LOS ANGELES COUNTY
DEPT. OF MEDICAL EXAMINER-CORONER

ANNUAL REPORT 2018

LOS ANGELES COUNTY BOARD OF SUPERVISORS

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A MESSAGE FROM THE CHIEF MEDICAL EXAIMINER-CORONER

In 2018, both the population of Los Angeles County and the number of cases investigated by the Department of Medical Examiner-Coroner increased.

Each of the 10,000 sudden, unexpected, or violent deaths the Department investigates each year is impactful to the affected family, friends, and their community; and it is also important to understand these deaths as a whole in order to identify patterns or trends within the County.

The DMEC takes these responsibilities seriously and is continuously working to improve its efforts on both fronts. Consequently, this year, the department added to its Mission Statement the goal of working collaboratively to reduce preventable deaths.

Doing so keeps us reminded of the unique and important role we play in not only finding answers, but also working with our partners to improve the health and safety of the citizens of Los Angeles County.

JONATHAN R. LUCAS, M.D.

Chief Medical Examiner-Coroner

2018 AT A GLANCE

9,523
CASES INVESTIGATED

72% MALE **28%** FEMALE

1,480
UNINTENTIONAL DEATHS DUE TO DRUGS & ALCOHOL

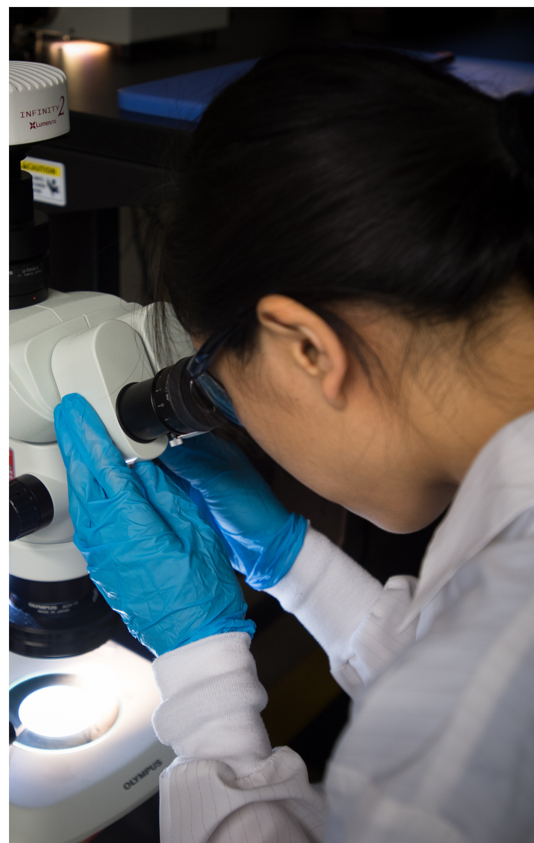
905
UNCLAIMED BODIES

656
HOMICIDES IN LA COUNTY

353
CHILD DEATHS

MISSION STATEMENT

The mission of the County of Los Angeles Department of Medical Examiner-Coroner is to provide independent, quality, death investigation using advanced forensic science with compassion and objectivity for families, communities, and public health & safety, working collaboratively with our partners to reduce preventable deaths.



VISION

The Los Angeles County Department of Medical Examiner-Coroner seeks to be the premier medicolegal death investigation agency, nationally recognized as a leader in the forensic science community.

HISTORY

The County of Los Angeles has had a Coroner in place since California became a state in 1850. At the time, the Coroner was an elected official who was tasked with determining the cause and manner of death in specific cases.

The first Coroner, Alpheus P. Hodges, also was the Mayor of Los Angeles.

Following the 1954 Model Postmortem Examinations Act, the Board of Supervisors amended the County Charter in 1956 to require that the Coroner be a certified pathologist.

They appointed Dr. Theodore Curphey as the first Chief Medical Examiner-Coroner in 1957.

In 1990, the Board of Supervisors appointed acting Chief Medical Examiner-Coroner Dr. J. Lawrence Cogan to oversee medical matters and Director Ilona Lewis to be responsible for all other departmental functions.

In 2013, the Board re-established a single Chief Medical Examiner-Coroner Department Head and appointed Dr. Mark Fajardo to this position.

Dr. Jonathan Lucas was appointed in July 2017.

The department occupied its first permanent location at the Old Hall of Records in 1911 and moved to the Hall of Justice in 1926, before the department moved to its current location on North Mission road in 1972.

JURISDICTION

California law requires the Department of Medical Examiner-Coroner to inquire into and determine the circumstances, manner, and cause of all sudden, violent, or unusual deaths, and those deaths where the decedent has not been seen by a physician 20 days prior to death. The cause of death is determined by a Deputy Medical Examiner (DME) and a death certificate is issued after the examination is completed.

The County of Los Angeles Department of Medical Examiner-Coroner is comprised of five sections; i.e., Operations Bureau, Forensic Medicine Division, Forensic Sciences Laboratories Division, Public Services Division, and the Administrative Services Division.

OPERATIONS BUREAU

The Operations Bureau is responsible for providing direct services of investigations and decedent services through a 24-hours-a-day, and 7-days-a-week operation.

In the Investigations Section, Coroner Investigators respond to scenes of death anywhere in the County. As part of their death investigation, they will conduct a physical examination of the deceased, collect evidence and personal property, take photographs, and conduct interviews. They also are tasked with identifying the deceased and notifying the next of kin. Coroner investigators prepare investigative reports to aid the pathologist in the determination of the cause and manner of death.

The Decedent Services Section is responsible for the transportation, processing, storage and release of decedents' bodies, which includes the weighing and measuring of bodies, the collection of personal effects, and the collection of physical and medical evidence, fingerprinting and tagging of the decedent.

Additionally, the Operations Bureau is responsible for the Special Operations Response Team (SORT), emergency and disaster planning, homeland security grants, fleet management, and other ancillary programs such as regional offices and the court-mandated hospital and morgue program.

FORENSIC MEDICINE DIVISION

The Forensic Medicine Division is comprised of full-time, permanent staff who are board-certified forensic pathologists. Also referred to as Deputy Medical Examiners, the forensic pathologists 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 Forensic Medicine Division has consultants in forensic neuropathology, odontology, anthropology, anesthesiology, pediatrics, ophthalmologic pathology, pulmonary pathology, cardiac pathology, psychiatry, psychology and radiology to assist the deputy medical examiners in evaluating their cases.

Additionally, the Forensic Medicine Division is one of few Medical Examiner Office's in the nation that uses computed tomography, commonly known as a CT scanner. The instrument improves accuracy of diagnoses, improves turnaround time by conducting virtual autopsies, and minimizes operational costs. In addition to these applications, the CT scanner is utilized for cases where there is religious objection to autopsy.

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.

It includes the following units: Toxicology, Histology, Human Genomics/DNA, Scanning Electron Microscope lab (includes gunshot residue and toolmark analysis), Field Criminalistics and Evidence Control.

The Laboratories Division conducts 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 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 through testimony and deposition.

The Forensic Sciences Laboratories are fully accredited by the prestigious ANSI National Accreditation Board (ANAB) in the following forensic science disciplines: Biology, Firearms and Toolmarks, Materials (Trace), Seized Drugs and Toxicology.

PUBLIC SERVICES DIVISION

The Public Services Division offers compassionate, responsive and efficient technical decedent processing services to the affected family members, involved law enforcement, mortuaries, medical personnel, and other county departments.

Staff in the division often handle sensitive functions related to the initial, midpoint, and close-out of Medical Examiner-Coroner cases. They offer these functions with utmost professionalism and in a caring manner.

The Public Services Division also manages the Medical Examiner-Coroner case records management and safekeeping and release of decedent personal property. Moreover, the division oversees decedent billing, responds to law enforcement agency inquiries, manages civil and criminal subpoena requirements, and issues death certificates to the mortuaries.

Internal departmental support services includes expeditious transcription of all dictated autopsy reports, neuropathology reports, microscopic reports and clerical support to Deputy Medical Examiners.

ADMINISTRATIVE SERVICES DIVISION

The Administrative Services Division 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.

OTHER SERVICES PROVIDED BY DME-C

Special Operations Response Team (SORT)
Within the Operations Bureau is a specialized response unit called SORT (Special Operations Response Team). It is comprised of Medical Examiner-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 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.

Organ & Tissue Donation
The Tissue Recovery/Organ Transplantation Program provides organs, corneas and other tissue to all in need in the community through coordinated efforts with various tissue banks and hospitals.

After family consent is obtained, medical staff provide 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 medical facilities at no cost to the patients or hospitals.

Forensic Pathology Resident Training Program
The department offers the opportunity for pathology residents from local university-affiliated hospitals (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.

