

**Los Angeles County  
Department of  
Medical Examiner-Coroner**

**2016  
Annual Report**



# Los Angeles County Board of Supervisors



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*Editor's Note:*

In 2016, Dr. Mark Fajardo was the Chief Medical Examiner-Coroner for the Los Angeles County Department of Medical Examiner-Coroner until April 15. Dr. Lakshmanan Sathyavagiswaran held the position of Interim Chief Medical Examiner-Coroner for the Department for the remainder of the 2016 calendar year.

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## **PRESENTATIONS**

JT Chu, DA Parham, JK Ribe, “Sudden Death from an Aortic Valve Low-Grade Myofibroblastic Sarcoma”, presented at Saban Institute Annual Poster Session, Los Angeles, June 2016.

L Sathyavagiswaran, “High-Profile Death Investigation—Michael Jackson”, presented at World Association of Medical Law, Los Angeles, August 2016.

C Rogers, “The Medical Examiner as Defendant”, presented at the National Association of Medical Examiners Annual Meeting, Minneapolis MN, September 2016.

## FORENSIC MEDICINE DIVISION

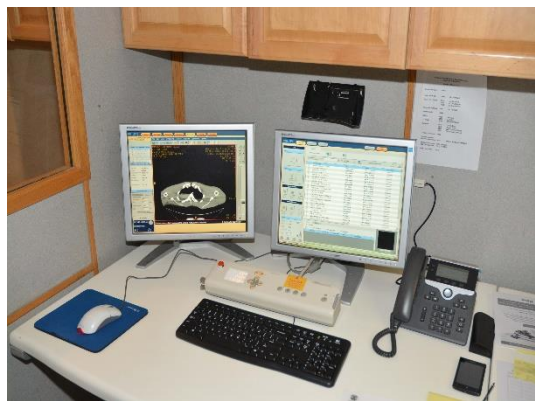
The Forensic Medicine Division's full-time permanent staff consists of board-certified forensic pathologists who are responsible for the professional medical investigation and determination of the cause and manner of each death handled by the Department.

The physicians are experts in the evaluation of sudden, unexpected, natural deaths and unnatural deaths such as deaths from firearms, sharp and blunt force trauma, etc. Physicians are frequently called to court to testify on cause of death and their medical findings and interpretations, particularly in homicide cases.

In addition, the division has consultants in forensic neuropathology, odontology, anthropology, anesthesiology, pediatrics, surgery, ophthalmologic pathology, pulmonary pathology, cardiac pathology, emergency medicine, psychiatry, psychology and radiology to assist the deputy medical examiners in evaluating their cases.

### CT SCANNER

Through generous donations and support from the 3rd Supervisory District and the Jewish religious community, the Medical Division was able to add a computed tomography (CT) scanner to the department in September 2016. The purpose was to improve accuracy of diagnoses, improve turnaround time by conducting virtual autopsies, and minimize the operational cost for the County of Los Angeles. In addition to these applications, the CT scanner is utilized for cases where there is religious objection to autopsy.



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### MEDICAL EDUCATION

The Department is approved by the Institute for Medical Quality, a subsidiary of the California Medical Association, as a provider of Continuing Medical Education activities.

### HEALTH & SAFETY/RISK MANAGEMENT

The Department has implemented an aggressive health & safety committee and risk management program, which has significantly reduced work-related injuries.

### ICAN

The Department participates in the Interagency Council for Child Abuse and Neglect (ICAN). This Department is the host of the monthly Child Death Review Committee of ICAN.

### IDENTIFICATION OF UNIDENTIFIED BODIES (SB 90)

The Department participates in a State-mandated program to examine dental records and collect appropriate specimens for the identification of John and Jane Does.

### MEDICAL EXAMINER-CORONER ALERT PROJECT (MECAP)

The Department of Medical Examiner-Coroner reports to the Consumer Product Safety Commission on all deaths directly related to unsafe consumer products.

### RESIDENCY PROGRAM

The Medical Division of the Department of Medical Examiner-Coroner has an Accreditation Council for Graduate Medical Education-approved forensic pathology residency program designed to train deputy medical examiners and prepare them for board certification while performing medical investigations under appropriate supervision.

### SCUBA PROGRAM

The Department staff participates in the Los Angeles County Interagency Scuba Committee to investigate and develop programs to prevent future scuba diving fatalities.

### TISSUE HARVESTING/ORGAN TRANSPLANTATION

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This program provides corneas and other tissue to all in need in our community through coordinated efforts with various tissue banks and hospitals. After family consent is obtained, our medical staff provides review of organ and tissue procurement in Medical Examiner-Coroner cases.

In addition, the program makes tissue available to low-income and indigent patients at County hospital at no cost to the patients or hospitals.

### UNIVERSITY HOSPITAL PATHOLOGY RESIDENT TRAINING PROGRAM

The department offers the opportunity for pathology residents from local university-affiliated hospital (USC, UCLA, Cedars-Sinai, and others) to train in our office with costs paid by the hospitals. This program fosters positive relationships with the university hospitals' pathology department and improves the standard of practice of forensic medicine in general, as these pathology residents will be practicing in the community when they finish training.



## **FORENSIC SCIENCES LABORATORIES DIVISION**

The Forensic Sciences Laboratories Division is responsible for the identification, collection, preservation, and analysis of physical and medical evidence associated with Medical Examiner-Coroner cases.

The mission is to conduct a comprehensive scientific investigation into the cause and manner of any death within the Medical Examiner-Coroner jurisdiction. This is accomplished through the chemical and instrumental analysis of physical and medical evidence.

The goal is to provide our medical examiners, families of decedents, outside investigating agencies, and the judicial system with timely, accurate, and advanced forensic analyses; and to provide expert interpretation of these analyses.

The Forensic Sciences Laboratories are fully accredited in Controlled Substances, Trace Evidence, Toxicology and Firearm/Toolmarks by the prestigious American Society of Crime Laboratory Directors-Laboratory Accreditation Board (ASCLD/LAB-International).

The forensic blood alcohol testing program is licensed by the State of California (Title 17).

### **CRIMINALISTICS**

Our teams of specially trained forensic scientists are on call twenty-four hours a day to respond to crime scenes for the proper documentation, collection and preservation of physical evidence.

### **HISTOLOGY**

This laboratory facilitates the preparation of gross tissue specimens for microscopic examination by the medical staff. This includes hematoxylin and eosin stains, special stains, and immunohistochemical stains.

Through the microscopic examination of tissue, forensic pathologists can determine the age and degree of injury, diagnose disease including cancers, evaluate cellular variation in tissue, and identify the presence of bacteria, medical disorders, and toxins such as asbestos.

## TOXICOLOGY

Using advanced instrumentation and methods, the toxicology laboratory conducts chemical and instrumental analysis on postmortem specimens to determine the extent to which drugs may have contributed to a death.

The laboratory's experienced forensic toxicologists offer expert drug interpretation that assist the medical examiners in answering questions such as, what drug was taken? How much and when was the drug taken? Did the drug contribute to the cause and/or manner of death? Was the drug use consistent with therapeutic administration, or was it abuse? If the death is due to a drug overdose, was it intentional or accidental?

## SCANNING ELECTRON MICROSCOPY LAB

Our scanning electron microscope (SEM) laboratory conducts gunshot residue (GSR) analyses and toolmark evaluations. Using a SEM equipped with an energy dispersive x-ray detector, GSR analysis is used to determine whether an individual may have fired a weapon.

Our laboratory also performs GSR analyses for many law enforcement agencies throughout California. Toolmark analysis involves the evaluation of trauma to biological material, especially bone and cartilage, as to the type of instrument that might have produced the trauma. This not only helps our pathologists understand the circumstances of a death, but also aids the law enforcement agency in their criminal investigation.

## EVIDENCE CONTROL

Our evidence personnel are responsible for maintaining the integrity and chain of custody for all of the evidence collected from Medical Examiner-Coroner cases. All of the physical evidence collected by Department investigators, criminalists, pathologists, forensic technicians, and forensic attendants is documented and maintained by the evidence control unit.

## **OPERATIONS DIVISION**

This Division is responsible for the 24-hour-a-day, 7-day-a-week operations of many direct services provided by the Department. The Division oversees Investigations and Decedent Services Unit. In addition, the Division is responsible for public information office functions, fleet management, emergency and disaster planning, homeland security grants, and other ancillary programs such as regional offices and the Youthful Drunk Driver Visitation Program (YDDVP).

### **INVESTIGATIONS**

The Investigations Division responds to the scenes of death throughout Los Angeles County twenty-four hours a day, 7 days a week.

It is the responsibility of the Coroner Investigator to function as the eyes and ears of the Deputy Medical Examiner, ensure that State law is followed in respect to Medical Examiner-Coroner cases, and be the advocate for the deceased person.

Coroner Investigators are responsible for preparation of investigative reports for use in the determination of cause and manner of death, along with identifying the deceased and notifying their next of kin.

Testimony in court and depositions on Medical Examiner-Coroner cases also is an important part of the investigator's duties. Due to the diverse case load in Los Angeles County, the Coroner Investigator is in the important position of seeing every death that occurs under other than natural circumstances and is often the first to identify trends such as serial deaths and consumer product safety issues.

The Department of Medical Examiner-Coroner is a California Peace Officer Standards and Training (POST) certified agency. Under State law (Penal Code 830.35), all Coroner Investigators are sworn peace officers. The Coroner Investigators must meet the same stringent hiring standards as any other California law enforcement agency.

The Division offers specialized POST certified training including the 40-hour annual Skeletal Recovery course, which is attended by law enforcement, coroner investigators, criminalists, military and others from around the country.

Investigative capabilities have been extended to offices in the Antelope Valley and San Fernando. Regional offices provide a more rapid Medical Examiner-Coroner response to the scene of death, which results in rapid mitigation of traffic and other public conveyance obstructions.

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### SPECIAL OPERATIONS, DISASTER PREPAREDNESS AND RESPONSE

The Department of Medical Examiner-Coroner has fielded a specialized response unit comprised of Coroner staff including investigators, criminalists, technicians, doctors and consultants in anthropology and entomology.

The SORT team responds to cases requiring specialized recovery and scene processing techniques, such as those required in aircraft crashes, buried bodies, scattered human remains and fires, and also assists law enforcement agencies in general searches for scattered human remains or possible burial sites. They are the primary responders for mutual aid requests and multiple fatality incidents.

Disaster preparedness and response is a key Departmental responsibility as one of the lead County agencies in major disasters and significant smaller incidents that involve multiple fatalities. The Department also serves as the Region 1 Coroner Mutual Aid Coordinator for the State of California. Our role requires plan development and regular training on the operation of an Emergency Operations Center (EOC) and field response, as well as participating in multi-agency emergency exercises.

