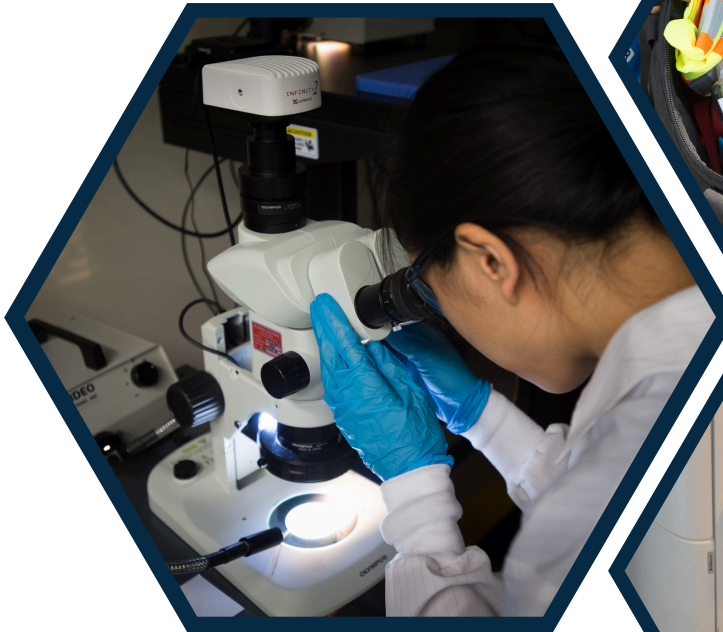


2022

Annual Report



County of Los Angeles
Department of Medical Examiner-Coroner
Dr. Odey Ukpo
Chief Medical Examiner-Coroner

Los Angeles County Board of Supervisors



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First District**

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Table Of Contents

About the Department of Medical Examiner-Coroner	4
Mission and Vision	5
Jurisdiction	5
Department Highlights 2022	6
Divisions	9
Statistics	16

About the Department of Medical Examiner- Coroner

The County of Los Angeles Department of Medical Examiner-Coroner is an independent investigative agency performing medicolegal death investigation of over 13,000 cases annually involving certain types of deaths in the community – any suspected homicide, suicide, or accidental deaths – to determine the circumstances, manner and cause of death. These also include any natural death where there either is no physician to sign a death certificate, or the physician is unwilling or legally prohibited from doing so. The goal of these investigations is to determine the medical cause (disease and/or injury) of the death for the protection of the public's health and safety.

Medical Examiner systems require the Chief Medical Examiner to be a physician, certified by the American Board of Pathology in the medical specialty of Forensic Pathology and experienced in the forensic sciences. The department's mission is to provide independent, quality, death investigation using advanced forensic science with compassion and objectivity for families, communities, and public health and safety, as well as to work collaboratively to reduce preventable deaths.





Mission and Vision

Mission

To provide independent, quality, death investigation using advanced forensic science with compassion and objectivity for families, communities, and public health & safety; working collaboratively to reduce preventable deaths.

Vision

To be the premier medicolegal death investigation agency, nationally recognized as a leader in the forensic science community.

Jurisdiction

State law instructs the Department of Medical Examiner-Coroner (DMEC) 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. In such cases, the deceased may be taken to the DMEC facility and examined by a deputy medical examiner to determine the cause of death. The DMEC determines the cause and manner of death but **does not issue death certificates**, which are completed by the state in collaboration with mortuaries. Occasionally, more extensive testing and studies are required after an examination. In those cases, the DMEC provides the information to produce an interim or deferred death certificate, allowing the family to make funeral arrangements. The DMEC will update the information at the completion of the case.

Department Highlights 2022

New Interim Chief Medical Examiner-Coroner

On Nov. 4, the Los Angeles County Board of Supervisors appointed Dr. Odey C. Ukpo as the Interim Chief Medical Examiner-Coroner of Los Angeles County. Dr. Ukpo is the first African American to serve as Chief Medical Examiner-Coroner since the office was established in 1850.

Dr. Ukpo was sworn in during a virtual ceremony and will now lead a workforce of 260 staff at the Los Angeles County Department of Medical Examiner-Coroner (DMEC), one of the most prominent medical examiner's offices in the nation with an annual volume of about 13,000 cases a year.

Dr. Ukpo joined the Department in 2014 and served as a Senior Deputy Medical Examiner before being named Medical Director in June 2022.

Prior to joining the office, Dr. Ukpo received his bachelor's degree in science from Loyola Marymount University in Los Angeles, as well as a master's degree in science from the Mayo Clinic Graduate School of Biomedical Sciences in Rochester, Minnesota. He went on to earn his medical degree from the Loyola University Chicago Stritch School of Medicine in 2008. He then completed his residency at Washington University in St. Louis in 2013 and finished his Forensic Pathology Fellowship at the Office of the Medical Examiner in Albuquerque, New Mexico in 2014.

Dr. Ukpo succeeds Dr. Jonathan R. Lucas, who led the department for five years and announced his intent to leave the DMEC in September.

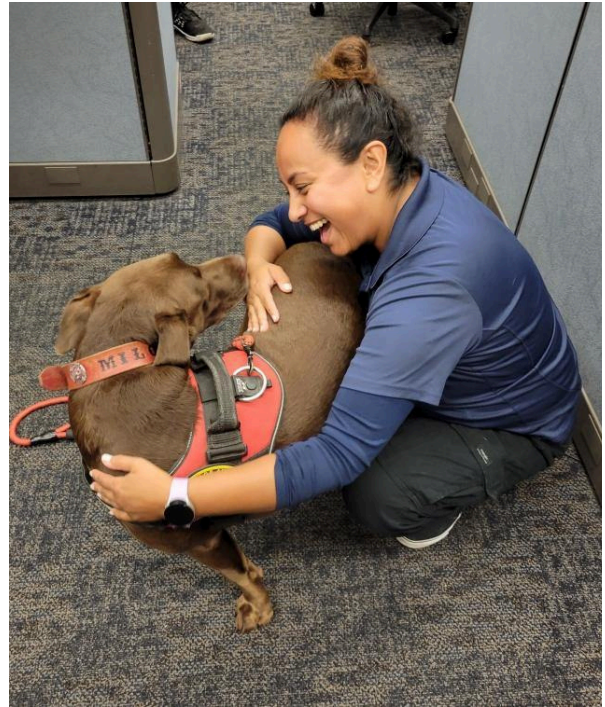


DMEC Launches Wellness Efforts

The Department is committed to looking for ways to improve employee wellness.

In April, the Department launched an 8-week Pet Dog in the Workplace pilot project, an initiative allowing pet dogs to accompany their owner/caretakers to work. The pilot program was successful and officially incorporated into the Wellness Program.

In August, the Department officially introduced its Wellness Connections team, a peer-led group of advocates focused on finding ways to bring wellness and wellbeing into the workplace. Led by a staff chief psychologist, the Meet-and-Greet event featured booths with wellness activities and information, and fostered wellness dialogue amongst peers.



Board of Supervisors Approves Funding for New Case Management System

On April 5, the LA County Board of Supervisors approved the Department to move forward with replacing its legacy case management system (CMS). The new CMS will manage the entire decedent case life cycle. The estimated project timeline is roughly 16 months.

The Department identified subject matter experts from each division who would participate in the designing, building, testing, training, and deployment of the new system.



Inquest Results Released in Deaths of Three Individuals

On Jan. 26, retired Court of Appeals Justice Candace Cooper submitted her findings in the inquests held on Dec. 15 and 16, 2021, in the deaths of Dijon Kizzee, Samuel Herrera Jr., and Dana Young Jr.

As in previous inquests, these proceedings support the department's mission and purpose to provide independent, evidence-based death investigations, addresses the public's interest in the death, and is in accord with a motion approved by the Board of Supervisors on Sept. 28, 2021.

The deaths of Mr. Dijon Kizzee on Aug. 31, 2020, Mr. Samuel Herrera on Sept. 10, 2020, and Mr. Dana Young, Jr. on Oct. 15, 2020, were each a result of Los Angeles County Sheriff Deputy-involved shootings.

The Department subpoenaed relevant witnesses to testify and documents to present at the inquests. The results of the inquests are available on the DMEC website.



Divisions

The Department is comprised of five sections, including the Investigations and Transportation Division, Forensic Medicine Division, Forensic Sciences Laboratories Division, Public Services Division, and the Administrative Services Division.

Forensic Medicine Division

The Forensic Medicine Division is comprised of board-certified forensic pathologists who are full-time, permanent staff. Commonly referred to as deputy medical examiners, the forensic pathologists are responsible for the professional medical investigation and determination of the cause and manner of death in the cases handled by the Department.

The forensic pathologists are experts in the evaluation of sudden, unexpected, natural, and unnatural deaths. They are frequently called to court to testify on their determinations, medical findings and interpretations, particularly in homicide cases.

The Forensic Medicine Division also uses computed tomography, commonly known as a CT scanner, to improve the accuracy of diagnoses and turnaround time by conducting virtual autopsies, minimizing operational costs. The Department is one of a few medical examiner offices in the nation utilizing a CT scanner. The CT scanner also is utilized for cases where there is a religious objection to an examination.

The deputy medical examiners utilize consultants in forensic neuropathology, odontology, anthropology, anesthesiology, pediatrics, ophthalmologic pathology, pulmonary pathology, cardiac pathology, psychiatry, psychology, and radiology to assist in evaluating their cases as needed.

The Department also employs forensic technicians who assist doctors during autopsy and are responsible for taking photographs and x-rays of decedents.

