County of San Diego

Department of the Medical Examiner

2014 Annual Report

Dr. Glenn Wagner
Chief Medical Examiner

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OVERVIEW AND INTRODUCTION

This Annual Report is a summary of the activities of the San Diego County Medical Examiner for the calendar year 2014. It is designed to provide an overview of victim characteristics, as well as the frequency, cause and location of deaths in the county, using graphs, charts, maps, and tables. In addition, we highlight some of the many activities we participate in to give back to the community and to keep other agencies informed. A goal of this report is to describe in detail many aspects of our mandated day-to-day activities, to keep the public informed and up-to-date on the functions and responsibilities of the San Diego County Medical Examiner.

The report is divided into three major sections:

1. **Introduction and overview**,
2. The **activities** of the Medical Examiner Department, and
3. The **data** describing the types of deaths investigated by the Medical Examiner in San Diego County.

DEDICATION, MISSION, AND VISION

DEDICATION

Although this report deals with numbers and statistics, we acknowledge that every case represents an individual's death, mourned by family and loved ones. This report and the work that is summarized are dedicated to those we serve: to the persons, living and deceased, who have passed through our doors, to their families, and to the people of the County of San Diego.

MISSION

Our mission is to promote safe and livable communities by certifying the cause and manner of death for all homicides, suicides, accidents and sudden/unexpected natural deaths in San Diego County. In addition, our mission is to provide related forensic services, assistance and education to families of the deceased, as well as to public and private agencies, in a professional and timely manner.

VISION

We are committed to working as a team to meet the needs and expectations of our customers by fulfilling our mandated mission in a professional, compassionate, ethical, and timely manner.

INTRODUCTION FROM DR. GLENN WAGNER

Welcome to the 2014 San Diego County Medical Examiner's Department Annual Report. The statistics and scope of activities reflect ever changing patterns of disease and trauma in public health and safety within our community. The scope of activities of the Medical Examiner's Department is largely based on Government Code 27491 which states that all unnatural deaths including homicides, suicides, accidents, and deaths in custody are, by definition, coroner/medical examiner cases, as well as infectious diseases reaching epidemic proportions, deaths in state or local institutions, and deaths believed to be natural but sudden and unexpected where the decedent has not seen their health care provider in the last 20 days of life. With San Diego County's land area of 4,261 square miles, 86 miles of border, 70 miles of coastline, and a diverse geography including deserts, mountains, forests, mesas and coastal areas, and an equally diverse population of some 3.2 million, with between 19,000-21,000 deaths recorded each year, the Medical Examiner's Department investigates some 9,200 cases annually, or approximately 770 cases/month.

Not all of those cases are brought to the department's 45,000 square foot facility at the County's Operations Center in Kearny Mesa. Approximately 6,200 cases reported and investigated by the Medical Examiner's Department each year are ultimately waived as sudden unexpected natural deaths. In these cases, the decedent's healthcare provider will sign the death certificate. Some 3,000 cases are brought to the facility each year for further evaluation. This annual breakdown has been relatively constant. For 2014, the 2,972 cases we took jurisdiction on were comprised of 34% natural deaths (heart attacks, cancer, diabetes mellitus, strokes, liver and kidney failure), 47% accidents (prescription drug, motor vehicle, industrial/agriculture, home-based), 14% suicides, 3.3% homicides and 1.4% undetermined. These percentages are very similar to those in 2013 and prior years.

Notable trends in 2014 included decreases in methamphetamine related deaths  [1] and suicides  compared to 2013, interrupting the multiyear upward trends of those two categories of death. There was an increase in motor vehicle related fatalities  , largely a result of a 35% increase in unintentional pedestrian deaths  . Prescription-related deaths continued a slow but downward trend seen since peaking in 2011 and 2012  , and heroin deaths rose again compared to the previous year, continuing a general rise seen over the past ten years  .

[1] Sparklines represent previous 10 years of data (2005-2014). High and low years are marked in red. Each is linked to its corresponding complete graph in the Data section.

Largely based on its geographic position and diverse population, the Medical Examiner's Department investigates the deaths of some 200-300 John and Jane Does representing a population composed of illegal immigrants, homeless, and individuals living under an alias, or simply dying without identification. Using photographs, fingerprints, dental records, general X-ray comparison, personal effects, and DNA testing, the nationally acclaimed John/Jane Doe Center identifies approximately 97% of its John and Jane Does. The Medical Examiner's Bereavement Center, also nationally acclaimed, brings together a large number of community resources to assist the families of decedents falling with the scope of the Medical Examiner's Department.

It is the intent of the Medical Examiner's Department to be more than the "County Morgue," by developing as much information on every case as resources permit and studying those cases in cohorts that reflect or are likely to reflect changing patterns important to public health and safety as well as risk factors for premature deaths. Current case categories or cohorts of study include child fatalities including SIDS, as well as elder abuse, domestic violence, prescription drug abuse, repetitive brain injuries, sudden unexpected death associated with epilepsy, schizophrenia and bipolar disorders, Alzheimer's dementia and autism, and suicides.

The Medical Examiner's Department is a popular rotation for medical students, including those studying allopathic (MD) and osteopathic (DO) medical degrees. The rotation provides a strong clinicopathology correlation for their clinical studies. The department also continues to train pathology residents from two programs: UC San Diego School of Medicine and Naval Medical Center San Diego (Balboa Hospital) as well as forensic fellows in our Accreditation Council for Graduate Medical Education (ACGME) accredited program.

Research efforts continue to grow with staff-written publications in toxicology, SIDS and child fatality areas. The Medical Examiner's Department is also currently engaged with Scripps Translational Science Institute in a multiyear study of molecular forensics exploring the genetic markers of sudden unexpected cardiovascular deaths.

The dead do have a story to tell – not only of death but of life – and we, the living, have an obligation to listen to that story and perhaps, just perhaps, learn something about ourselves and our community.

Glenn N. Wagner, D.O.

Chief Medical Examiner

POPULATION AND GEOGRAPHY OF SAN DIEGO COUNTY

The County of San Diego is the fifth most populous in the United States, with a population greater than 20 of the 50 states. The total population of the county is currently estimated to be 3,194,362. Nearly half of the county's more than 3 million residents live in the city of San Diego, with the remainder making their homes in smaller cities and towns, reservations, or unincorporated areas. Most of the county's urban regions are concentrated along the coast and freeway corridors, while there are many rural areas and large expanses of undeveloped open terrain in the eastern portions of the county.

San Diego County is unique in its geographic diversity. Our area of 4,261 square miles includes 75 miles of coastline and 86 miles of the U.S.-Mexico international border. The county includes impressively diverse features such as forested mountains, deserts, beaches, bays, wetlands, rivers, lakes, canyons, and mesas. These natural features are, of course, an important part of understanding the variety and range of sudden and unexpected deaths in our community.

With such variety, the county has numerous microclimates. As a whole, we have an average annual high temperature of 70°F, and average daily temperature of 64°F. While coastal areas have among the mildest climates in the continental United States, inland areas experience more variety. In the summer, some areas may experience temperatures above 100°F, while in the winter, temperatures may fall well below freezing.

The San Diego County Medical Examiner deals with many deaths of the types expected in any jurisdiction with a large urban and rural population, such as those from motor vehicle accidents, natural causes, alcohol or drug-related causes, or homicidal violence. In addition, the great variety of terrain, microclimates, and geography result in an even wider range of cases seen at our office, including deaths from exposure to hot and cold environmental conditions. San Diego County has a large homeless population; the deaths of these individuals are often

linked to drug or alcohol use or violence, or at least occur without the care of a physician. So, deaths of homeless people play a significant role in the numbers of cases this seen by this office.

Temperature extremes, in combination with the rugged terrain of many inland areas, are strongly tied to the deaths of undocumented persons crossing the U.S.-Mexico Border. Elevated temperatures may lead to dehydration or hyperthermia; low temperatures may lead to hypothermia; and in any season, the terrain may lead to exhaustion, getting lost, or death from exacerbation of existing natural disease. Proximity to the international border also increases the number of case investigations related to people injured or ill in Mexico who are sometimes transferred to hospitals in the U.S. where they nevertheless die.