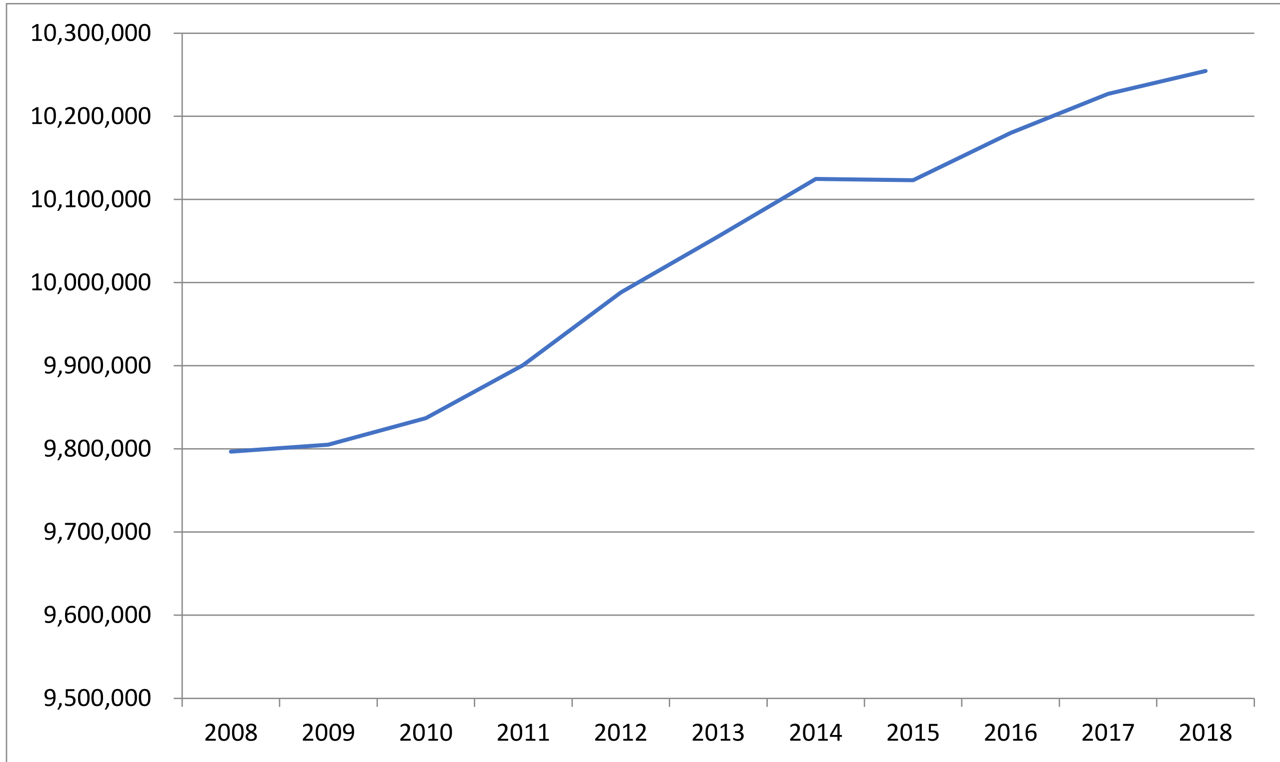
Youthful Drunk Driver Visitation Program (YDDVP)
Since 1989, the Department of Medical Examiner-Coroner has conducted the Youthful Drunk Driver Visitation Program (YDDVP) program, which a judicial officer can consider as an alternative sentencing option.

The program is designed to present the consequences of certain behavior to the participants in a manner that is both impactful and educational.

Statistics Required by National Association of Medical Examiners

Number of deaths reported:	18,551
Number of cases accepted:	9,523
Number of cases by manner of death:	
Accident:	3,296
Homicide:	656
Natural:	4,429
Suicide:	989
Undetermined:	153
Scene visits:	4,289
Number of bodies transported:	6,667
External examinations:	
By physician:	3,418
By investigator:	2,818
Partial autopsies:	186
Complete autopsies:	3,242
Hospital autopsies under ME jurisdiction:	2
Cases where toxicology was performed:	4,784
Bodies unidentified after examination:	22
Organ and tissue donations:	
Total organ donors:	169
Total tissue donors:	402
Unclaimed bodies:	905
Exhumations:	0

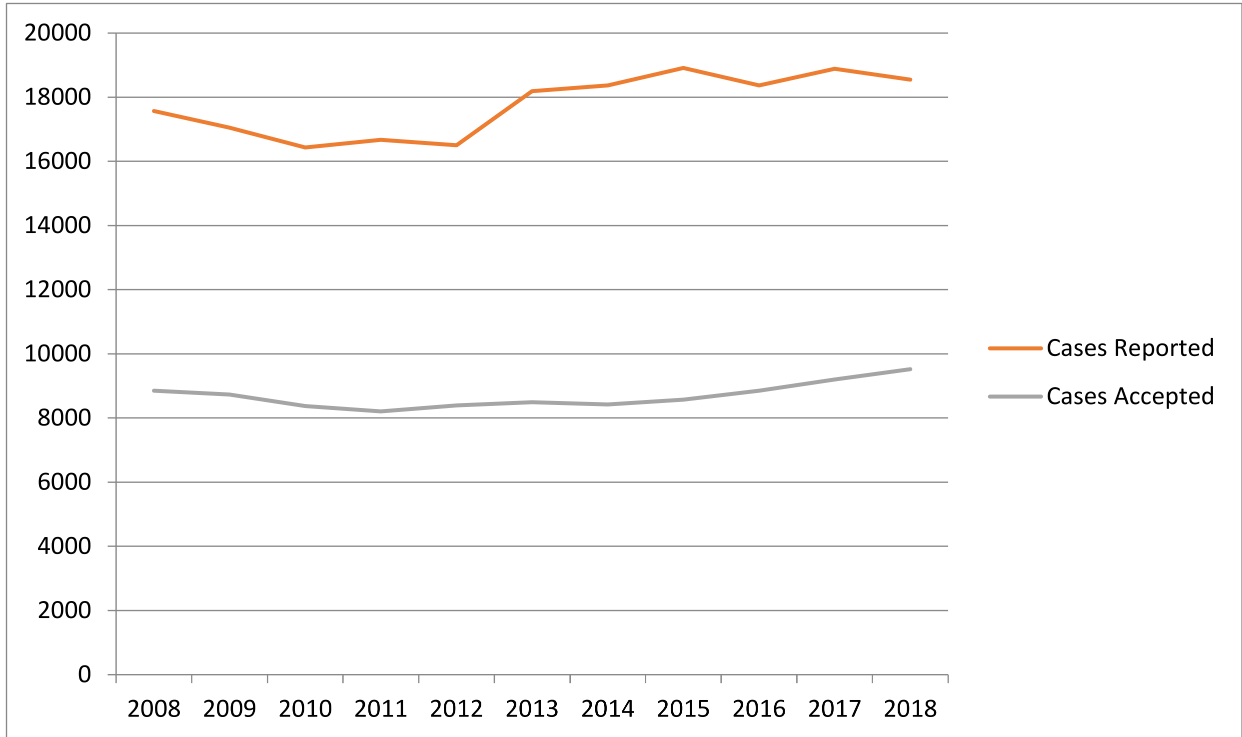
Population of Los Angeles County, 2008-2018



Year	Population
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
2017	10,226,920
2018	10,254,658