Grant Funding Enables Purchase to Help Medical Examiners

Fifteen workstations on wheels (WOW), along with the required wireless network, hardware, engineering, and labor required for the installation process were successfully purchased through the Los Angeles County Quality & Productivity Commission's Productivity Investment Fund Grant. These workstations are used by medical examiners to view imaging studies, such as CT and x-rays; view photographs; enter the required information into the case management system; and

type examination and autopsy reports. The WOWs are equipped with a computer, mouse, keyboard, specimen label printer, drawers to hold accessory materials, and space to write to complete current paperwork and diagrams.

Most of these workstations are in use at the Forensic Science Center. The WOW improves the turnaround time of a case and allows the medical examiner to immediately complete a case after the examination. Additionally, forensic technicians use the WOW to print additional specimen labels required for the case.

Remaining workstations are used in ancillary service areas to aid investigators and forensic attendants in completing case-related work.



DME Expands Efforts to Recruit Forensic Pathology Fellows

Amidst a national shortage of trained forensic pathologists, the Department of Medical Examiner looked for ways to strengthen efforts to recruit forensic pathology fellows to the department.

One of the ways was to seek funding through the federal Department of Justice's Bureau of Justice Assistance (BJA) and be awarded a grant to fund an additional pathology fellow for 2024-25 at the DME. The DME typically retains at least one trained forensic pathology fellow on staff as a physician specialist (deputy medical examiner) following completion of the fellowship, allowing the Department an opportunity to fill physician specialist vacancies. (Currently 80% of physician specialists on staff have been retained from the Forensic Pathology Fellowship program).

The DME also joined with the National Association of Medical Examiners, the

accrediting agency for Medical Examiner offices, to begin participating in their national MATCH program for 2024-2025. Applicants looking for a forensic pathology fellowship are matched with associated medical examiner offices across the country, expanding and diversifying the applicant pool. Historically, the DME relied on local pathology residency training programs to feed into the fellowship.



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

The Laboratories Division conducts comprehensive scientific investigation through the chemical and instrumental analysis of physical and medical evidence to provide medical examiners, families of decedents, and outside legal and law enforcement agencies with timely, accurate, and advanced forensic analyses; and to provide expert interpretation of these analyses through testimony and deposition.

Additionally, the Forensic Sciences Laboratories Division is 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.

Forensic Laboratories Division Successfully Completes ANAB Accreditation Audit

The Forensic Sciences Laboratories Division successfully completed an onsite ANAB (ANSI National Accreditation Board) accreditation audit from January 25-27.

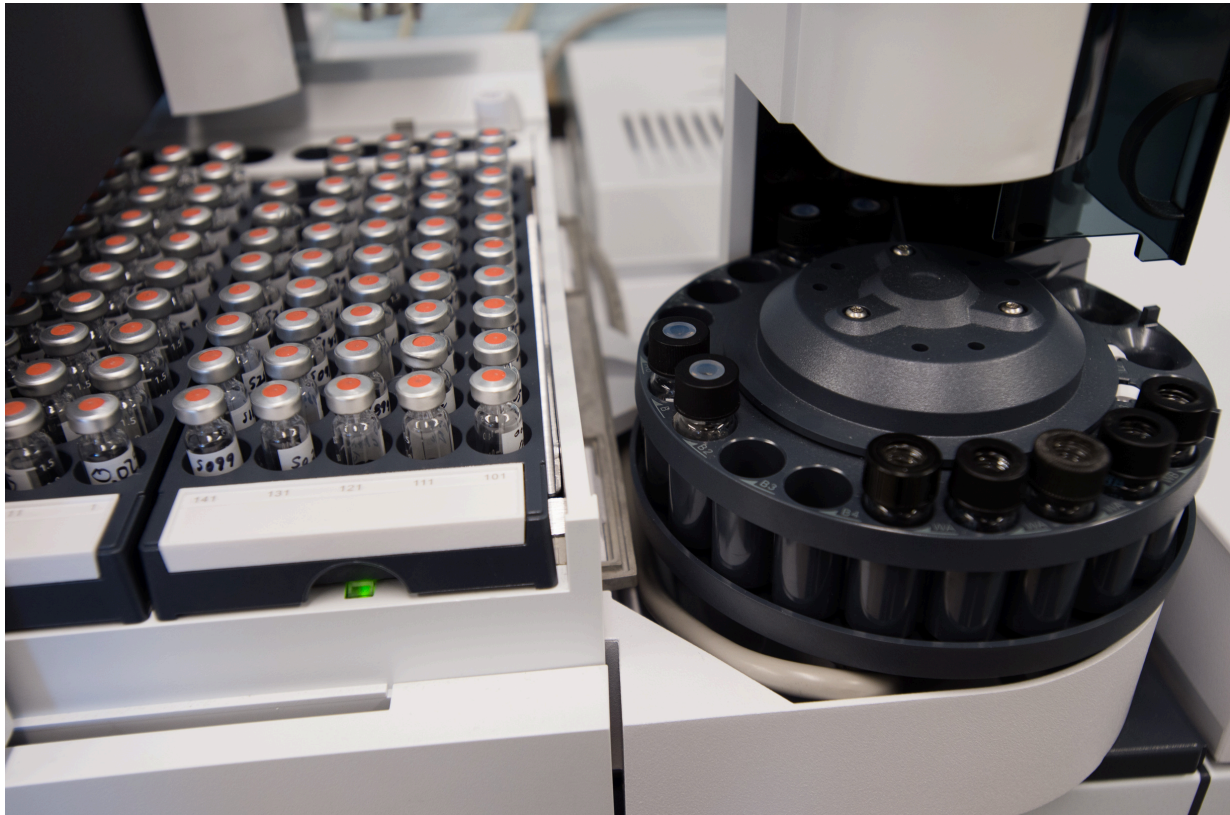
The full audit review occurs every four years under the direction and leadership of the Laboratories QA Manager.

Out of 171 relevant accreditation standards, only two nonconformances were found. The next review will be in 2026.



New Method Validation and Development

In August, the Forensic Laboratories Division successfully implemented the new Pain Management Panel. The implementation of this panel combined multiple other methodologies, either completely or in part, into one protocol. The net result of this was a significant reduction in sample volume, reagent volume, laboratory time, data processing, and data review time. It also added the ability to identify a number of opioid compounds that previously were not reported by the laboratory.



Upgrades and Updates to Facilities and Software

In 2022, the Labs Division completed:

- the implementation of the Open Labs system within toxicology to improve data processing of case analyses.
- the installation of a refurbished, short-term toxicology cooler to store all biological specimens, including a new accessioning area.
- the installation of a portable AC unit to control temperatures in the LC tandem mass spectrometer room.

Investigations and Transportation Division

The Investigations and Transportation Division 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 Unit, investigators respond to death scenes throughout the County. As part of their death investigation, they 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. Reports made by medical examiner investigators aid the forensic pathologist in determining of the cause and manner of death.

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

The DME is the first and only Medical Examiner or Coroner office in the U.S. who handles the disposition of its indigent Veterans. The Department provides, free of charge, a casket and transportation to the Riverside National Cemetery. The Department also files all paperwork and permits with the local registrar and the Department of Veterans Affairs and makes arrangements with the Riverside National Cemetery to place a non-denominational grave marker complete with name, date of birth, date of death, rank, and branch of service.

The Special Operations Response Team (SORT) responds to multi-casualty incidents and death investigations that require specialized search or recovery. The Unit members receive regular training to prepare them for their roles and also manages the homeland security grants awarded to the Department, and other ancillary programs, such as regional offices and the court-mandated hospital and crypt program.

Division Highlights for 2022

- 619 cases were referred to the Identifications Unit and were identified through scientific methods.
- The DSU transported 163 Veterans to the Riverside National Cemetery for proper burial.

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 cases. They offer these functions with utmost professionalism and in a caring manner.

The Public Services Division manages the Medical Examiner 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 provides death information to the mortuaries.

Internal departmental support services include expeditious transcription of all dictated autopsy reports, neuropathology reports, microscopic reports and clerical support to deputy medical examiners.

Property Section Secures New Space

In 2022, construction was completed to create a new vault within the DME to store decedent's personal property. The larger space provides Property Section staff with a safe and secure area to keep the property until the legal next of kin can come claim it.



Administrative Services Division

The Administrative Services Division is responsible for all departmental financial operations, 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.