Drownings may occur in our oceans, lakes, rivers, or swimming pools. In addition to swimmers, drownings may involve scuba divers, people trapped in flooding waters, or those involved in boating accidents. Because of our thriving seaport, the Medical Examiner may also have jurisdiction on deaths occurring on a boat or ship at sea when it makes San Diego its first port-of-call. Deaths involving attacks by marine life do occur, but are extremely rare, averaging less than one every 20 years.

Deaths due to falls most commonly occur from injuries in the home, but may occur in urban areas from buildings, from our local bridges, or from mountain and beach cliffs. Cliff collapses have contributed to other deaths as well.

The variety of circumstances presented by our unique environment is ever-growing and always challenging. The size of our jurisdiction, and its numerous remote areas, can be an obstacle for quickly responding to a death scene and retrieving remains, much less providing a thorough death investigation. Nonetheless, your San Diego Medical Examiner's Department rises to that challenge.

DEATHS WE INVESTIGATE

Under California law, the Medical Examiner is both required and empowered to determine the cause and circumstance (manner) of certain deaths. For additional details, see Government Code Section 27491 and the Health and Safety Code 102850. In general, deaths of a sudden and unexpected nature and those related to any type of injury or intoxication must be reported to the Medical Examiner and investigated by our office. These include deaths that are obviously due to trauma (such as motor vehicle-related fatalities) and deaths known or suspected to be due to drug or alcohol intoxication. In addition, if an injury or intoxication is known to *contribute* to the death - even in a small way - or is even merely suspected to have contributed to death, the death falls under our jurisdiction. This applies when an individual dies of complications of a prior injury, even if that injury occurred many years prior to the death.

Each death is assigned a Medical Examiner Investigator, who will generally go to the location of the death, interview family and friends, obtain medical records, and provide a synopsis of the circumstances surrounding the death. In the majority of cases, a postmortem examination (autopsy) is conducted by a physician specializing in forensic pathology in order to determine the cause of death, and a death certificate is completed. This examination normally occurs within three days of our receipt of the decedent's body, and usually the following day. Our forensic pathologist staff will assess whether an autopsy and/or laboratory tests are required as part of the examination. Autopsies are required in approximately 75% of the cases we examine. In the rest, an examination of only the external surfaces of the body is performed and the death can be certified based upon investigation and review of the medical history. If we do not require an autopsy for our official purposes, the legal next-of-kin may request that we perform one at his/her expense.

While we try to accommodate all the wishes of family members and the decedent, occasionally the circumstances of the death necessitate that an autopsy be performed despite the oppositions of the family or the decedent. Common reasons include the involvement of a law enforcement agency, mandates specified in California Law, and our legal obligation to investigate deaths under our jurisdiction.

HISTORY

The San Diego County Medical Examiner's Department was established as the County Coroner when the County government was established in 1850. Initially led by San Diego's first coroner, John Brown, the office had 27 different coroners throughout its history until the County converted to a Medical Examiner system in 1990. The major difference between the two systems is that a Medical Examiner must be a physician, specifically a forensic pathologist, while a coroner can be a layperson and is traditionally elected. Despite being a stand-alone department within the County, we are an active partner with all of the law enforcement agencies serving the San Diego community, including the San Diego County District Attorney, the San Diego County Sheriff's Department, the San Diego Police Department, and the other law enforcement agencies in the County.

For the first hundred years of our existence, we performed the administrative aspects of the department in what was then the County courthouse and various offices downtown (including the Spreckels Building and the Land Title Building, which is now where the NBC building stands) and performed examinations at various local mortuaries. All functions were consolidated under one roof on April 1, 1957 at now nonexistent 3322 Congress Street in Old Town, close to the current Old Town Transit station. Our first toxicology laboratory was operational the following year.

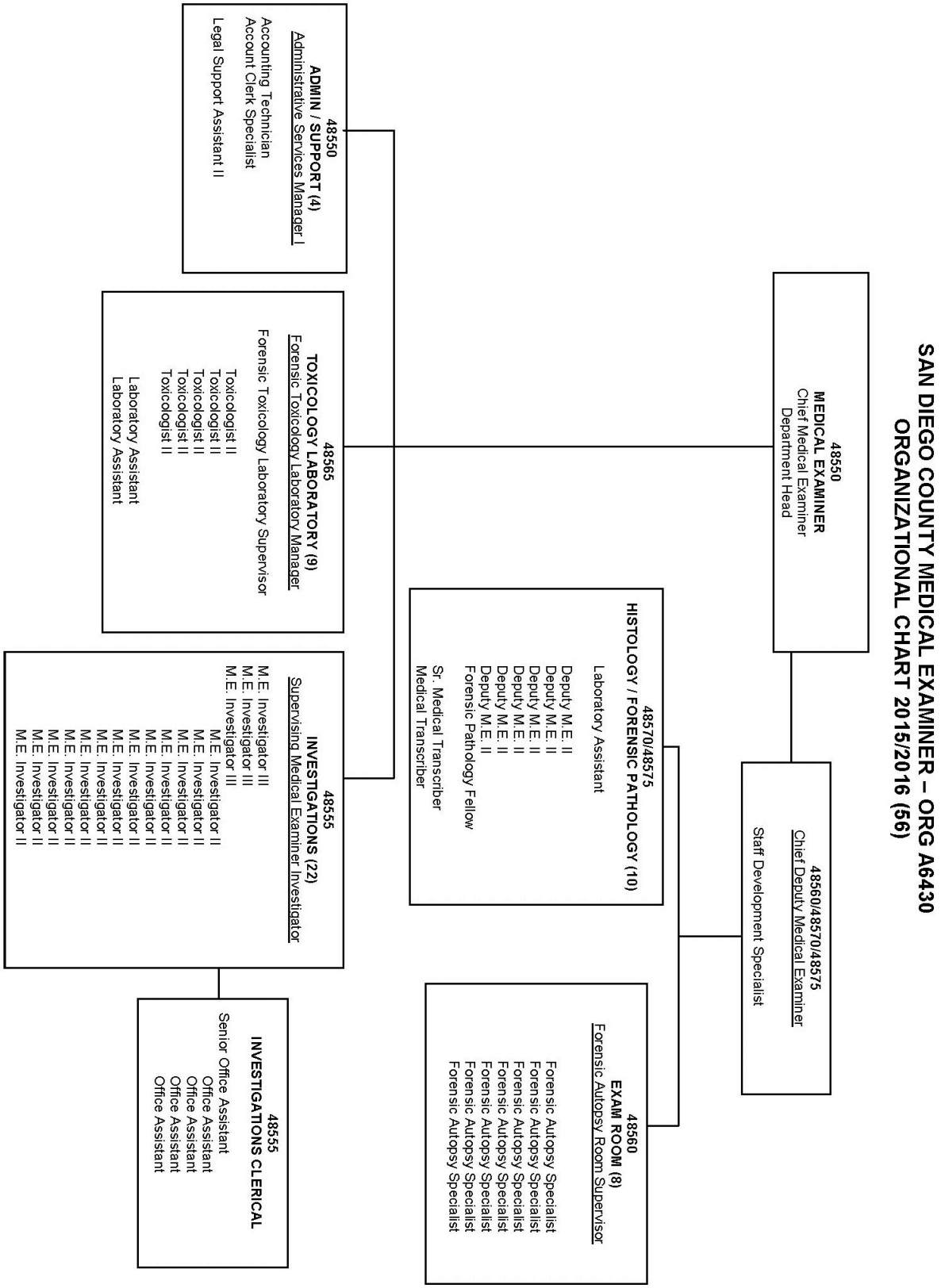
1963

2009

In October of 1963, we moved into Building 14 at the current County Operations Center (COC) in Kearny Mesa. We remained there for the next 46 years, undergoing several expansions.