As a result of grant funding, the Department has been able to purchase disaster equipment to include multiple decedent storage and transportation vehicles, a command post and mobile autopsy vehicle. We continue to strive to update and keep current with our training and equipment needs.

### YOUTHFUL DRUNK DRIVER VISITATION PROGRAM (YDDVP)

Since 1989 the Department of Medical Examiner-Coroner has conducted the YDDVP program, which a judicial offer can consider as an alternative sentencing option. The program is designed to present the consequences of certain behavior to the participants in a manner that is both impactful and educational. The program is currently offered weekly and includes classes presented completely in Spanish.

### DECEDENT SERVICES UNIT

Personnel assigned to this unit are responsible for the transportation, processing, storage, and release of bodies that are under the jurisdiction of the Medical Examiner-Coroner. Bodies may be recovered from any death scene, in almost any environment imaginable, including those in public view, private homes, and hospitals. Decedent processing includes obtaining the height and weight of bodies, the collection, documentation, and safekeeping of personal effects, and the collection of both physical and medical evidence, fingerprinting

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of decedents using LIVE-SCAN technology and placement of identification tags on the body.

Bodies are maintained in refrigerated crypts while awaiting examination and release to mortuaries or for County cremation. Additionally, staff members are accountable for all human remains and specimens stored in the crypt areas.

## **ADMINISTRATIVE SERVICES DIVISION**

The Administrative Services Bureau is responsible for all departmental financial operations, departmental budget preparation, fiscal reports, personnel, payroll, procurement, accounting, revenue collection, marketing, volunteer services, contracts and grants, public records request processing, information technology, workfare programs, facilities management, and other related functions.

### **FISCAL SERVICES**

The Accounting section is responsible for all financial transactions performed by the Department of Medical Examiner-Coroner. All Auditor-Controller guidelines are followed as well as any departmental guidelines governing monetary issues. The section also monitors all departmental accounts, such as salary and benefits, overtime expenditures, services and supplies, and budget.

### **PROCUREMENT**

Procurement is responsible for processing all requests for goods and services for the Department, warehouse and facilities management. Procurement staff works closely with fiscal staff to provide real-time information on services and supplies expenditures, fixed assets and inventory control, playing an important budgetary support role. They also provide guidance to end-users in the development of specifications and scopes of work.

### **HUMAN RESOURCES**

Human Resources is responsible for personnel issues that are inherent in County government such as benefits, processing examinations, filling vacant positions, litigation, workers compensation, volunteer services, payroll, community support programs such as job fairs, and budgetary support.

### **CONTRACTS AND GRANTS**

The Department administers contracts and agreements for various functions, such as tissue recovery, regional offices lease agreements, cremation services, neuropathology and forensic pathologist physician services. Contracts/Grants staff monitor existing contracts and grants, ensuring all provisions are adhered to. Staff also studies Department operations in the continuing evaluation of the appropriateness of contracting for other functions.

## FORENSIC DATA INFORMATION SYSTEMS

The mission of Forensic Data Information Systems (FDIS) is to enhance and support the Department's long-range goals, mission-critical business goals, and objectives through the administration, project management, and expansion of information technology-related applications and services, including the appropriate delivery of services to agencies referred through appropriate 24/7 e-government technologies.

The FDIS also is responsible for network, database and application administration, preparation of statistics and general client support. The FDIS is responsible to ensure that the Department is in alignment with the County-wide strategic planning effort to conduct County business electronically and maintain compliance with the technological directives as stipulated by the County's Chief Information Officer. The FDIS manages the information technology efforts of subcontracts in the implementation and support of new technologies such as e-commerce content management and voice over internet protocol (VoIP).

## **PUBLIC SERVICES DIVISION**

This Division is responsible for Medical Examiner-Coroner case file management, revenue collection (document sales, decedent billing, etc.), and interaction with the public both telephonically and at the front lobby reception area. In addition to providing information and copies of autopsy reports, Public Services staff offers many services to the public. These services include preparation of "Proof of Death" letters to verify that a death is being investigated by the Medical Examiner-Coroner, and "Port of Entry" letters to confirm that at decedent had no communicable disease, necessary for the decedent's admission into a foreign country after death.

### **RECORDS SECTION**

The Medical Examiner-Coroner is mandated by the California Government Code to retain all files permanently; therefore, the Department maintains 100+ years of records that are accessed on a regular basis at the request of the public, law enforcement and other government agencies. This Section is responsible for maintaining and securing Medical Examiner-Coroner records. In addition, this section handles a large volume of calls and is tasked with handling requests for records, reports and proof of death letters. Older records are maintained off site, on microfilm or microfiche, and must be transferred on to paper in order to be released. Some of our older records date back to the 19<sup>th</sup> century and are handwritten in ledgers.

### **DEATH CERTIFICATION**

The Section is responsible for the completion and daily issuance of the death certificates to mortuaries.

### **MEDICAL/CLERICAL SECTION**

This Section is responsible for reporting SIDS (Sudden Infant Death Syndrome) cases to the State and local health agencies for follow-up by those agencies.

The section also provides clerical support to the Deputy Medical Examiners.

### **MEDICAL TRANSCRIBING**

The Transcriber is responsible for the transcription of the autopsy report protocols, microscopic slide reports, neuropathology reports, suicide recordings, case review reports, supplemental reports, etc. An outside contractor is utilized for routine transcriptions.



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### PERSONAL PROPERTY SECTION

Personal property of all decedents is kept in the Personal Property Section and maintained in a vault until release to the decedent's next of kin. The Department has three Personal Property Custodians who collect, inventory, safeguard and release decedent's personal property to the legal next of kin. The Custodians are also responsible for disposal of all unclaimed personal effects.

### SUBPOENA DESK

The desk is responsible for processing all criminal and civil subpoenas, distribution (DocuPeak) of all subpoenas issued to staff on Medical Examiner-Coroner related business, processes subpoenas requesting documents, collection of witness fees. The desk is also responsible for the scheduling of all Deputy medical Examiners for court appearances, depositions and appointments with law enforcement, Deputy District Attorneys, Public Defender staff, and members of the public.

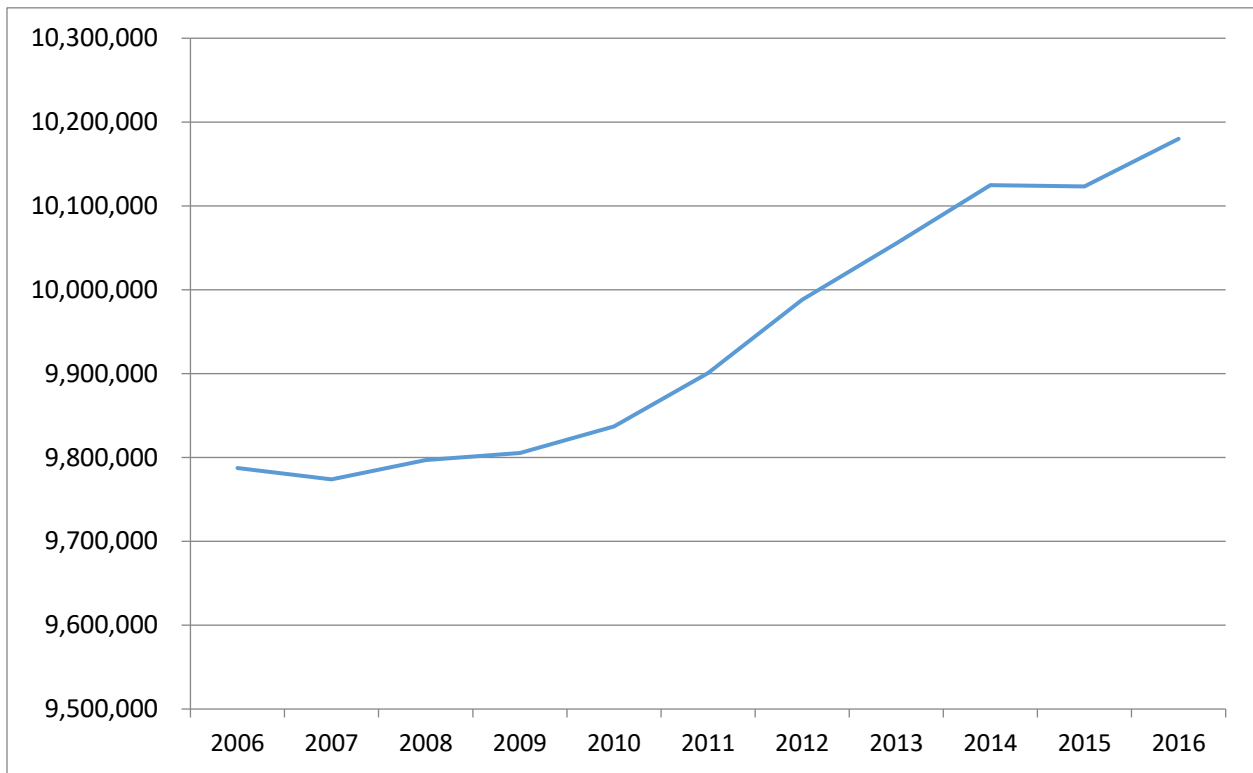
### BILLING SECTION

This section is responsible for billing and collecting transportation and handling (T&H) fees from the legal Next of Kin (NOK). California Government Code (Sections 27472 and 54985) and Los Angeles County Code (2.22.100) authorizes the Medical Examiner-Coroner to charge and collect from the person entitled to control the disposition of the remains the actual expense incurred by the coroner in removing the body from the place of death and keeping the body until its release to the person responsible for its interment. These same codes allow the Medical Examiner-Coroner to waive the fees if the person entitled to control the disposition of the remains claims and proves to be indigent. Full or make partial payments can be made via mail, online or in person.

### GIFT SHOP

"Skeletons in the Closet" has been operating since September 1993. The purpose of the store is to promote how fragile life is and create awareness and responsibility toward one's actions. Souvenir items, such as beach towels, t-shirts, baseball caps, key chains and more are offered for sale in the store and online. The items are available to the public via website at [LACORONER.COM](http://LACORONER.COM) or by calling (323) 343-0760.

