CY 2017

Ventura County

Medical Examiner's Office

Annual Report 2017

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FOREWORD

The Ventura County Medical Examiner's Office (VCMEO) investigates deaths occurring within the County of Ventura in accordance with California law. In general, the types of deaths investigated are sudden, violent, untimely, unexpected or when the cause of death is unknown. The 2017 VCMEO annual report provides statistical data from deaths investigated and certified by our office as well as key achievements over the year.

Of California's fifty-eight counties, Ventura County is unique as one of only five counties with a modern Medical Examiner system of medicolegal death investigation. While the concept of a Medical Examiner has not been widely accepted in California, Ventura County took progressive action in 1974 when it abolished the office of the Coroner and established the office of the Medical Examiner. Every effort is made to maintain the independence of the office to provide sound medicolegal death investigations as a service to the community and other agencies within the county. The investigations are performed under the direction of two board certified forensic pathologists and the office administrator with the goal of fiscal responsibility and public stewardship.

The VCMEO has twelve full time employees and a budget of 3.28 million dollars. During CY2017, the office investigated 1,617 deaths and performed 625 postmortem examinations. This annual report summarizes the activities of the VCMEO and presents data related to mortality and public health from a Medical Examiner's perspective. This report includes statistics focusing on number and types of cases accepted and examined; causes and manners of death; decedent demographics; and, toxicological findings.

The medicolegal death investigators at the Ventura County Medical Examiner's Office play an essential role in the process of death investigation within the county. They work tirelessly, responding to death scenes at all hours, year-round. They witness and document tragic deaths on a daily basis and encounter people who are mourning and experiencing the worst of times. Despite these trying and sad circumstances, they maintain the highest level of professionalism and provide thorough, detailed investigations. The quality of death investigation in Ventura depends on their dedication and hard work.

2017 was a year of change, and the department experienced a number of key achievements and identified a number of goals moving forward:

- The VCMEO on boarded two full time, board certified forensic pathologists with over 25 years of combined forensic pathology experience.
- The new leadership prioritizes National Association of Medical Examiners (NAME) accreditation to ensure a high standard of medicolegal investigation. In 2017, we focused on identifying facility and staffing needs to meet accreditation requirements.
- VCMEO staff have attended the Ventura County Behavioral Health's Prescription Drug and Heroin Workgroup since 2015. In response to the national opioid epidemic, our office has increased our level of participation and commitment to this workgroup in 2017. Unprecedented drug death data was generated by the office to help better define the problem within our county. The VCMEO is proud to contribute and participate in countywide collaborative efforts to reduce drug abuse and deaths in our communities.
- An upgraded, web-based case management system was implemented in 2016. During calendar year 2017, we identified a number of ways to improve and standardize data entry to maximize the potential of the software, to provide consistent death investigation and to facilitate future data collection.

The VCMEO provides medicolegal death investigation 24 hours a day, 7 days a week, 365 days a year. We are committed to enhancing public health and public safety and the administration of justice. Our staff is dedicated to providing our community with the highest quality, independent, and unbiased death investigation possible. We encounter individuals at a time when they are the most vulnerable and grief stricken and therefore strive to treat decedents and their survivors with the utmost dignity and respect.

PREPARATION OF ANNUAL REPORT

The VCMEO data from which this report was compiled are maintained in a web-based database management solution, MDILog. Because the VCMEO has not historically produced a formal annual report, the necessary data to demonstrate long term trends is currently limited. Such information will only increase and improve in years going forward. This represents the efforts and diligence of the entire VCMEO staff, but special recognition is due to Sierra Plush MA who spent countless hours compiling and refining data to make this report possible.

OVERVIEW OF CASES REPORTED AND INVESTIGATED

During Calendar Year (CY) 2017, **1,617** deaths were reported to and investigated by the Ventura County Medical Examiner's Office (VCMEO). Overall, the total number of deaths reported to the VCMEO continues to increase in accordance with population growth. Of the total number of deaths reported and investigated, jurisdiction was accepted for **46.1%** which required further investigation, certification and/or examination.

The data presented within this report represents deaths occurring exclusively within the County of Ventura for which the VCMEO had jurisdiction. The data does not represent all deaths of Ventura County Residents. The decedent's place of residence or location of injury may be outside of the County of Ventura.

Accepted Cases: The VCMEO accepted jurisdiction of **745** decedent cases, of which **625** decedent cases were examined. Accepted cases include those which require examination, certification, next-of-kin search or storage.

- **Non-Human Remains**: On rare occasion, material from non-human origin is received by the VCMEO to determine that they are non-human.
- **Medical Record Reviews**: For certain cases where examination of the body is not needed to determine the cause and manner of death, the determination is based, in part, on the review of available medical records.
- **Storage cases**: On occasion, a decedent dies of natural causes and a private physician is available to sign the death certificate, but next-of-kin is not available to designate a funeral home. These decedents are transported to the VCMEO and stored until disposition of the decedent is arranged. The VCMEO provided storage for **39** decedents who would have otherwise been designated as jurisdiction declined.

Declined Cases: The VCMEO investigated and declined jurisdiction of **872** decedent cases. These were natural deaths for which jurisdiction was relinquished to private physicians.

Scene Visits -The VCMEO responded to **579** death scenes in 2017.

Body Transport: - In 2017, 606 decedents were transported to the VCMEO by a contracted transport company.

General Summary

Total Number of Deaths Reported and Investigated by the VCMEO	**1,617**
Total Number of Deaths Investigated as Jurisdiction Declined	**872**
Percentage of Deaths Investigated as Jurisdiction Declined	*53.9%*
Total Number of Deaths Accepted for Further Investigation	**745**
Percentage of Deaths Investigated with Jurisdiction Accepted	*46.1%*
Total Number of Examinations	**625**
Percentage of Jurisdiction Accepted Deaths Examined	*83.9%*
Total Number of Scene Visits by a Medical Examiner Investigator	**579**
Percentage of Jurisdiction Accepted Deaths with Scene Investigation	*77.7%*

Breakdown of Accepted Deaths by Exam Type

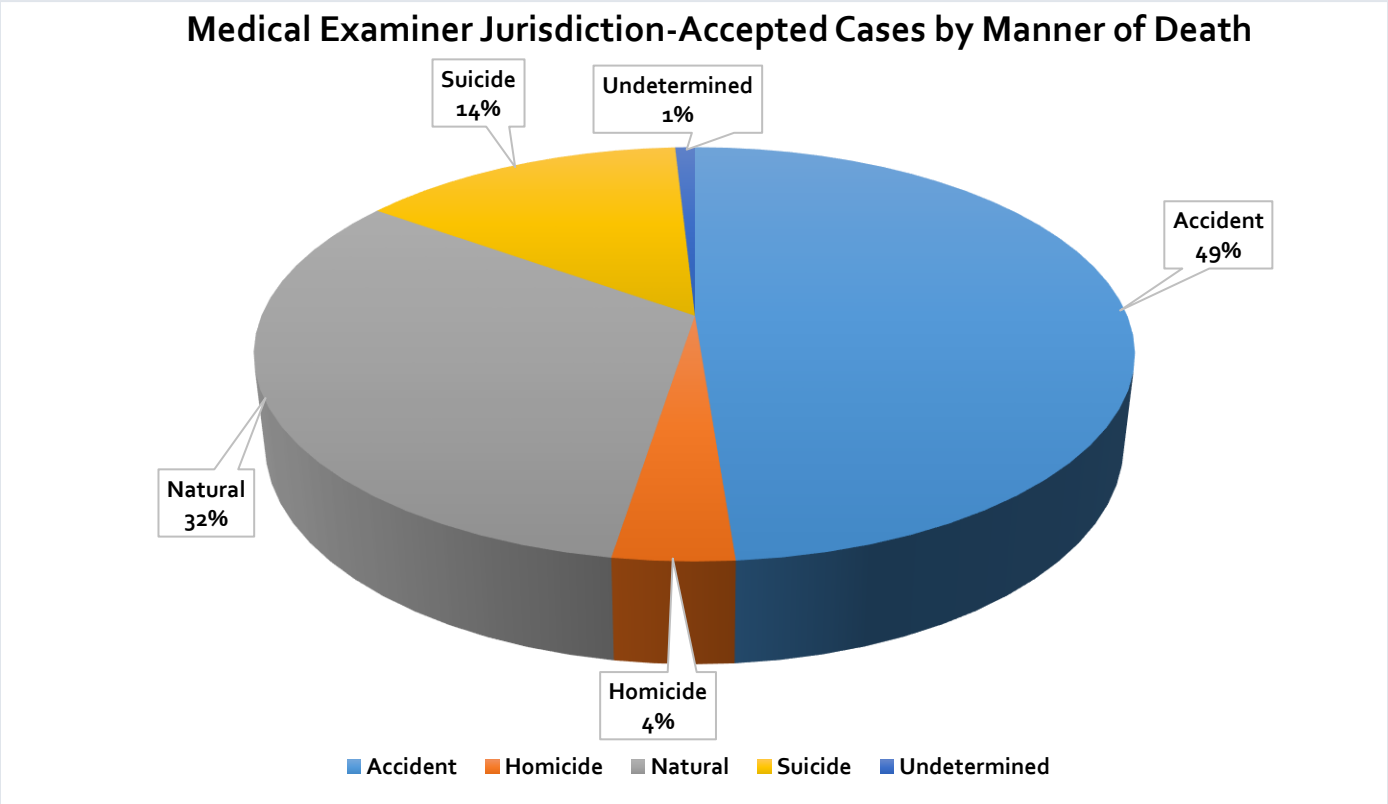
Total Number of Deaths Accepted for Further Investigation	**745**
Total Number of Autopsies (Full and Partial)	**402**
Percentage of Jurisdiction Accepted Deaths - Autopsy	*54.0%*
Total Number of External Examinations	**223**
Percentage of Jurisdiction Accepted Deaths - External Examination	*29.9%*
Total Number of Medical Records Review	**67**
Total Number of Non-Human Remains	**9**
Percentage of Deaths Accepted – Non-Human Remains	*1.2%*
Total Number of Storage Cases	**39**
Total Number of Non-Forensic Human Remains	**5**

Breakdown of Accepted Cases and Autopsies by Month

Month	Case Investigations	Autopsies	Externals
January	61	39	20
February	48	26	22
March	69	37	27
April	58	36	18
May	69	35	22
June	71	31	23
July	66	33	24
August	55	32	10
September	57	30	15
October	64	36	14
November	56	26	15
December	71	41	13
Total	**745**	**402**	**223**

Medical Examiner Case Examinations by Manner of Death

Manner	Full Autopsy	Limited Exam	External Exam	Medical Records Review	Total
Accident	193	9	85	52	339
Homicide	26	0	0	0	26
Natural	125	11	74	15	225
Suicide	26	7	64	2	99
Undetermined	4	0	0	2	6
Total	**374**	**27**	**223**	**71**	**695**



Medical Examiner Cases by Residence and Manner of Death

City	# of Deaths	Accident	Homicide	Natural	Suicide	Undetermined
Oxnard	143	68	13	45	16	1
Ventura	100	52	2	26	19	1
Simi Valley	97	36	0	40	20	1
Thousand Oaks	78	42	2	18	16	0
Camarillo	63	28	2	26	7	0
Santa Paula	27	14	2	10	1	0
Port Hueneme	25	10	2	11	1	1
Ojai	22	11	0	8	1	2
Newbury Park	20	10	0	8	2	0
Moorpark	14	7	0	5	2	0
Fillmore	10	6	0	4	0	0
Westlake	7	4	0	2	1	0
Oak View	5	2	0	0	3	0
Oak Park	3	1	0	1	1	0
Piru	2	0	2	0	0	0
Somis	2	1	0	0	1	0
Point Mugu	1	0	0	0	1	0
Lake Sherwood	1	1	0	0	0	0
Unknown	2	1	0	1	0	0
Los Angeles County	36	28	0	2	6	0
Santa Barbara County	7	5	1	0	1	0
California Out of county	56	40	1	7	8	0
Out of state	17	5	0	12	0	0
Homeless	53	31	3	12	5	2

***One decedent was from outside of the US.**

CAUSE AND MANNER OF DEATH

The VCMEO accepted jurisdiction of **695** decedent cases in CY 2017 which required further review and investigation. This section highlights the overall statistics of the 5 manners of death recognized by the VCMEO. This section reflects the data including, but not limited to: demographics (age, race, gender), jurisdiction of residence, and specific cause of death. In 2017, VCMEO investigated **26** homicides, **339** accidents, **225** natural deaths, **99** suicides, and **6** cases where the manner of death was concluded to be "undetermined".

HOMICIDE

The VCMEO investigated **26** homicides in the CY 2017. The following tables and graphs provide a distribution by cause of death, month, race, gender, and age group. Death by homicidal acts is more prevalent in males (**77%**) and in age group **18-24**. The leading circumstance of homicidal death was by firearms.