In December 2009, we moved into our state-of-the-art facility at the COC, more than tripling our space and capacity for future growth. Building 14 was demolished in early 2010, making way for a multi-story parking structure at the COC.

ORGANIZATIONAL CHART

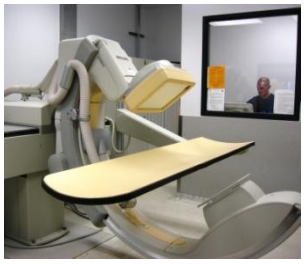


MEDICAL EXAMINER FACILITY

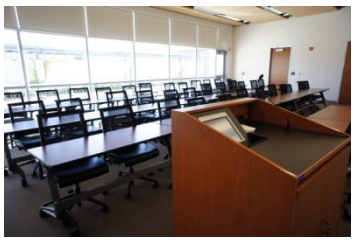
In December of 2009, we moved into our current facility at 5570 Overland Avenue, Suite 101, in Kearny Mesa. It is the third building that has housed all the operations of the Medical Examiner's Department since 1957.

Our newest building represents the first completed structure of the larger project of redesigning and updating the entire County Operations Center. It is a two-story building encompassing 83,000 square feet, tripling our office space and storage capacity, and giving us the capability to handle certain types of mass casualty incidents on-site. Although we are the single largest tenant, we share the building with the Department of Environmental Health's Vector Control Program and Hazardous Incident Response Team (HIRT).

We proudly achieved a LEED (Leadership in Energy and Environmental Design) Silver certification on the building. This rating is based on an evaluation of the environmental performance of the whole building over its life cycle and emphasizes the County's commitment to the environment. Among the improvements is the use of natural light throughout the building, most notably in the examination areas, where a bright, natural lit area is essential to performing detailed forensic procedures.



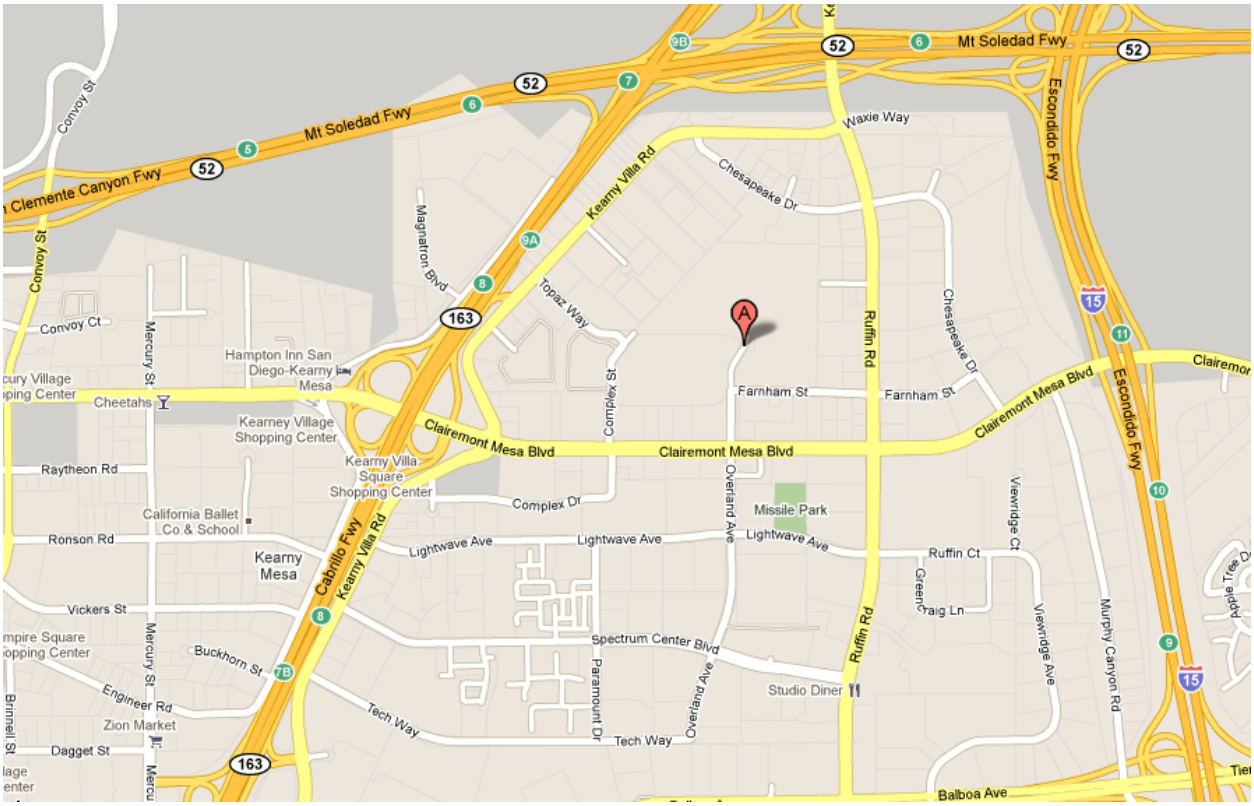
In addition to this upgraded work environment, several shared conference rooms are now equipped with the latest audiovisual technology, the toxicology laboratory's advanced instrumentation allows for more comprehensive analyses , and a combination fluoroscope and digital X-ray system has three-dimensional reconstruction and vascular imaging capability. These advances, among others, are part of the overall strategy to develop a viable regional forensic science complex that will have the capability to address the anticipated needs of the county over the next several decades.



HOURS AND LOCATION

The Medical Examiner Department is located at the County Operations Center in the Kearny Mesa neighborhood of San Diego at:

5570 Overland Ave.
Suite 101
San Diego, CA 92123



We conduct operations year-round, 24 hours a day, and are open to the public weekdays between the hours of 8:00 AM and 5:00 PM. Our main telephone line is 858-694-2895.

ACTIVITIES OF THE MEDICAL EXAMINER

This section of the report covers the general process of a death investigation, from the examination of the death scene to the certification of death, as well as other non-mandated activities in which the Medical Examiner is involved.

In addition to conducting death investigations, the Medical Examiner participates in numerous activities that support our own mission as well as those of other local, state, and federal agencies and institutions. These activities include distributing reports, sharing data, teaching on multiple levels, working to identify unknown deceased individuals, providing legal testimony, participating in research, and providing court testimony. This section will discuss each of these activities and more, showing the impressive span of matters our office covers, especially for such a small department.

INVESTIGATIONS

Medico-legal investigations are completed in a professional, ethical and timely manner and are geared towards assisting in the determination of the cause and manner of death. This is accomplished through the continued cooperation between the law enforcement agencies, health care professionals, and the public.

The initial phase of the investigative process typically starts with a report of death. In 2014, investigators processed 9,139 reports of death. In 6,167 (67%) of those cases, after undergoing a methodical and structured process of review to ensure they did not fall under the criteria of California Government Code 27491 requiring further investigation, we waived jurisdiction to the treating physician so he or she could sign the death certificate. Medical Examiner's Jurisdiction was invoked in the remaining 2,972 (33%) of reports.

Investigators physically respond to the majority of death scenes that fall into the Medical Examiner Jurisdiction. In 2014, we responded to 1,989 scenes (67%). An initial body and scene assessment is completed at the place of death, which can be virtually anywhere in the county's 4,261 square miles. There, photographs are taken and relevant evidence collected to assist in the investigation. Evidence may include weapons, biological specimens, medications, drugs, and drug paraphernalia. All investigations are completed using a methodical and systematic approach and all findings are documented in a comprehensive investigative report.

Medical Examiner investigators have the difficult task of notifying the next of kin of the death. The process starts with the identification of the decedent – arguably one of the most important duties of our office. Methods for identification may range from fingerprint and dental comparison to DNA comparison in some cases. This is a multidisciplinary approach that involves other county agencies. The process continues with a diligent search of the decedent's family, with which the Medical Examiner's Department has a high rate of success. (see John/Jane Doe Center for more information)

Those who die suddenly or unexpectedly often die with valuables – both monetary and sentimental – in their possession. The importance of ensuring that these items make their way to the next of kin cannot be underestimated. Often, the retention of the decedent's personal property is of utmost importance to the next of kin. We take this responsibility seriously, accurately tracking and recording the chain of custody until the property is returned to the family.