2022 Statistics

Deaths reported	21,065
Cases accepted	13,102

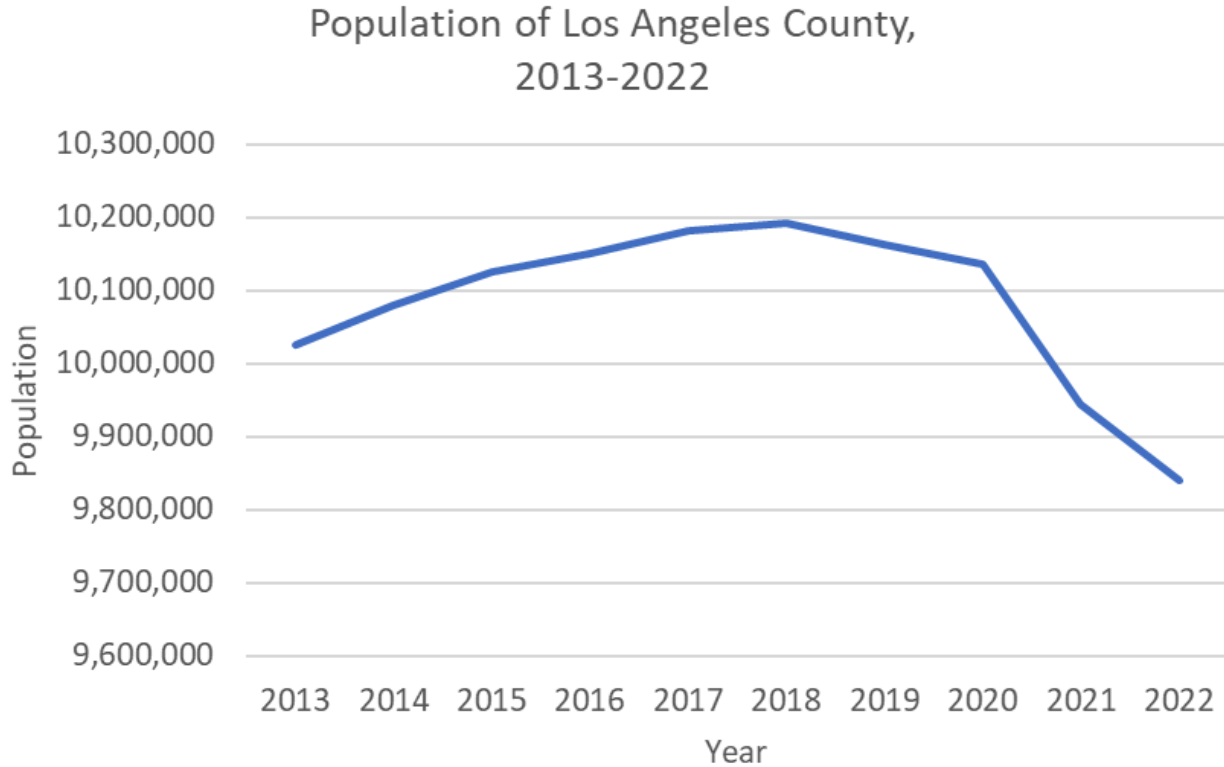
Number of cases by manner of death

	Count ^a	Percent ^b
Accident	5,477	42%
Homicide	832	6%
Natural	5,750	44%
(of which COVID-19)	217	2%
Suicide	920	7%
Undetermined	123	1%

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.

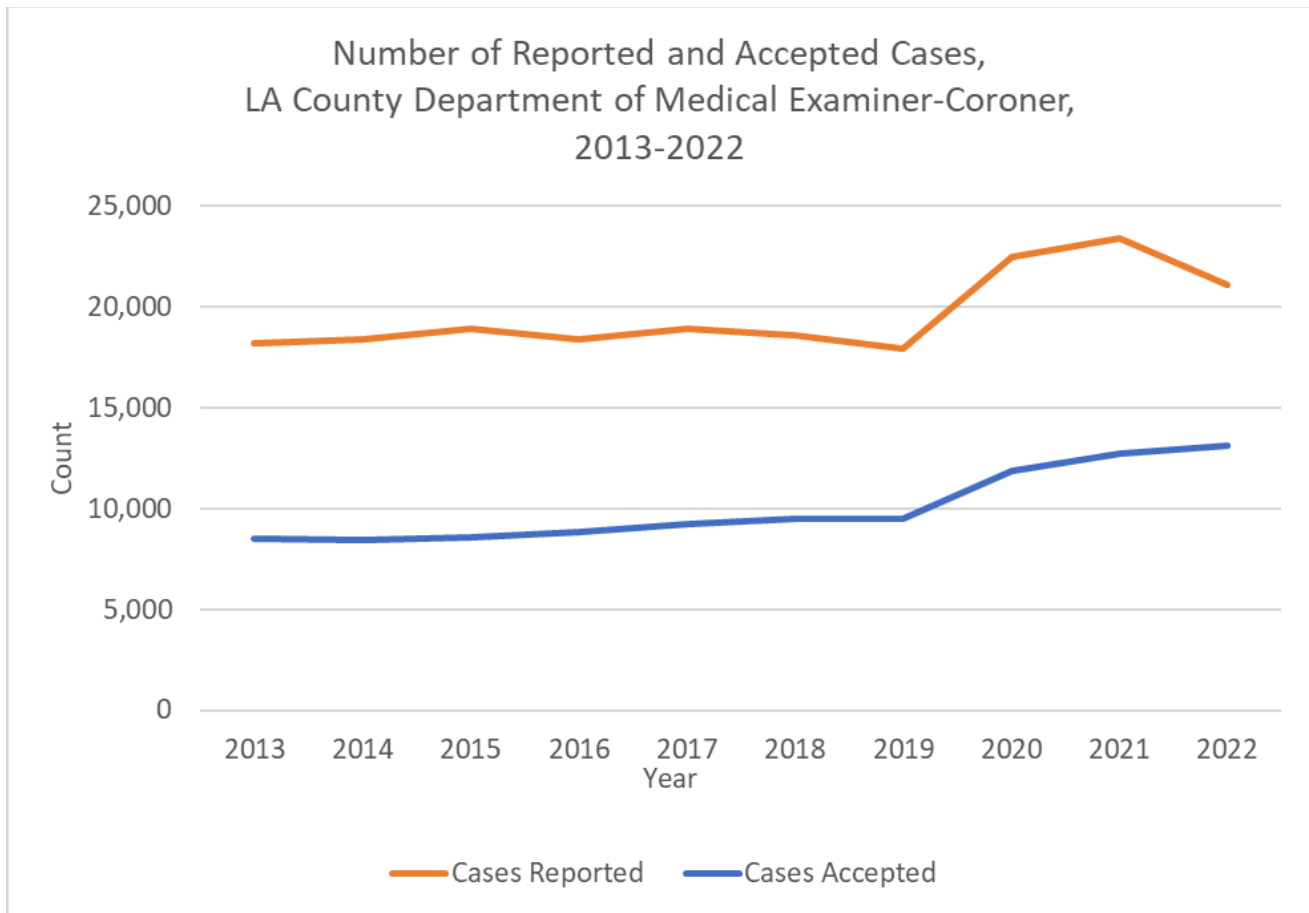
LA County Population 2013-2022



YEAR	POPULATION
2013	10,025,721
2014	10,078,942
2015	10,124,800
2016	10,150,386
2017	10,181,162
2018	10,192,593
2019	10,163,139
2020	10,135,614
2021	9,944,653
2022	9,839,078

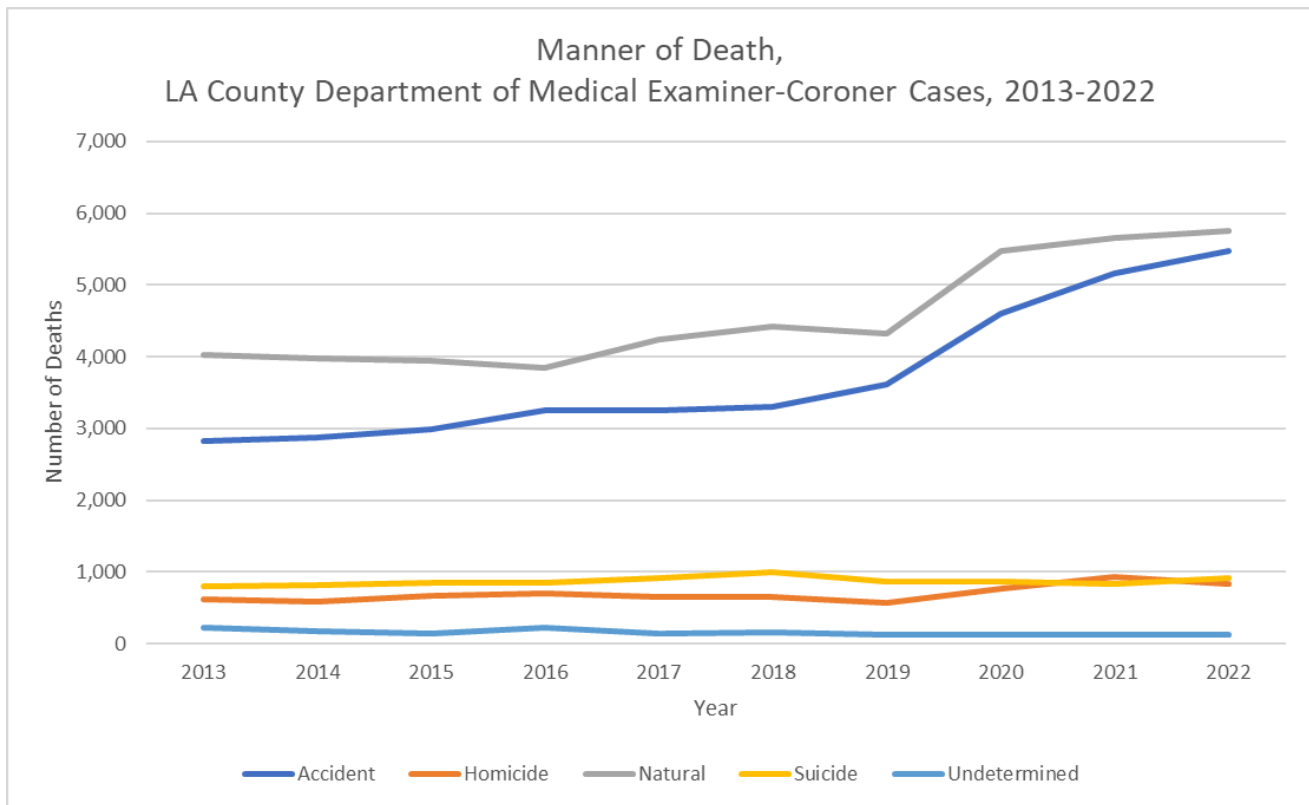
Source: California State Department of Finance