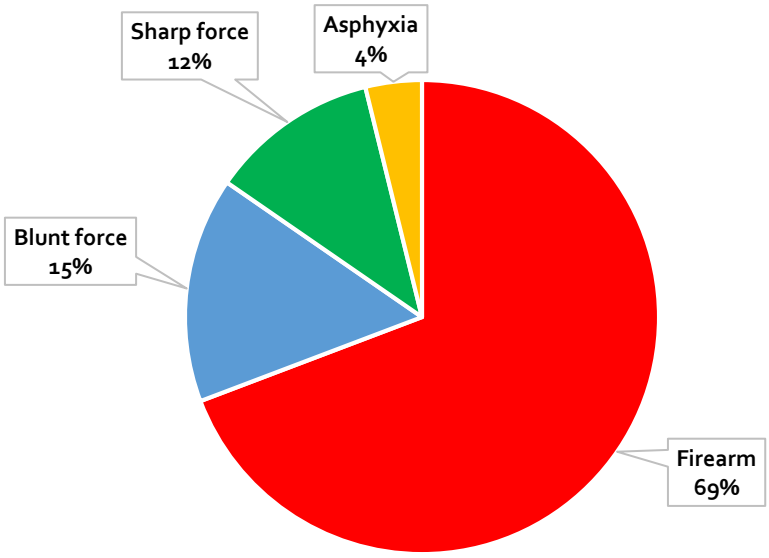
Homicides by City where Injury Occurred

Jurisdiction	Number of Homicides	Percent of Homicides
Oxnard	15	57.7%
Ventura	2	7.7%
Port Hueneme	2	7.7%
Santa Paula	2	7.7%
Piru	2	7.7%
Newbury Park	1	3.8%
Thousand Oaks	1	3.8%
Camarillo	1	3.8%
Total	**26**	100%

Homicides by Circumstance of Death

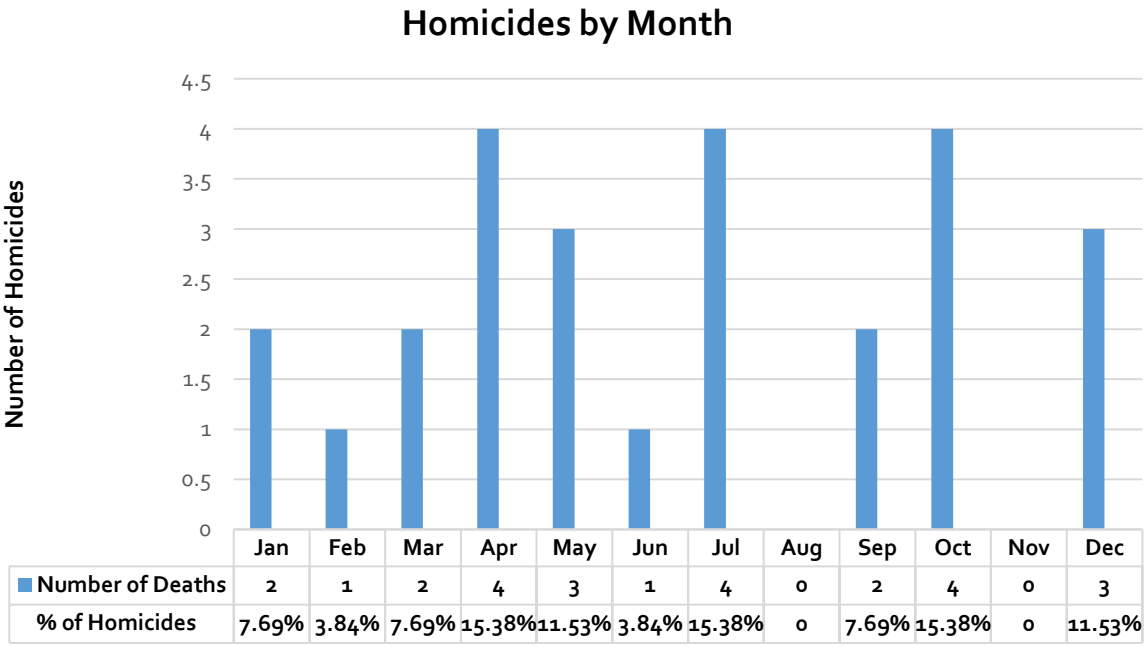
Circumstance	Number of Homicides	Percent of Homicides
Firearm	18	69.2%
Blunt Force	4	15.4%
Sharp Force	3	11.5%
Asphyxia	1	3.8%
Total	**26**	**100%**

Homicides by Cause of Death



Homicides by Month

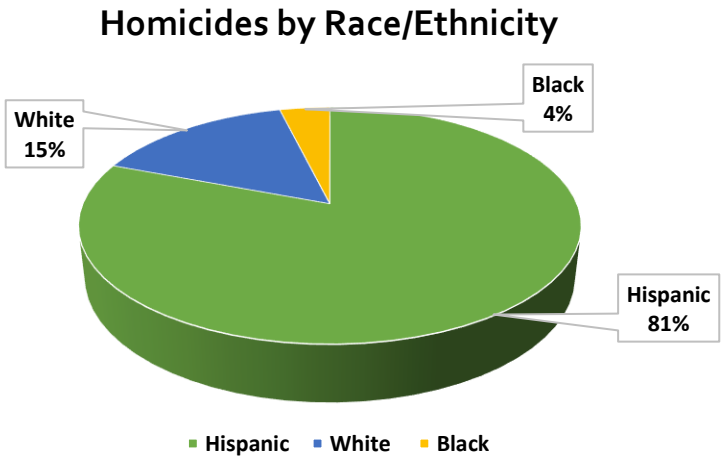
Month	Number of Homicides	Percent of Homicides
January	2	7.7%
February	1	3.8%
March	2	7.7%
April	4	15.4%
May	3	11.5%
June	1	3.8%
July	4	15.4%
August	0	0%
September	2	7.7%
October	4	15.4%
November	0	0%
December	3	11.5%
Total	26	100%



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Number of Deaths	2	1	2	4	3	1	4	0	2	4	0	3
% of Homicides	7.69%	3.84%	7.69%	15.38%	11.53%	3.84%	15.38%	0	7.69%	15.38%	0	11.53%

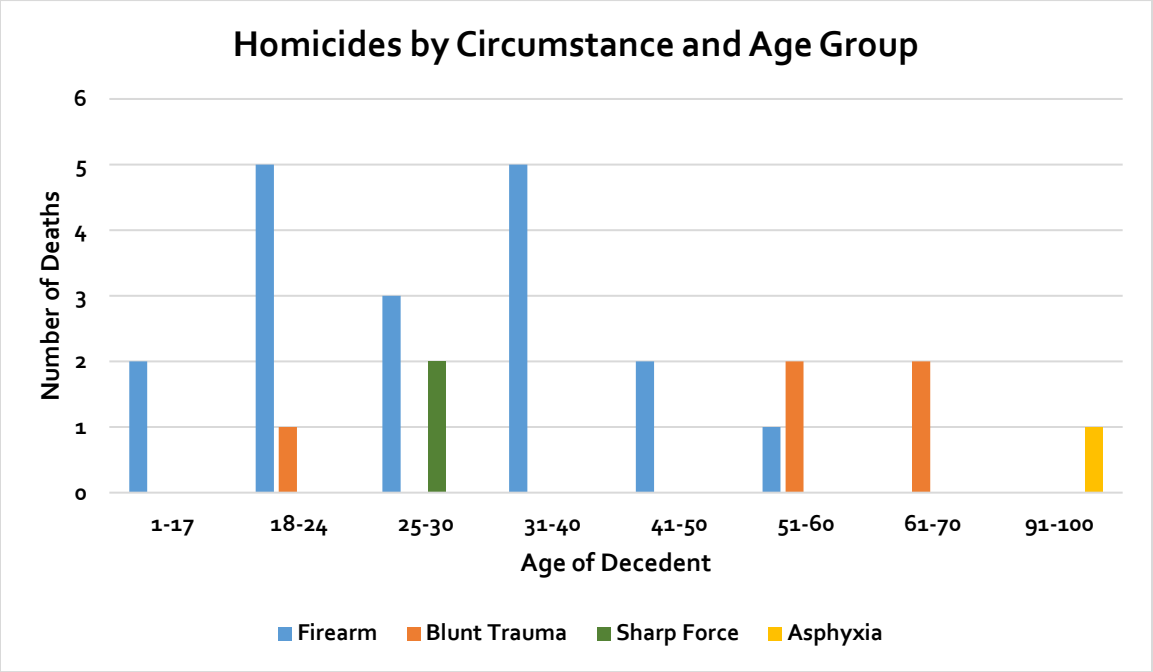
Homicides by Race/Ethnicity

Race/Ethnicity	Number of Homicides	Percent of Homicides
Hispanic	21	80.7%
White Non-Hispanic	4	15.4%
Black	1	3.8%
Total	**26**	**100%**



Homicides by Circumstance and by Age Group

	11-17	18-24	25-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Firearm	2	5	3	5	2	1	0	0	0	0
Blunt Trauma	0	1	0	0	0	2	2	0	0	0
Sharp Force	0	0	2	0	0	0	0	0	0	0
Asphyxia	0	0	0	0	0	0	0	0	0	1
Total	2	6	5	5	2	3	2	0	0	1



Toxicology Findings for Homicide Deaths

Description	Number of Cases	Percent of Cases
N=	26	
Negative	5	19.23%
Positive	19	73.07%
No testing requested	2	7.7%

Toxicology was performed on 24 of 26 homicide deaths investigated by the VCMEO. In the two cases where toxicology was not requested, the decedents were hospitalized, and their admission blood samples were not available for testing. All decedent cases were screened for alcohol and major drugs of abuse. Positive findings refer to illicit drugs, alcohol, or abused prescription drugs. Toxicological findings of prescribed drugs at therapeutic levels were considered negative.

SUICIDE

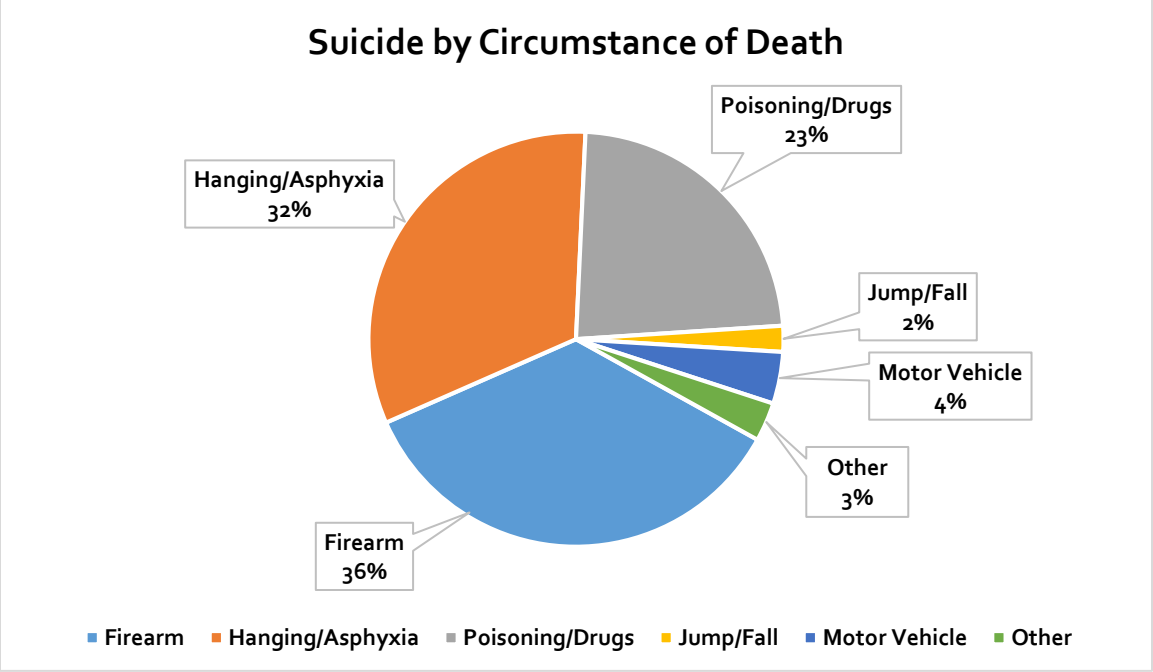
The VCMEO investigated **99** suicides in CY 2017, which represents an **increase** (16 deaths) from CY 2016. Deaths by suicidal acts were more prevalent in **males** and in persons between the ages of **61-70**. Gunshot wound was the leading cause of suicidal deaths. More incidents occurred in **May** and **December** (12 deaths each).