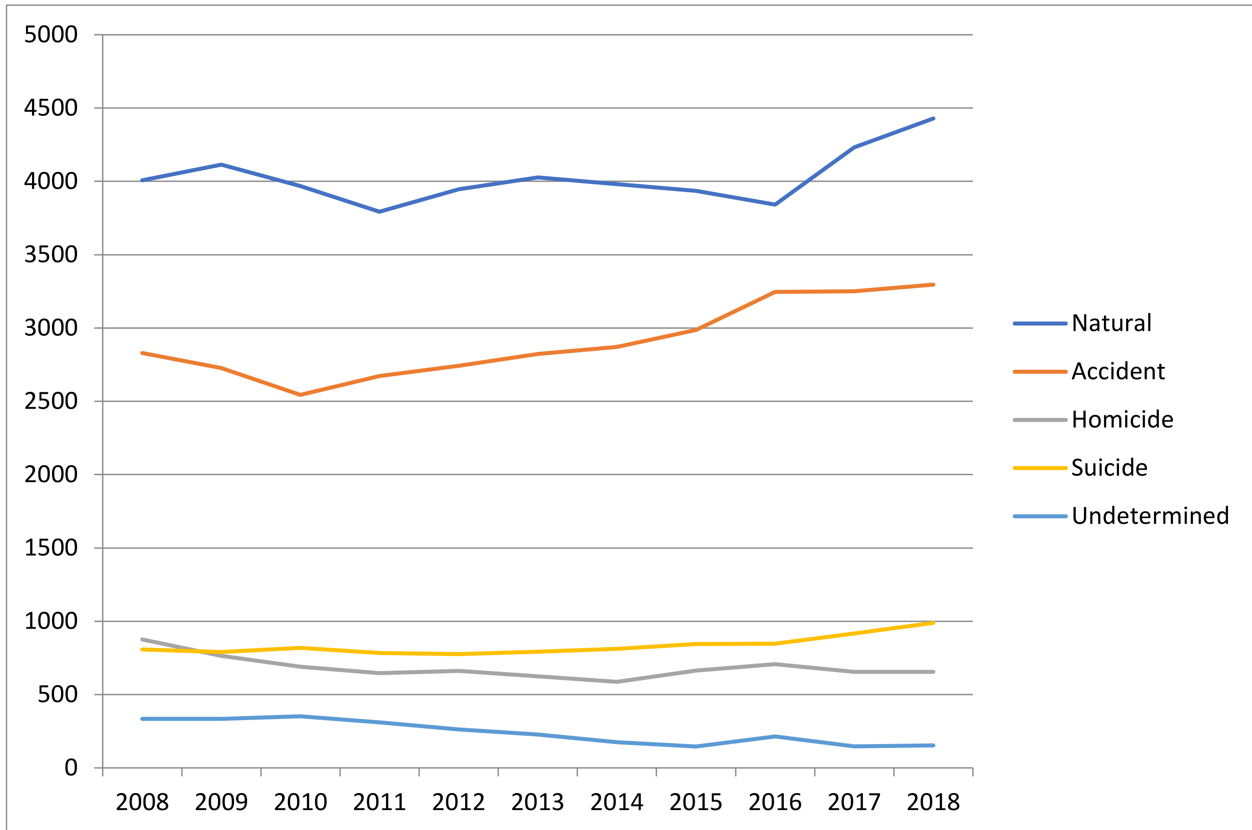
Sources: State of California, Department of Finance

Number of Reported and Accepted Cases per Year, 2008-2018



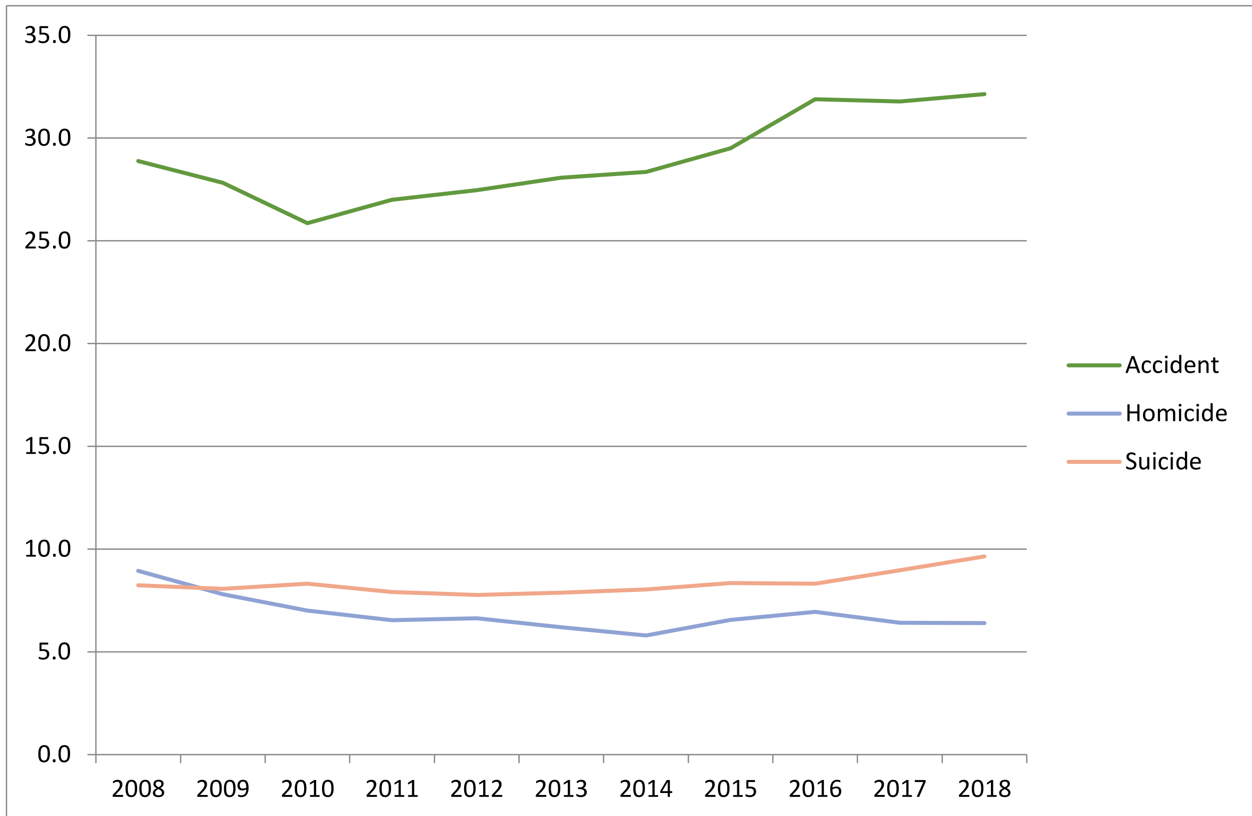
Year	Cases Reported	Cases Accepted
2008	17,572	8,854
2009	17,053	8,734
2010	16,434	8,371
2011	16,668	8,207
2012	16,508	8,390
2013	18,187	8,495
2014	18,365	8,428
2015	18,913	8,578
2016	18,367	8,856
2017	18,892	9,204
2018	18,551	9,523

Final Manner of Medical Examiner-Coroner Cases, 2008-2018



Year	Natural	Accident	Homicide	Suicide	Undetermined
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
2017	4233	3251	656	917	147
2018	4429	3296	656	989	153

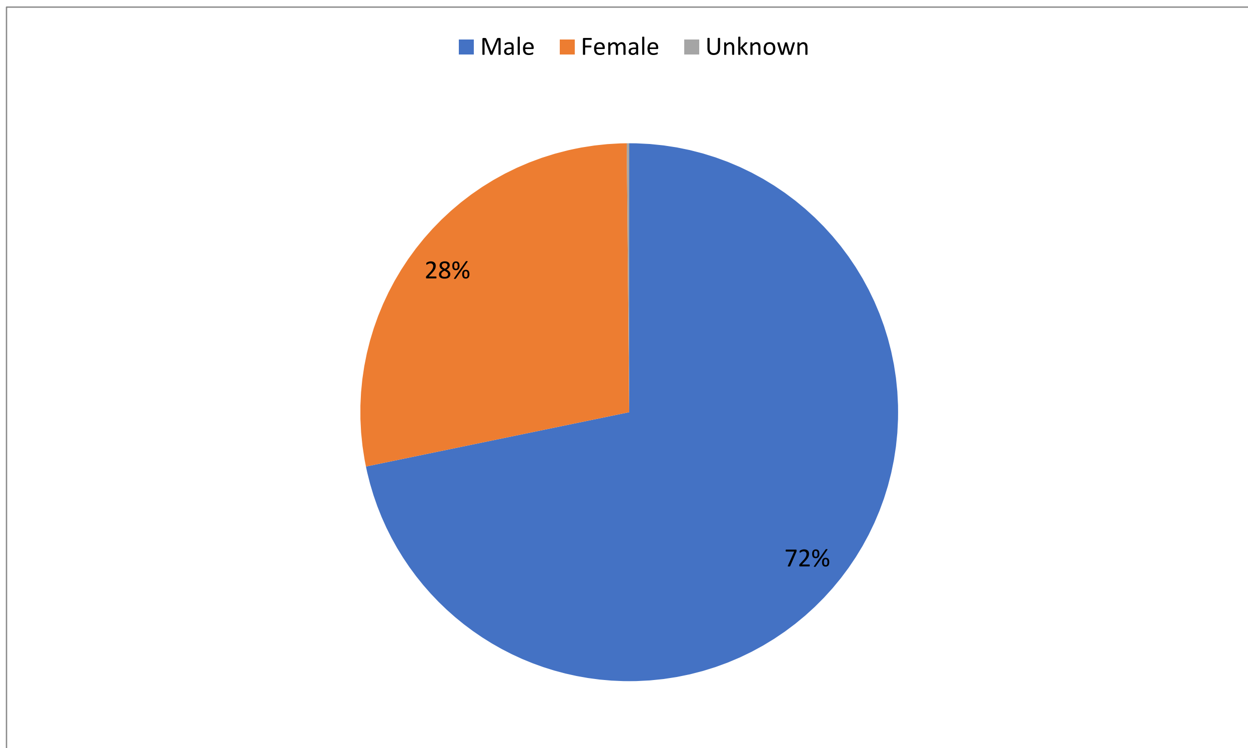
Death Rates* per 100,000 Population, 2008-2018