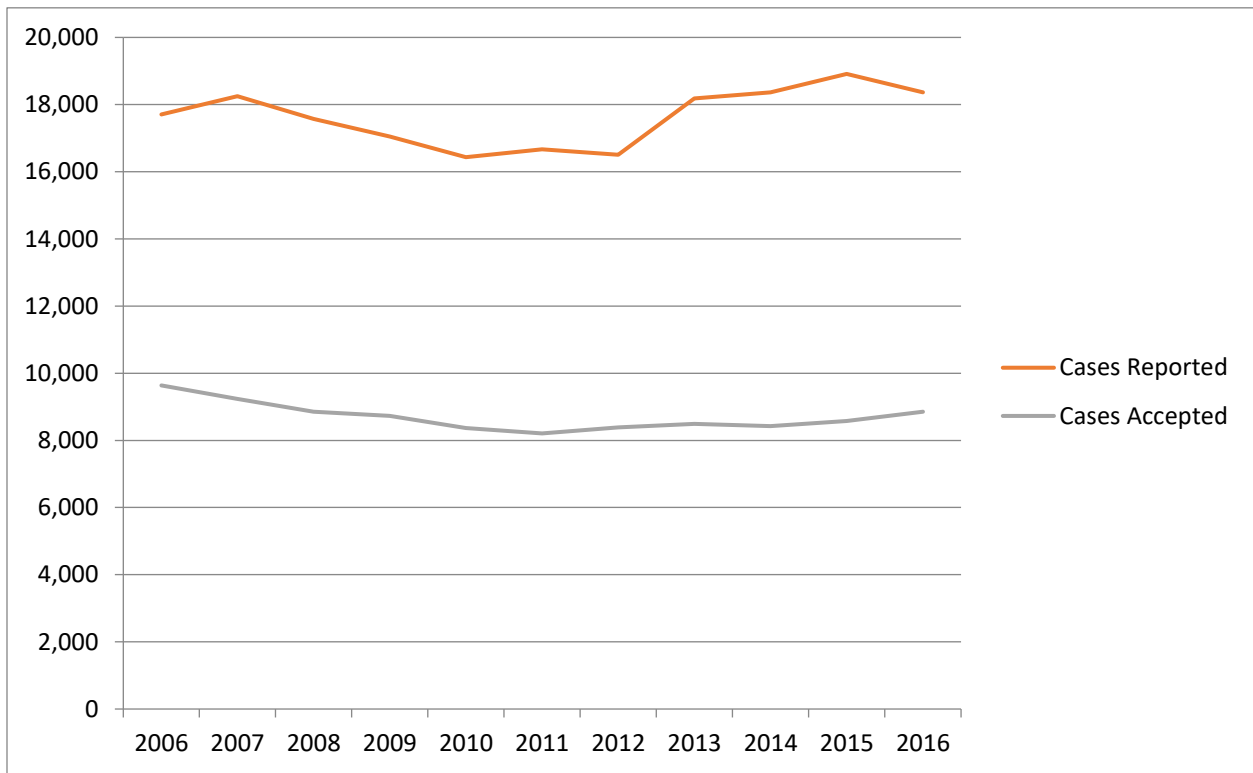
## Population of Los Angeles County, 2006-2016



Year	Population
2006	9,787,327
2007	9,773,894
2008	9,796,812
2009	9,805,233
2010	9,837,011
2011	9,900,858
2012	9,988,287
2013	10,055,477
2014	10,124,684
2015	10,123,248
2016	10,180,069

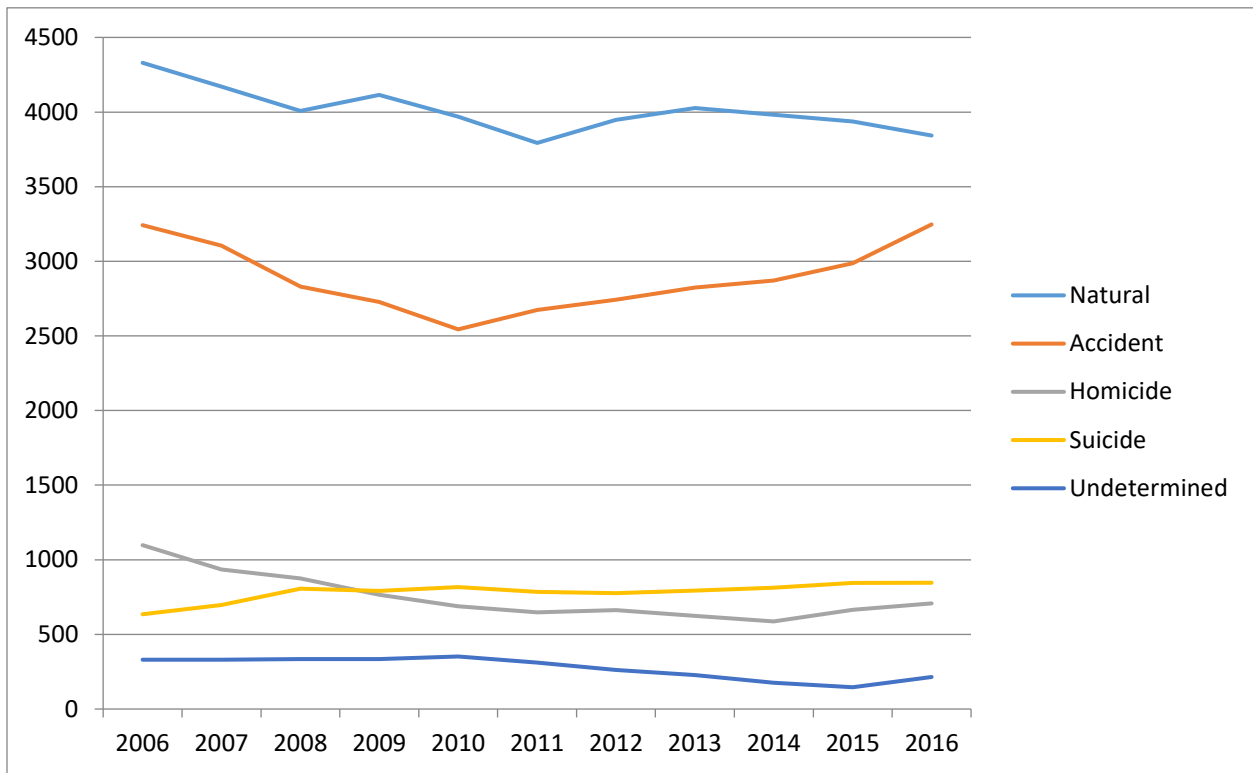
**Sources:** State of California, Department of Finance

### Number of Reported and Accepted Cases per Year, 2006-2016



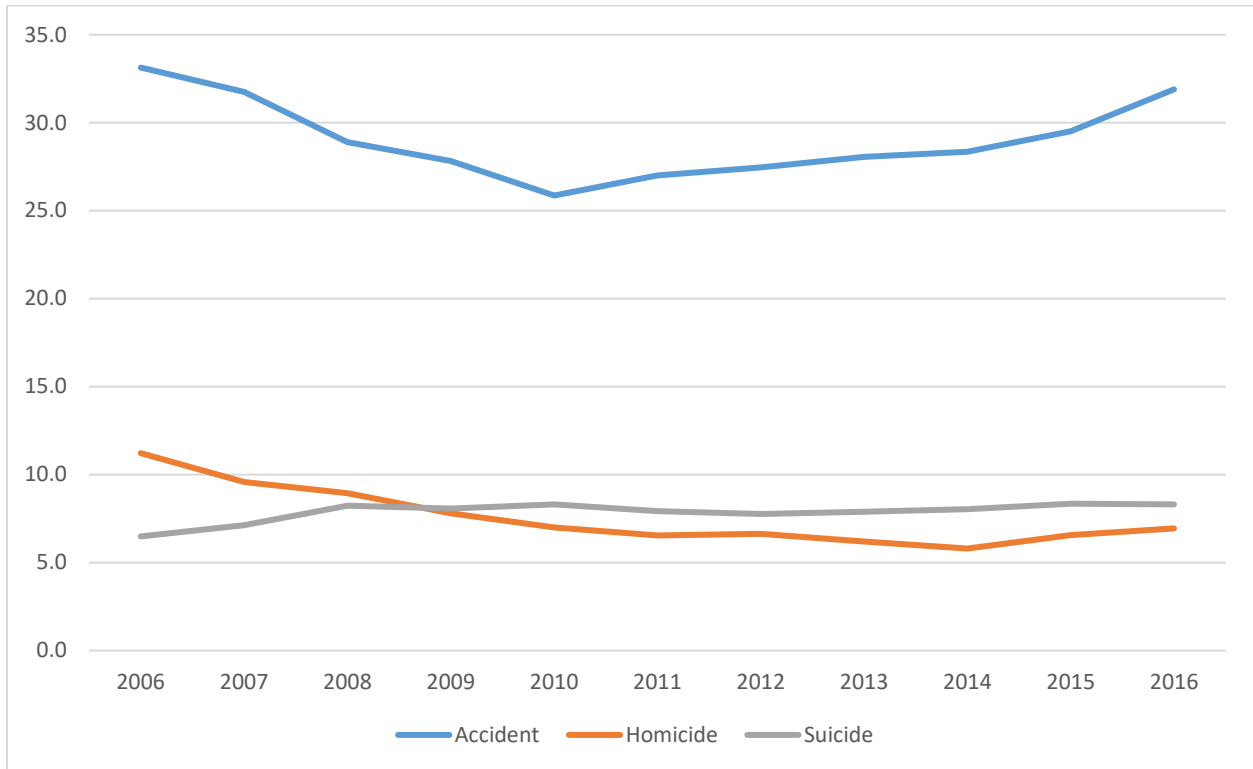
<b>Year</b>	<b>Cases Reported</b>	<b>Cases Accepted</b>
2006	17,704	9637
2007	18,254	9237
2008	17,572	8854
2009	17,053	8734
2010	16,434	8371
2011	16,668	8207
2012	16,508	8390
2013	18,187	8495
2014	18,365	8428
2015	18,913	8578
2016	18,367	8856

## Final Manner of Medical Examiner-Coroner Cases, 2006-2016



Year	Natural	Accident	Homicide	Suicide	Undetermined
2006	4330	3243	1098	635	331
2007	4170	3104	936	696	331
2008	4007	2830	876	807	334
2009	4115	2728	765	791	335
2010	3968	2544	689	818	352
2011	3793	2673	647	784	310
2012	3947	2743	662	776	262
2013	4027	2823	624	793	228
2014	3981	2871	587	813	176
2015	3936	2987	664	845	146
2016	3842	3247	707	846	214