Suicide by Location of Injury Causing Death

City	Number of Suicides	Percent of Suicides
Agoura Hills	1	1.01%
Calabasas	1	1.01%
Camarillo	8	8.08%
Malibu	1	1.01%
Moorpark	3	3.03%
Newbury Park	2	2.02%
Oak Park	1	1.01%
Oak View	3	3.03%
Ojai	1	1.01%
Oxnard	16	16.16%
Port Hueneme	1	1.01%
Santa Paula	1	1.01%
Simi Valley	20	20.20%
Somis	1	1.01%
Thousand Oaks	18	18.18%
Ventura	21	21.21%
Total	**99**	**100%**

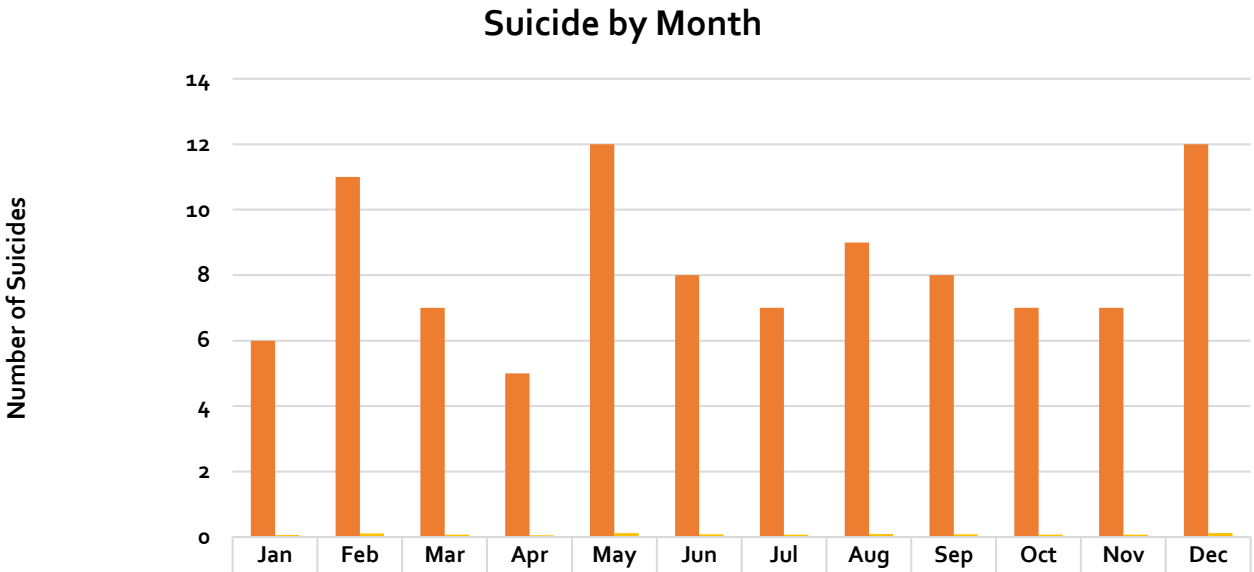
Suicide by Circumstance of Death

Circumstance	Number of Suicides	Percent of Suicides
Firearm	35	35.35%
Hanging/Asphyxia	32	32.32%
Poisoning/Drugs	23	23.23%
Jump/Fall	2	2.02%
Motor Vehicle	4	4.04%
Other	3	3.03%
Total	**99**	**100%**



Suicide by Month

Month	Number of Suicides	Percent of Suicides
January	6	6.06%
February	11	11.11%
March	7	7.07%
April	5	5.05%
May	12	12.12%
June	8	8.08%
July	7	7.07%
August	9	9.09%
September	8	8.08%
October	7	7.07%
November	7	7.07%
December	12	12.12%
Total	99	100%



Suicide by Race/Ethnicity

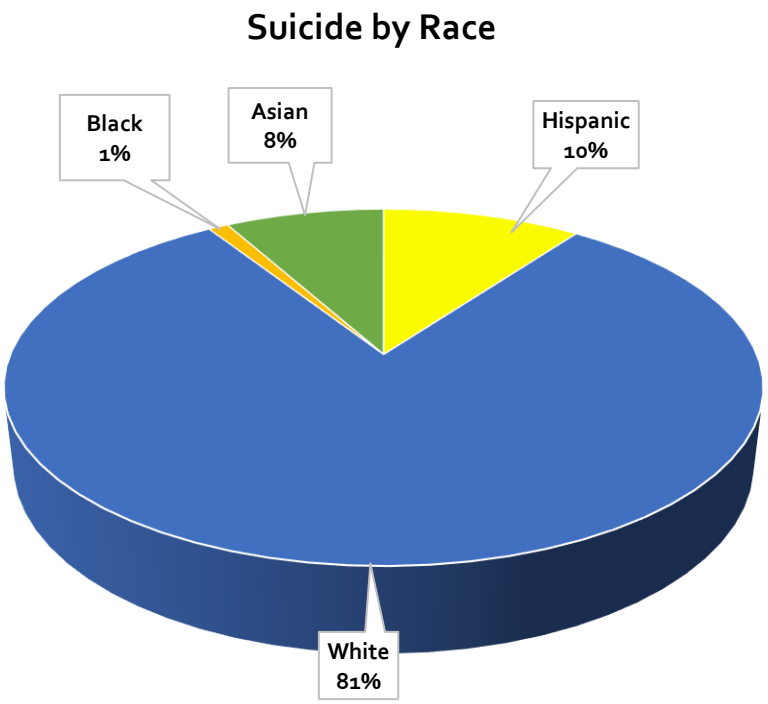
Race/Ethnicity	Number of Suicides	Percent of Suicides
Hispanic	10	10.10%
White Non-Hispanic	81	81.82%
Black	1	1.01%
Asian	7	7.07%
Total	**99**	**100%**

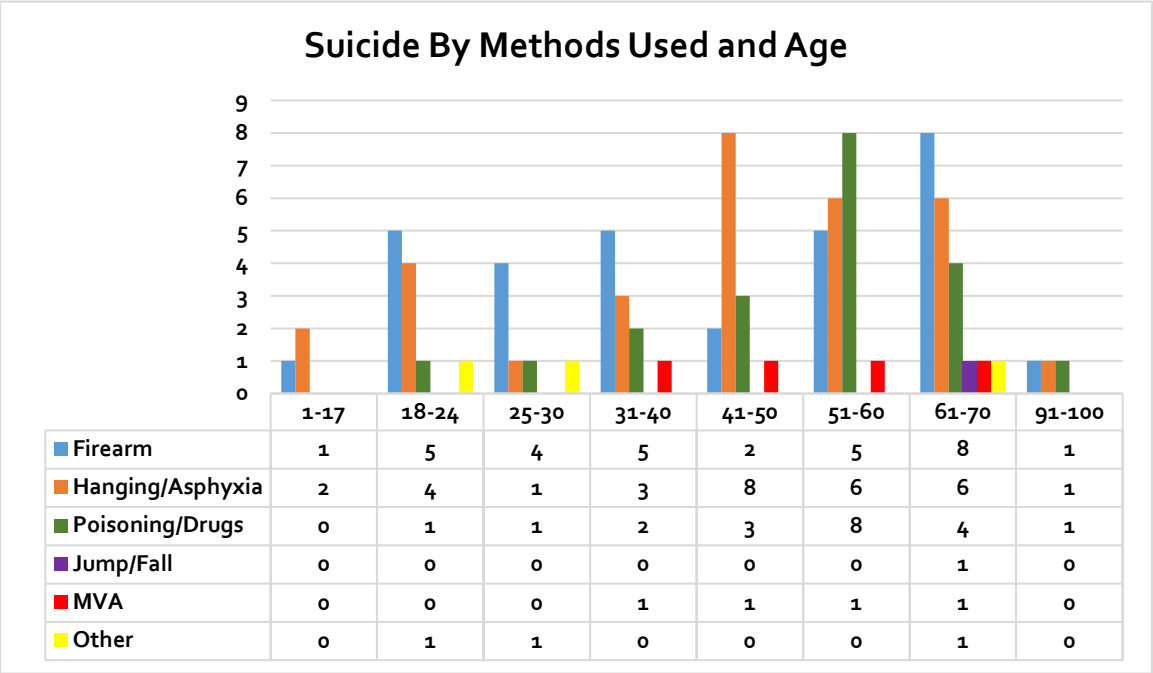
Suicide by Gender

Gender	Number of Suicides	Percent of Suicides
Male	76	77 %
Female	23	23%
Total	**99**	**100%**

Suicide by Race/Ethnicity and Gender

Race/Ethnicity by Gender	Number of Suicides
Hispanic	10
Male	8
Female	2
White Non-Hispanic	81
Male	62
Female	19
Black	1
Male	1
Female	0
Asian	7
Male	4
Female	3
Total	**99**

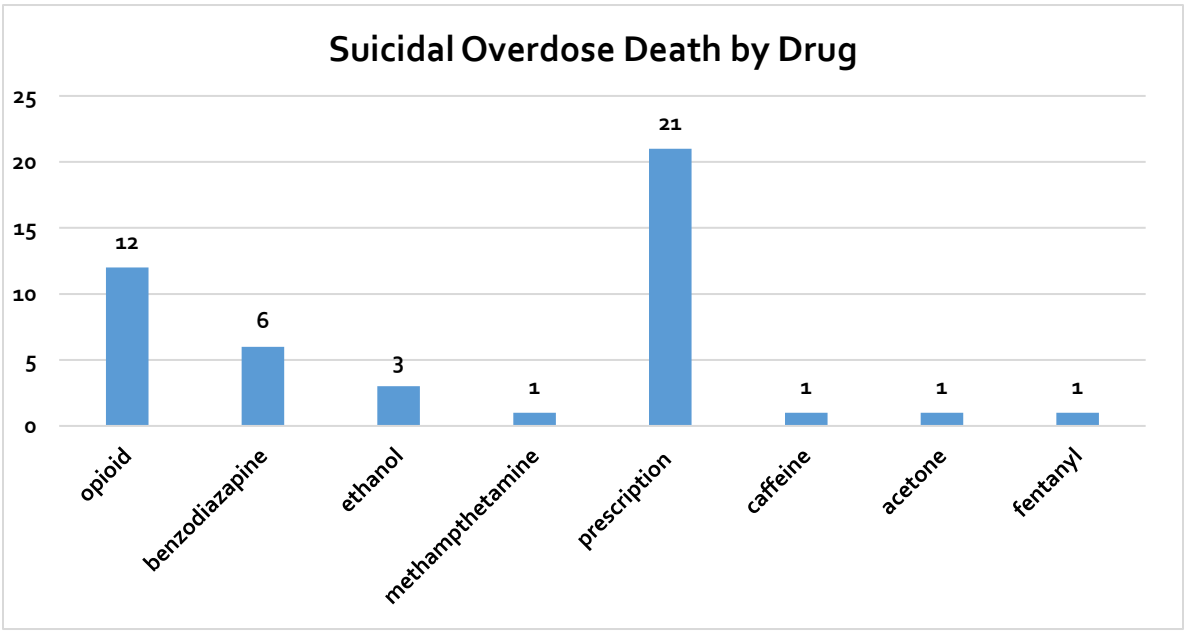


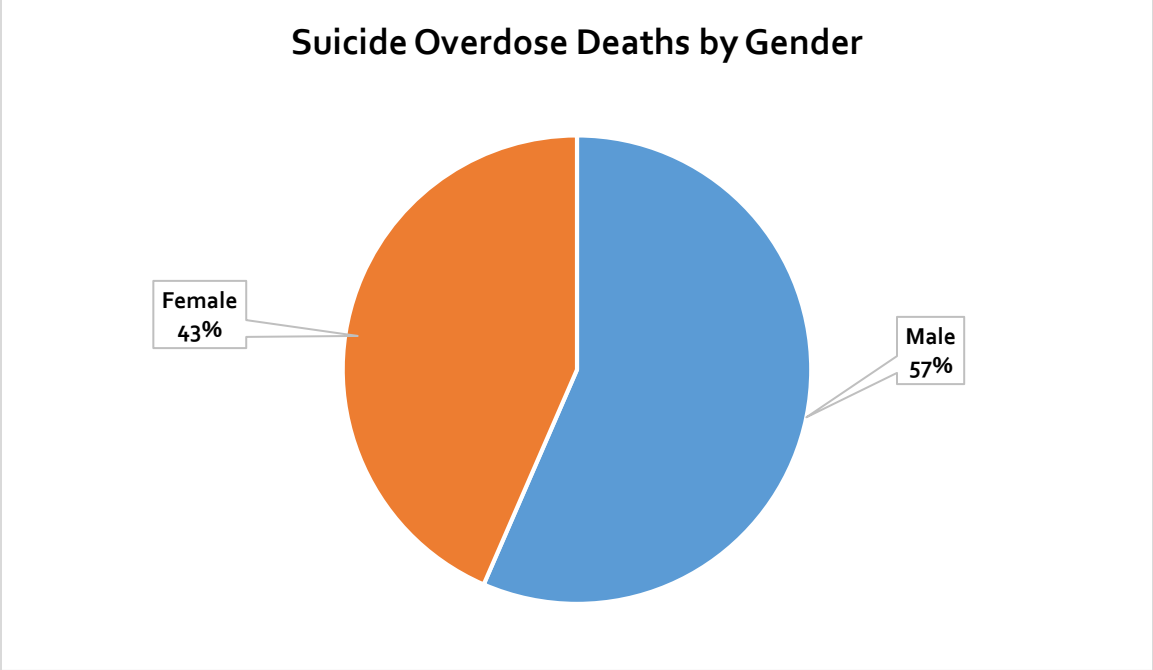


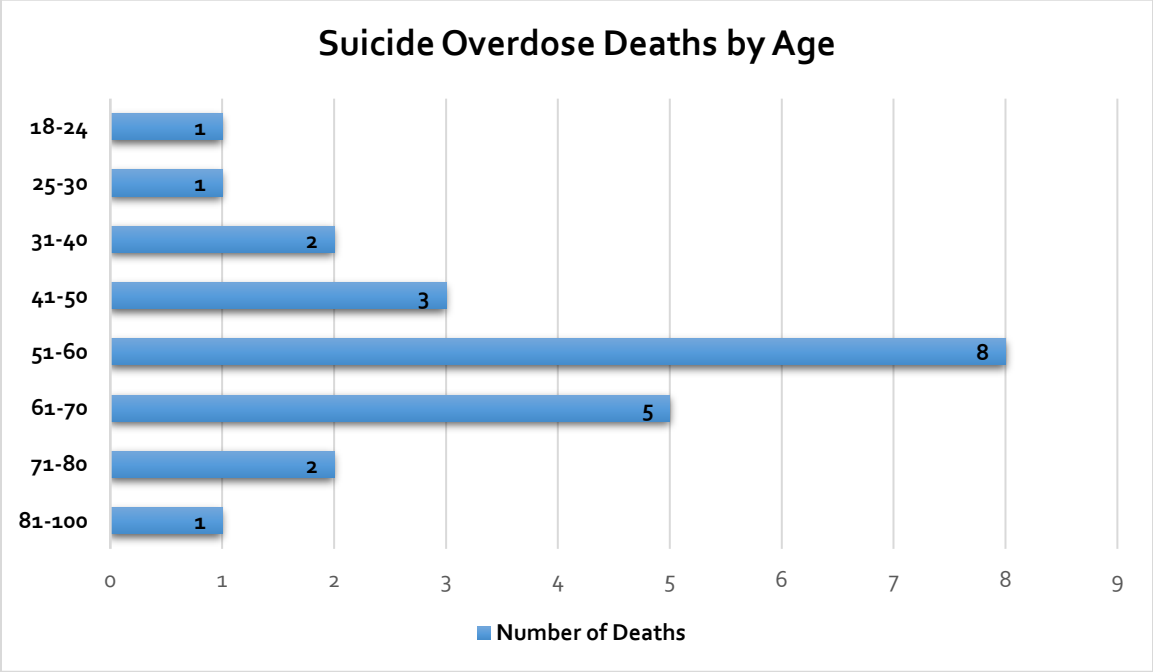
	1-17	18-24	25-30	31-40	41-50	51-60	61-70	91-100
Firearm	1	5	4	5	2	5	8	1
Hanging/Asphyxia	2	4	1	3	8	6	6	1
Poisoning/Drugs	0	1	1	2	3	8	4	1
Jump/Fall	0	0	0	0	0	0	1	0
MVA	0	0	0	1	1	1	1	0
Other	0	1	1	0	0	0	1	0