*crude rates

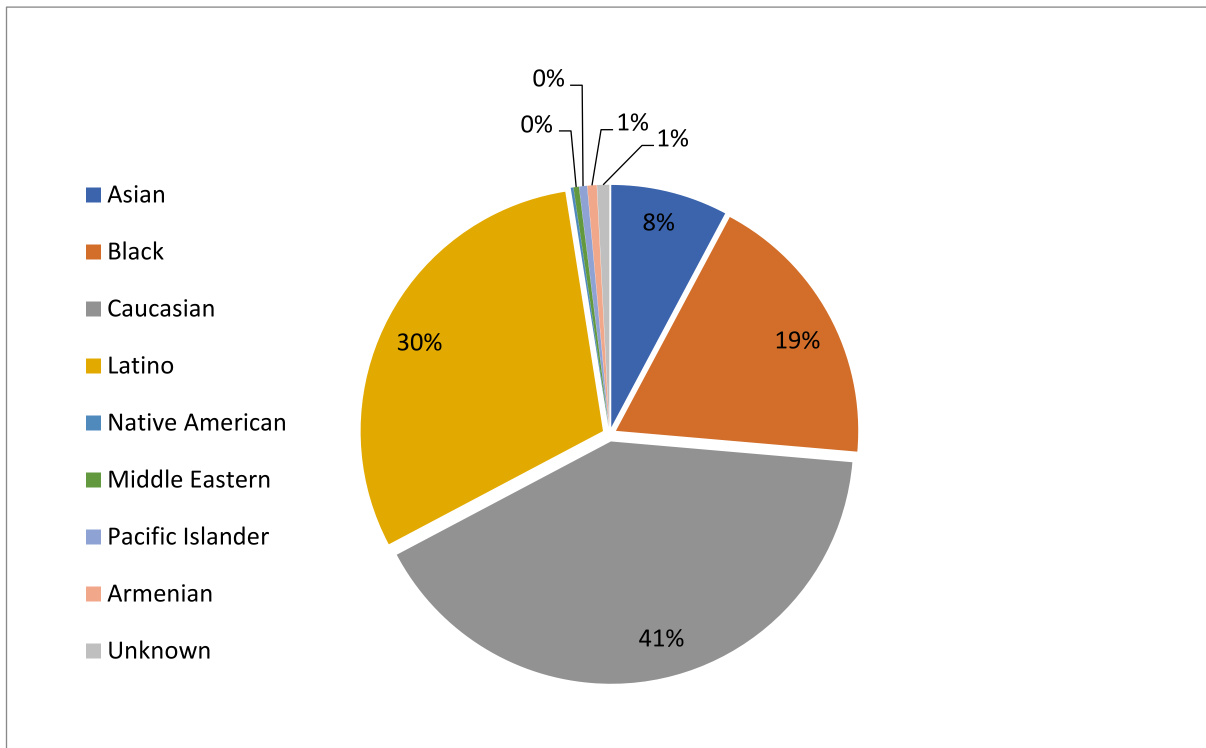
Year	Accident	Homicide	Suicide
2008	28.9	8.9	8.2
2009	27.8	7.8	8.1
2010	25.9	7.0	8.3
2011	27.0	6.5	7.9
2012	27.5	6.6	7.8
2013	28.1	6.2	7.9
2014	28.4	5.8	8.0
2015	29.5	6.6	8.3
2016	31.9	6.9	8.3
2017	31.8	6.4	9.0
2018	32.1	6.4	9.6

Medical Examiner-Coroner Cases by Gender, 2018



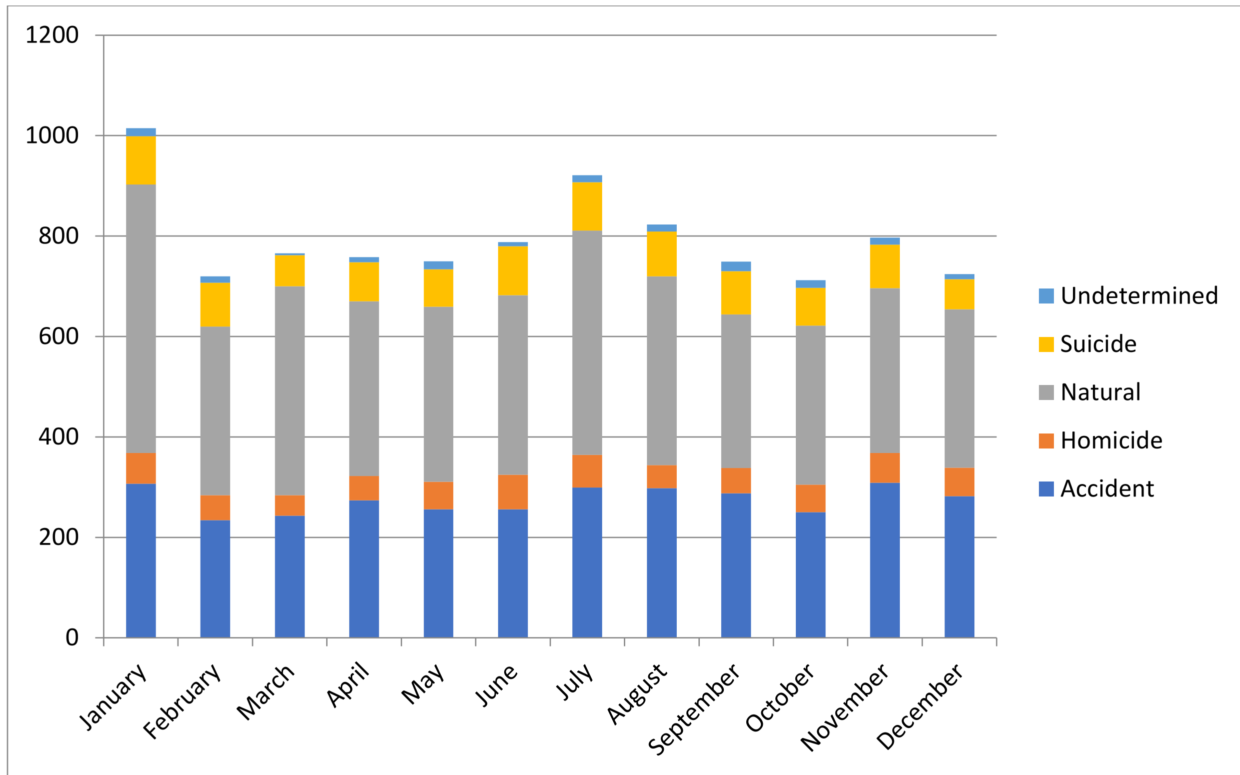
Gender	**Number of Cases**
Female	2,675
Male	6,834
Unknown	14
Total	9,523