When a death occurs at home, that person may leave behind medications, many of which are often controlled substances. As part of our investigations, we collect and inventory all of the

decedent's medications at the scene. This task serves three functions. First, by measuring the remaining medications, including dosage and dates, we can gain an understanding as to whether there was medication overuse or non-compliance. Second, medications can give clues to an individual's medical or social history, and provide names of prescribing physicians who may know critical information about the person's history. Lastly, we remove medications from the home, eliminating the possibility of inappropriate use by other members of the household (especially children), as well as the possibility that the medications will become part of illegal trafficking. Medication disposal occurs at regular intervals after a period of secure storage at our offices.

Medical Examiner investigators also discuss the circumstances of the death with the decedent's family; conduct interviews at the scene; and obtain additional statements from witnesses, the treating physician and responding emergency personnel. They also offer the family free support through our Bereavement Center. Follow up investigation is required in many cases, which may involve reviewing medical records, police reports and traffic accident reports.

Medical Examiner Investigators are the front line for our office – the eyes and ears of the Medical Examiner. Their caring attitudes, compassion, professionalism, and objectivity allow our office to conduct thorough, balanced and accurate death investigations while at the same time helping ease the difficulties the family will have during their time of grief.

AUTOPSIES

Nearly 2,000 autopsies are performed each year by the Medical Examiner's pathologists, serving as a critical component used by the Medical Examiner to determine a decedent's cause and manner of death. An autopsy consists of both external and internal examinations of the body. Externally, the condition of the body, evidence of medical intervention, scars, tattoos, injuries, and any other external marks are noted. Internally – through surgical incisions across the chest and abdomen and across the top of the head – the organs of the head, torso, and any other necessary aspects of the body are thoroughly examined, removed, sectioned, and small tissue samples collected for possible microscopic examination. During the examination, specimens are collected for possible toxicological testing, and may include blood, urine, liver, vitreous (eye) fluid, stomach contents, and other tissues or fluids. Sometimes it might be necessary to save a whole organ for further examination by a sub-specialist like a neuropathologist or cardiac pathologist. Digital photographs are commonly taken at various points to document certain findings, or, in some cases, a pertinent lack of findings.

A common misconception is that an autopsy will render a body unsuitable for viewing in a funeral after the procedure. This is far from true. In fact, changes made during an autopsy are easily hidden by a mortuary so that the individual can be viewed by loved ones.

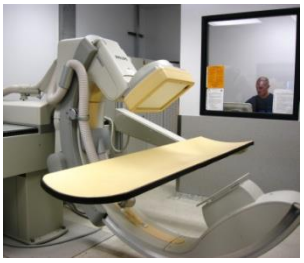
In 2014, the Medical Examiner's Department performed autopsies on 1,832 of the 2,972 individuals examined. Of those 1,832 autopsies, 94 were performed by pathology residents, generally from the University of California San Diego Medical Center, or the US Naval Medical Center, San Diego, under the direct supervision of a board-certified pathologist. The remaining 1,140 individuals had sufficient accompanying medical history and known circumstances to allow certification of death without an autopsy, based on the investigation, external examination of the body, and sometimes review of medical records.

Decedents who do not fall under the Medical Examiner Department's jurisdiction, or in whom an autopsy is not necessary to determine the cause of death, may have an autopsy requested and paid for by the decedent's next of kin. In 2014, the San Diego County Medical Examiner performed 11 family-requested autopsies.

It has been said that the body is the only unbiased witness to the death. It is our department's responsibility to hear what that body is saying, so that loved ones can feel a sense of finality, light can be shed on a criminal investigation, and vital statistics can be provided to the community at large.

EXAMINATION ROOM

The examination room at the Medical Examiner's Department is a modern, clean, safe, state-of-the-art facility used to conduct postmortem examinations. The examination room area is where bodies are received, property and evidence are collected, postmortem examinations take place, and bodies are released to mortuaries. It is staffed by seven Forensic Autopsy Specialists and one supervisor, all of whom are licensed embalmers.



A variety of important procedures take place in this area, including forensic photographic documentation, fingerprinting, and all the procedures associated with the examination itself. The Medical Examiner has an X-ray room housing a C-arm digital X-ray unit which also performs fluoroscopy, angiography, and three-dimensional digital reconstructions. These 3D images can be rotated and sliced to view aspects of the body that are difficult to view during an autopsy, and is an important tool for postmortem examination. It can also be a valuable resource for courtroom demonstrations. The larger X-ray unit is supplemented by a portable unit as well. The Medical Examiner also has an ultrasound machine – a unique piece of equipment in the postmortem setting – and is exploring its applications. Barcode systems are used throughout the area to ensure accurate body tracking, specimen tracking, and evidence management.

The exam room area is actually made up of several rooms. The largest is a main room, which contains eleven autopsy stations and has space for expansion. The room has ample natural and fluorescent lighting and high air flow. Other spaces include an autopsy room that can be dedicated to homicides, a room with two stations used for teaching, and a room currently used as a space for forensic anthropological and forensic dental examinations.

Finally, there is an isolation room attached to a dedicated refrigerator for examination of known or suspected infectious cases. There are detectors at the entrance to the facility to detect radiation in bodies brought to the Medical Examiner.

All of these features allow for safe, thorough, and state-of-the-art postmortem examinations with the ultimate goals of identification and cause and manner of death in mind.

PATHOLOGY

The Pathology Division is composed of eight pathologists, including the Chief Medical Examiner (CME), Chief Deputy Medical Examiner (CDME), and six Deputy Medical Examiners (DME's). Each of the pathologists earned a medical degree, and is trained in anatomic pathology, and subsequently in the medical subspecialty of forensic pathology. Some have also received training in clinical pathology, and one also has training in forensic neuropathology and cardiac pathology. All of the pathologists have been certified by the American Board of Pathology (ABP) in their respective specialties, meaning that they are deemed to have been appropriately trained and have passed the corresponding nationally-administered examinations.

Training and education are an integral part of the pathology division, including instruction of medical students and pathology residents in autopsy pathology. The pathologists have faculty appointments with the Department of Pathology at the UC San Diego (UCSD) School of Medicine. Residents from both the UCSD School of Medicine and Naval Medical Center San Diego (Balboa) rotate with and are trained by the pathologists at the Medical Examiner's Department. ME's pathologists deliver lectures to pathology residents at the UCSD Medical Center and medical students from UCSD and several osteopathic schools rotate through the pathology division each month.

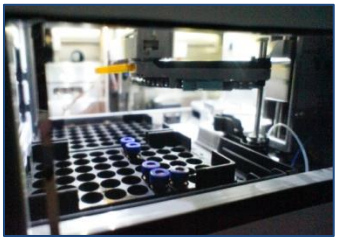
Lastly, the Pathology division trains one forensic pathology fellow per year. The fellow is a pathologist who has completed training in anatomic or anatomic and clinical pathology, and wishes to subspecialize in forensic pathology. Following the fellowship training, the fellow is expected to take the annual American Board of Pathology-administered forensic pathology examination along with the other fellows from around the country. Starting in the 2015/2016 year, we will be adding a second fellowship position, adding great value to the training program.

TOXICOLOGY LABORATORY REVIEW

Forensic toxicology provides a comprehensive drug testing service in medico-legal death investigations. The laboratory offers routine testing for alcohol and simple volatile compounds, drugs of abuse (cocaine, amphetamines, opioids, benzodiazepines, fentanyl, cannabinoids, buprenorphine, carisoprodol, oxycodone, zolpidem, methadone, and phencyclidine-PCP), as well as many therapeutic agents and poisons. This case work translates into about 30,000 tests annually. Currently the laboratory is staffed by a laboratory manager, a supervisor, five toxicologists, and two laboratory assistants.