TOXICOLOGY FINDINGS FOR DEATHS DUE TO SUICIDAL OVERDOSE

Multiple drugs or medications may be involved in one case. The same case may be represented multiple times by different drugs or drug categories.




Suicide Overdose Deaths by Gender
Female
43%
Male
57%


Suicide Overdose Deaths by Age
18-24
25-30
31-40
41-50
51-60
61-70
71-80
81-100
1
1
2
3
8
5
2
1
0
1
2
3
4
5
6
7
8
9
Number of Deaths

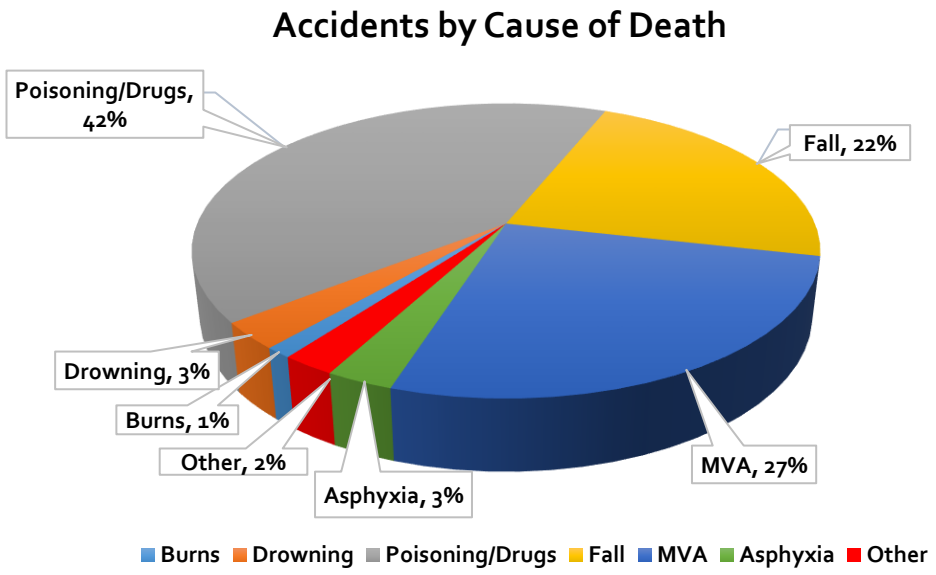
ACCIDENT

The VCMEO investigated **339** accidental deaths in CY 2017. Of the **339** deaths investigated, **90** were related to motor vehicle collisions, **76** were related to falls and **145** were the direct result of prescription and/or illicit drug use. The number of accidental drug overdose deaths accounts for nearly half of all accidental deaths in Ventura County.

Accidents by Injury Type

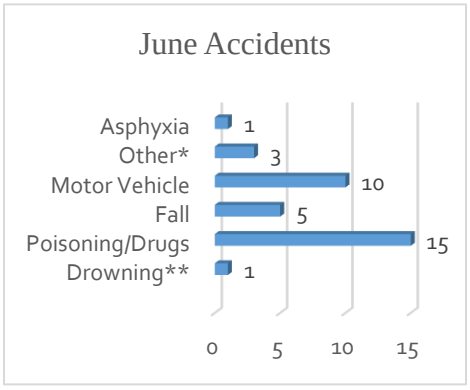
Cause	Number of Accidents	Percent of Accidents
Burns	4	1%
Drowning	10	3%
Poisoning/Drugs	145	42%
Fall	76	22%
Motor Vehicle	90	27%
Asphyxia	10	3%
Other	8	2%
Total	**340**	**100%**

*** In one case, a fall and asphyxia contributed to the cause of death. This death was counted in both categories.**



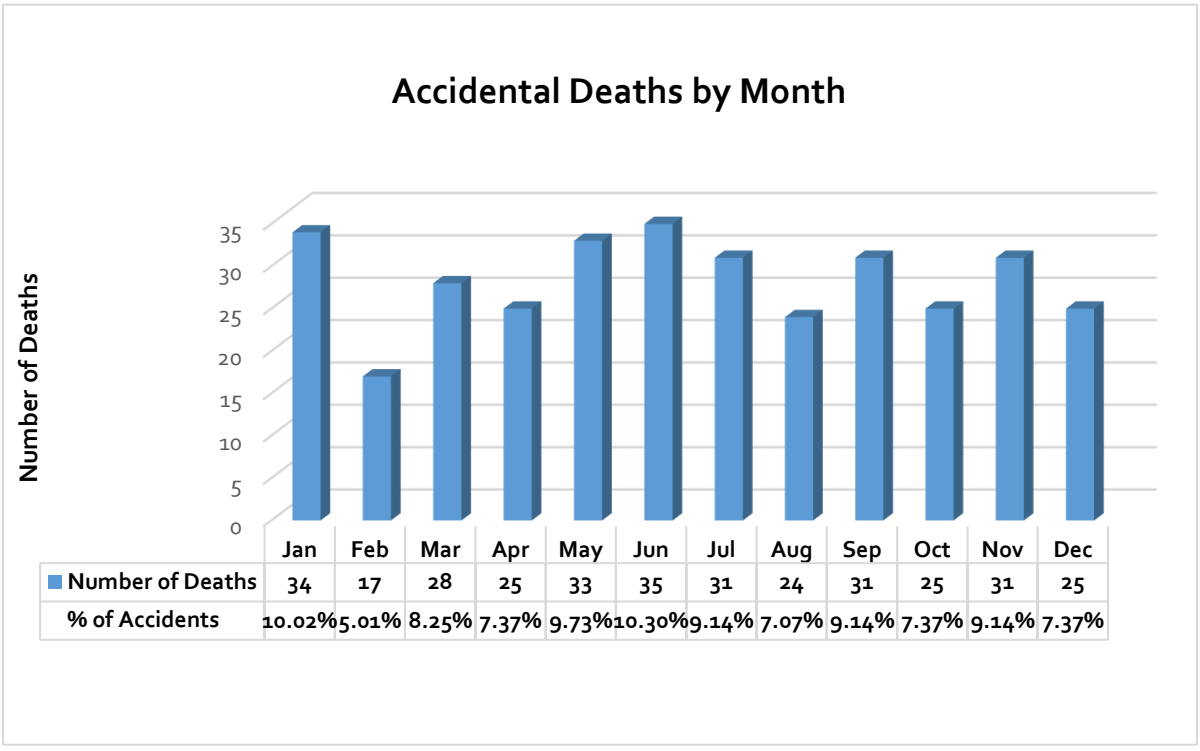
Accident by Month

Month	Number of Accidents
January	34
February	17
March	28
April	25
May	33
June	35
July	31
August	24
September	31
October	25
November	31
December	25
Total	339



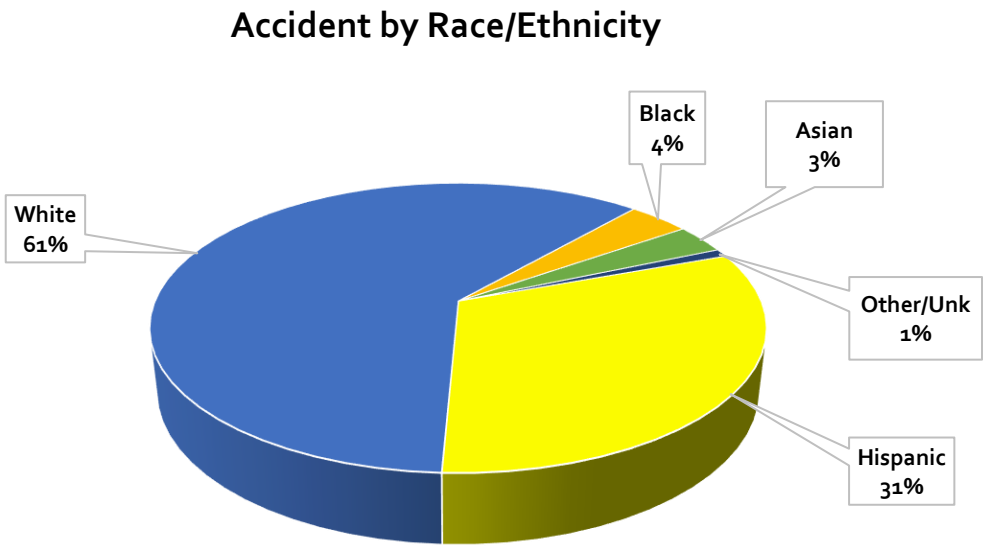
*"other" deaths were plane crash related

**Drowning death was drug-related



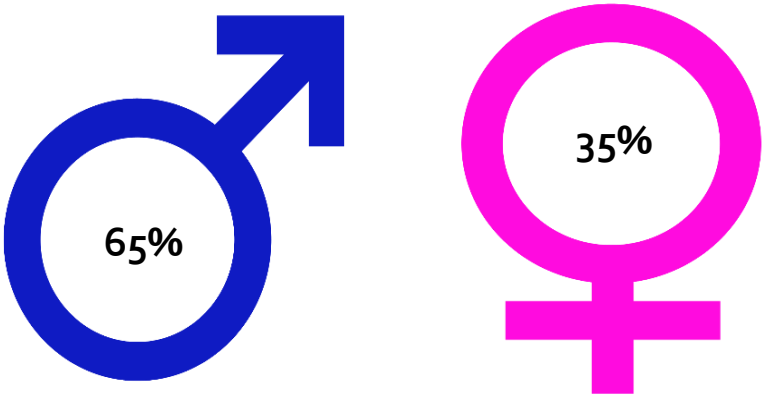
Accident by Race/Ethnicity

Race/Ethnicity	Number of Accidents	Percent of Accidents
Hispanic	106	31%
White Non-Hispanic	206	61%
Black	13	4%
Asian	11	3%
Other/Unknown	3	1%
Total	**339**	**100%**



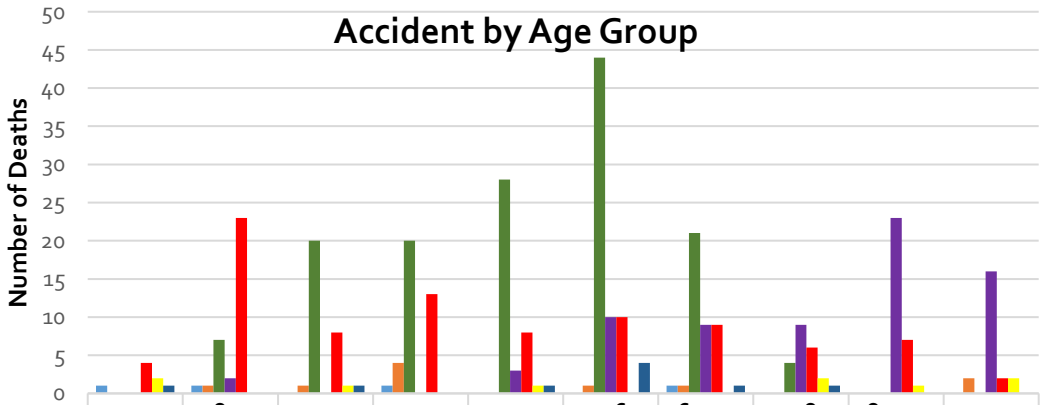
Accident by Gender

Gender	Number of Accidents	Percent of Accidents
Male	222	65%
Female	117	35%
Total	**339**	**100%**



Accident by Race/Ethnicity and Gender

Race/Ethnicity by Gender	Number of Accidents
Hispanic	106
Male	79
Female	27
White Non-Hispanic	206
Male	127
Female	79
Black	13
Male	8
Female	5
Asian	9
Male	5
Female	4
Pacific Islander	2
Female	0
Male	2
Other/Unknown	3
Female	2
Male	1
Total	**339**



	1-17	18-24	25-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Burns	1	1		1			1			
Drowning		1	1	4		1	1			2
Poisoning/Drugs		7	20	20	28	44	21	4		
Fall		2			3	10	9	9	23	16
MVA	4	23	8	13	8	10	9	6	7	2
Asphyxia	2		1		1			2	1	2
Other	1		1		1	4	1	1		

TRAFFIC ACCIDENTS

Motor-vehicle related accidents make up for **25.84%** of all accidental deaths in CY 2017. Of the **90** traffic-related deaths certified by the VCMEO in CY 2017 the majority involved **drivers** of motor operated vehicles (all types). The majority of decedents were between the ages of **18 and 24**.