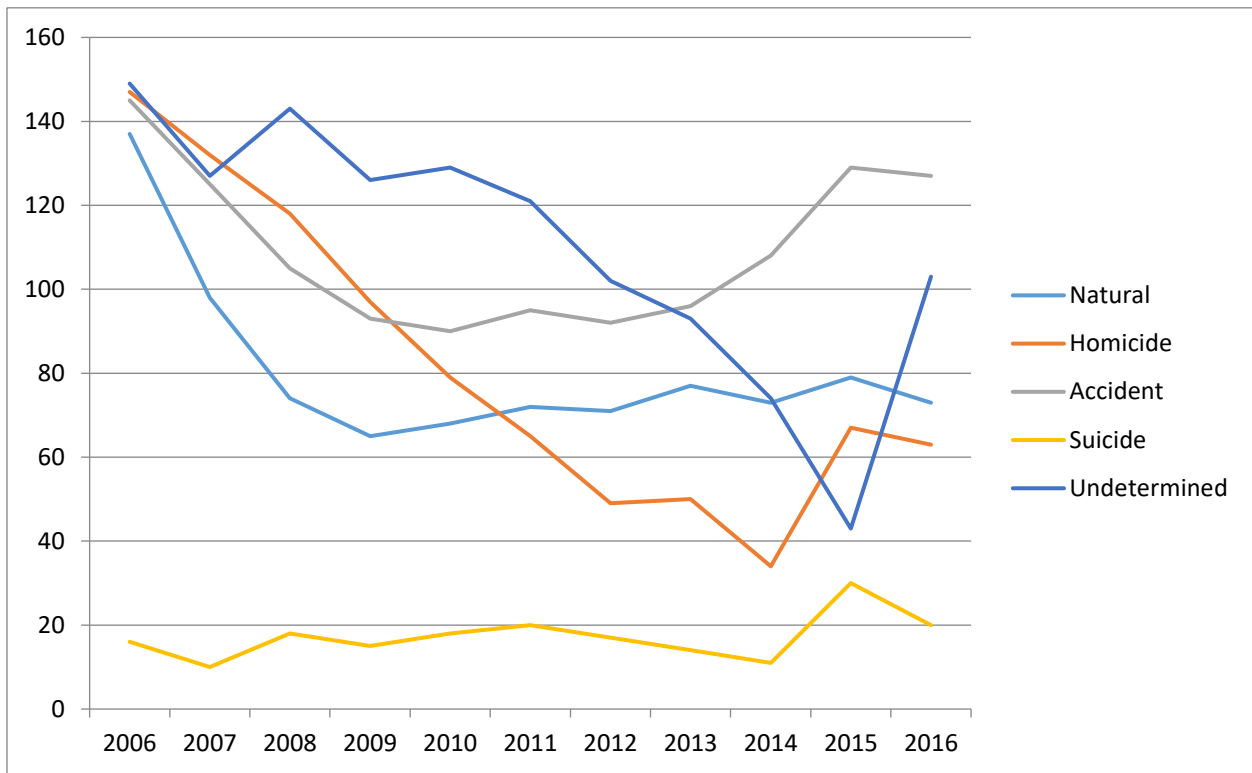
### Death Rates\* per 100,000 Population, 2006-2016



\*crude rates

Year	Accident	Homicide	Suicide
2006	33.1	11.2	6.5
2007	31.8	9.6	7.1
2008	28.9	8.9	8.2
2009	27.8	7.8	8.1
2010	25.9	7.0	8.3
2011	27.0	6.5	7.9
2012	27.5	6.6	7.8
2013	28.1	6.2	7.9
2014	28.4	5.8	8.0
2015	29.5	6.6	8.3
2016	31.9	6.9	8.3

### Manner for Child Deaths (Ages under 18), 2006-2016

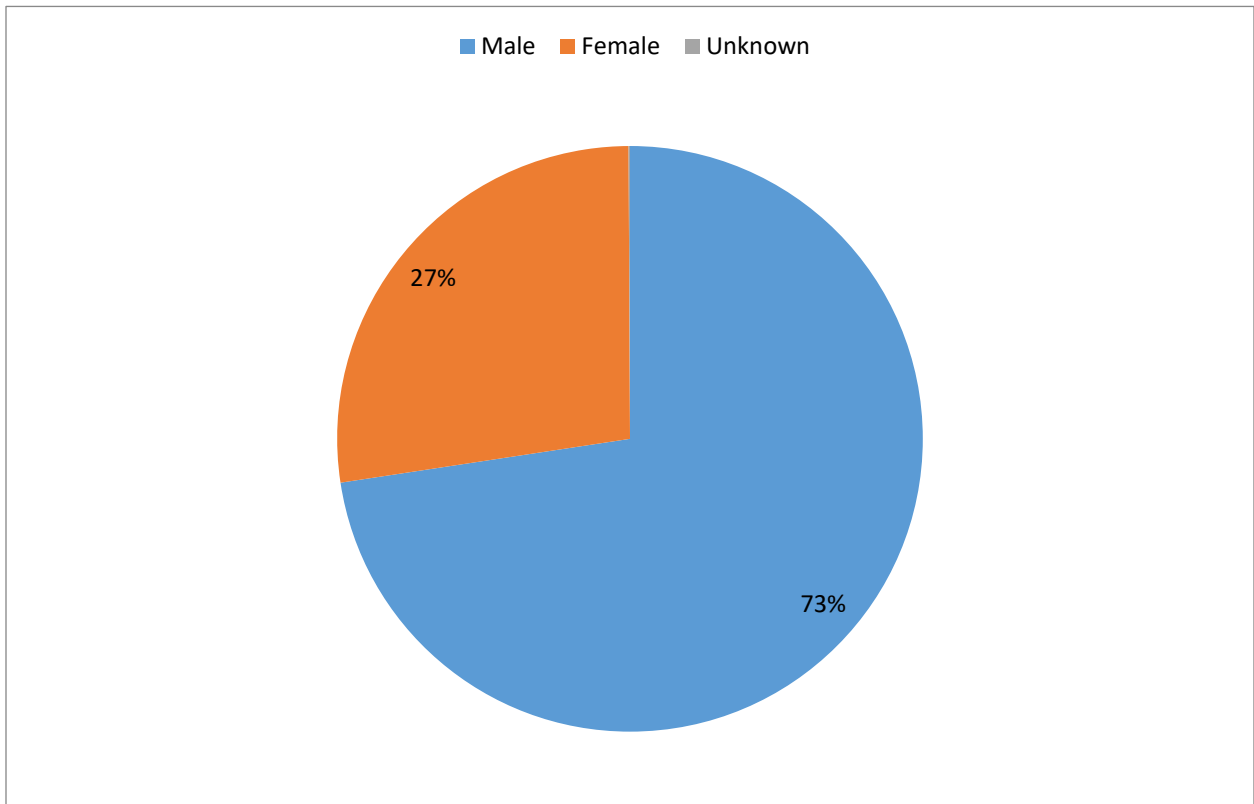


Year	Natural	Homicide	Accident	Suicide	Undetermined	Total
2006	137	147	145	16	149	594
2007	98	132	125	10	127	492
2008	74	118	105	18	143	458
2009	65	97	93	15	126	396
2010	68	79	90	18	129	384
2011	72	65	95	20	121	373
2012	71	49	92	17	102	331
2013	77	50	96	14	93	330
2014	73	34	108	11	74	300
2015	79	67	129	30	43	305
2016	73	63	127	20	103	386

## Statistics Required by National Association of Medical Examiners

Number of deaths reported:	18,367
Number of cases accepted:	8,856
Number of cases by manner of death:	
Accident:	3,247
Homicide:	707
Natural:	3,842
Suicide:	846
Undetermined:	214
Scene visits:	4,098
Number of bodies transported:	6,769
External examinations:	
By physician:	3,216
By investigator:	2,447
Partial autopsies:	287
Complete autopsies:	3,330
Hospital autopsies under ME jurisdiction:	0
Cases where toxicology was performed:	4,703
Bodies unidentified after examination:	20
Organ and tissue donations:	
Total organ donors:	131
Total tissue donors:	471
Unclaimed bodies:	791
Exhumations:	3

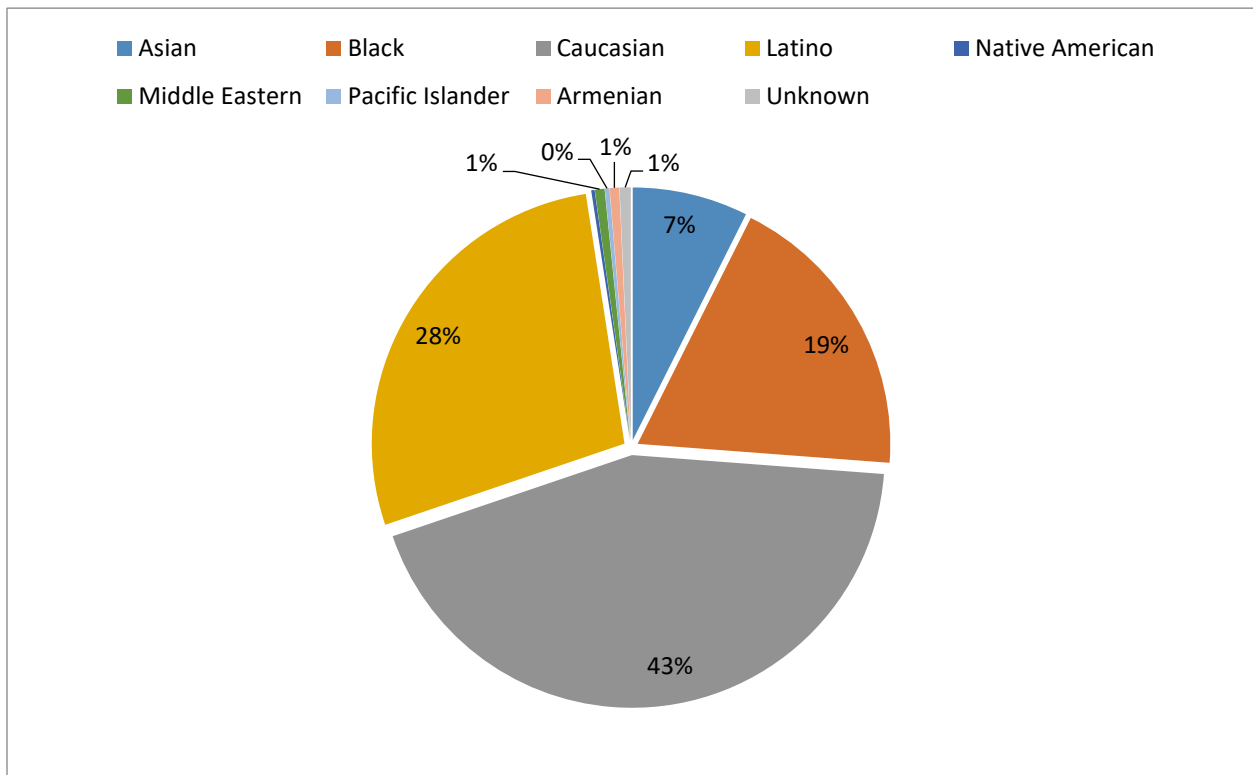
## Medical Examiner-Coroner Cases by Gender