MAJOR ACHIEVEMENTS

The laboratory has been fully accredited by the American Board of Forensic Toxicology (ABFT) since 2005. Furthermore, the laboratory manager (Dr. Iain M. McIntyre, Ph.D.) has participated in the inspection and review of a number of forensic toxicology laboratories around the nation on behalf of the ABFT. These inspections and reviews ensure that the San Diego Medical Examiner's forensic toxicology laboratory maintains an equivalent standard of performance to those nationally recognized facilities according to the joint ABFT and American Academy of Forensic Sciences (AAFS) Forensic Laboratory guidelines and standards.



The laboratory offers contracted alcohol analyses and complete toxicology testing to other facilities. The forensic toxicology laboratory now routinely performs testing for the San Bernardino Coroner, as well as NMS Labs (an independent provider of clinical and forensic toxicology, endocrinology and criminalistics services).

Due to the ever-increasing expansion of both therapeutic and illicit drugs, forensic toxicology is constantly developing and re-developing its analytical procedures.

In 2014, the laboratory identified an unprecedented number of new synthetic drugs. These included some "bath salt"-type compounds such as methylone, ethylone and 5-APB, and opioid compounds including acetyl fentanyl and mitragynine. The importance of developing both screening tests and confirmation analyses for these newer drugs of abuse is essential. As a result of these developments, the San Diego County Medical Examiner's Department is able to assist law enforcement agencies (both local and national) in monitoring trends for drugs currently circulating, and being abused, in the local community.

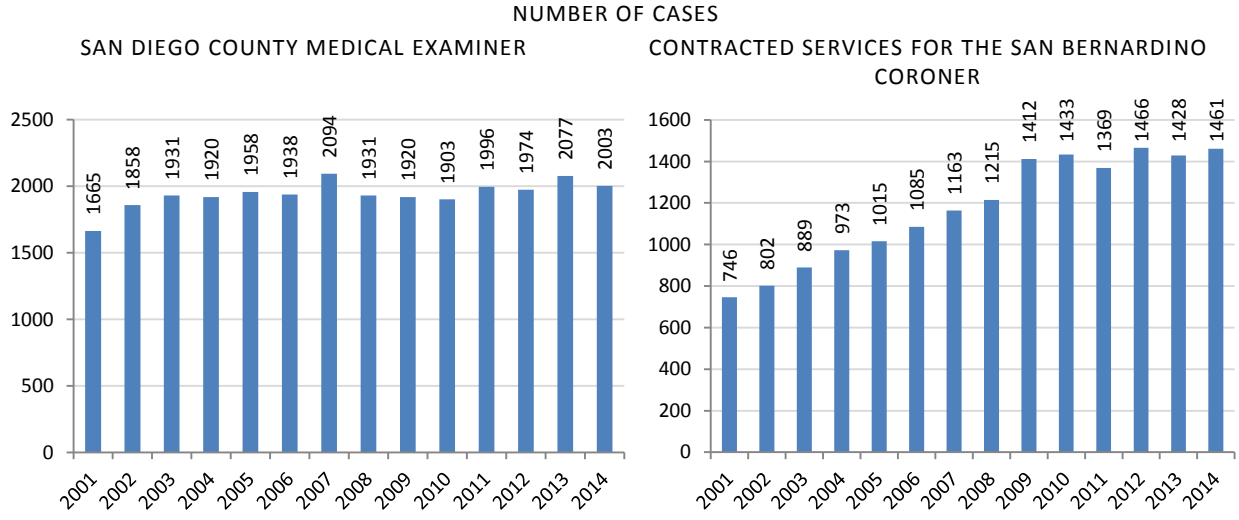
The laboratory has also developed collaborative efforts with the California Poison Control System, and created additional research programs with the Department of Pathology, University of California, San Diego, and the Center for Advanced Laboratory Medicine. The expansion of teaching responsibilities, together with the development of research programs, has ensured that the laboratory and its staff keep up-to-date with advances in the field of forensic toxicology, and maintain current with the newest technological innovations.

Dr. McIntyre also was a member of the National Institute of Justice (NIJ) Forensic Science Research & Development Program team in 2014. This team held a meeting over two days in Washington D.C., where they discussed fresh ideas and new perspectives regarding the development of national forensic science technological needs.

WORKLOAD DATA FOR 2014 IN COMPARISON TO PREVIOUS YEARS

The forensic toxicology laboratory performs testing for the San Diego County Medical Examiner and, under contract, for the San Bernardino Coroner.

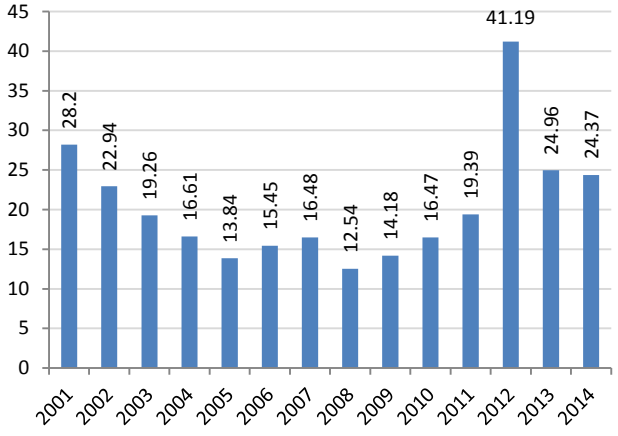
As the data illustrates below, the number of cases examined was essentially the same as the previous year: a total of about 3,500. The complexity of testing continues to increase, and the lab is performing an increasing amount of routine monitoring of therapeutic drugs, vitreous chemistries and volatile screens in cases from both San Diego and San Bernardino.



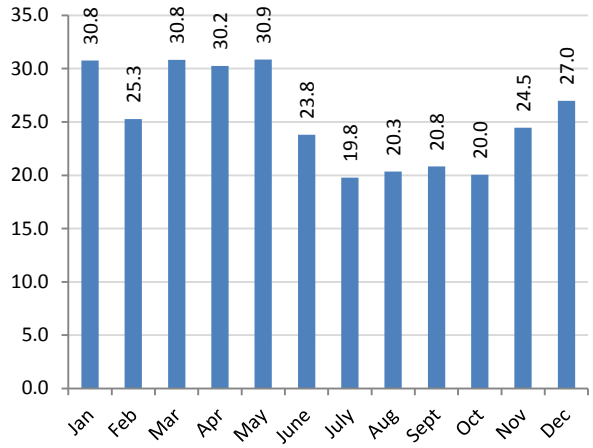
The average turnaround time for the completion of cases remained stable at about 24 days (on average) for the San Diego County Medical Examiner.

CASE TURNAROUND

AVERAGE TURNAROUND TIME (DAYS) BY YEAR



AVERAGE TURNAROUND TIME BY MONTH, 2014



PUBLICATIONS

McIntyre, I.M., Gary, R.D., Estrada, J. and Nelson, C.L. "Antemortem and Postmortem Fentanyl Concentrations: A Case Report" **International Journal of Legal Medicine** 128 65-67, 2014. http://dx.doi.org/10.1007/s00414-013-0897-5

McIntyre, I.M. "Liver and Peripheral Blood Concentration Ratio (L/P) as a Marker of Postmortem Drug Redistribution: A Literature Review" **Forensic Science, Medicine and Pathology** 10 91-96, 2014. http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s12024-013-9503-x

Cantrell, F.L., Ogera, P., Mallett, P. and McIntyre, I.M. "Fatal Oral Methylphenidate Intoxication with Postmortem Concentrations." **Journal of Forensic Sciences** 59 (3) 847-849, 2014. http://onlinelibrary.wiley.com/doi/10.1111/1556-4029.12389/abstract

McIntyre, I.M. "Identification of a Postmortem Redistribution Factor (*F*) for Forensic Toxicology." **Journal of Analytical Science and Technology** 5 24, 2014. http://www.jast-journal.com/content/5/1/24

McIntyre, I.M., Mallett, P., Burton, C.G. and Morhaime, J. "Acute Benztropine Intoxication and Fatality" **Journal of Forensic Sciences** 59 (6) 1675-1678, 2014. doi:10.1111/1556-4029.12489

McIntyre, I.M. "Identification of a Postmortem Redistribution Factor (*F*) for Forensic Toxicology." **TOXTALK** 38/1 15-17, 2014.