Role of the Decedent in Traffic Death

Role	Number of Traffic Deaths	Percent of Traffic Deaths
Driver *Motorcycle:14* *Motor Vehicle: 38*	52	58.42%
Pedestrian	22	23.59%
Passenger	14	15.73%
Bicyclist	2	2.24%
Total	**90**	**100%**

Traffic Accidents by Age

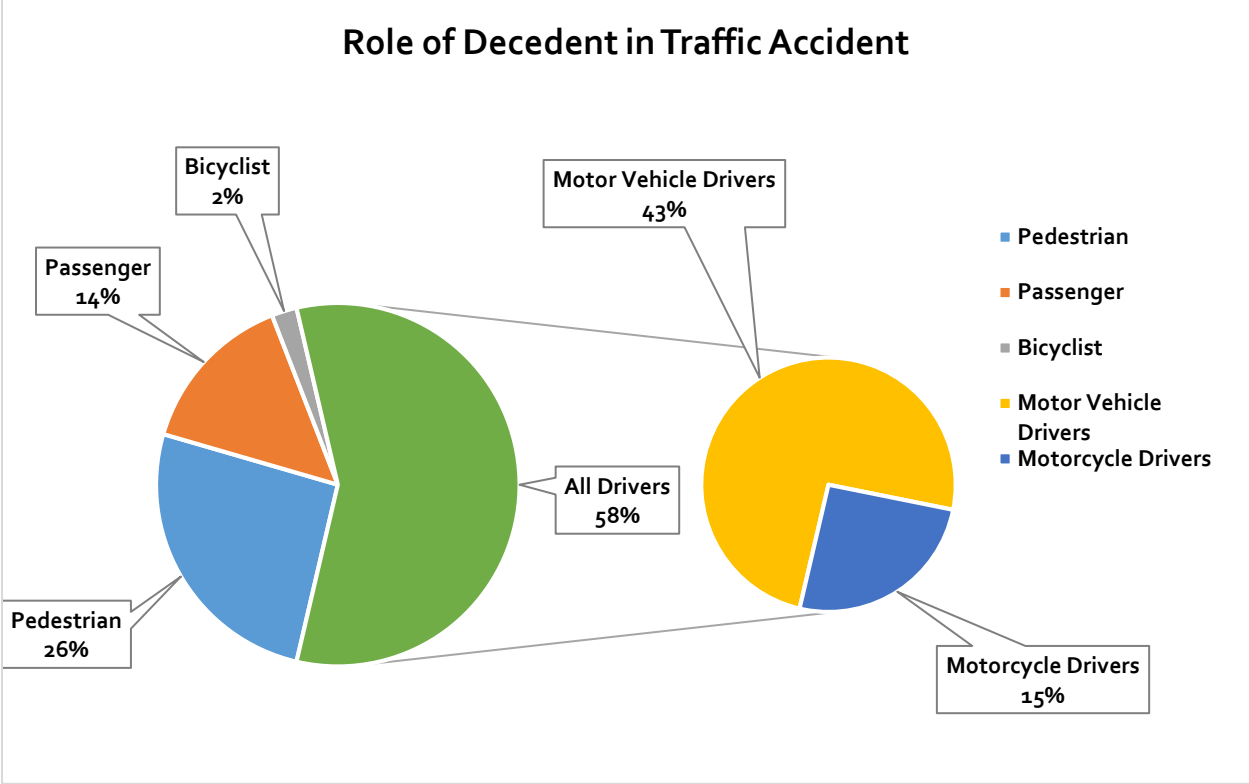
Age group	1-10	11-17	18-24	25-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
# of MVAs	1	3	**23**	8	13	8	10	9	6	7	2
% of Total	**1.11**	**3.33**	**25.56**	**8.89**	**14.44**	**8.89**	**11.11**	**10.00**	**6.67**	**7.78**	**2.22**

Traffic Accidents by Gender

Gender	Number of Traffic Accidents	Percent of Traffic Accidents
Male	63	70 %
Female	27	30%
Total	**90**	**100%**

Traffic Accidents by Month

Month	Number of Accidents
January	8
February	3
March	9
April	6
May	6
June	10
July	15
August	6
September	5
October	7
November	10
December	5
Total	**90**



TOXICOLOGY FINDINGS FOR TRAFFIC ACCIDENTS: DRIVERS ONLY

Of the cases where testing was not requested, all but one were delayed traffic incidents where testing was not possible.

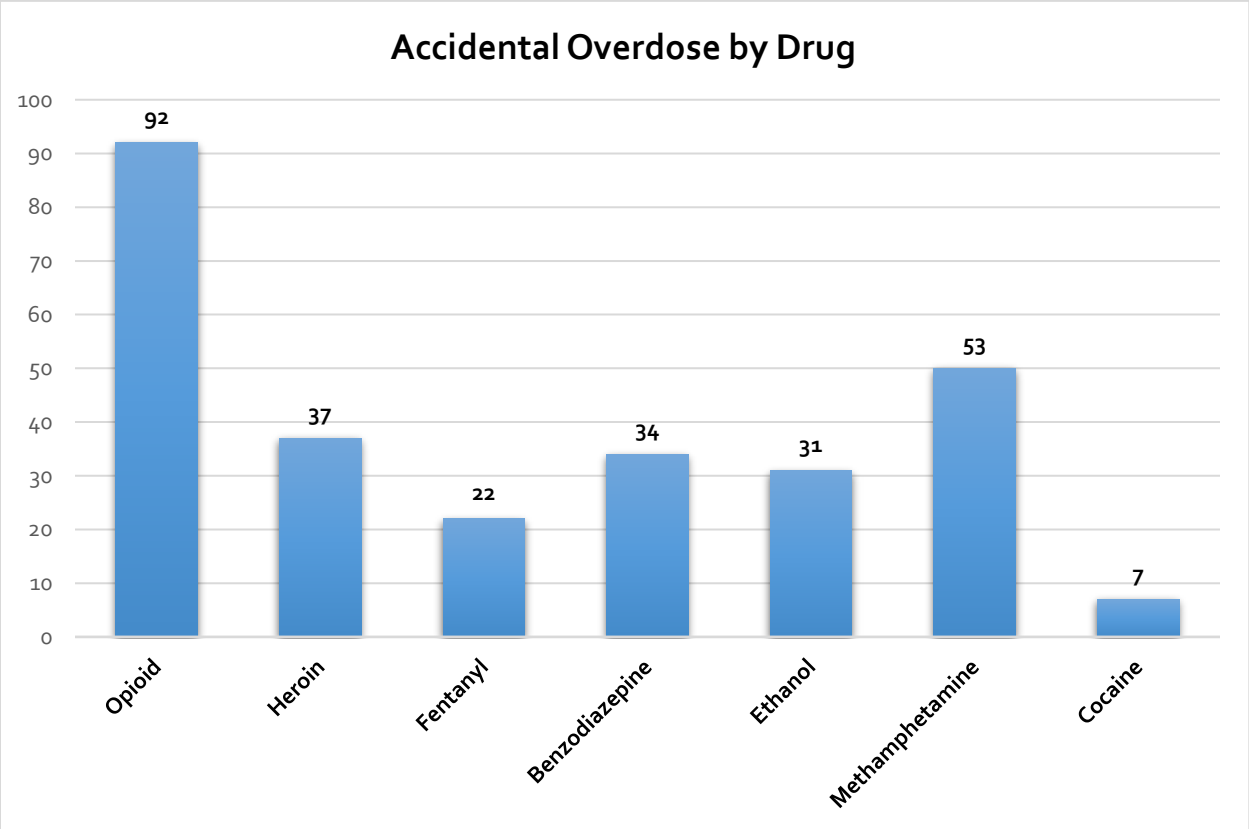
Of the 14 traffic deaths positive for ethanol, 10 were greater than the legal limit for driving under the influence (.08g/ 100 mL).

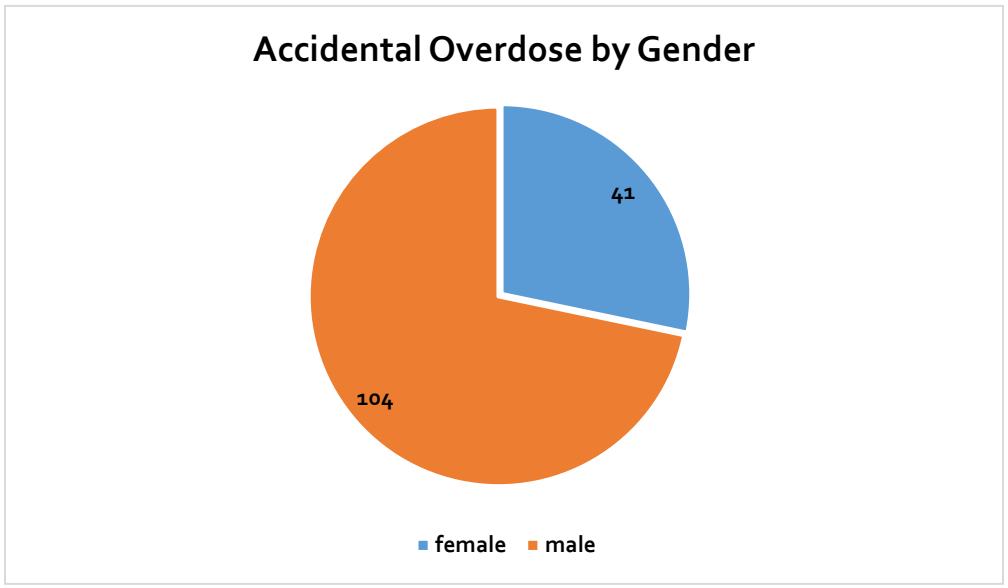
Description	Number of Cases
N=	51
Negative	19
Positive	24
No testing requested	8

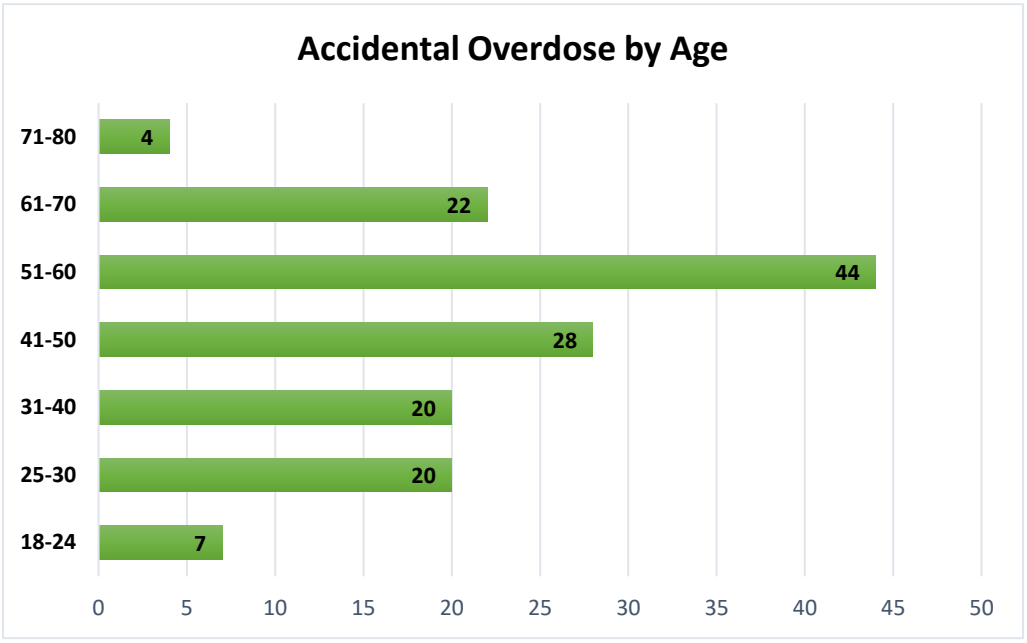
DRUG RELATED ACCIDENTS

In 2017, accidental overdose deaths outnumbered all other accidental causes of death in Ventura County. Of the deaths investigated by the VCMEO, **145** were accidental drug deaths resulting from medications, alcohol and or illicit drugs. Historically, in Ventura County and nationwide, motor vehicle deaths outnumber accidental overdose deaths. In 2017 there were **145** accidental overdoses compared to **90** motor vehicle deaths in Ventura County. Of the accidental overdose deaths, men accounted for **104** deaths (**72%**) and women accounted for **41** deaths (**28%**).

Multiple drugs or medications may be involved in one case. The same case may be represented multiple times by different drugs or drug categories.