Gender	Number of Cases
Male	6430
Female	2419
Unknown	7



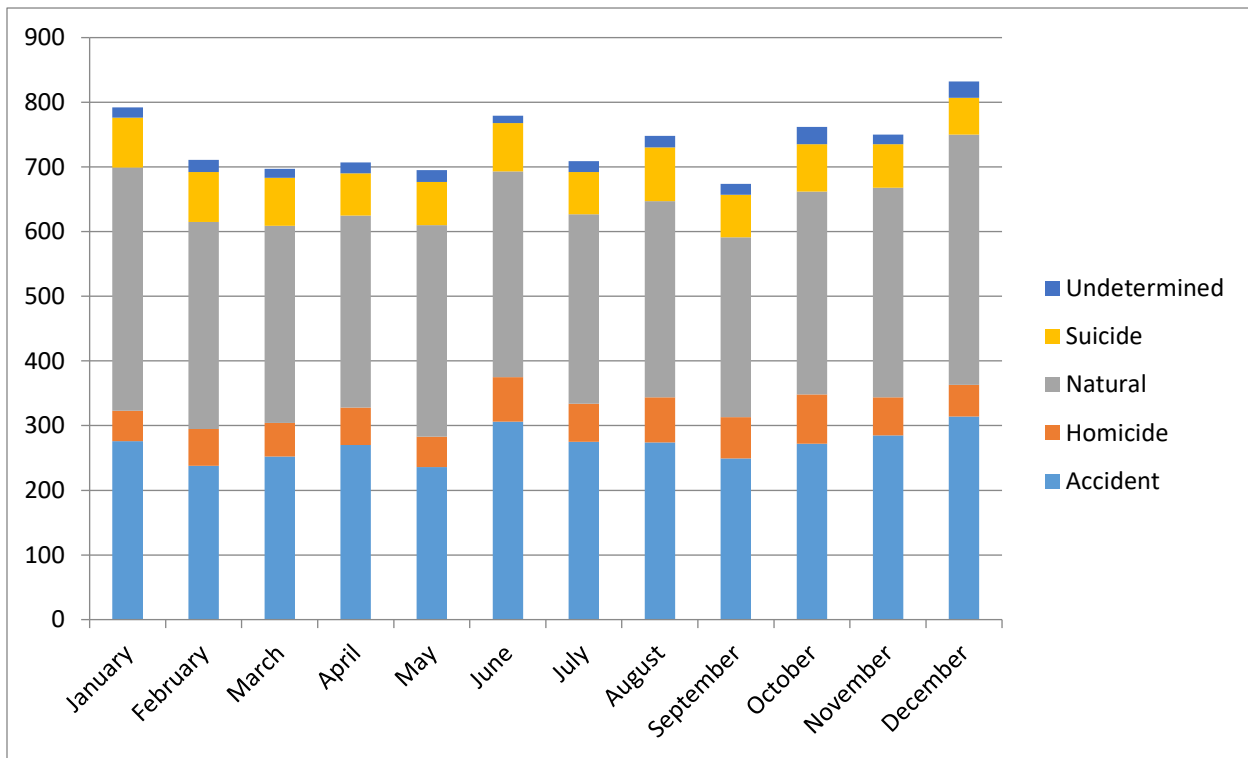
### Medical Examiner-Coroner Cases by Race



Race	Number of Cases
Caucasian	3861
Latino	2458
Black	1665
Asian	655
Unknown	63
Middle Eastern	55
Armenian	54
Pacific Islander	26
Native American	19

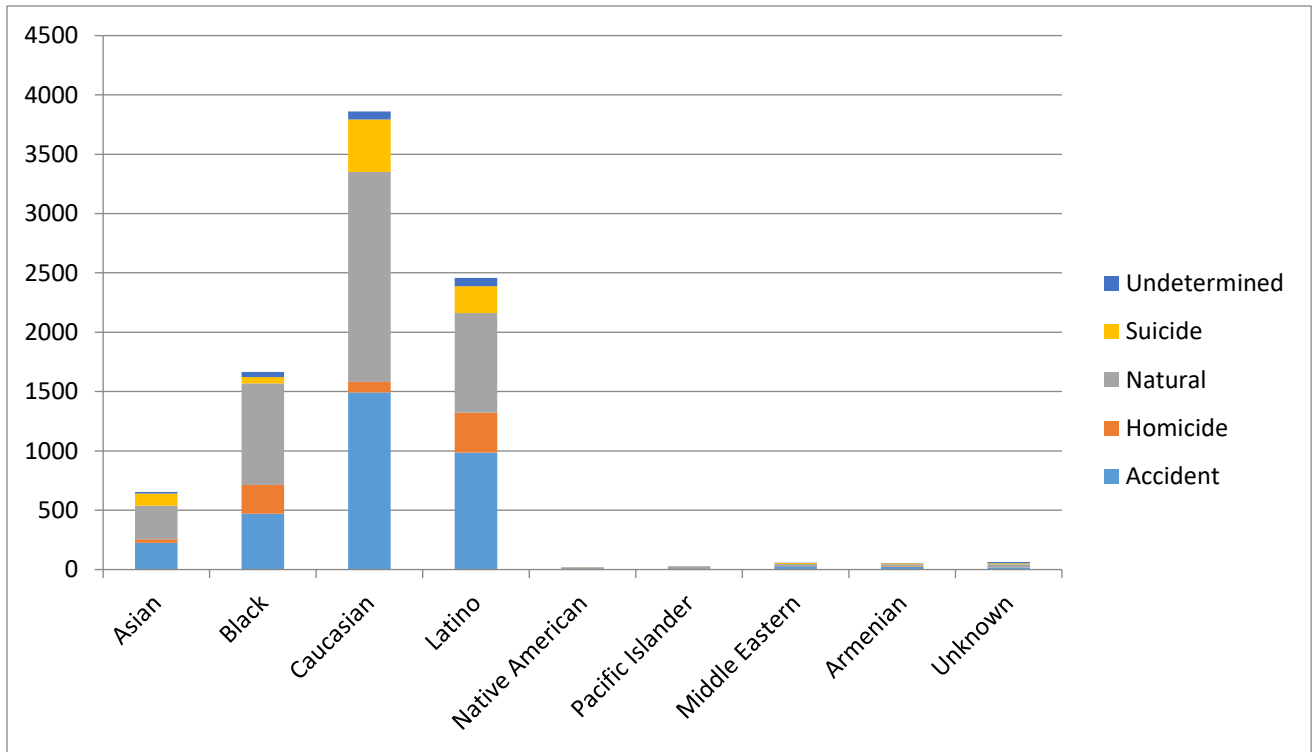
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### Manner of Death by Month



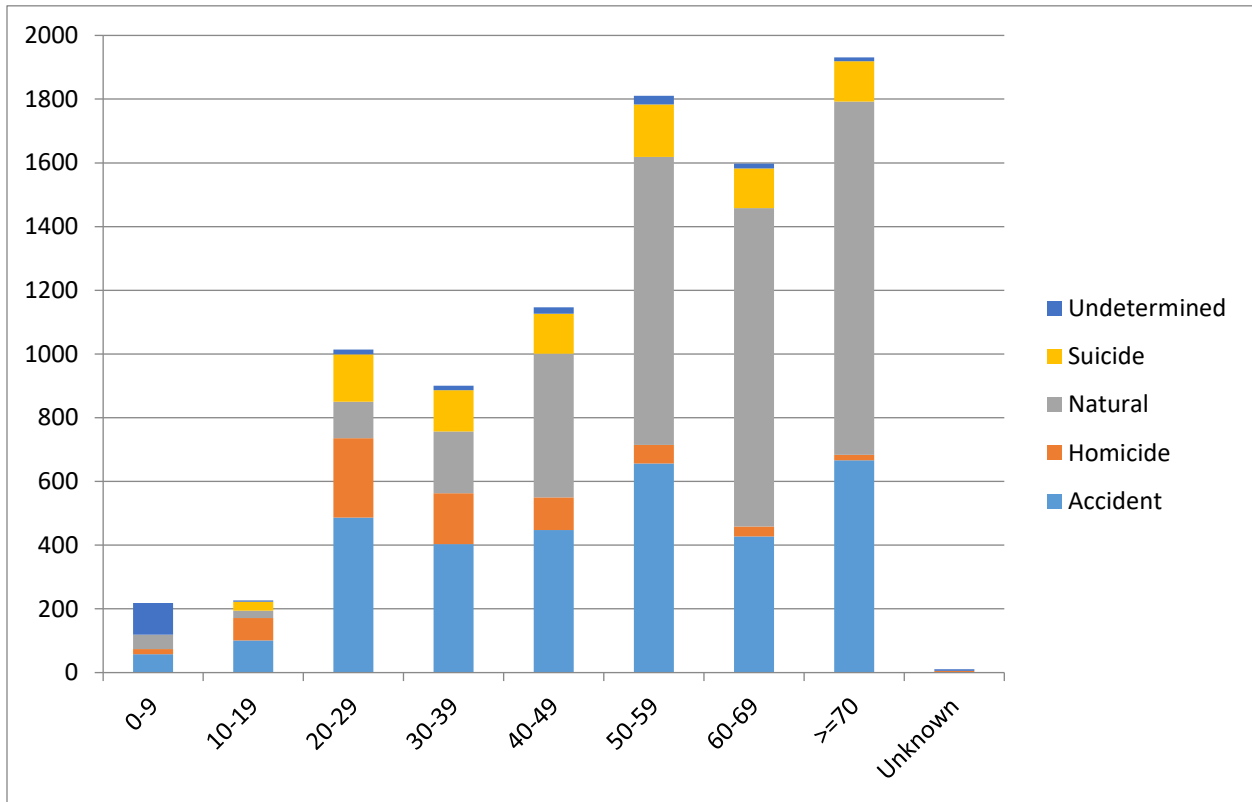
Month	Accident	Homicide	Natural	Suicide	Undetermined	Total
January	276	47	376	77	16	<b>792</b>
February	238	57	320	77	19	<b>711</b>
March	252	52	305	74	14	<b>697</b>
April	270	58	297	65	17	<b>707</b>
May	236	47	327	67	18	<b>695</b>
June	306	69	318	75	11	<b>779</b>
July	275	59	293	65	17	<b>709</b>
August	274	70	303	83	18	<b>748</b>
September	249	64	278	66	17	<b>674</b>
October	272	76	314	73	27	<b>762</b>
November	285	59	324	67	15	<b>750</b>
December	314	49	387	57	25	<b>832</b>
<b>Total</b>	<b>3247</b>	<b>707</b>	<b>3842</b>	<b>846</b>	<b>214</b>	<b>8856</b>