Cases Reported and Accepted 2013-2022



Year	Cases Reported	Cases Accepted
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
2019	17,940	9,489
2020	22,445	11,836
2021	23,415	12,698
2022	21,065	13,102

Manner of Death 2013-2022

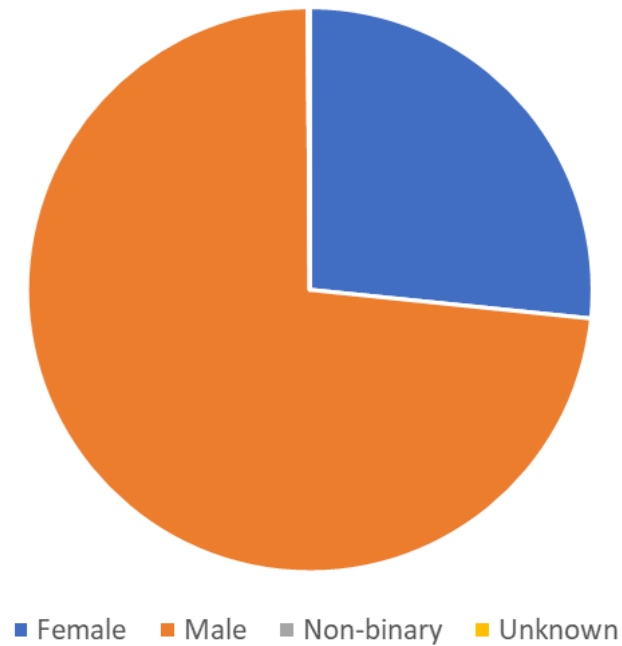


Year	Manner of Death ^a				
	Accident	Homicide	Natural	Suicide	Undetermined
2013	2,823	624	4,027	793	228
2014	2,871	587	3,981	813	176
2015	2,987	664	3,936	845	146
2016	3,247	707	3,842	846	214
2017	3,251	656	4,233	917	147
2018	3,296	656	4,429	989	153
2019	3,608	571	4,319	871	120
2020	4,603	770	5,476	866	121
2021	5,156	934	5,654	836	118
2022	5,477	832	5,750	920	123

^a Manner of death determinations reflect only accepted cases in the corresponding year.

Deaths by Gender/Sex 2022

Gender/Sex of Deaths,
LA County Department of Medical Examiner-Coroner Cases,
2022



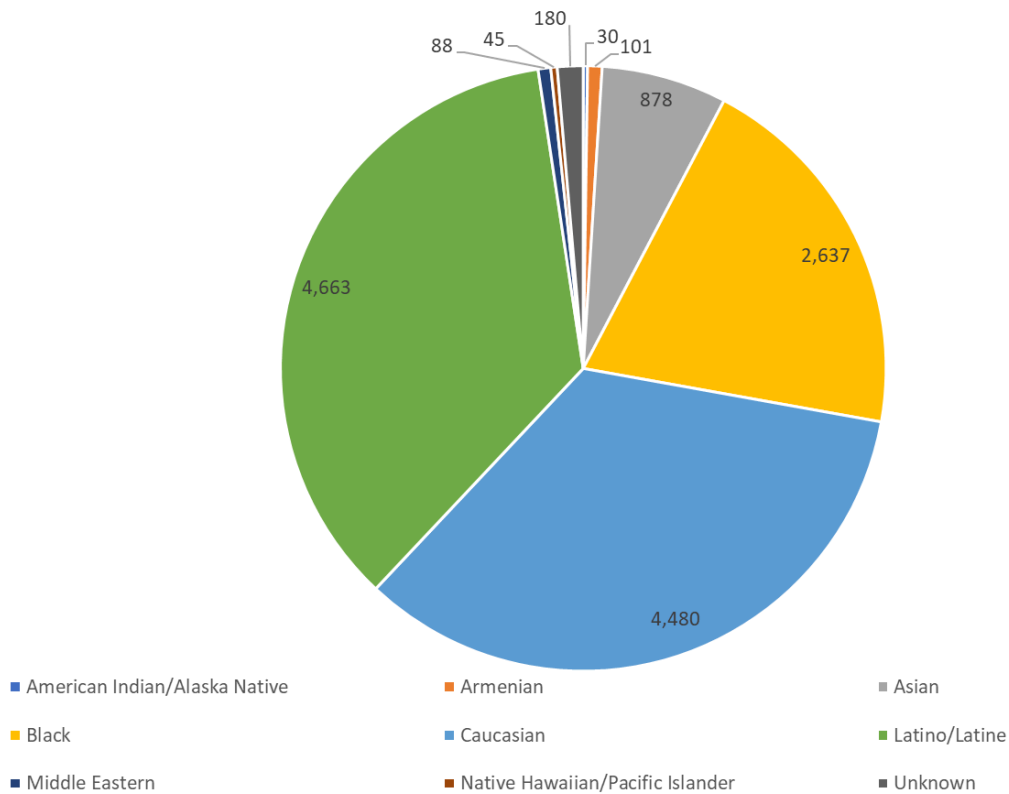
Gender/Sex	Number of Cases ^a	Percent ^b
Female	3,488	27%
Male	9,599	73%
Non-binary	2	<1%
Unknown	13	<1%
Total	13,102	

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.

Deaths by Race/Ethnicity 2022

Race/Ethnicity of Deaths,
LA County Department of Medical Examiner-Coroner Cases, 2022

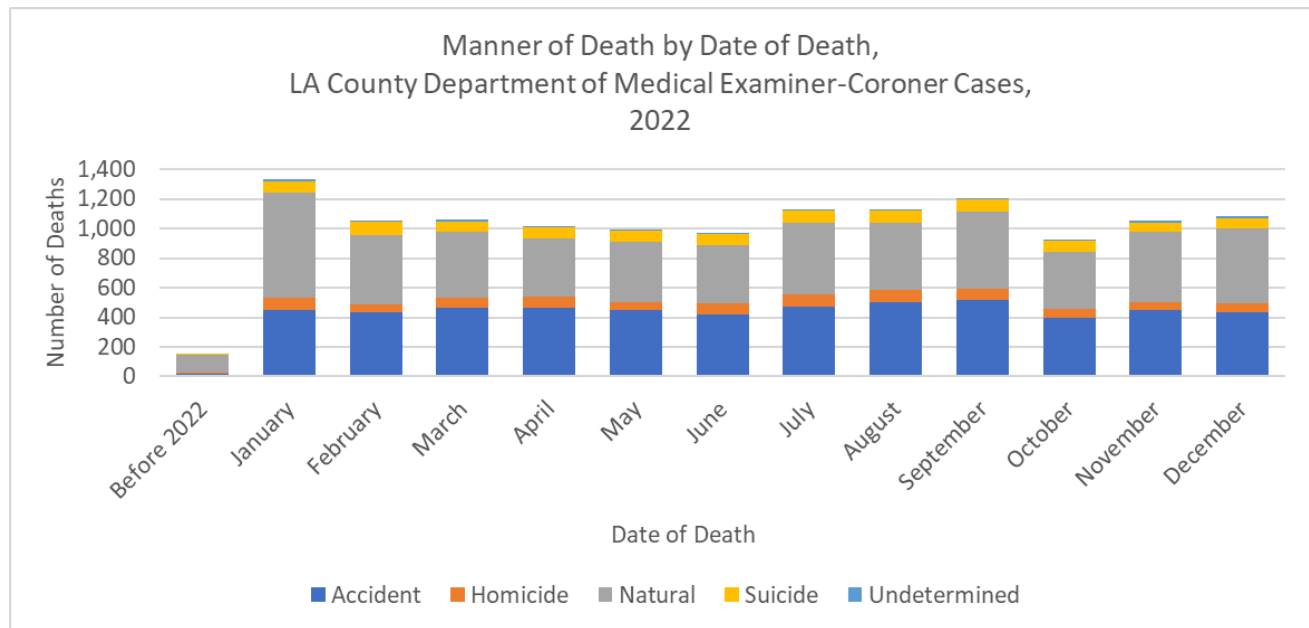


Race/Ethnicity	Number of Cases ^a	Percent ^b
American Indian/Alaska Native	30	<1%
Armenian	101	1%
Asian	878	7%
Black	2,637	20%
Caucasian	4,480	34%
Latino/Latine	4,663	36%
Middle Eastern	88	1%
Native Hawaiian/Pacific Islander	45	<1%
Unknown	180	1%
Total	13,102	

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.