Medical Examiner-Coroner Cases by Race, 2018



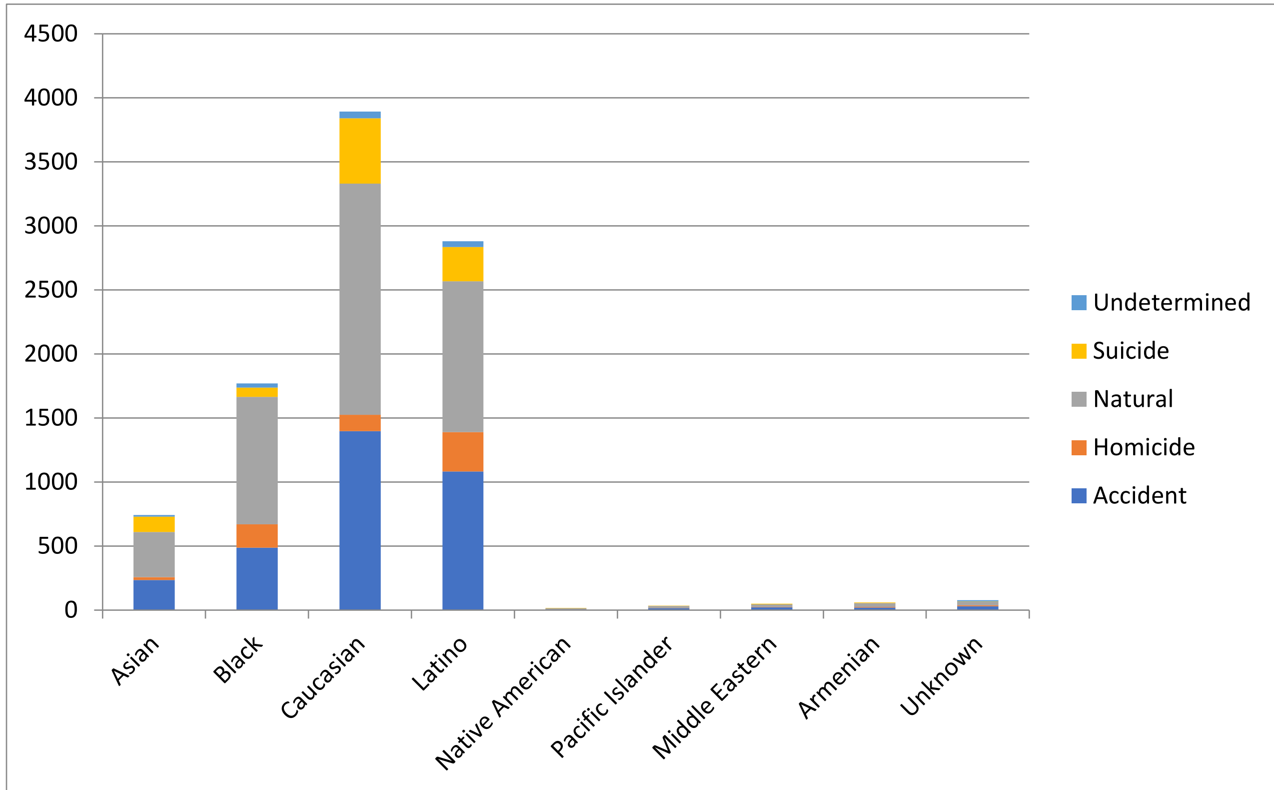
Race	Number of Cases
Armenian	59
Asian	742
Black	1,769
Caucasian	3,894
Latino	2,881
Middle Eastern	34
Native American	17
Pacific Islander	50
Unknown	77
Total	9,523

Manner of Death by Month, 2018



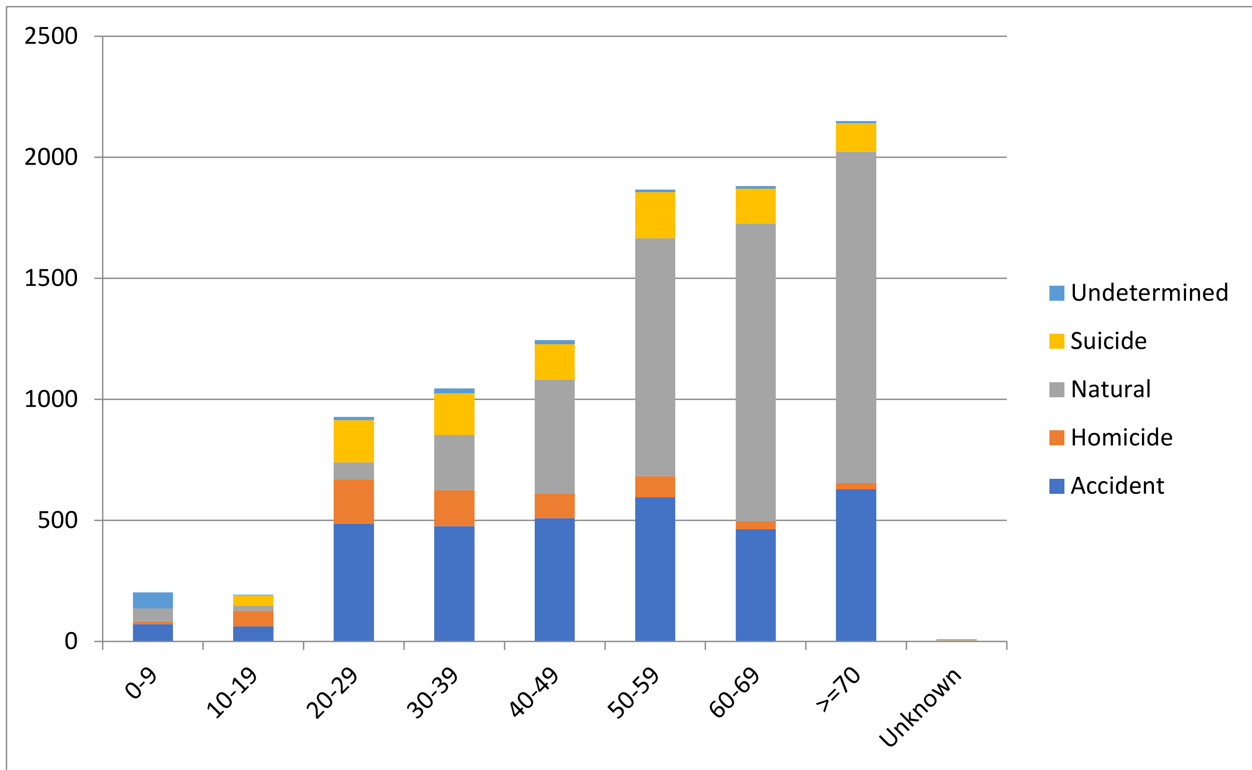
Month	Accident	Homicide	Natural	Suicide	Undetermined
January	307	61	535	96	16
February	234	50	336	87	13
March	243	41	416	62	4
April	274	48	348	78	10
May	256	55	348	75	16
June	256	69	357	98	8
July	299	65	447	96	14
August	298	46	376	89	14
September	288	50	306	86	19
October	250	55	317	75	15
November	309	59	328	87	14
December	282	57	315	60	10
Total	3296	656	4429	989	153

Race/Ethnicity Distribution for Each Manner, 2018



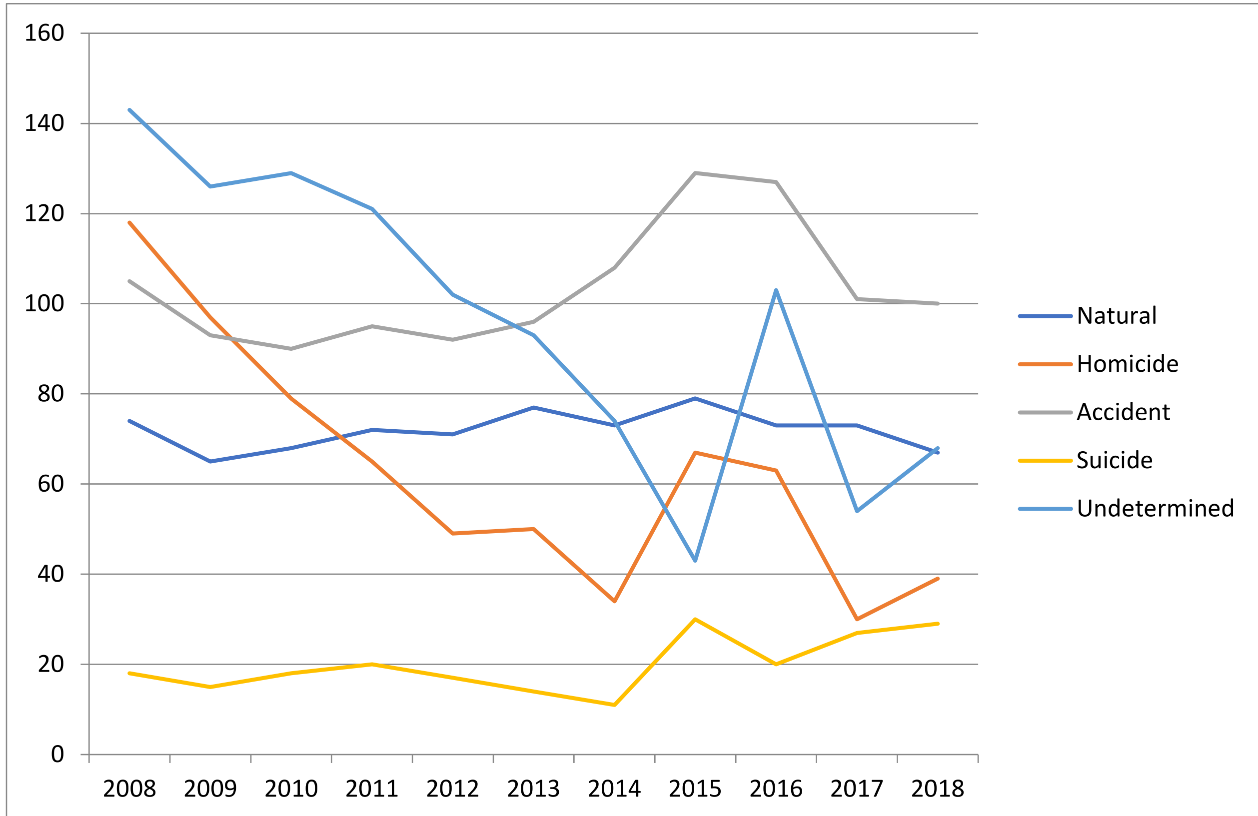
Race	Accident	Homicide	Natural	Suicide	Undetermined
Armenian	21	5	28	5	0
Asian	236	22	351	120	13
Black	487	183	994	74	31
Caucasian	1,397	128	1,805	511	53
Latino	1,083	306	1,179	267	46
Middle Eastern	23	2	20	5	0
Native American	4	1	10	2	0
Pacific Islander	14	2	16	2	0
Unknown	31	7	26	3	10
Total	3,296	656	4429	989	153