### Race/Ethnicity Distribution for Each Manner



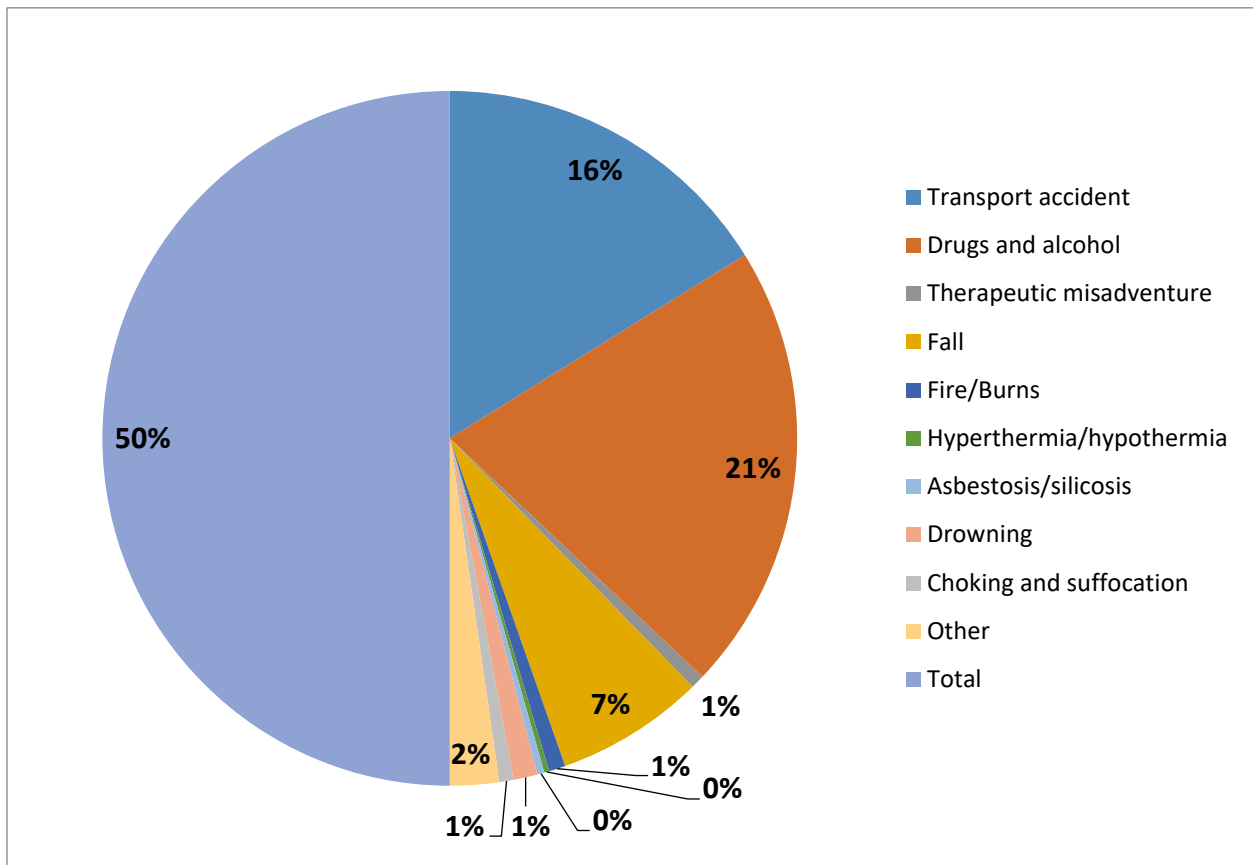
Race/Ethnicity	Accident	Homicide	Natural	Suicide	Undetermined
Asian	225	29	283	104	14
Black	471	241	856	53	44
Caucasian	1493	90	1769	440	69
Latino	985	337	840	226	70
Native American	4	0	12	2	1
Pacific Islander	3	1	19	1	2
Middle Eastern	27	3	18	6	1
Armenian	22	6	17	7	2
Unknown	17	0	28	7	11

## Medical Examiner-Coroner Cases by Age and Manner



Age	Accident	Homicide	Natural	Suicide	Undetermined	Total
0-9	58	16	45	0	99	<b>218</b>
10-19	101	70	23	28	4	<b>226</b>
20-29	487	249	114	149	15	<b>1014</b>
30-39	403	160	194	129	14	<b>900</b>
40-49	447	103	451	125	21	<b>1147</b>
50-59	656	59	904	164	28	<b>1811</b>
60-69	427	32	999	124	16	<b>1598</b>
>=70	666	18	1108	127	12	<b>1931</b>
Unknown	2	4	0	0	5	<b>11</b>
<b>Total</b>	<b>3247</b>	<b>711</b>	<b>3838</b>	<b>846</b>	<b>214</b>	<b>8856</b>

## Accidental Deaths

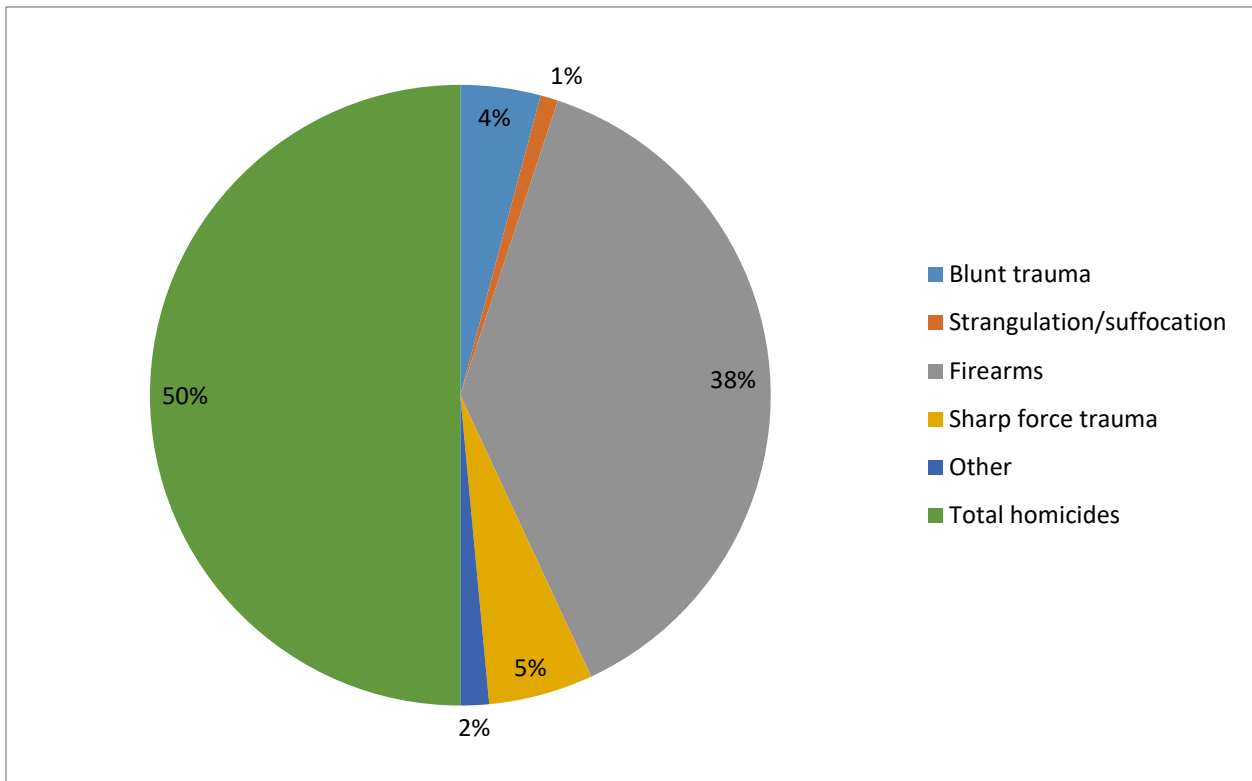


Drugs and alcohol	1356
Transport accident	1049
Fall	450
Other	148
Drowning	73
Fire/Burns	50
Choking and suffocation	43
Therapeutic misadventure	42
Asbestosis/silicosis	21
Hyperthermia/hypothermia	15
<b>Total</b>	<b>3247</b>

## Transportation Accidents

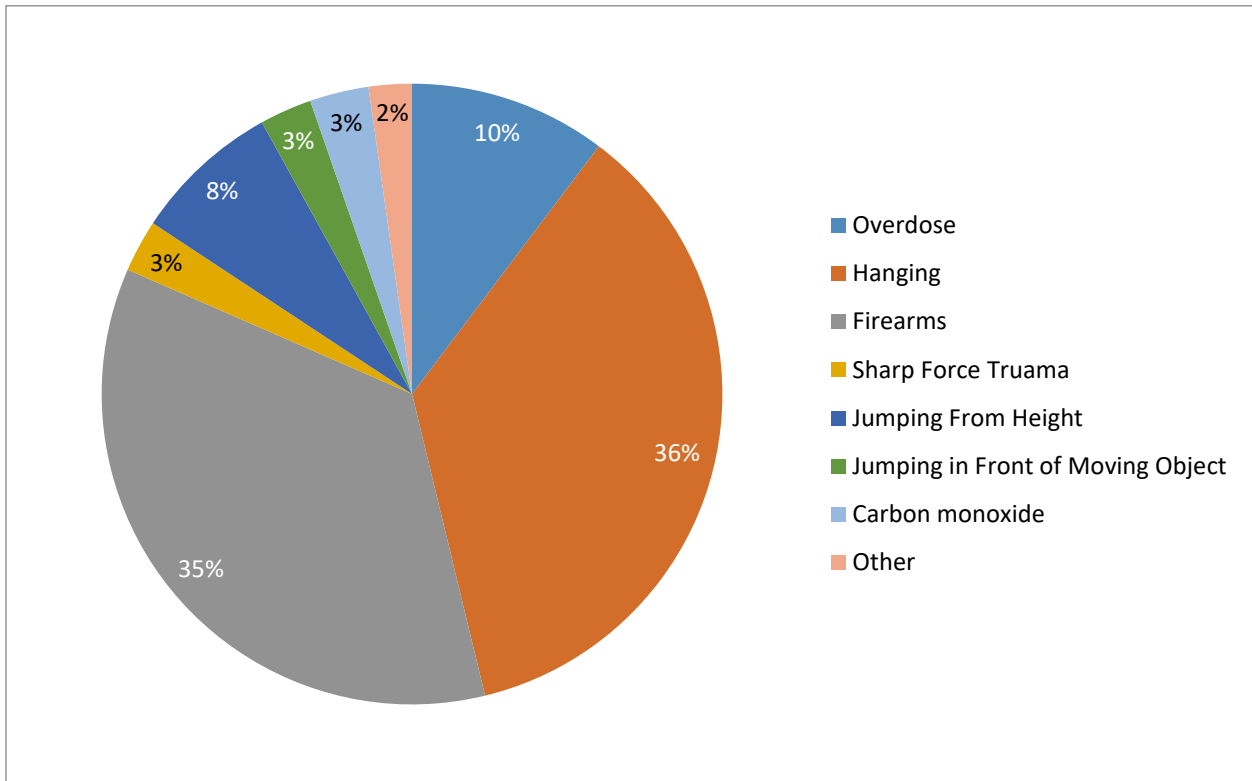
Pedestrians	381
Pedal cyclists	54
Motorcycle riders	165
Car occupants	395
Water transport accident	11
Other transport accidents	43
<b>Total transport accidents</b>	<b>1049</b>