Lucas, J.R and McIntyre, I.M. "Unintentional Deaths due to Medications, Alcohol, and Illicit Drugs in San Diego County, California." **TOXTALK** 38/3 16-21, 2014.

McIntyre, I.M., Navarrete, A. and Mena, O. "Postmortem Distribution of Guaifenesin Concentrations Reveals a Lack of Potential for Redistribution" **Forensic Science International** 245 87-91, 2014. http://dx.doi.org/10.1016/j.forsciint.2014.10.029

McIntyre, I.M. "A *Theoretical* Postmortem Redistribution Factor (F_t) as a Marker of Postmortem Redistribution." **Journal of Forensic Toxicology and Pharmacology** 3:4, 2014. doi: 10.4172/2325-9841.1000131

PRESENTATIONS

Logan, B.K., Labay, L.M., Caruso J.L., Gilson, T.B., Lemos, N., McIntyre, I.M., Stoppacher, R., Knight, L.D., Wiens, A., Williams, E. "Synthetic Cannabinoid Drugs as a Cause or Contributory Cause of Death" Presented at NAME, Tucson, AZ, November 2014.

McIntyre, I.M. "Detection and Quantitation of some Newer Synthetic Sympathomimetic Drugs" Presented at CAT, San Diego, CA, November 2014.

DEATH CERTIFICATION

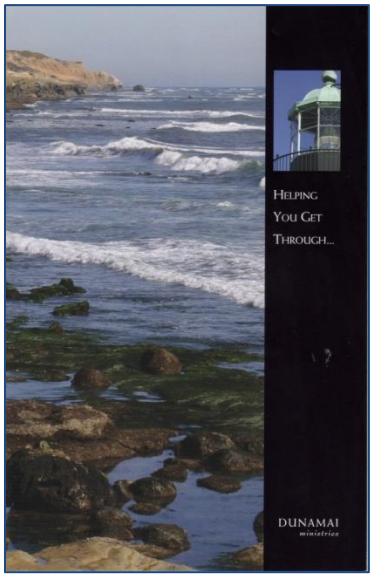
Death certification consists of determining a cause and manner of death, and completing portions of a California Death Certificate on those cases that fall under the jurisdiction of the Medical Examiner's Department. The cause of death can be summarized as the disease or injury that initiates the sequence of events that ultimately results in the person's death. The manner of death is essentially a one-word way to classify the circumstances of the death into one of the following five categories: natural, accident, suicide, homicide or undetermined. Once a determination is made following an examination and investigation, the cause and manner of death are entered into the department's internal electronic data system, followed by entry into the California Electronic Death Registration System (EDRS) and then signing with an electronic signature.

The Medical Examiner is able to issue a cause and manner of death shortly after the initial examination in approximately two-thirds of all deaths. However, many deaths require additional investigation and/or testing to determine or confirm the cause and/or manner of death. When this is the case, the cause of death is temporarily listed as "pending" on the death certificate. The certificate will then be amended following further investigation or examination. In a very small percentage of cases, a cause and/or manner of death might not be determined even after completion of the autopsy, further investigation, and/or extensive toxicological testing.

BEREAVEMENT CENTER

The San Diego County Medical Examiner's Bereavement Center offers a host of services to those who are going through the grieving process, following the sudden, traumatic, and unexpected loss of a loved one. Started in July 2007, the Bereavement Center offers grief counseling, personal assistance, and volunteer chaplains from an array of religions to those who have lost a loved one. This is the only program in the United States providing counseling services to all affected by the sudden and traumatic loss of a loved one. The center is run by a volunteer chaplain who facilitates counseling services to thousands of clients each year.

The 3,000 deaths investigated by the Medical Examiner each year are often sudden, unexpected, and traumatic. Families experiencing this event are in a period of high vulnerability. It has been documented that death from unnatural causes directly influences the nature and course of bereavement. For individuals bereaved through unnatural causes, the suddenness and lack of anticipation adversely influences their internal world and coping abilities, thus constituting trauma. There is also evidence that unnatural dying presents a greater incidence of symptoms of post-traumatic stress, victimization, and intrusive thoughts than in populations surviving death by a natural cause. Additionally, increased alcohol consumption, smoking, and use of tranquilizers and other medicines are well documented among the bereaved, especially among people who had used these substances prior to the loss. Thus, it is apparent that the bereavement state can adversely affect health and can exacerbate and precipitate health-compromising behaviors.



Prior to the inception of the Bereavement Center, families enduring the bereavement process were an unserved population. Given the aforementioned mental and physical problems that grieving can pose, the Medical Examiner's Department recognized the need to establish a set of much needed services. The center was established to fill this gap in services and help mitigate the adverse effects that an untimely death can pose**.** As steward of the Bereavement Center, the chaplain provides an array of services to families who recently lost a loved one, including counseling services, cremation assistance, and a 27-page grief resource booklet titled "Helping You Get Through…" Families who encounter the loss of a loved one are plagued with many questions. "What should I expect next?" "What resources

are available?" "How do I deal with insurance companies?" These are some of the typical questions raised by families going through the grieving process.

At each death notification, a Medical Examiner investigator provides the booklet to decedent's next of kin, along with the contact numbers for organizations providing grief counseling and resources. The booklet contains an array of subjects, including available support groups, how to help children during a time of loss, the first steps after death (a five page checklist), a funeral checklist, and much more.

The Bereavement Center also offers a support group for mothers who have lost a son or daughter through Umbrella Ministries. More than 224 mothers have benefited from this group. The Bereavement Center and DUNAMAI Ministries also partner to provide cremation assistance for certain qualified families. DUNAMAI Ministries receives private donations to help pay for cremation costs for families who cannot afford to do so.

The results of the Bereavement Center are remarkable. Most of the successes are not quantifiable, and the degree to which the Bereavement Center provides comfort to grieving families is immeasurable. However, there are a few quantifiable measures of success. Through December 2014, more than 20,500 grief resource booklets had been provided to grieving families at no cost.

Every person affected by a Medical Examiner case has the option to choose from at least eight free grief counselors. Through December 2014, the cost of 249 cremations had been paid for by the center. The Bereavement Center also offers clergy support for funeral arrangements. And perhaps the most touching detail is that the Bereavement Center's chaplain follows up on every local case with a phone call to the family to offer condolences and answer any questions they may have.

As a new addition to the Bereavement Center, we now have a program called Beyond the Caution Tape. It is open to any juvenile or adult using or influenced by drugs, hanging out with the "wrong crowd" or exhibiting any "at risk" behavior. This program provides the ultimate opportunity to offer a "wake-up call" to those who may need a change of direction by showing the real and actual consequences others have suffered. Through December 2014, the program has served 376 juveniles and adults.

CASE REPORT REQUESTS AND DATA SHARING

We investigate deaths throughout the county, and it is critical that we communicate to those who need the details of our investigations, findings, and conclusions as to cause and manner of deaths. The most important documents we generate are autopsy, toxicology, and investigative reports, and it is essential that we distribute these reports in a timely fashion to those who request them after the completion of our investigations.

According to California Law, the reports we generate are public record. We receive between 4,500-5,000 requests for reports per year from a wide variety of people and agencies, including family members, friends, hospitals, law firms, insurance companies, media, and government agencies. Our administrative division completes this task in a timely fashion, while also processing court orders and subpoenas, handling phone calls and emails, and performing innumerable other duties throughout the day. With the exception of the first request from the next-of-kin which is provided at no cost, we charge $1.60 per page for hard copies of the reports. There is no charge for emailed copies. Historically, we have filled 95% of these requests in seven days or less. In 2014, we filled 96% (4,713 of 4,886) case reports in seven days or less.