Medical Examiner-Coroner Cases by Age and Manner, 2018



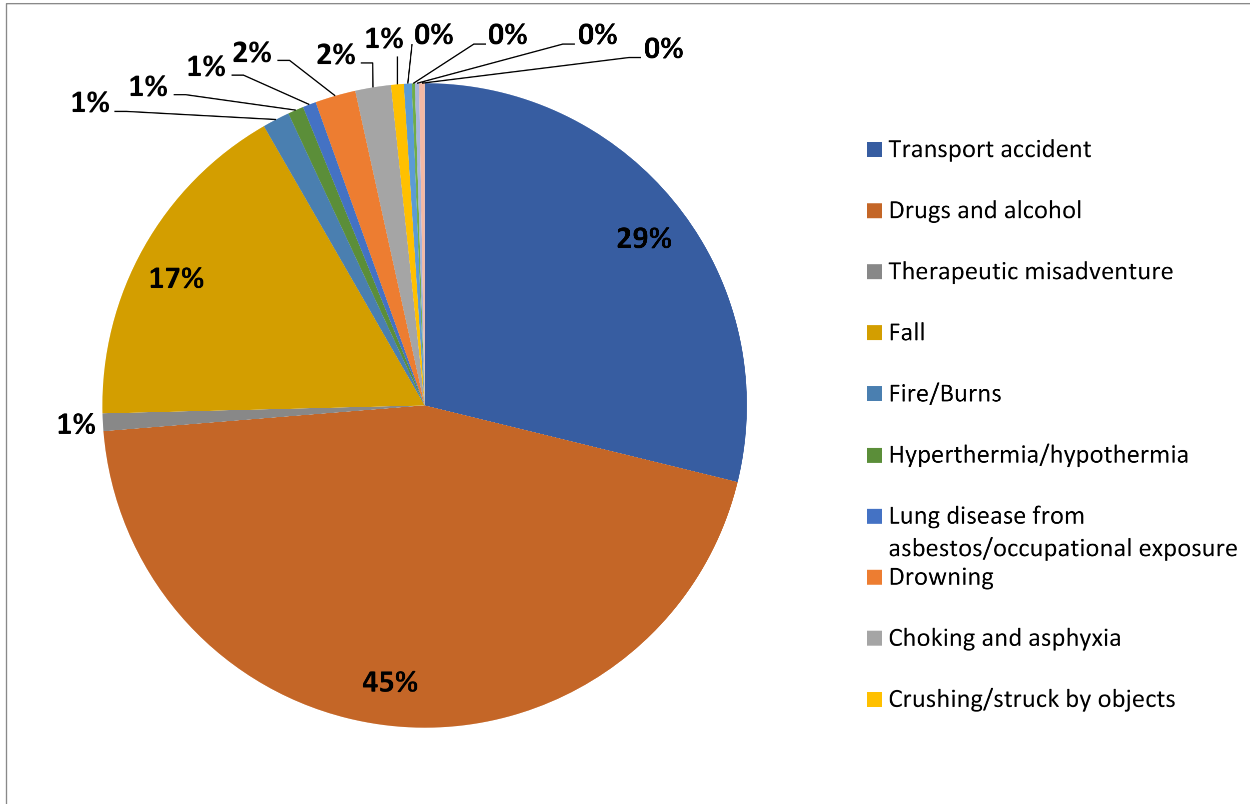
Mode	0-9	10-19	20-29	30-39	40-49	50-59	60-69	>=70	Unknown
Accident	71	63	487	476	510	595	463	628	3
Homicide	12	64	183	148	100	88	34	27	0
Natural	54	20	70	230	472	982	1,230	1,368	3
Suicide	0	44	174	172	146	191	144	117	1
Undetermined	66	3	14	19	17	11	10	10	3
Total	203	194	928	1,045	1,245	1,867	1,881	2,150	10

Manner for Child Deaths (Ages under 18), 2008-2018



Year	Natural	Homicide	Accident	Suicide	Undetermined
2008	74	118	105	18	143
2009	65	97	93	15	126
2010	68	79	90	18	129
2011	72	65	95	20	121
2012	71	49	92	17	102
2013	77	50	96	14	93
2014	73	34	108	11	74
2015	79	67	129	30	43
2016	73	63	127	20	103
2017	73	30	101	27	54
2018	67	39	100	29	68

Accident Deaths, 2018

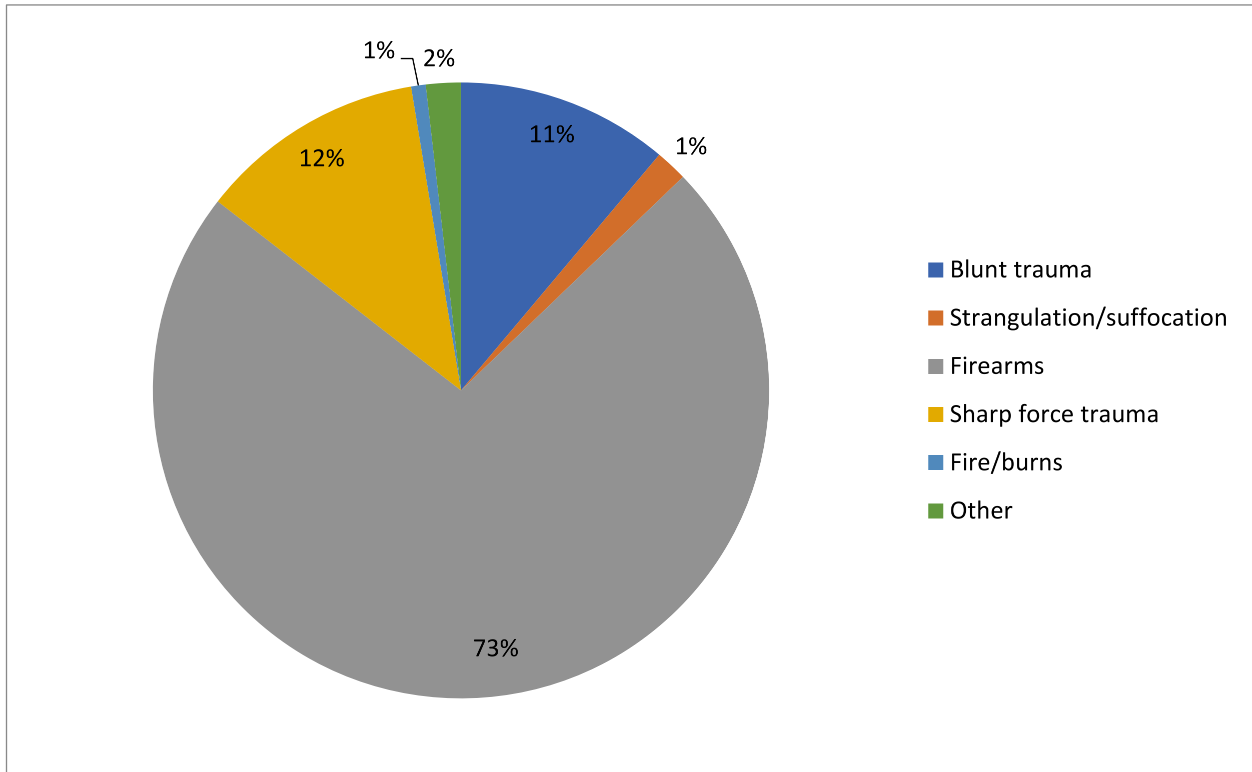


Type of Accident Death	Number of Cases
Carbon monoxide/other gas inhalation	13
Choking and asphyxia	59
Crushing/struck by objects	21
Drowning	67
Drugs and alcohol	1,480
Electrocution	5
Fall	563
Fire/Burns	45
Firearm injuries	7
Hyperthermia/hypothermia	26
Lung disease from asbestos/occupational exposure	22
Other	9
Therapeutic misadventure	29
Transport accident	950
Total	3,296