## Homicidal Deaths



Firearms	537
Sharp force trauma	77
Blunt trauma	59
Other	21
Strangulation/suffocation	13
<b>Total homicides</b>	<b>707</b>

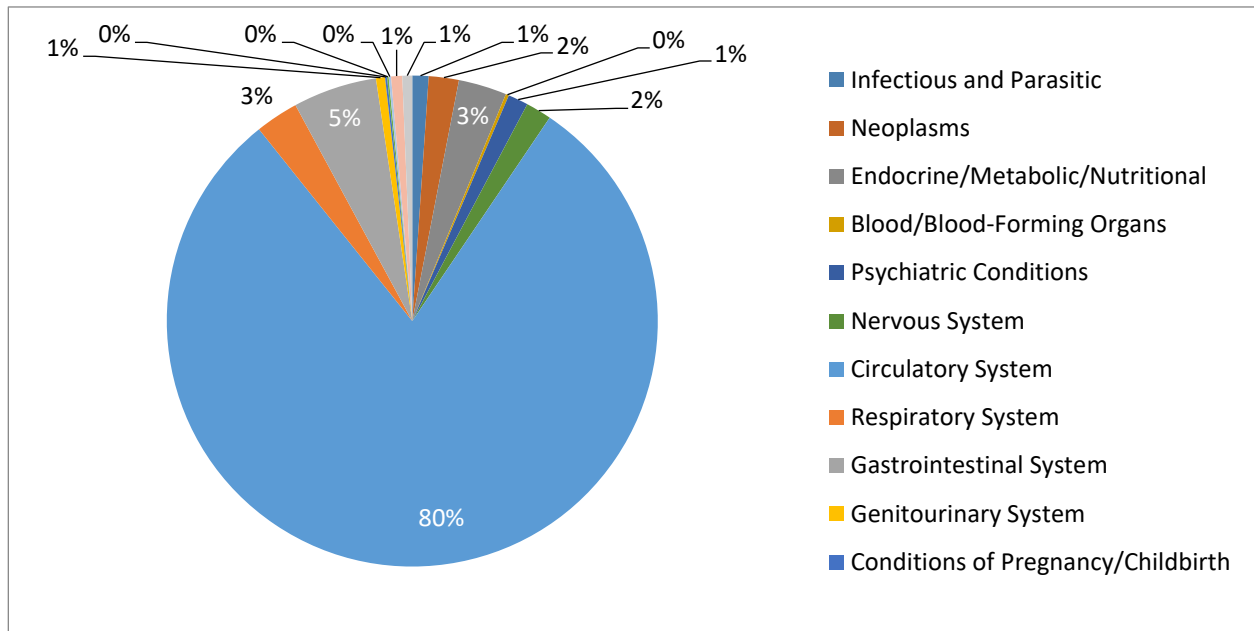
## Suicidal Deaths



Hanging	304
Firearms	299
Overdose	87
Jumping From Height	65
Carbon monoxide	26
Sharp Force Trauma	23
Jumping in Front of Moving Object	23
Other	19
<b>Total suicides</b>	<b>846</b>

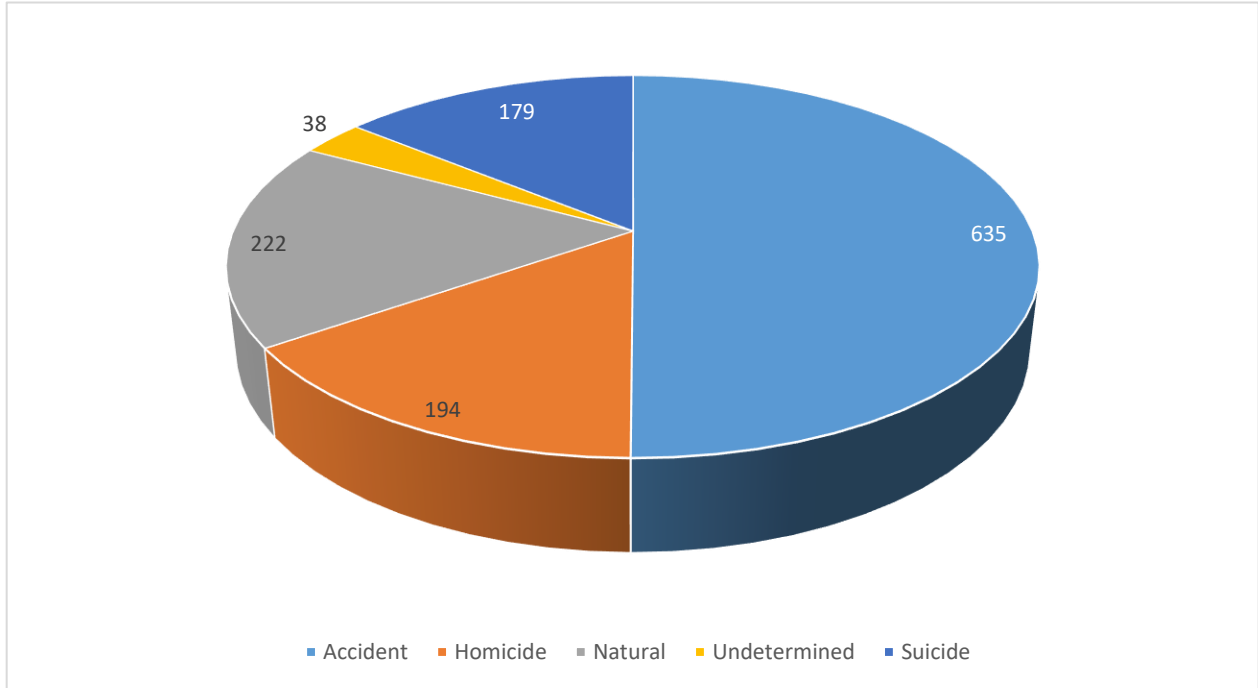


## Natural Deaths

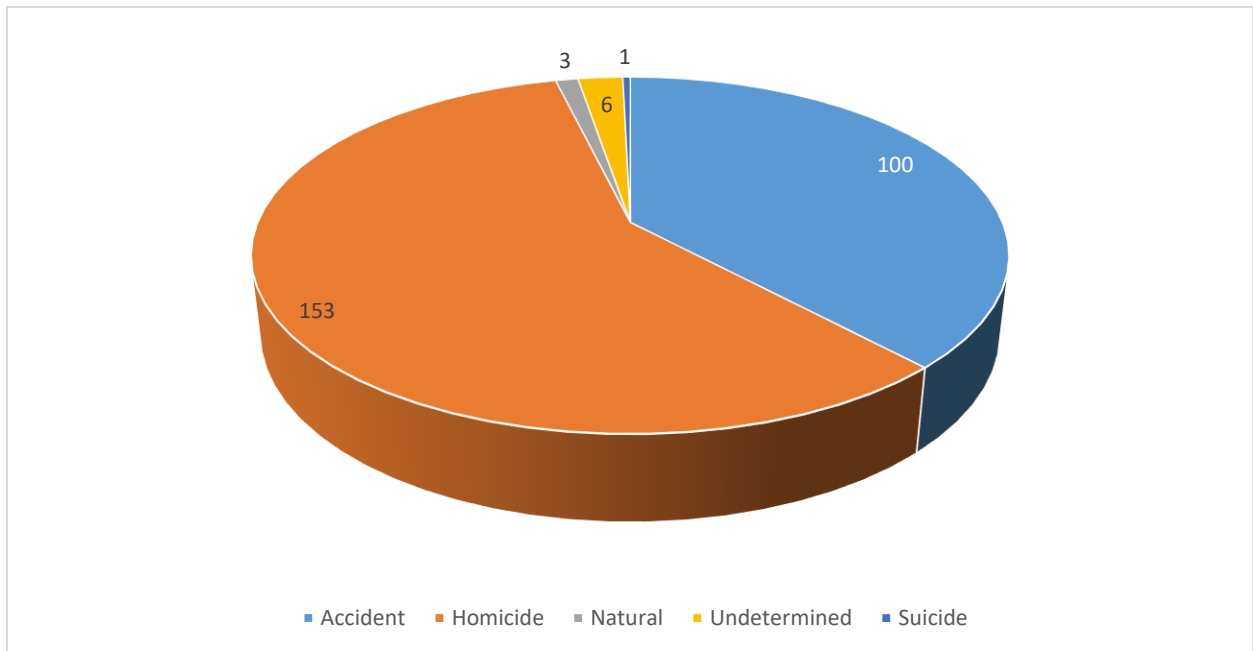


Circulatory system	3063
Gastrointestinal system	212
Endocrine/Metabolic/Nutritional	122
Respiratory system	109
Infectious and parasitic	41
Neoplasms	76
Nervous system	65
Psychiatric conditions	51
Congenital anomalies	28
Perinatal conditions	25
Genitourinary system	23
Blood/Blood-forming organs	8
Musculoskeletal system	6
Conditions of pregnancy/Childbirth	5
Skin and subcutaneous tissue	4
Other	3
Anaphylaxis	1
<b>Total</b>	<b>3842</b>