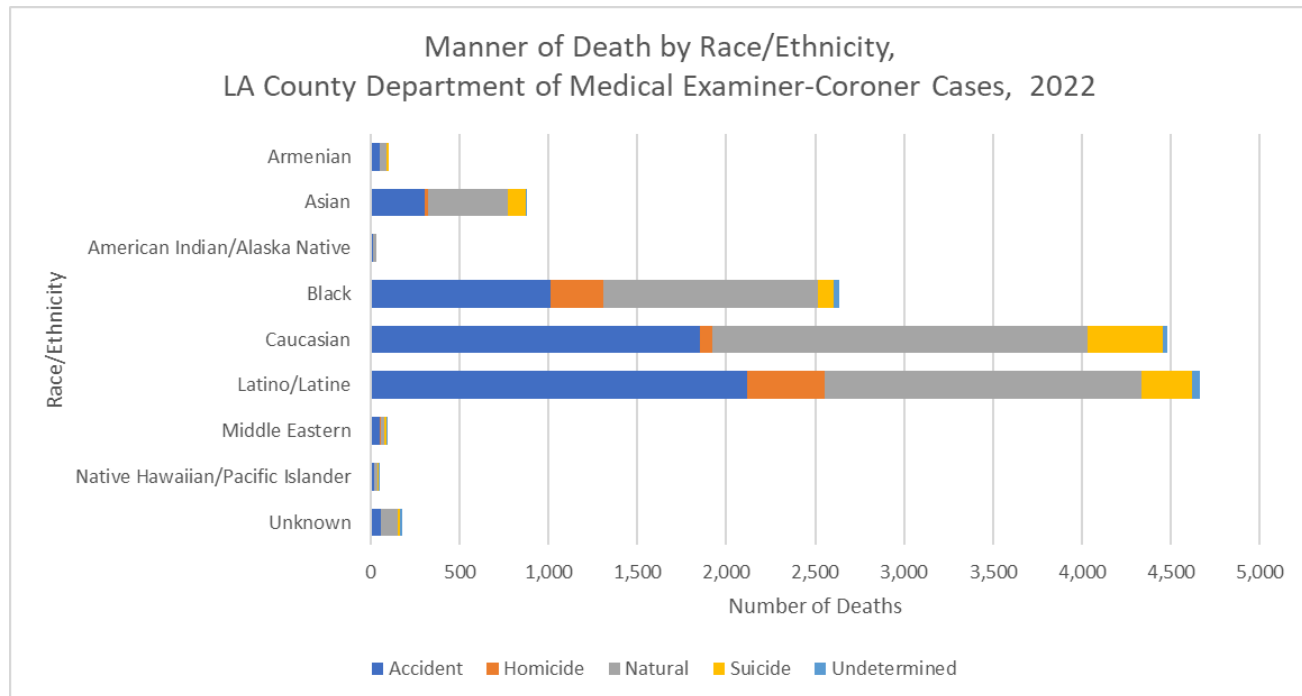
Manner of Death by Date of Death 2022



Date of Death	Manner of Death ^a					Total
	Accident	Homicide	Natural	Suicide	Undetermined	
Before 2022	22	1	123	1	0	147
January	450	83	712	71	14	1,330
February	438	50	465	90	8	1,051
March	462	69	445	73	12	1,061
April	465	76	389	76	10	1,016
May	446	56	409	75	11	997
June	421	73	392	79	8	973
July	474	82	480	87	7	1,130
August	504	85	447	87	6	1,129
September	518	72	526	78	6	1,200
October	396	64	386	70	12	928
November	446	59	472	64	15	1,056
December	435	62	504	69	14	1,084
Total	5,477	832	5,750	920	123	13,102

^a Manner of death determinations are based on accepted cases from 2022.

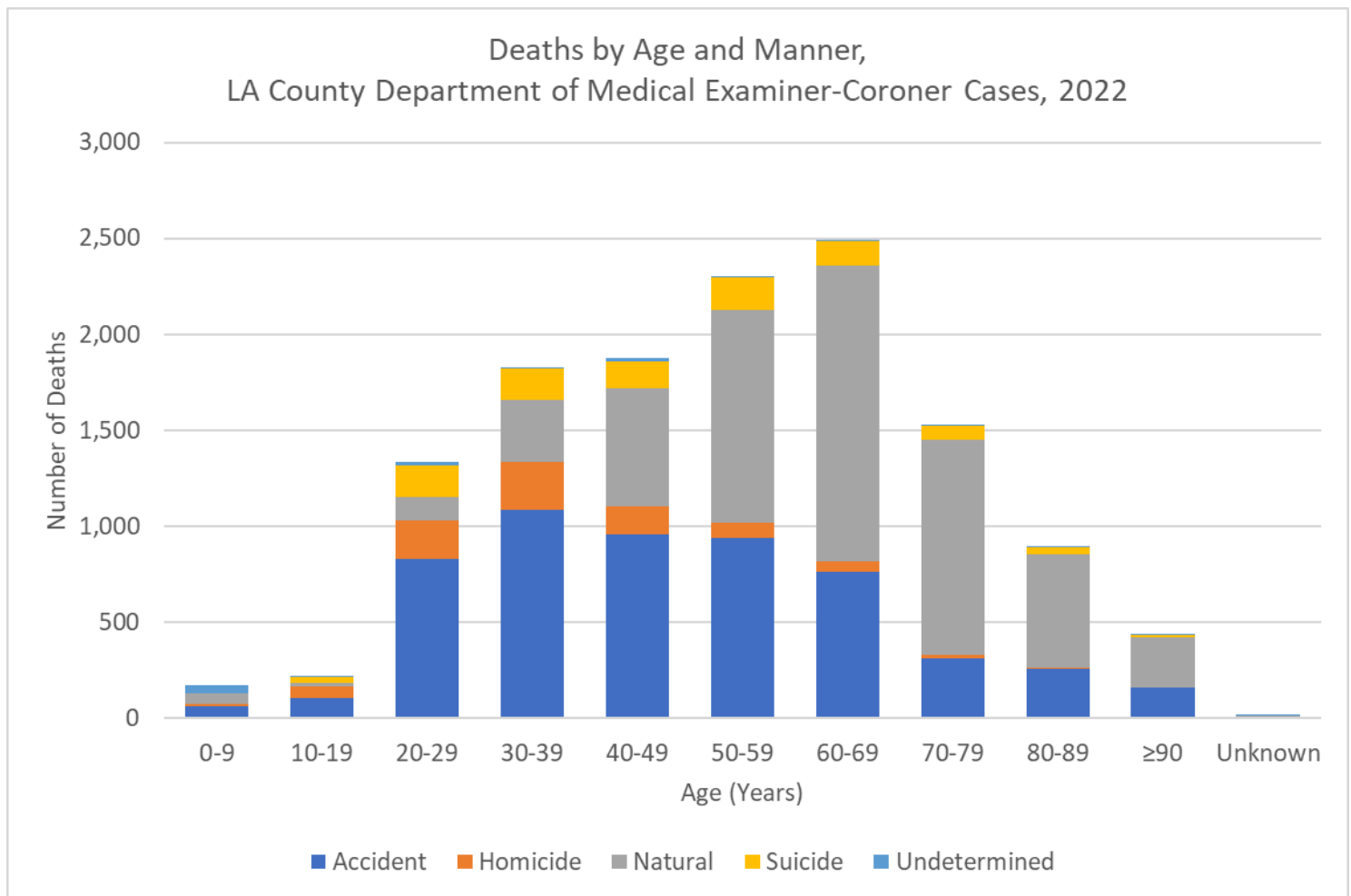
Manner of Death by Race/Ethnicity 2022



Race/Ethnicity	Manner of Death ^a					Total
	Accident	Homicide	Natural	Suicide	Undetermined	
Armenian	50	4	38	9	0	101
Asian	307	18	450	96	7	878
American Indian/ Alaska Native	14	0	16	0	0	30
Black	1,013	297	1,205	87	35	2,637
Caucasian	1,850	71	2,114	422	23	4,480
Latino/Latine	2,120	431	1,785	285	42	4,663
Middle Eastern	49	8	21	9	1	88
Native Hawaiian/ Pacific Islander	19	1	22	2	1	45
Unknown	55	2	99	10	14	180
Total	5,477	832	5,750	920	123	13,102

^a Manner of death determinations are based on accepted cases from 2022.

Deaths by Age and Manner 2022

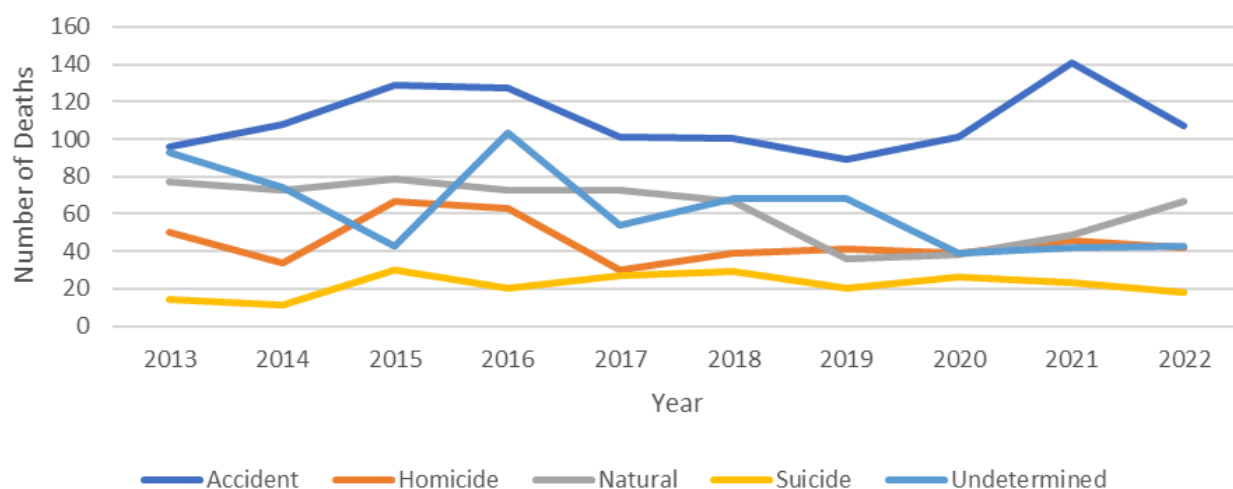


Manner of Death	Age (Years) ^a										
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	≥90	Unknown
Accident	62	106	830	1,084	955	937	765	313	259	157	9
Homicide	13	61	203	248	150	80	50	17	7	2	1
Natural	56	15	121	323	613	1,110	1,543	1,121	585	260	3
Suicide	0	35	160	165	140	168	128	70	42	12	0
Undetermined	43	1	18	10	16	11	8	3	3	1	9
Total	174	218	1,332	1,830	1,874	2,306	2,494	1,524	896	432	22

^a Age breakdown of deaths is based on accepted cases from 2022.