In addition to examining individual deaths, we also examine each death as part of a larger group over months or years to identify trends, patterns and specific details that can shed light on emerging public health concerns. We receive queries from media, government and private agencies, federal and local law enforcement agencies, and the general public on a regular basis regarding a variety of subjects. Threading our information with other agencies and law enforcement can produce a more comprehensive understanding of public health issues and potentially lead to intervention or policy changes to address them.

DEATH REVIEW TEAMS

As part of its greater role in promoting safe and livable communities, employees of the San Diego County Medical Examiner (primarily Deputy Medical Examiners and Medical Examiner Investigators) are members of various multidisciplinary death review committees, and also participate in county-wide trauma review meetings, and sit on various local task forces. We play a valuable role in these activities and contribute to the greater goal of reducing fatalities in the children and elderly; reducing deaths related to domestic violence, prescription drugs, or methamphetamine; and improving the trauma system.

CHILD ABUSE PREVENTION COORDINATING COUNCIL (CAPCC) FATALITY REVIEW COMMITTEE

This review team is comprised of representatives from the Medical Examiner's Department, clinical medical community, Child Welfare Services, law enforcement, District Attorney, emergency medical personnel, Consumer Product Safety Commission, SDSU Academy for Professional Excellence, Probation, and County Counsel. The committee meets monthly to review all sudden, unexpected deaths of children that fall under the jurisdiction of the Medical Examiner to identify factors and circumstances contributing to these deaths. The goal is to prevent future occurrences and make recommendations, as well as improve the coordination and effectiveness of child protection, investigations and legal processes. The CAPCC Fatality Review Committee was established in 1982 and was only the second child fatality committee established in the country. During its first 15 years, the committee reviewed the deaths of children newborn through age 6, but expanded its work to also include children through age 12 in 1998 and through age 17 in July 2005. In 2013 and 2014, the committee reviewed a total of 150 child deaths.

DOMESTIC VIOLENCE FATALITY REVIEW TEAM

The County of San Diego Board of Supervisors established the Domestic Violence Fatality Review Team (DVFRT) in 1996. The DVFRT is a confidential, multidisciplinary team that conducts in-depth retrospective case reviews of intimate partner-related fatalities that have occurred in San Diego County. The team is made up of dedicated representatives from more than 30 public and non-profit organizations such as the Medical Examiner, District Attorney, law enforcement, Health and Human Services Agency, domestic violence service agencies, and local healthcare

settings. This is the nineteenth year the team has been convening and a total of 200 deaths have been reviewed to date.

The DVFRT seeks to identify system-based opportunities for improvements in violence prevention and intervention policies, procedures, and coordinated strategies, make recommendations for system change and raise public awareness about intimate partner violence.

In addition to conducting case reviews, the DVFRT also tracks the intimate partner violence-related deaths (homicides and suicides) that occur in San Diego County. The Medical Examiner continues to be a key partner is this process, as the DVFRT is dependent upon representatives from the Medical Examiner, law enforcement, and the District Attorney to identify and track these cases to ensure accurate reporting.

For more information, visit: http://www.sdcda.org/helping/domestic-violence-fatality-review-team.html

ELDER AND DEPENDENT ADULT DEATH REVIEW TEAM

The San Diego County Elder and Dependent Adult Death Review Team is a countywide group with a core membership from the District Attorney, Medical Examiner's Department, Sheriff's Department, San Diego Police Department, and Department of Aging and Independence Services. It is designed to facilitate communication among the agencies involved in the identification, investigation, or prosecution of elder/dependent adult abuse or deaths. Its task is to review elder and dependent adult deaths in San Diego County with the goal of reducing the number of deaths related to physical abuse, neglect, or self-neglect. The County's Elder Death Review Team was established in 2003, in accordance with Senate Bill 333, Chapter 301, of 2001, authorizing counties in California to establish such committees, and was expanded to include dependent adults in 2011. The San Diego County team was one of the first elder death review teams in the country and continues to be a model for other jurisdictions trying to establish similar review committees.

The team promotes policy changes in government and private agencies, retrospectively identifies gaps and barriers to service that existed for victims prior to death, increases public awareness, and encourages the safety and health of San Diego County residents by promoting change. The team also participates in a number of other projects, such as an annual review of elder suicides, research studies, and more importantly, daily, real-time cross-reference efforts between the Medical Examiner and Adult Protective Services databases to help identify cases of abuse that might otherwise be missed.

DIVER DEATH REVIEW COMMITTEE

With miles of coastline, beautiful kelp beds, and a number of shipwrecks, San Diego is a haven for scuba divers. In order to improve the safety of San Diego's scuba divers and to ensure thorough investigation of all diving-related deaths, a multidisciplinary diver death review committee was formed in 2009. The group , includes members from the San Diego Lifeguards, San Diego Police Department, UCSD's Undersea and Hyperbaric Medicine section, Scripps Institute of Oceanography, the United States Coast Guard, the local dive community, and the ME's Department, which is represented by a Deputy Medical Examiner with expertise in scuba diving and diving medicine. Each diving-related death is thoroughly reviewed and discussed by the committee. This review guides the certification in cause and manner of death and contributes to recommendations for diver safety in the County of San Diego. In 2014, two such deaths occurred; one has been reviewed by the committee already, and as of June 2015, one is pending discussion at the next diver death review committee meeting.

OTHER PARTICIPATION

Our department also participates in several local trauma-related meetings as well as a County wide trauma monitoring system, made up of:

Rady Children's Hospital Trauma Mortality and Morbidity (M&M) Conference

Sharp Memorial Hospital Trauma M&M Conference

MAC (Medical Audit Committee) meeting of Trauma Centers (County-wide)

We are also part of the San Diego County Methamphetamine Strike Force, the Prescription Drug Task Force, and the California Sudden Infant Death Syndrome (SIDS) Advisory Council.

FORENSIC PATHOLOGY FELLOWSHIP

A fellowship is a period of subspecialty training for physicians, undertaken after completion of a specialty residency. The San Diego County Medical Examiner is one of only 38 sites in the country that provide a one-year accredited training program in the medical subspecialty of forensic pathology, and has trained 16 fellows over the last 23 years.

Our program has been fully and continuously accredited by the Accreditation Council for Graduate Medical Education (ACGME) and is approved for two positions, although historically we have only had adequate funding for one. Until this year, we have trained one of the approximately 40 forensic pathology fellows trained throughout the country each year. Our positions are currently filled through June 2017, and for the 2015/16 academic year we will have two fellows.

San Diego County is uniquely positioned to provide a fellow exposure to sudden, unexpected deaths in a variety of manners not encountered in many more populous jurisdictions, based on our population, our proximity to an international border, the ocean and our waterways, our blend of well-developed modern urban areas and remote unpopulated urban areas, and our remarkable variety of inland geography. The Medical Examiner's team of fully board-certified forensic pathologists comes from diverse training backgrounds, which provide the fellow a wide breadth of knowledge, experience and perspective from which to learn. In addition, we require our fellows to participate in death scene response and provide court testimony. Combine all of this with the fact that we have one of the highest faculty-to-fellow ratios in the country, and it is clear that the department is well-positioned to successfully train fellows to become proficient in the field of forensic pathology and instill the confidence, skills and knowledge they need to practice in any setting.

TEACHING AND RESEARCH

TEACHING

Pathology Residents: In addition to the formal instruction provided to Forensic Pathology Fellows, the department provides critical teaching rotations for Pathology Residents from both the UC San Diego School of Medicine and Naval Medical Center San Diego (Balboa). Residents receive in-depth training in forensic and autopsy pathology under the direct supervision of Medical Examiner Department pathologists. They are required to receive this training in order to be eligible for Pathology board examinations. In 2014, five residents spent rotations ranging from two to six weeks in length at the Medical Examiner Department, performing a total of 94 cases under direct supervision, providing invaluable learning opportunities.