Transportation Accidents

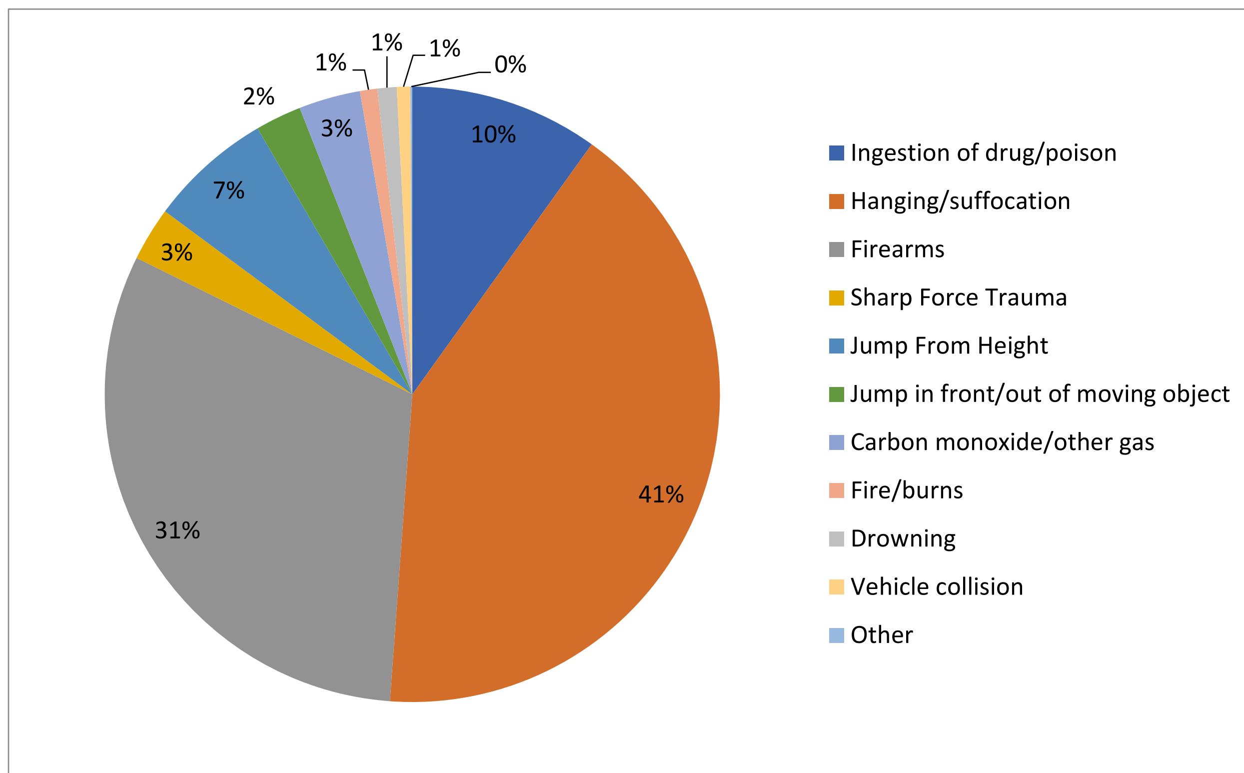
Type of Transportation Accident	**Number of Cases**
Airplanes	8
Motorcycle Riders	139
Other Transport Accidents	11
Pedal Cyclists	55
Pedestrians	345
Vehicle Occupants	390
Water transport accident	2
Total	950

Homicide Deaths, 2018



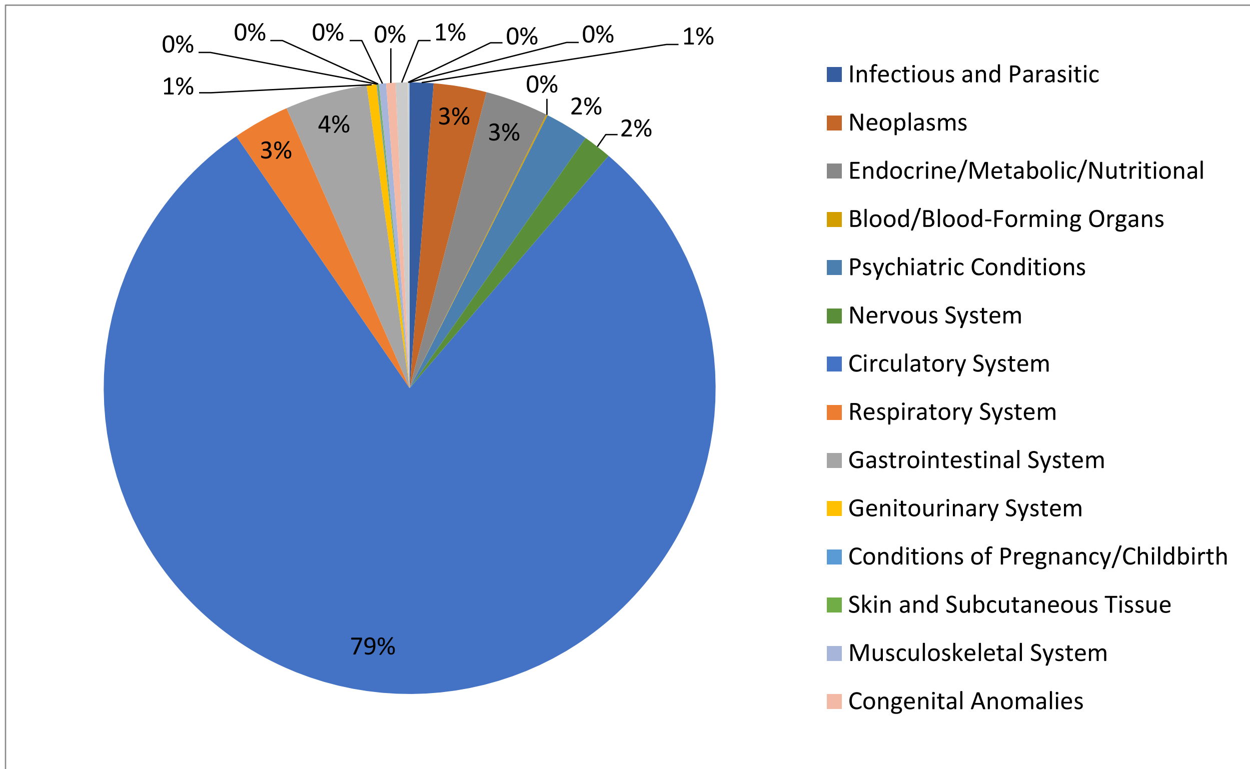
Type of Homicide Death	**Number of Cases**
Blunt trauma	73
Fire/burns	5
Firearms	477
Other	12
Sharp force trauma	78
Strangulation/suffocation	11
Total	656

Suicide Deaths, 2018

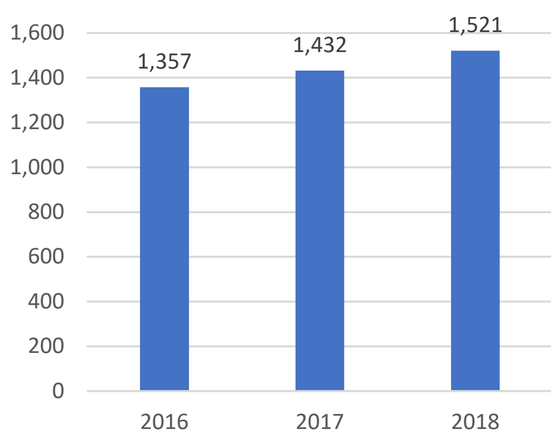


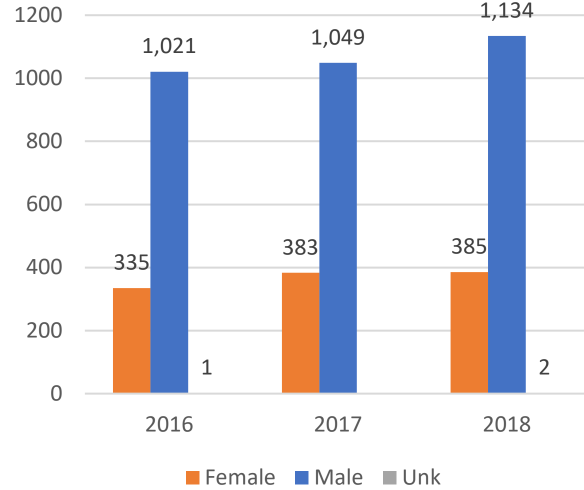
Type of Suicide Death	**Number of Cases**
Carbon monoxide/other gas	32
Drowning	10
Fire/burns	9
Firearms	308
Hanging/suffocation	408
Ingestion of drug/poison	98
Jump from height	64
Jump in front/out of moving object	24
Other	1
Sharp force trauma	28
Vehicle collision	7
Total	989

