngoscopy
Airway-ECO2 Monitoring
Airway-Endotracheal Intubation
Airway-Endotracheal Tube Existing/Monitoring
Airway-EOA/EGTA
Airway-Extubation
Airway-Foreign Body Removal
Airway-Gastric Tube Inserted Nasally
Airway-Gastric Tube Inserted Orally
Airway-Impedance Threshold Device
Airway-Intubation Confirm Colorimetric ETCO2
Airway-Intubation Confirm Esophageal Detector Device/Bulb (EDD)
Airway-Intubation of Existing Tracheostomy Stoma
Airway-King LT Blind Insertion Airway Device
Airway-Laryngeal Mask
Airway-Nasopharyngeal
Airway-Nasotracheal Intubation
Airway-Nebulizer Treatment
Airway-Needle Cricothyrotomy
Airway-Oropharyngeal
Airway-PEEP
Airway-Rapid Sequence Intubation
Airway-Respirator Operation
Airway-Sellick Maneuver
Airway-Suctioning
Airway-Surgical Cricothyrotomy
Airway-Ventilator
Airway-Ventilator Setting Adjustment
Airway-Ventilator with PEEP

Airway-Verification
Airway-Video Laryngoscopy
Arterial Access - Femoral Line
Arterial Access/Blood Draw
Arterial Line Maintenance
Assessment-Pediatric
Back Blows
Backboard-Short
Bleeding/Hemorrhage Control
Blood Pressure
Burn Care
Cardiac Arrest
Cardiac Pacing-External
Cardiac Pacing-Transvenous
Cardioversion (Synchronized)
Chest Decompression
Chest Tube Placement
Childbirth
CNS Catheter-Epidural Maintenance
CNS Catheter-Intraventricular
Contact Medical Control
CPR - Citizen (trained)
CPR - Citizen (untrained/coached)
CPR by Other External Automated Device
CPR-AutoPulse Device
CPR-Hold
CPR-Mechanical Thumper Type Device
CPR-Precordial Thump Only
CPR-Start Compressions and Ventilations
CPR-Start Compressions only without Ventilation
CPR-Start Rescue Breathing without Compressions
CPR-Stop
Decontamination
Defibrillation (Semi-Automatic)
Defibrillation-Automated (AED)
Defibrillation-Manual
Defibrillation-Placement for Monitoring/Analysis
Escharotomy
Esophageal/Tracheal Airway
Extrication
Fluid Challenge - 0.9% NS
Injections-SQ/IM
INO - Intubation/Other
Intra-Aortic Balloon Pump
Intraosseous Infusion
Isolation Procedures
Last Seen Normal

Contact:
EMSData@emsa.ca.gov
916-322-4336 Ext. 742

Left Ventricular Assist Device Maintenance
ME - Medication Administered
Needle Thoracostomy
None
Orthostatic Blood Pressure Measurement
Patient Cooling (Cold Pack, etc.)
Patient Cooling-Post Resuscitation
Patient Loaded
Patient Loaded-Helicopter Hot-Load
Patient Monitoring of Pre-existing Devices, Equipment, or Ongoing Medications
Patient Off-Loaded
Patient Off-Loaded Helicopter Hot Off-Load
Patient Warming (Hot Pack, etc.)
Pedimate / Safeguard
Pericardiocentesis
Pharyngeal Tracheal Lumen (PtL)
Psych Assist
Rescue
Restraints-Pharmacological
ROSC
Snakebite Treatment
Specialty Center Activation-Adult Trauma
Specialty Center Activation-Cardiac Arrest
Specialty Center Activation-Pediatric Trauma
Specialty Center Activation-STEMI
Specialty Center Activation-Stroke
Spinal Assessment - No Deficits Noted
Spinal Immobilization – Clear
Spinal Immobilization - K.E.D.
Spinal Immobilization - Long Back Board
Spinal Immobilization - Rigid Cervical Collar
Spinal Immobilization - Soft Cervical Collar
Splinting
Splinting-Traction
Stretcher
Stroke Scale
Thrombolytic Screen
Transferred Patient Care
Umbilical Venous Catheter
Urinary Catheterization
Vagal Maneuver-Carotid Massage
Valsalva Maneuver
Venous Access-Blood Draw
Venous Access-Central Line Maintenance
Venous Access-Discontinue
Venous Access-Existing Catheter/IV Monitoring
Venous Access-External Jugular Line

Venous Access-Femoral Line
Venous Access-Internal Jugular Line
Venous Access-Intraosseous Adult
Venous Access-Intraosseous Pediatric
Venous Access-Saline Lock
Venous Access-Subclavian Line
Venous Access-Swan Ganz Maintain
Wound Care - Burn Care
Wound Care - Pressure Dressing
Wound Care-Hemostatic Agent
Wound Care-Irrigation
Wound Care-Taser Barb Removal
Wound Care-Tourniquet
Zofran - Post Assessment
Zofran - Pre Assessment

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APPENDIX C

POPULATION BY LEMSA

Local EMS Agency Counties	Population
Alameda	1,638,215
Central California (Madera, Fresno, Kings, Tulare)	1,740,687
Contra Costa	1,126,745
Coastal Valleys (Mendocino, Sonoma)	589,795
El Dorado	184,452
Imperial	180,191
Inland Counties (Mono, Inyo, San Bernardino)	2,160,302
Kern	882,176
Los Angeles	10,170,292
Marin	261,221
Merced	268,455
Monterey	433,898
Mountain Valley (Alpine, Amador, Calaveras, Stanislaus, Mariposa)	638,858
Napa	142,456
North Coast (Del Norte, Humboldt, Lake)	227,572
Northern California (Modoc, Lassen, Plumas, Sierra, Glenn, Trinity)	102,772
Orange	3,169,776
Riverside	2,361,026
Sacramento	1,501,335
San Benito	58,792
San Diego	3,299,521
San Francisco	864,816
San Joaquin	726,106
San Luis Obispo	281,401
San Mateo	765,135
Santa Barbara	444,769
Santa Clara	1,918,044
Santa Cruz	274,146
Sierra-Sacramento Valley (Siskiyou, Shasta, Tehama, Butte, Colusa, Sutter, Yuba, Nevada, Placer)	1,178,511
Solano	436,092
Tuolumne	53,709
Ventura	850,536
Yolo	213,016
Total California Population:	**39,144,818**

Note: Census Data, www.census.gov

POPULATION BY REGION

Regions	Local EMS Agencies	Population
Northern California:	Coastal Valleys, Northern California, North Coast, Sierra-Sacramento Valley, Sacramento, El Dorado, San Joaquin, Napa, Yolo	4,866,015
Bay Area:	Marin, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, Santa Cruz, San Francisco, San Benito, Monterey	7,777,104
Central California:	Central California, Mountain Valley, Tuolumne, Merced, Kern	3,583,885
South Eastern California:	Inland Counties, Riverside, San Diego, Imperial	8,001,040
Southern:	San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange	14,916,774
	Total:	**39,144,818**

Note: Census Data, www.census.gov