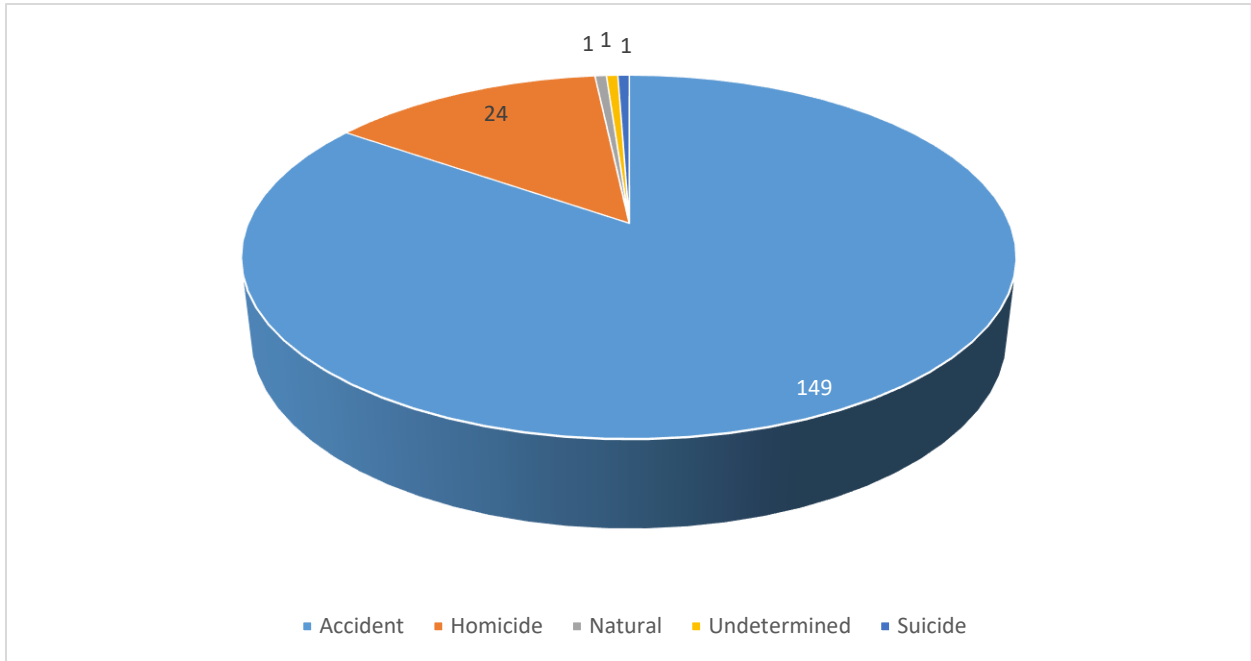
### Alcohol Detected by Manner Total Cases: 1268



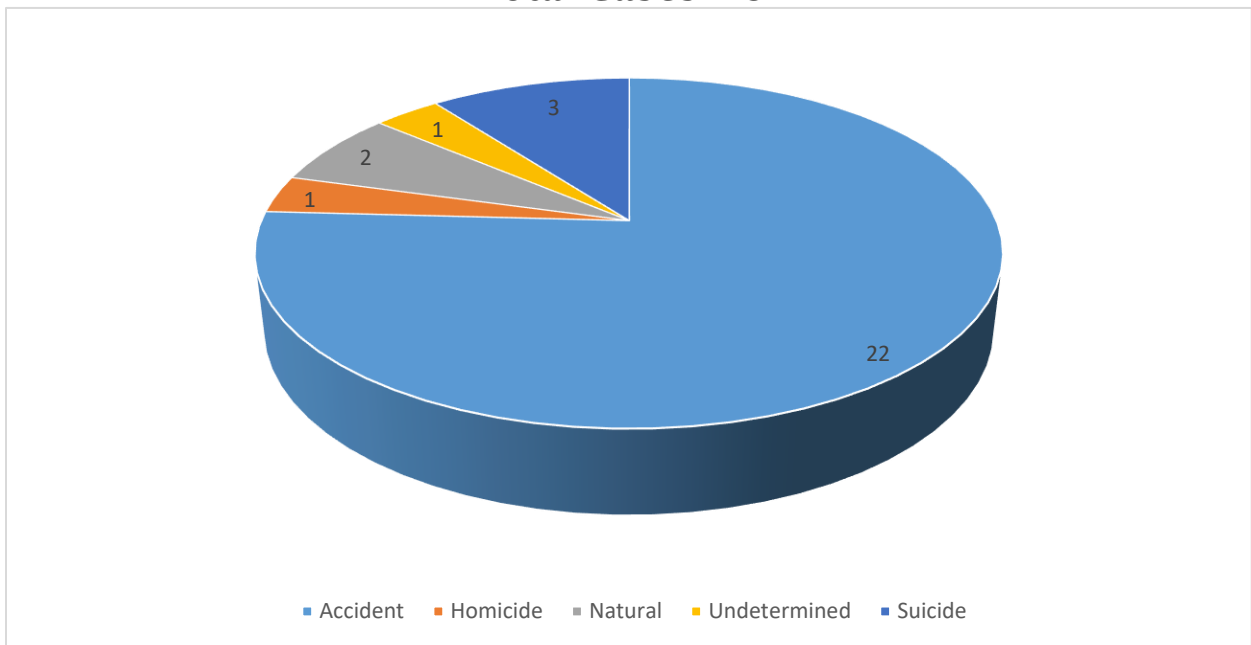
### Marijuana Detected by Manner Total Cases: 263



### Cocaine Detected by Manner Total Cases: 176



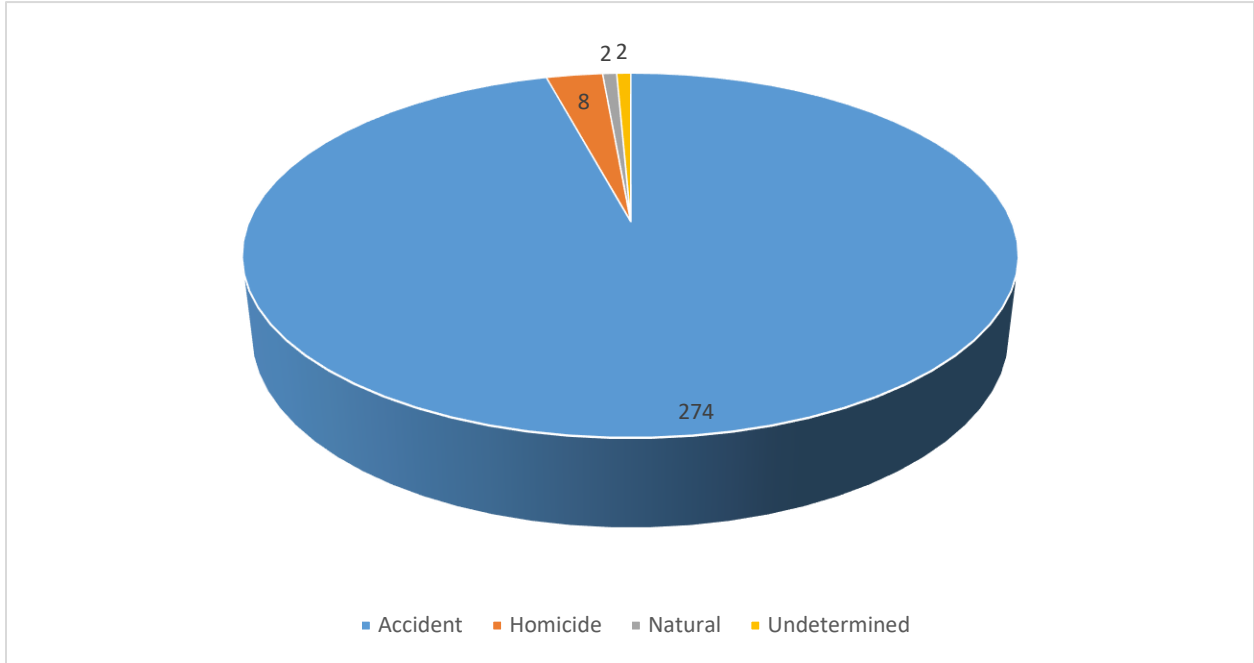
### Methamphetamine Detected by Manner Total Cases: 29\*



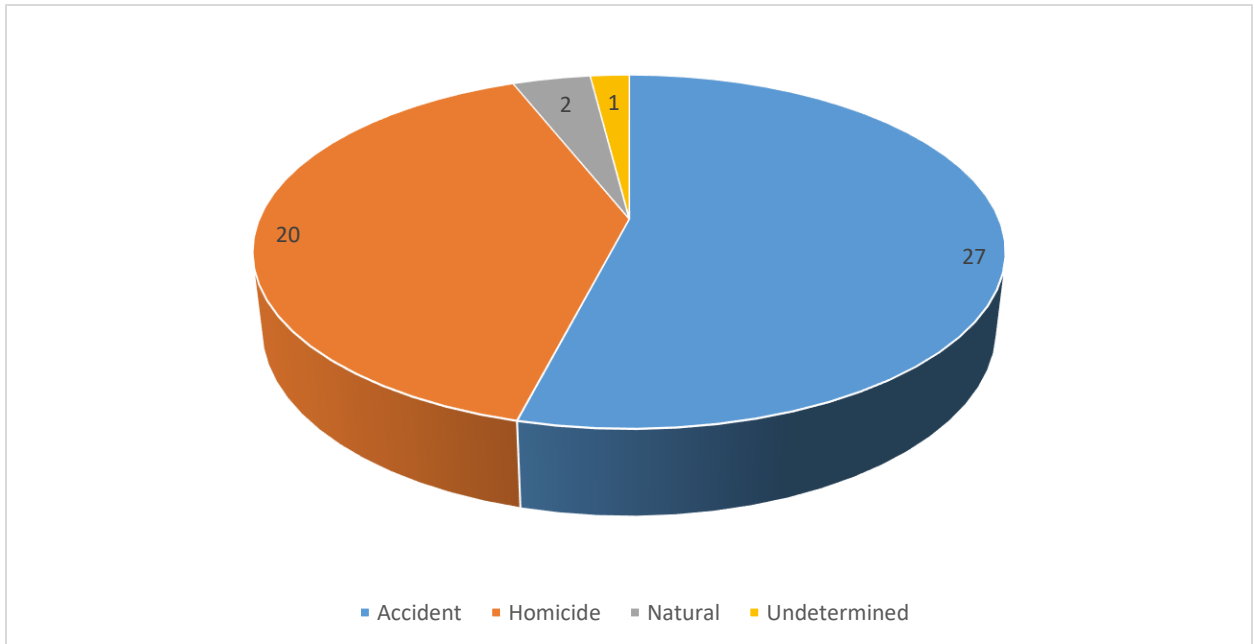
# DMEC 2016 Annual Report

\*The actual number of cases in which methamphetamine was detected was higher than 29, which represents in-house testing only. In 2016, it was necessary to send a large proportion of testing to an outside laboratory. Those results were not included in the DMEC database, and therefore, cannot be included here.

## Heroin Detected by Manner Total Cases: 291



## Phencyclidine Detected by Manner Total Cases: 53



**Fentanyl Detected by Manner**  
**Total Cases: 125**