Accidental Overdose by Gender
41
104
female
male

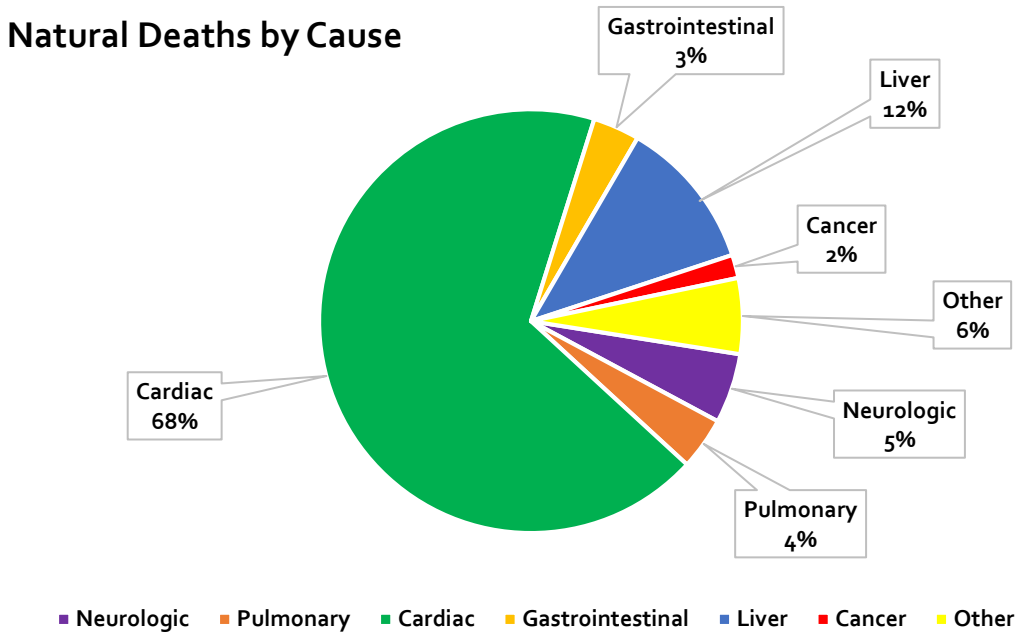

Accidental Overdose by Age
71-80
4
61-70
22
51-60
44
41-50
28
31-40
20
25-30
20
18-24
7
0
5
10
15
20
25
30
35
40
45
50

NATURAL DEATHS

Natural deaths continue to account for most decedent cases reported to and accepted by the VCMEO. In CY 2017, the VCMEO determined that **225** of the deaths were the result of natural disease. Deaths due to cardiovascular disease continue to dominate this category with **152** fatalities. The majority of the natural deaths falling under the jurisdiction of the VCMEO occurred in the month of March. The data included in this section only pertain to deaths for which jurisdiction was accepted.

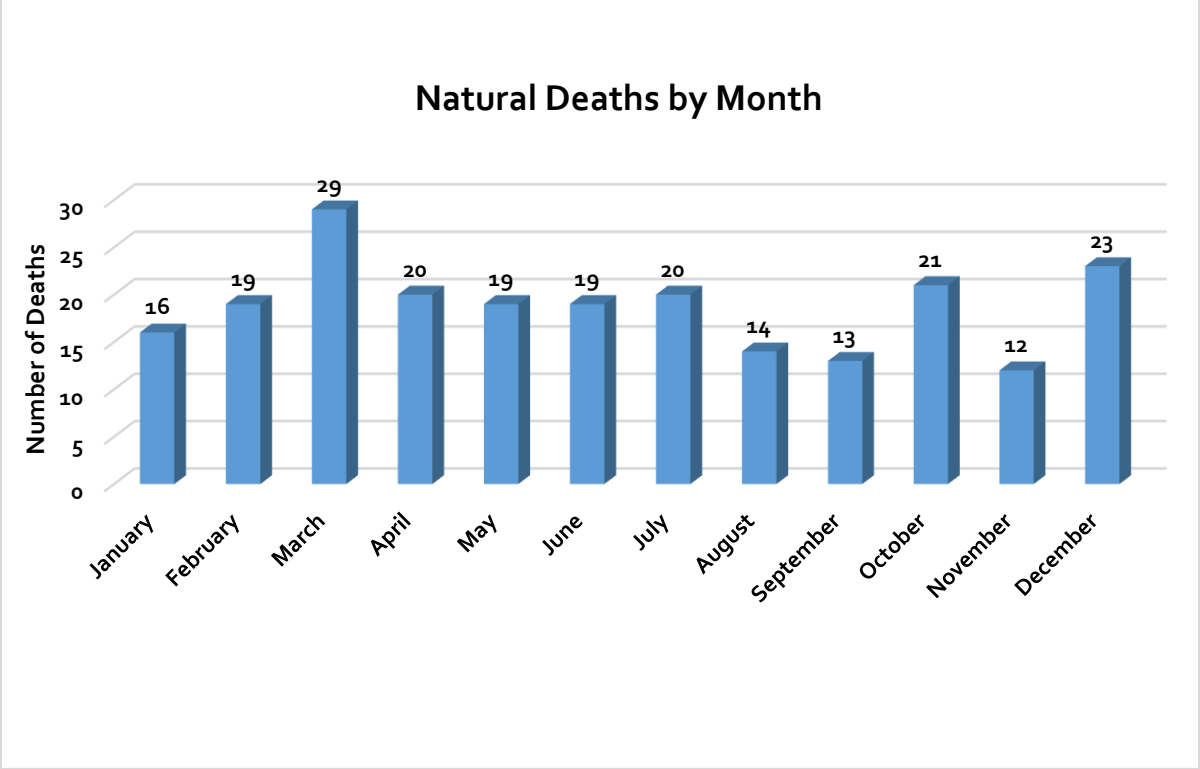
Natural Deaths by Cause

Cause	Number of Deaths	Percent of Total Natural Deaths
Neurologic	12	5.0
Pulmonary	9	4.0
Cardiac	152	68
Gastrointestinal	8	3.0
Liver* *chronic alcoholism contributed to 25 deaths	27	12.0
Cancer	4	2.0
Other	13	6.0
Total	**225**	**100**



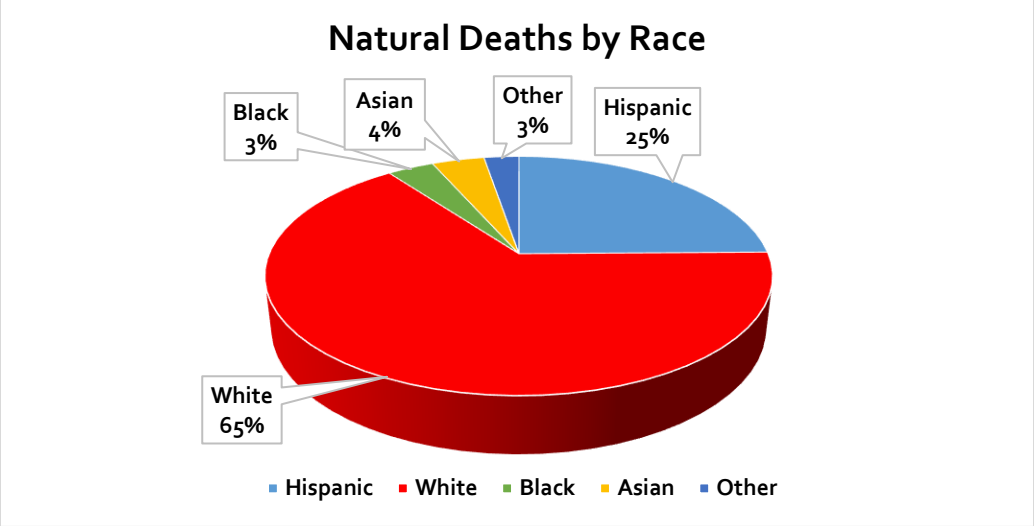
Natural Deaths by Month

Month	Number of Natural Deaths	Percent of Natural Deaths
January	16	16%
February	19	19%
March	29	29%
April	20	20%
May	19	20%
June	19	19%
July	20	20%
August	14	14%
September	13	13%
October	21	21%
November	12	12%
December	23	23%
Total	225	100%



Natural Deaths by Race

Race/Ethnicity	Number of Naturals	Percent of Naturals
Hispanic	55	25 %
White Non-Hispanic	147	65%
Black	8	3.5%
Asian	9	4%
Other	6	2.5%
Total	**225**	**100%**



Natural Deaths by Gender

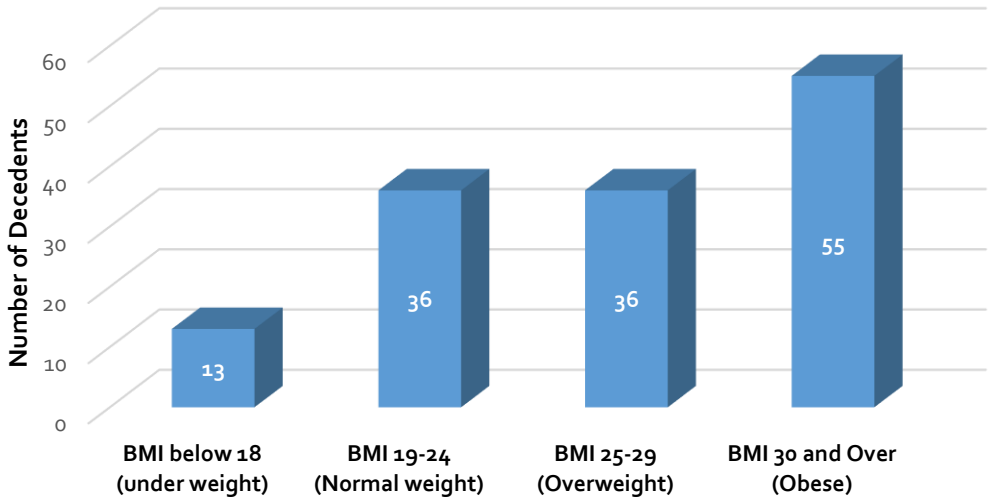
Gender	Number of Naturals	Percent of Naturals
Male	156	69 %
Female	69	31%
Total	**225**	**100%**

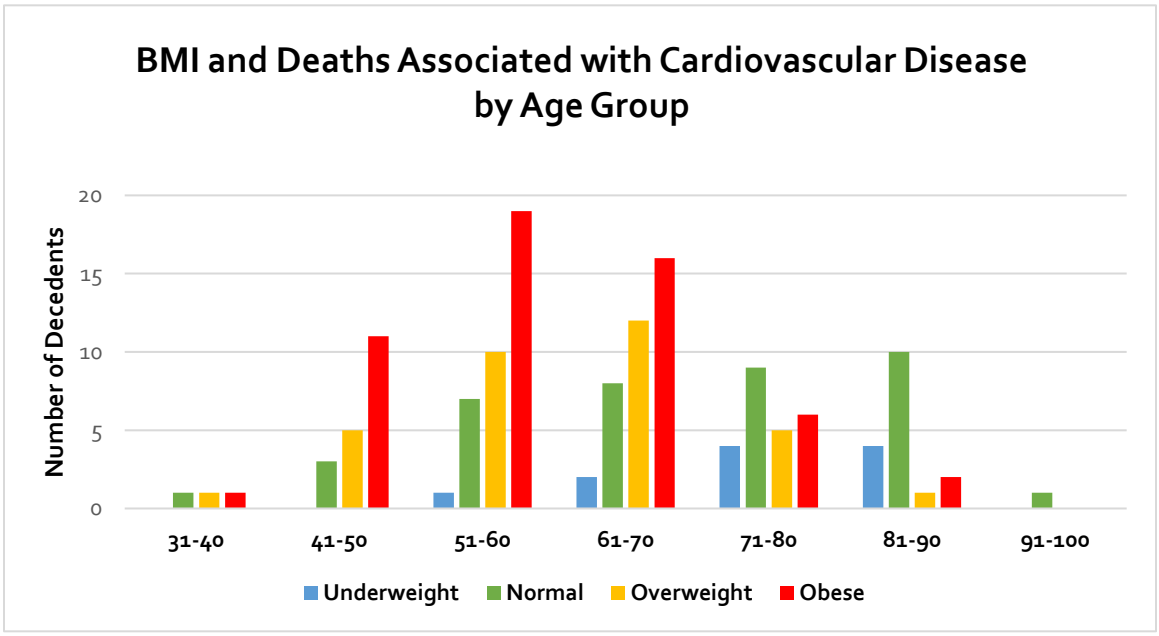
BMI AND DEATHS ASSOCIATED WITH CARDIOVASCULAR DISEASE

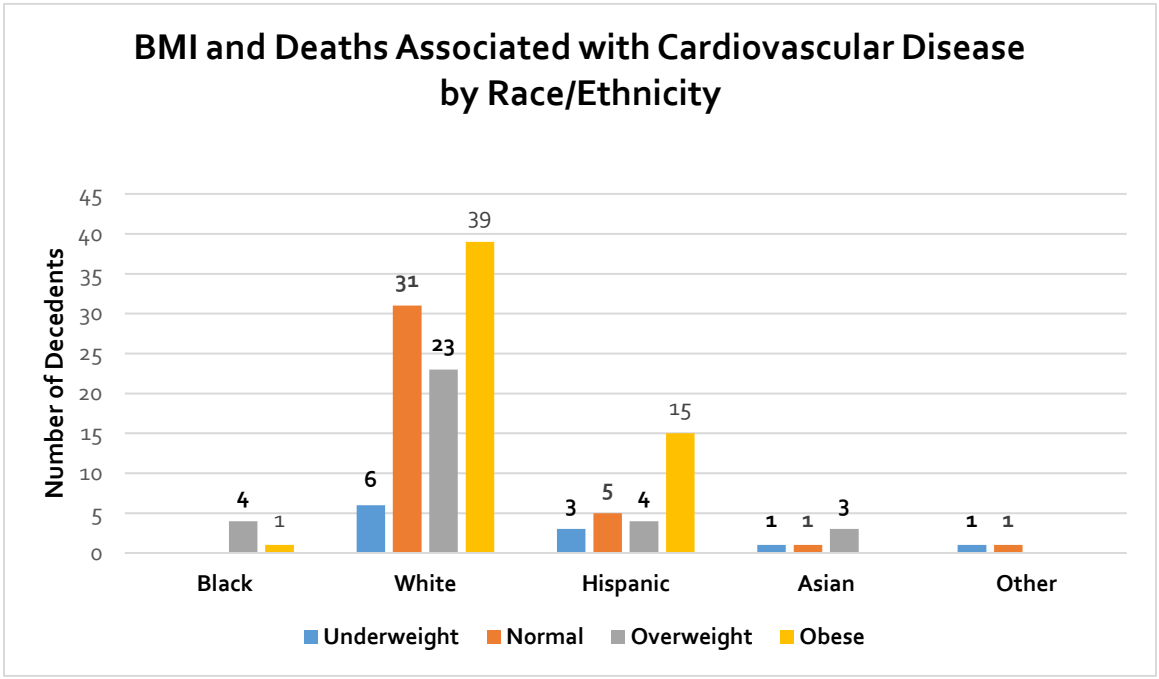
Body Mass Index (BMI) is measured by an adult person's weight divided by the height squared. BMI is a common tool for correlating health risks associated with obesity because of its usability and inexpensiveness. The Centers for Disease Control and Prevention (CDC) describes the standard weight categories associated with BMI ranges as follows:

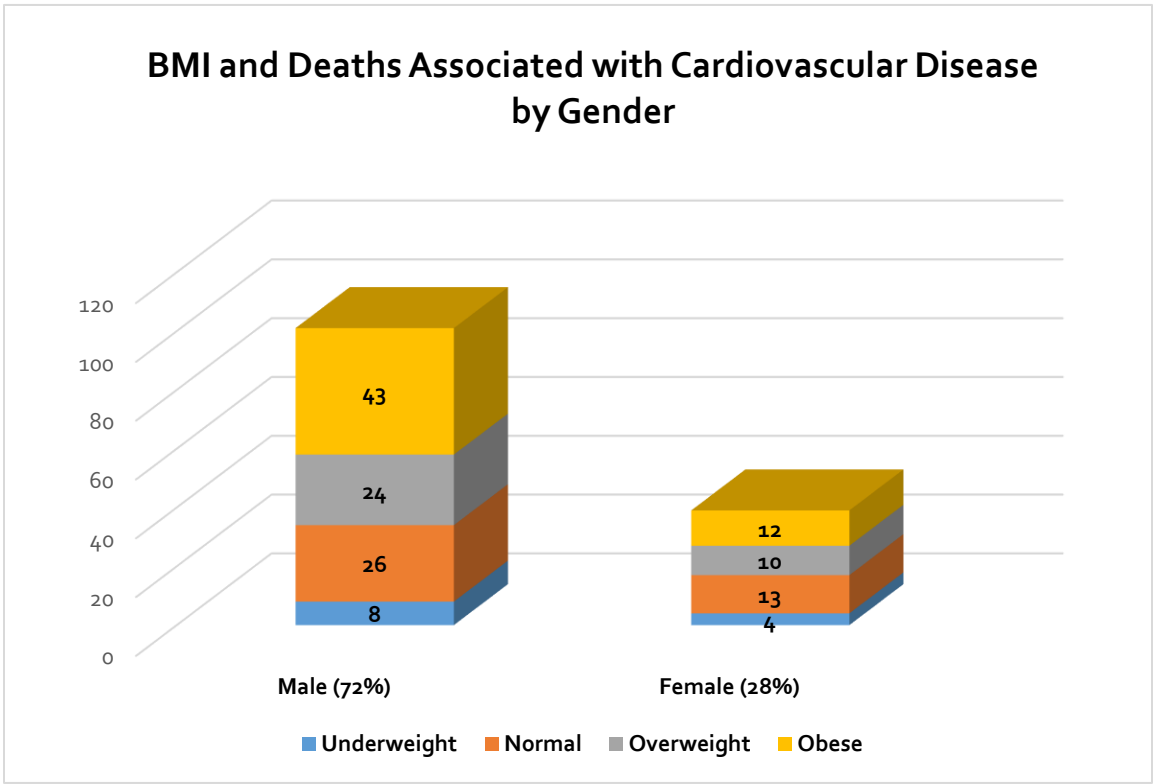
BMI	Weight Status
Below 18.5	Underweight
18.5-24.9	Normal Weight
25.0-29.9	Overweight
30.0 and Over	Obese

The charts below provide a breakdown of all adult decedents by BMI classification, by age and by race as related to cardiovascular disease. Of the adult decedents who were examined by the VCMEO and died of complications of cardiac deaths, **55** were classified as obese **(39%)** and **36** were classified as overweight **(28%)**.






BMI and Deaths Associated with Cardiovascular Disease by Race/Ethnicity
Number of Decedents
45
40
35
30
25
20
15
10
5
0
4
1
6
31
23
39
3
5
4
15
1
1
3
1
1
Black
White
Hispanic
Asian
Other
Underweight
Normal
Overweight
Obese


BMI and Deaths Associated with Cardiovascular Disease by Gender
120
100
80
60
40
20
0
43
24
26
8
12
10
13
4
Male (72%)
Female (28%)
Underweight
Normal
Overweight
Obese

UNDETERMINED DEATHS

The VCMEO investigated **6 deaths** (0.86% of total Accepted Cases) in CY 2017 that were certified as Undetermined for manner of death. Of these deaths, one also had a cause of death which was undetermined.

An "Undetermined" manner of death is determined when there is inconclusive evidence or investigatory information regarding the circumstances of the death. The manner of death can be amended as additional information is received as it infers a continuous investigation/search for clarification of the events surrounding the death. At times, the cause of death can also be certified as "Undetermined" when autopsy findings are not conclusive. This is often the case with skeletonized or markedly decomposed remains. Of the six undetermined deaths from CY 2017, one involved skeletonized remains.

A separate category of "Undetermined" manner of death involves infants whose deaths are associated with unsafe sleep environments including bed sharing, inappropriate bedding or other related, similar circumstances, where accidental manner cannot be excluded after a full and thorough autopsy. Many of these deaths were historically certified as SIDS with a Natural manner of death across the US. Of the six undetermined deaths, two were infants with unsafe sleep environments.

An additional category of "Undetermined" manner of death arises in the setting of a hospital death where drug intoxication may have contributed to the death, but admission samples were not retained by the hospital. In CY 2017, two deaths were certified with a manner of "Undetermined" because admission blood samples were not available for toxicology testing and drug or medication use may have contributed to the death. The VCMEO plans to work with area hospitals to create policies for retaining admission specimens for specific cases falling under MEO jurisdiction.

One other scenario where the manner of death may be listed as "Undetermined" is seizure disorders. If a death is the result of epilepsy related to accidental, suicidal or homicidal trauma, the manner is certified accordingly. Sometimes seizure disorders are idiopathic, and the manner is listed as natural. The sixth death with undetermined manner during CY 2017 was due to a seizure disorder of uncertain etiology.

TOXICOLOGY

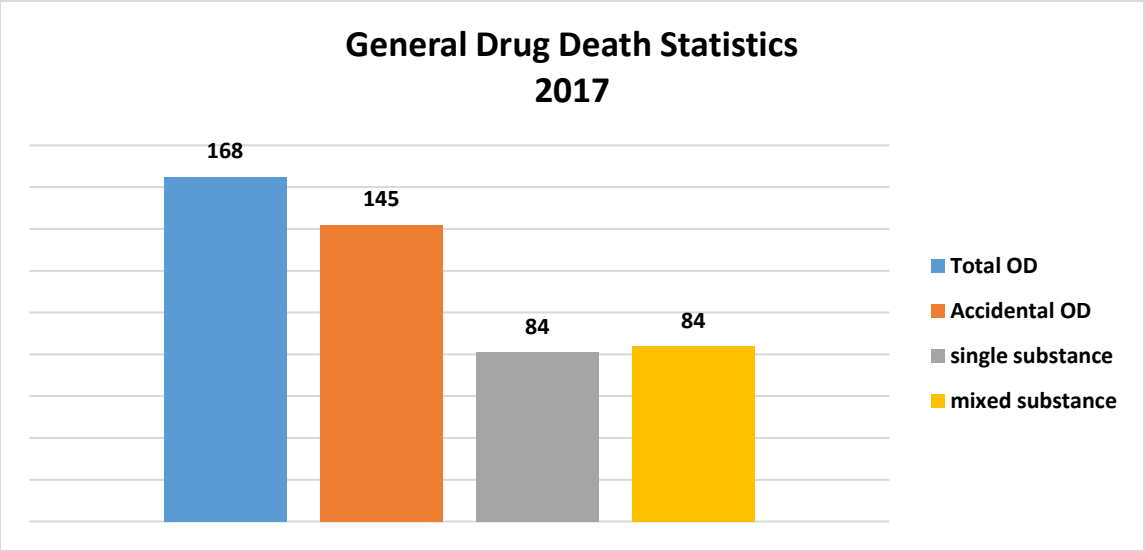
The VCMEO contracted with National Medical Services (NMS) for toxicological analysis at the beginning of fiscal year 17-18 (July 1, 2017). Prior to the NMS contracting implementation, the VCMEO utilized the services of the Sheriff's Crime lab. The VCMEO is grateful for many years of toxicology service from the Ventura County Sheriff's Office. The increased caseload from the opioid crisis, in addition to the dramatic increase in novel substances produced by clandestine laboratories worldwide, has caused a backlog in local toxicology laboratories across the country. The backlog results in delays in toxicology testing which in turn delays autopsy results and death certification. By switching to NMS, the VCMEO has seen an improvement in turnaround time from several months to as little as a few weeks. As a national provider of toxicology testing, NMS is able to regularly update their testing panels to identify newly emerging drugs.

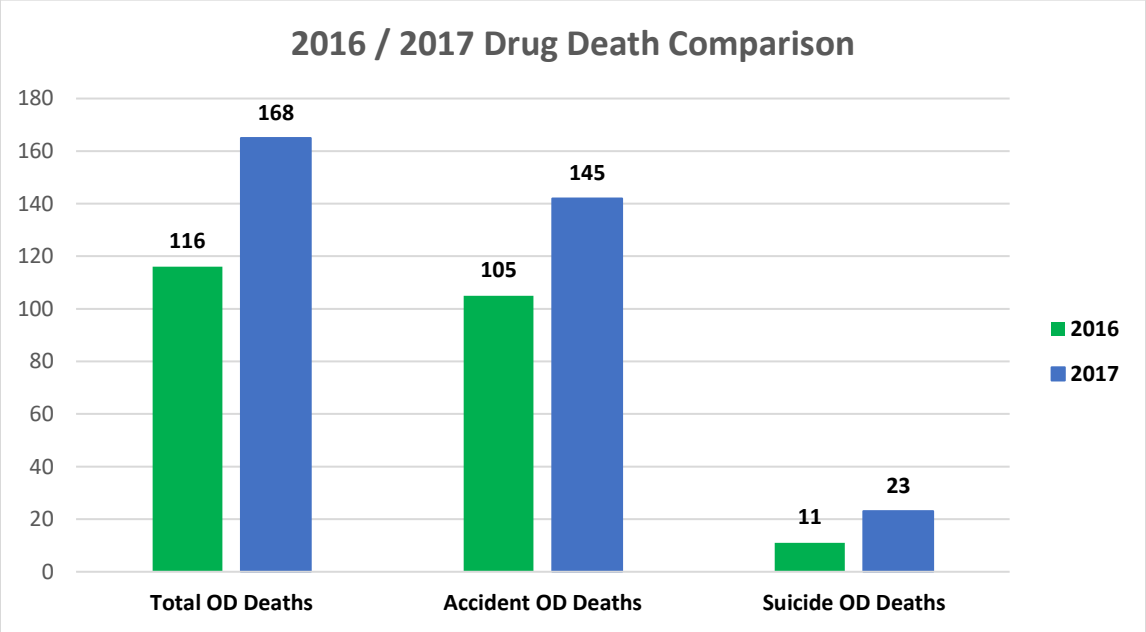
Drug overdoses account for a significant portion of the caseload at the VCMEO. Approximately 40% of all autopsies performed in 2017 were drug overdose and or alcohol intoxication deaths. In 2017, the 168 drug overdose cases required our staff to invest hundreds of hours to investigate, examine and accurately certify these deaths. The information and data generated from these cases are invaluable toward educating the public, assisting law enforcement with drug control and facilitating drug abuse treatment and prevention within Ventura County.