Manner of Death Among Children 2013-2022

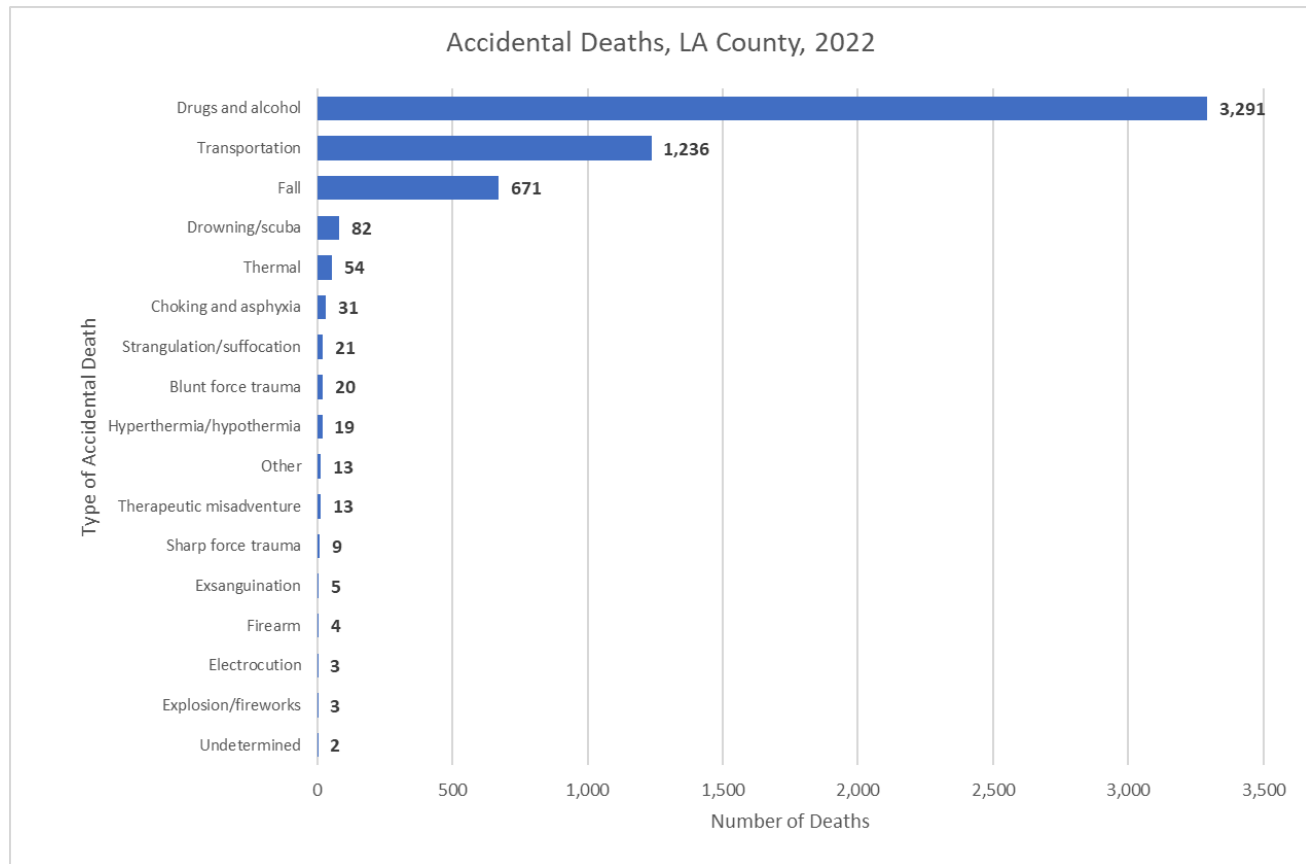
Manner of Death Among Children, (Under 18 Years of Age),
LA County Department of Medical Examiner-Coroner Cases,
2013-2022



Year	Manner of Death ^a				
	Accident	Homicide	Natural	Suicide	Undetermined
2013	96	50	77	14	93
2014	108	34	73	11	74
2015	129	67	79	30	43
2016	127	63	73	20	103
2017	101	30	73	27	54
2018	100	39	67	29	68
2019	89	41	36	20	68
2020	101	39	38	26	39
2021	141	46	49	23	42
2022	107	42	67	18	43

^a Manner of death determinations reflect only accepted cases in the corresponding year.

Accidental Deaths 2022



Type of Accidental Death	Number of Cases ^a	Percent ^b
Drugs and alcohol	3,291	60%
Transportation	1,236	23%
Fall	671	12%
Fall down stairs	28	
Fall from great height	62	
Fall from standing height	581	
Drowning/scuba	82	1%
Drowning	81	
Scuba	1	

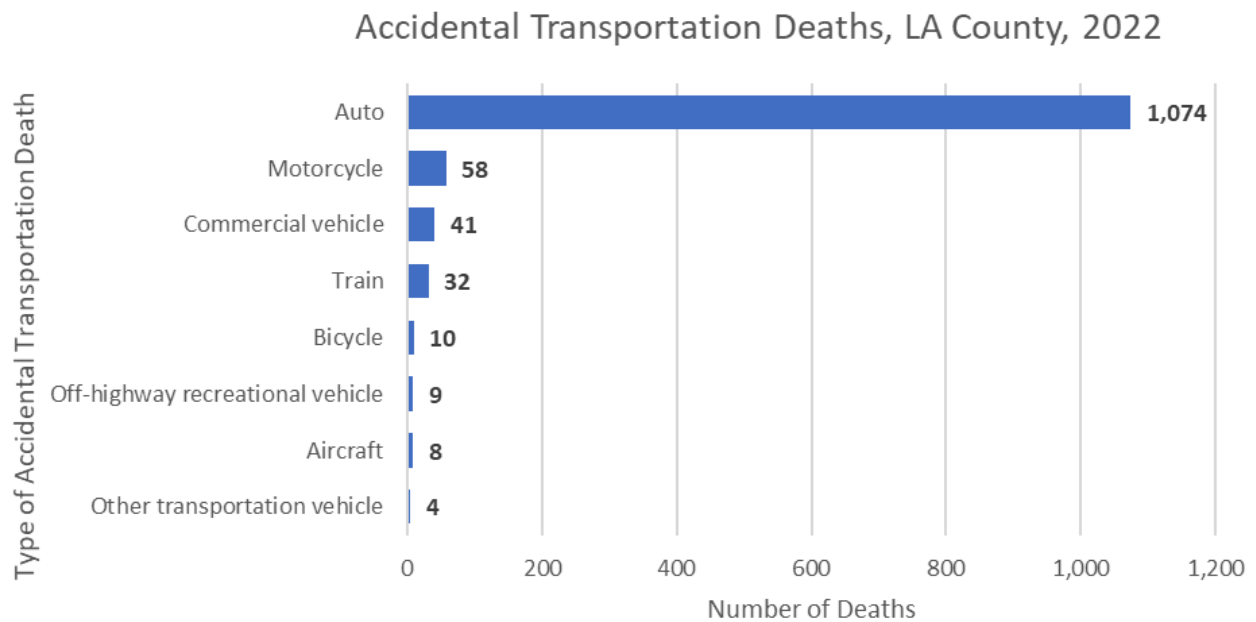
Thermal	54	1%
Other thermal	2	
Thermal injuries and inhalation of products of combustion	52	
Choking and asphyxia	31	1%
Strangulation/suffocation	21	<1%
Hanging	7	
Strangulation	1	
Suffocation	13	
Blunt force trauma	20	<1%
Crushed or struck by objects	16	
Other blunt force trauma	3	
Trench collapse	1	
Hyperthermia/hypothermia	19	<1%
Hyperthermia	12	
Hypothermia	7	
Other	13	<1%
Bee stings	1	
Chainsaw	1	
Dog bites	2	
Inhalation injuries	1	
Machinery entrapment	1	
Mineral oil aspiration	1	
Other entrapment	1	
Shellfish allergic reaction	1	
Thunder strike	1	
Vitiated space	3	

Therapeutic misadventure	13	<1%
Sharp force trauma	9	<1%
Exsanguination	5	<1%
Firearm	4	<1%
Electrocution	3	<1%
Explosion/fireworks	3	<1%
Explosion	2	
Fireworks	1	
Undetermined	2	<1%
Total	5,477	

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.