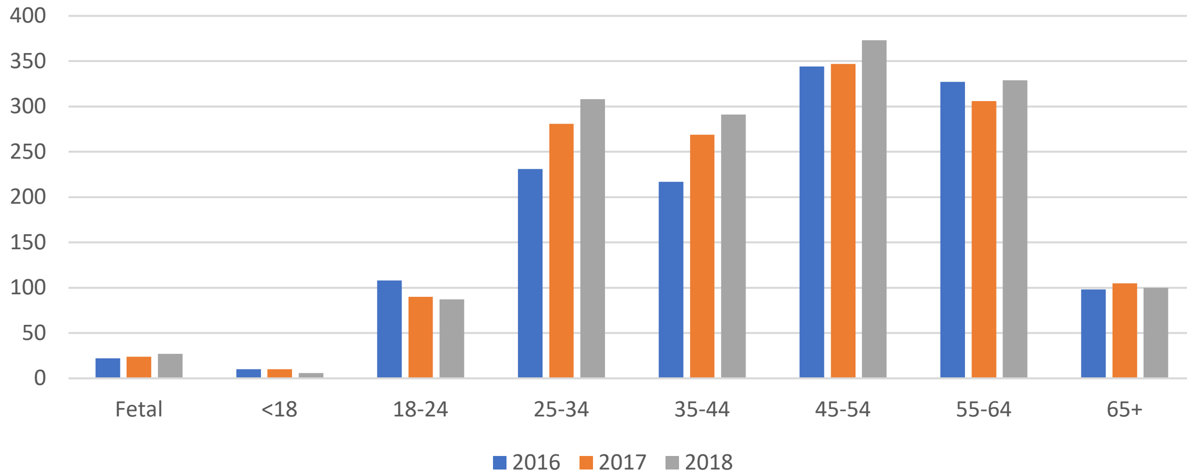
Natural Deaths, 2018



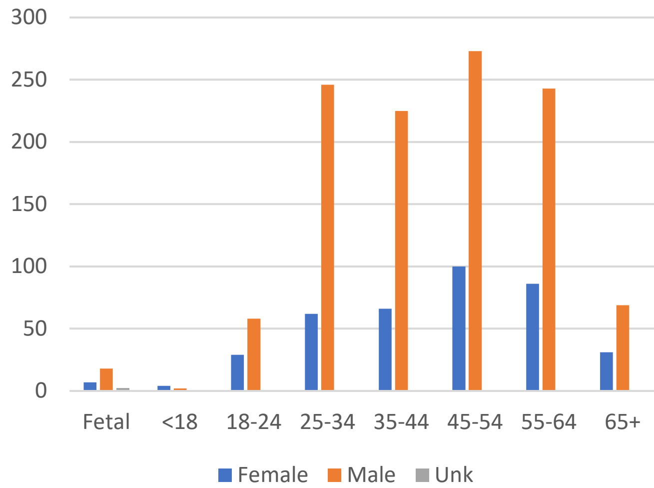
Type of Natural Death	**Number of Cases**
Blood/Blood-Forming Organs	2
Circulatory System	3,546
Conditions of Pregnancy/Childbirth	9
Congenital Anomalies	23
Endocrine/Metabolic/Nutritional	111
Gastrointestinal System	217
Genitourinary System	35
Infectious and Parasitic	58
Musculoskeletal System	5
Neoplasms	95
Nervous System	58
Other	11
Perinatal Conditions	27
Psychiatric Conditions	93
Respiratory System	130
Skin and Subcutaneous Tissue	6
Sudden Unexpected Infant Death	3
Total	4,429



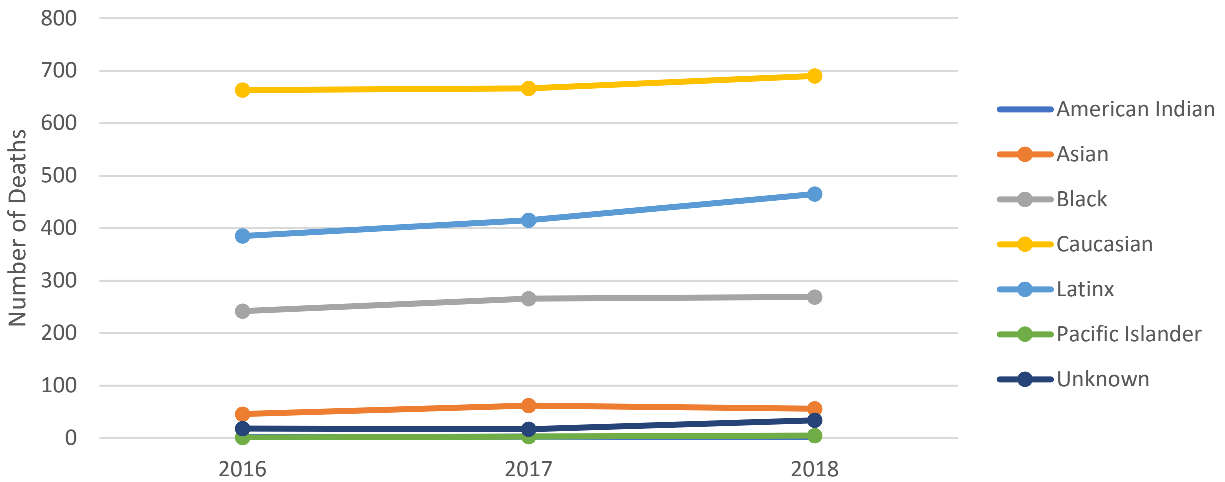




Year of Death	Fetal	<18	18-24	25-34	35-44	45-54	55-64	65+
2016	22	10	108	231	217	344	327	98
2017	24	10	90	281	269	347	306	105
2018	27	6	87	308	291	373	329	100



Age	Female	Male	Unk
Fetal	7	18	2
<18	4	2	
18-24	29	58	
25-34	62	246	
35-44	66	225	
45-54	100	273	
55-64	86	243	
65+	31	69	
Total	385	1134	2



Year	American Indian	Asian	Black	Caucasian	Latinx	Pacific Islander	Unknown
2016	2	46	242	663	385	1	18
2017	3	62	266	666	415	3	17
2018	2	56	269	690	465	5	34

Number of Deaths by Selected Substances, 2016-2018

Drug type	2016	2017	2018
Methamphetamine	506	630	752
Cocaine	283	290	276
Heroin	247	268	264
Fentanyl	91	155	244
Alcohol	274	236	227
Morphine	66	60	65
Methadone	54	61	46
Oxycodone	55	46	45
Opiate, NOS	48	42	38
Alprazolam	40	52	37
Hydrocodone	34	39	35
PCP	27	25	31

Overdose deaths often involve more than one substance. Therefore, summation of the individual substances will produce a result greater than the number of overdose deaths.

PRESENTATIONS

Neelakanta G, Calmes S, Lucas J., Anesthesia related deaths reported to Los Angeles County Department of Medical Examiner-Coroner, 2008-2017. Presented at American Society of Anesthesiologists annual meeting, October 2018, San Francisco CA.

Dutra T. Overlaps of cases of forensic medicine and transfusion medicine. Presented at Congreso Internacional de Ciencias Forenses, September 2018, Mexico City.

Vallone J, Rogers C.Final Exit, poster presented at National Association of Medical Examiners, October 2018, West Palm Beach FL.

Wang Y, Neelakanta G, Pulmonary Fat Embolism during Cemented Arthroplasty, presented at National Association of Medical Examiners, October 2018, West Palm Beach FL.

Prahlow JA, Ashraf Z, Plaza N, Rogers C, Ferreira P, Fowler DR, Blessing MM, Wolf DA, Graham MA, Sandberg K, Timm K, Brown TT, Lantz PE. Elevator-Related Deaths, presented at American Academy of Forensic Sciences, February 2019, Baltimore MD.

PUBLICATIONS

Rogers C, Devera R., The forensic pathology of liver trauma. Acad Forensic Pathol 2018 8(2): 184-191.

Sathyavagiswaran L, Rogers C, eds. Multidisciplinary Medicolegal Death Investigation: The Role of Consultants. Elsevier (2018).

Doctor JM, Nguyen A, Lev R, Lucas J, Knight T, Zhao H, Menchine M. Opioid prescribing decreases after learning of a patient’s fatal overdose. Science 2018 361(6402): 588-590.