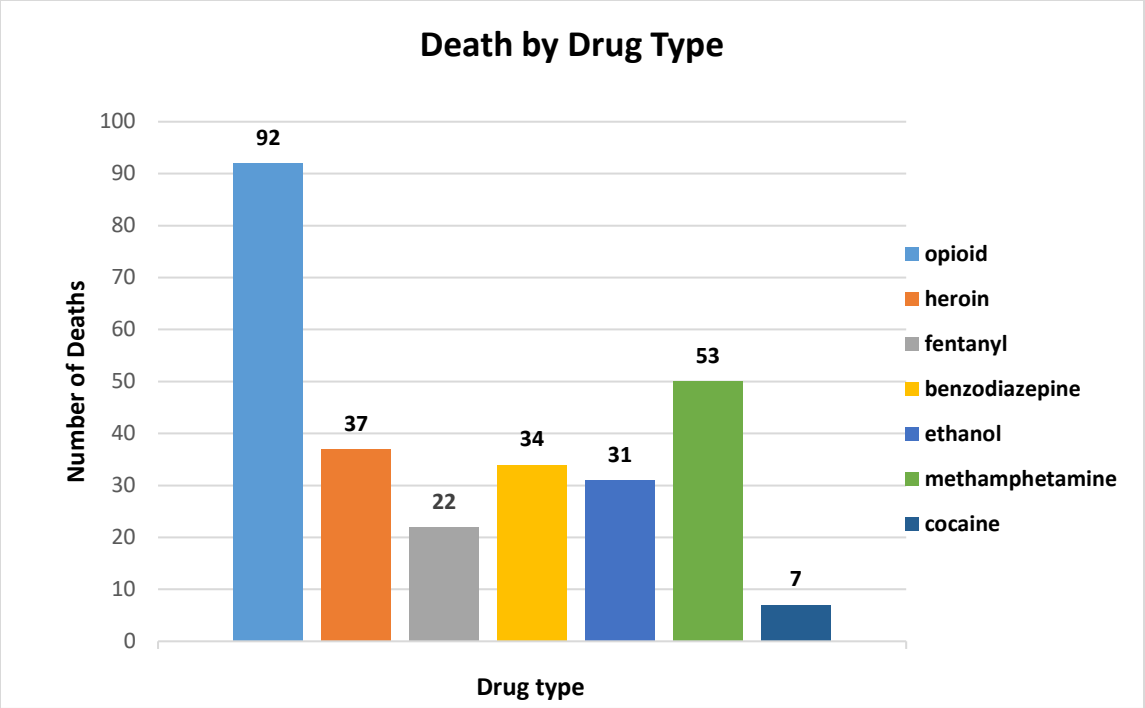
During the Calendar Year (CY) 2017, the Medical Examiner's Office tested 482 decedent cases for toxicology. Testing was performed on all cases where drugs and or alcohol are suspected to have contributed to the cause and manner of death as well as all transportation-related deaths.

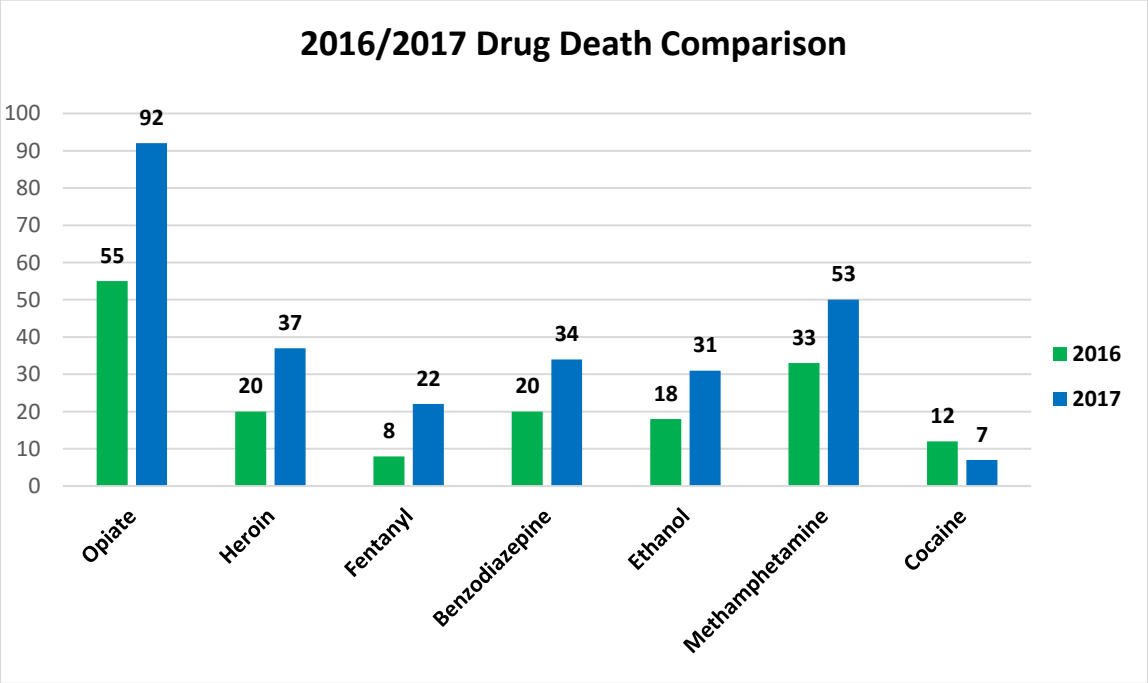
Description	Number of Cases	Percent of Cases
Toxicology requested	482	69.3
No testing requested	214	30.7

***The following toxicology data varies slightly from previously released overdose statistics due to death certificate amendments**.


General Drug Death Statistics
2017
168
145
84
84
Total OD
Accidental OD
single substance
mixed substance

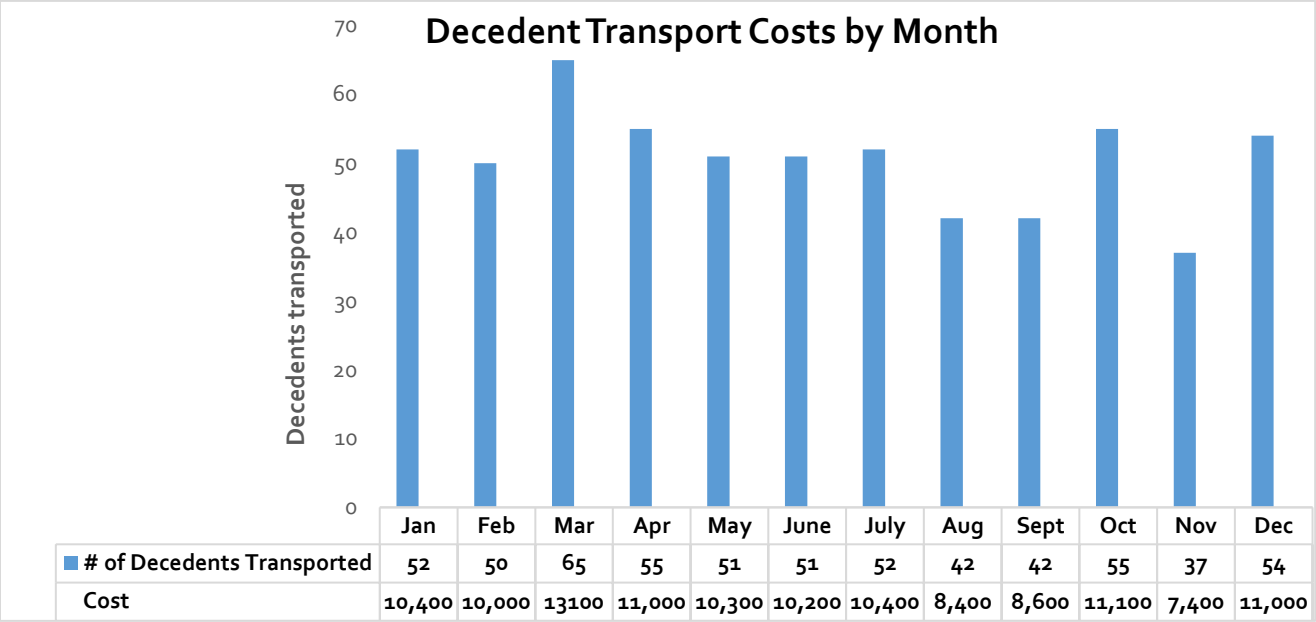

2016 / 2017 Drug Death Comparison
180
160
140
120
100
80
60
40
20
0
116
168
105
145
11
23
Total OD Deaths
Accident OD Deaths
Suicide OD Deaths
2016
2017


Death by Drug Type
Number of Deaths
100
90
80
70
60
50
40
30
20
10
0
92
37
22
34
31
53
7
Drug type
opioid
heroin
fentanyl
benzodiazepine
ethanol
methamphetamine
cocaine


2016/2017 Drug Death Comparison
100
90
80
70
60
50
40
30
20
10
0
55
92
20
37
8
22
20
34
18
31
33
53
12
7
Opiate
Heroin
Fentanyl
Benzodiazepine
Ethanol
Methamphetamine
Cocaine
2016
2017

TRANSPORTATION

A contracted transportation company does almost all transportation of decedents. A total number of **606** decedents were transported by the vendor in 2017 at an annual cost of $121,900. The tables below show the number of bodies transported per month and the associated costs per month in CY17.



CY2017	# Bodies Transported	Cost
Jan	**52**	$10,400
Feb	**50**	$10,000
Mar	**65**	$13,100
Apr	**55**	$11,000
May	**51**	$10,300
June	**51**	$10,200
July	**52**	$10,400
Aug	**42**	$8,400
Sept	**42**	$8,600
Oct	**55**	$11,100
Nov	**37**	$7,400
Dec	**54**	$11,000
Total	**606**	**$121,900**

ORGAN AND TISSUE RECOVERY

The VCMEO supports regional efforts for organ and tissue recovery. Many people who are donation candidates also fall under VCMEO jurisdiction in accordance with California Health and Safety Code Section 7150.5 *et seq.* or better known as the Uniform Anatomical Gift Act. This Act mandates that Medical Examiners and Coroners cooperate with organ procurement organizations to maximize the opportunity to recover anatomical gifts for the purpose of transplantation, therapy, research, or education. The primary entity that recovers donations in Ventura County is One Legacy, a donate life organization. This process is conducted with respect and honor to the decedents and their families. The following tables provide a statistical rendering of the work related to recovery efforts for tissue and organs in CY2017.

CY17	ME Jurisdictional Cases: Tissue Recovery
Corneas	18
Heart	7
Bone	3
Skin	14
Veins	10
Other	3
Total Donors	**55**

***A single donor may be listed in more than one category**

CY17	ME Jurisdictional Cases: Organ Recovery
Left Kidney	16
Right Kidney	16
Kidney Enbloc	0
Liver Whole	13
Pancreas Whole	2
Intestine Whole	0
Heart	6
Left Lung	3
Right Lung	1
Lung Enbloc	0
Total Donors	**57**

GLOSSARY

Cause of Death: Any injury or disease that produces a sequence of events in the body that results in the death of an individual.

Jurisdiction: The jurisdiction of the Medical Examiner extends to all reportable deaths occurring within the boundaries of Ventura County, whether or not the incident leading to the death (such as an accident) occurred within the county. Reportable deaths are defined by California Government Code 27491. Not all natural deaths reported fall within the jurisdiction of the Medical Examiner.

Manner of Death: A classification of the way in which the events preceding the death were causal factors in the death. The manner of death as determined by the forensic pathologist is an opinion based on the known facts concerning the circumstances leading up to and surrounding the death, in conjunction with autopsy findings and laboratory testing.

Manner: Accident Death resulting from an action or lack of action when death would not otherwise be expected.

Manner: Homicide Death resulting from intentional harm (explicit or implicit) of one person by another.

Manner: Natural Death caused by disease and/or the aging process. If natural death is hastened by injury (such as a fall or drowning in a bathtub), the manner of death is classified other than natural. The Natural category includes most complications of therapy deaths.

Manner: Suicide Death as a result of a purposeful action with intent (explicit or implicit) to end one's own life.

Manner: Undetermined Manner assigned when there is insufficient evidence or information, especially about intent, to assign a specific manner; death does not fit the other definitions or when two or more manners are just as likely.

Opiate: Any preparation or derivative of opium, including heroin, morphine or codeine.

Opioid: Natural or synthetic chemical that interacts with opioid receptors on nerve cells in the body and brain, and reduce the intensity of pain signals and feelings of pain. This class of drugs that include the illegal drug heroin, synthetic opioids such as fentanyl, and pain medications available legally by prescription, such as oxycodone, hydrocodone, codeine, morphine, and many others. Opioid pain medications are generally safe when taken for a short time and as prescribed by a doctor, but because they produce euphoria in addition to pain relief, they can be misused.

Race/Ethnicity – The racial categories used in this report are: Black, American Indian/Alaska Native, Asian/Pacific Islander, Other, and White. **Hispanic is the only ethnicity included in this data.**

Sudden and Unexpected Infant Death – A diagnosis designated for infants (children under the age of 1 year). Sudden and Unexplained Infant Death (SUID) is a diagnosis made in cases in which autopsy does not reveal a definitive medical or traumatic cause of death and the circumstances surrounding the death suggest that there is an associated risk factor for dying, such as unsafe bedding or co-sleep, or some other external factor, but the contribution of this factor cannot be determined with certainty. The diagnosis may also be used in the situation where a medical disease is identified, but it is uncertain that this disease caused the death.

Ventura County Medical Examiner's Office- The Ventura County Medical Examiner's Office (VCMEO) is responsible for the investigation of sudden, violent, or unexpected death