Accidental Transportation Deaths 2022



Type of Accidental Transportation Death	Number of Cases ^a	Percent ^b
Auto	1,074	87%
Auto, fall from great height	3	
Auto, NOS	4	
Auto vs ATV	1	
Auto vs auto	283	
Auto vs auto vs fixed object	1	
Auto vs bicycle	49	
Auto vs dirt bike	1	
Auto vs fixed object	163	
Auto vs fixed object vs pedestrian	3	
Auto vs mini bike	3	
Auto vs motorcycle	103	

Auto vs pedestrian	443	
Auto vs scooter	12	
Auto vs side-by-side	1	
Auto vs skateboard	1	
Auto vs wheelchair	3	
Motorcycle	58	5%
Motorcycle, fall from great height	1	
Motorcycle vs bicycle	1	
Motorcycle vs fixed object	51	
Motorcycle vs motorcycle	1	
Motorcycle vs pedestrian	3	
Motorcycle, NOS	1	
Commercial vehicle	41	3%
Box truck vs auto	2	
Box truck vs motorcycle	1	
Box truck vs pedestrian	1	
Bus vs moped	1	
Cement truck vs bicycle	1	
Delivery truck vs auto	1	
Garbage truck vs auto	1	
Semi-trailer truck vs auto	12	
Semi-trailer truck vs auto vs fixed object	1	
Semi-trailer truck vs bicycle	2	
Semi-trailer truck vs fixed object	1	
Semi-trailer truck vs motorcycle	4	

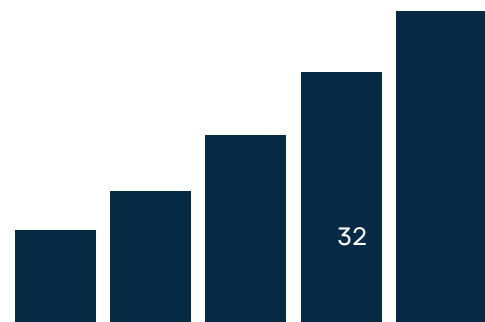
Semi-trailer truck vs pedestrian	10	
Tanker truck vs auto	1	
Tow truck vs motorcycle	1	
Tractor, NOS	1	
Train	32	3%
Train vs auto	1	
Train vs pedestrian	30	
Other train related	1	
Bicycle	10	1%
Bicycle vs bicycle	1	
Bicycle vs fixed object	4	
Bicycle vs pedestrian	2	
Electric bicycle vs fixed object	1	
Other bicycle related	2	
Off-highway recreational vehicle	9	1%
ATV vs fixed object	3	
Dirt bike, NOS	2	
Golf cart vs pedestrian	1	
Side-by-side vs dirt bike	3	
Aircraft	8	1%
Airplane vs fixed object	6	
Airplane, NOS	1	
Hang gliding, NOS	1	

Other transportation vehicle	4	<1%
Moped vs fixed object	2	
Scooter vs fixed object	2	
Total	1,236	

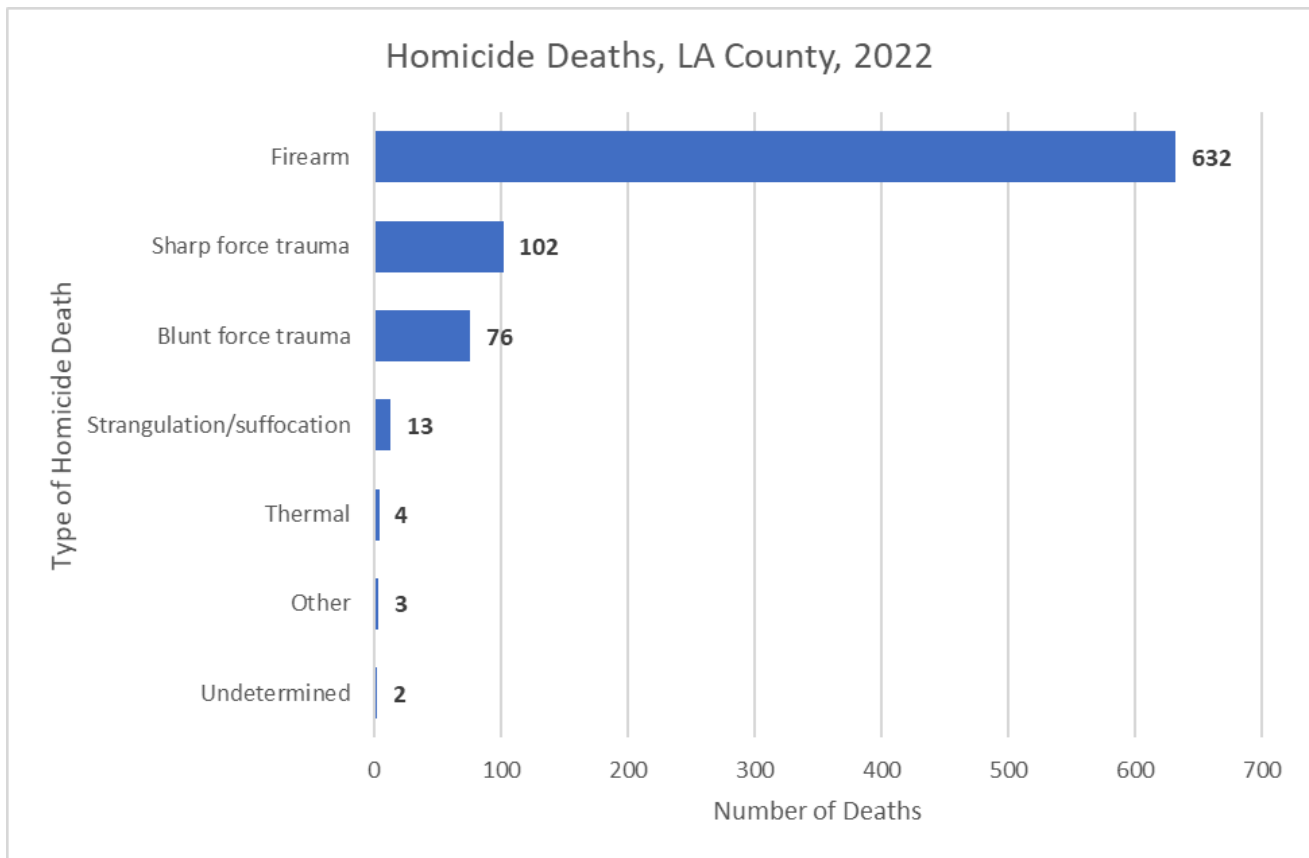
Auto = automobile; NOS = not otherwise specified; vs = versus; ATV = all-terrain vehicle

^a *Number of cases are based on accepted cases from 2022.*

^b *Percentages rounded to the nearest whole number.*



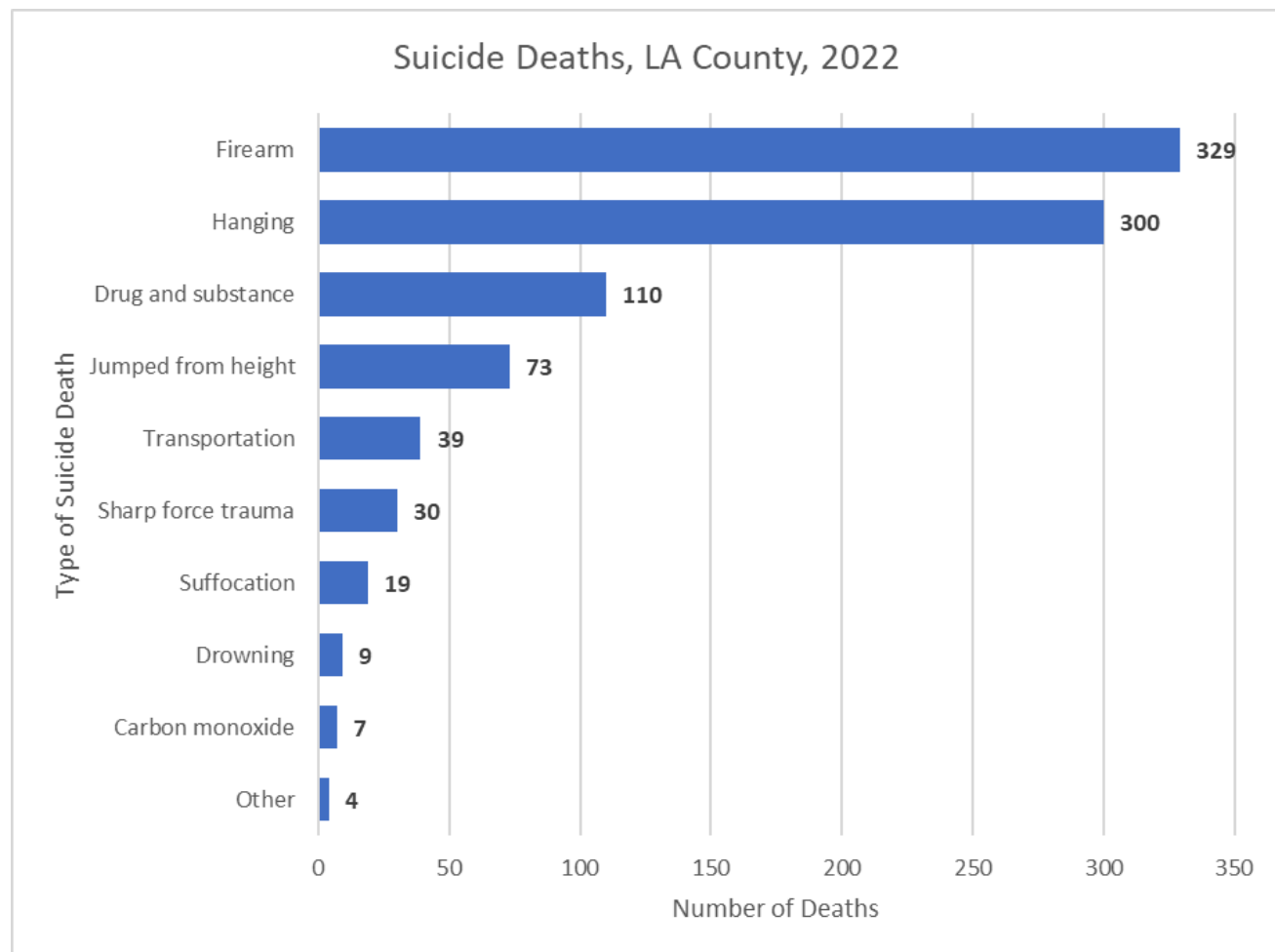
Homicide Deaths 2022



Type of Homicide Death	Number of Cases ^a	Percent ^b
Firearm	632	76%
Sharp force trauma	102	12%
Blunt force trauma	76	9%
Strangulation/suffocation	13	2%
Thermal	4	<1%
Other	3	<1%
Undetermined	2	<1%
Total	832	

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.



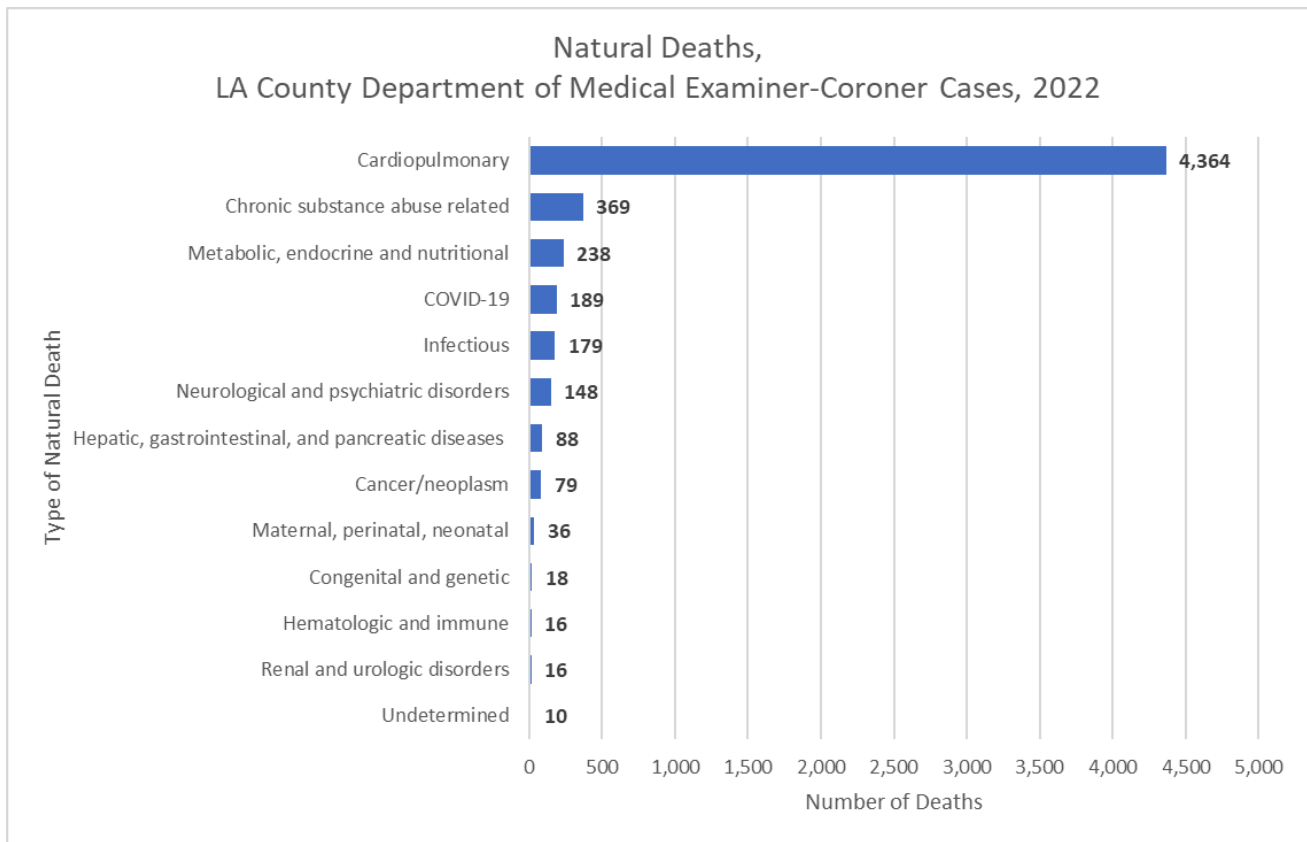
Type of Suicide Death	Number of Cases ^a	Percent ^b
Firearm	329	36%
Hanging	300	33%
Drug and substance	110	12%
Acetaminophen toxicity	3	
Ingestion of other toxic substance	4	
Other drug toxicity	92	
Sodium nitrite toxicity	11	
Jumped from height	73	8%

Transportation	39	4%
Auto vs fixed object	1	
Auto vs pedestrian	11	
Bus vs pedestrian	1	
Freight truck vs pedestrian	1	
Train vs pedestrian	25	
Sharp force trauma	30	3%
Suffocation	19	2%
Drowning	9	1%
Carbon monoxide	7	1%
Other	4	<1%
Choking	1	
Starvation	1	
Thermal injuries and inhalation of products of combustion	2	
Total	920	

Auto = automobile; vs = versus

^a *Number of cases are based on accepted cases from 2022.*

^b *Percentages rounded to the nearest whole number.*



Type of Natural Death	Number of Cases ^a	Percent ^b
Cardiopulmonary^c	4,364	76%
Chronic substance abuse related	369	6%
Metabolic, endocrine and nutritional	238	4%
COVID-19	189	3%
Infectious^d	179	3%
Neurological and psychiatric disorders	148	3%
Hepatic, gastrointestinal, and pancreatic diseases	88	2%
Cancer/neoplasm	79	1%
Maternal, perinatal, neonatal	36	1%

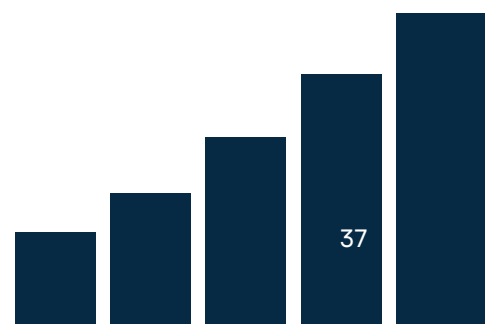
Congenital and genetic	18	<1%
Hematologic and immune	16	<1%
Renal and urologic disorders	16	<1%
Undetermined	10	<1%
Total	5,750	

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.

^c Consolidation of primary cardiac and pulmonary causes of death and is distinct from the common mechanistic term 'cardiopulmonary arrest'.

^d Excludes COVID-19 deaths.



Accidental Drug-Related Deaths 2022

Type of Accidental Drug Death	Number of Cases ^a	Percent ^b
Acetaminophen	3	<1%
Acute ethanol toxicity	63	2%
Benzodiazepine	6	<1%
Benzodiazepine/ethanol	1	<1%
Bupropion	1	<1%
Carisoprodol	1	<1%
Cocaine	174	5%
Cocaine and carbon monoxide toxicity	1	<1%
Cocaine/ethanol	13	<1%
Cocaine/heroin	1	<1%
Cocaine/methamphetamine	3	<1%
Cocaine/phencyclidine	8	<1%
Cyclobenzaprine	1	<1%
Diphenhydramine	1	<1%
Doxylamine	1	<1%
Drug toxicity, NOS	1	<1%
Ethanol/benzodiazepine	3	<1%
Ethylene glycol	1	<1%
Fentanyl	691	21%
Fentanyl/cocaine	204	6%
Fentanyl/heroin	1	<1%
Fentanyl/methamphetamine	1,011	31%

Fluorofentanyl	3	<1%
Fluorofentanyl/cocaine	1	<1%
Gabapentin	1	<1%
Gamma-hydrobutyrate	1	<1%
Heroin	25	1%
Heroin/cocaine	2	<1%
Heroin/hydrocodone	1	<1%
Heroin/methamphetamine	36	1%
Hydrocodone	2	<1%
Hydrocodone/ketamine	1	<1%
Hydrocodone/oxycodone	1	<1%
Inhalant	16	<1%
Ketamine	3	<1%
MDMA	6	<1%
Metformin	1	<1%
Methadone	5	<1%
Methamphetamine	864	26%
Methamphetamine and carbon monoxide toxicity	2	<1%
Morphine	5	<1%
Olanzapine	1	<1%
Opioid	9	<1%
Opioid/benzodiazepine	2	<1%
Other mixed drugs^c	43	1%
Oxycodone	9	<1%

Oxycodone/alprazolam	1	<1%
Oxycodone/benzodiazepine	1	<1%
Oxycodone/cocaine	1	<1%
Phencyclidine	14	<1%
Quetiapine	2	<1%
Tramadol	1	<1%
Undetermined drug^d	41	1%
Total	3,291	

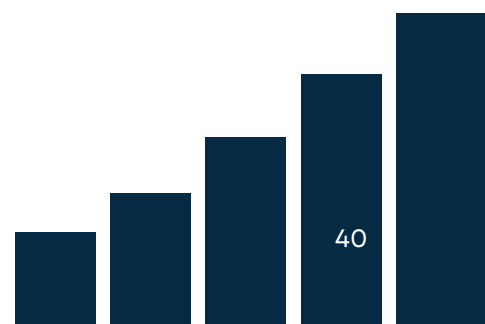
NOS = not otherwise specified

^a Number of cases are based on accepted cases from 2022.

^b Percentages rounded to the nearest whole number.

^c Numerous drugs were involved with death.

^d Timeframe precluded specific drug testing, such as during prolonged hospitalization before death.



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