Additional instruction of Pathology Residents included 11 formal lectures by our Deputy Medical Examiners (forensic pathologists) at UCSD Hillcrest's Department of Pathology on topics including gunshot wounds, sharp and blunt force injuries, asphyxia, electrical and thermal injuries, toxicology, postmortem changes, death certification, and environmental deaths, among others. These lectures have been part of the annual UCSD Pathology curriculum for many years, and will continue in the years to come.

Teaching for the greater community: Medical Examiner Department staff, including pathologists, investigators, and others, gave dozens of presentations during 2014, with more than 72 hours total spent teaching more than 1,900 people split among topics and audiences such as safety stand-downs/drinking and driving for military personnel; awareness lectures for juvenile and adult probationers; educational courses for Funeral Directors, Sheriff's Search and Rescue and the DA Citizen's Academy; forensic pathology topics for Cal Western Law School, and Grossmont College; as well as many others. These presentations took place at the Medical Examiner facility and at locations throughout the county with the goal of educating, informing, and clearing up any misconceptions about our function.

The Medical Examiner Department allowed 49 groups, a total of 820 guests, including police cadets and paramedic students, to view an actual autopsy with narration and teaching by a pathologist. These are invaluable educational opportunities and observer feedback from such opportunities was universally positive and appreciative. Guests noted that viewing an autopsy taught them anatomy, function and an appreciation of the body and forensic medicine in a way that simply could not be duplicated.

RESEARCH INVOLVEMENT

During 2014, the Medical Examiner Department was involved in many different research opportunities. Our toxicology section published nine scientific papers (some in collaboration with our pathology and investigations sections) in journals including the *Journal of Analytical Science and Technology*, *International Journal of Legal Medicine, Journal of Forensic Sciences,* and *Forensic Science International.* We continued our ongoing collaboration with research doctors and scientists at Rady Children's Hospital and Harvard University to provide research specimens to study associations and possible causes of Sudden Infant Death Syndrome (SIDS), a multiyear project that has become one of the greatest contributors to the body of knowledge on this tragic issue.

Other research work involved the University of California, Irvine and the Veteran's Administration in Los Angeles for programs on the study of schizophrenia, bipolar disorder, and depression; the Allen Institute for Brain Science for the Human Brain Atlas project; UCSD Medical Center for research on methamphetamine addiction and the Psychiatry Brain Donor Program for seizures and epilepsy. Seizures are being studied in collaboration with two groups, including at New York University and at Baylor College of Medicine. Also in 2014, we began a multiyear study in collaboration with Scripps Translational Science Institute (STSI) with the goal of identifying genetic causes of sudden death.

JOHN/JANE DOE CENTER

The identification of a decedent is one of the most critical functions of the Medical Examiner's Department and must be made by official and verifiable means. The misidentification of an individual is not an option and, conversely, if a person is not identified, we know nothing of their medical or psychiatric history or how they came to be in the situation in which they were found. In addition, families cannot have closure until the remains are identified and released for funeral services. The majority of decedents are identified by family members or through government identification (such as a driver's license). However, when a decedent carries no identification, no family is present to make identification, or the condition of the body is such that a visual identification is not possible, he or she becomes a Doe and the identification process begins.

Most decedents are identified quickly, often within a day or two, through fingerprints or tattoos. Some decedents are identified by a family member who views a photograph and then provides supporting identifying documentation. Scientific identification can be made by a dental comparison using our forensic odontologist, through radiographic comparison, or through surgical history and identifying anatomic features. When identification cannot be made by these means, DNA profile comparison is attempted. Very rarely, we will use a circumstantial identification based on physical characteristics, morphology, and known activities and location at the time of death.

When necessary, we make every effort to obtain an artist's sketch, through the assistance of a Medical Examiner's Department volunteer. We release the sketch, any identifiable information and the decedent's physical characteristics to all of San Diego's media outlets in hopes of learning an identity or contacting possible family.

When a decedent remains unidentified and we have no leads on a possible identity, several legal mandates go into effect. Those include creating an entry with the decedent's information, known physical characteristics and full forensic dental examination into NCIC (National Crime Information Center) in order to perform a comparison of the decedent against reported missing persons. Often a full anthropology examination is conducted to provide information such as race/ethnicity, age, height, and skeletal anomalies. We also provide a DNA sample to the California Department of Justice (DOJ) DNA Laboratory, so that the decedent's genetic profile can be entered into CODIS (Combined DNA Index System) for a possible match against someone missing or wanted, whose profile is already in CODIS.

In 2014, 190 of the total 2,823 cases (6.4%) came to the Medical Examiner's Department with an unknown or in question identity. Three-quarters of those were identified in the first week and all but 13 were identified within the first 30 days. As of June 2015, all but six – each of those skeletonized remains – were identified..

ABANDONED BODIES

State law (California Health & Safety Code Sections 7100-7105) requires San Diego County to handle the disposition of decedents when they have been declared indigent, or declared abandoned when families fail to act, or when next of kin is unable to be located. The disposition is the final state of the body after death: identified abandoned bodies are always cremated, while unidentified abandoned bodies are always buried to allow for possible identification in the future.

A family that is unable to take care of the disposition of their loved one due to financial reasons can apply for Indigent Assistance through the Public Administrator. Provided they meet the financial criteria, the Public Administrator will assist the family in selecting a cremation service and will cover the costs of cremation.

If the family cannot be located, fails to act, or does not apply for or qualify for Indigent Assistance, a decedent's body may be declared "Abandoned" 30 days after the death. In 2014, 241 bodies were declared abandoned. The Medical Examiner's Department handles abandoned bodies over which we have taken jurisdiction, as well as those abandoned at a hospital or mortuary as long as these agencies have completed their mandated due diligence.

On a rotating basis, county mortuaries and cremation service providers have agreed to take part in this process for a specific reimbursement amount. This funding falls under the budget of the Public Administrator/Public Guardian (PA/PG), and the PA/PG is involved in the disposition of every abandoned and indigent body.

HUMAN REMAINS DETECTION CANINES

In 2003, the Medical Examiner's Investigation Division began to explore the use of cadaver dogs (human remains detection canines) as part of its search and recovery efforts. The Medical Examiner Investigator overseeing the John and Jane Doe Identification Program purchased and trained a man-hunting bloodhound dog for this effort. That bloodhound, K9 Thelia, became FEMA-certified and deployed on a number of high visibility searches. That Investigator and K9 Thelia continued to participate in a number of successful search and recovery efforts augmenting the activities of the San Diego Sheriff's Search and Rescue Unit, the Chula Vista and San Diego Police Department-sponsored volunteer Southwest Search Dogs and the U.S. Border Patrol's BorStar cadaver dogs. To our knowledge, the San Diego County Medical Examiner was the first Coroner/Medical Examiner to have an in-house K9 resource. Subsequently, two German Shepherds (K9 Lulu and K9 Romeo) were added as well, creating a three generation in-house K9 program. Both shepherds were obtained from the San Diego Animal Services Adoption Program. The program was and is funded in-house with no County funds used.

K9 Thelia and K9 Lulu are now retired. K9 Romeo was put into service in 2011 and trained in a unique fashion so that he could work with any of the Medical Examiner Investigators rather than with just one K9 handler. The innovative program was a huge success. K9 Romeo turned out to be an exceptional detection dog locating three clandestine shallow graves, a host of scattered remains, and blood evidence at several homicide scenes. He also developed an exceptional aptitude for drug detection. K9 Romeo has also participated in a number of community outreach programs with Medical Examiner Investigators and is always a hit with school forensic programs where his tracking skills are profiled. K9 Romeo has received press attention from two local TV stations.

LEGAL TESTIMONY

A significant duty of the Medical Examiner Department involves providing legal testimony. Pathologists, investigators, and toxicologists are called upon to testify, usually in homicide cases, but also in other criminal cases such as motor vehicle accidents (particularly those involving driving under the influence of alcohol, drugs, or medications), and less commonly, in civil cases. Forensic Autopsy Specialists who assist with autopsies may sometimes be called to testify as witnesses as well.

Investigators who conduct scene investigations and interviews may be called upon to describe their findings. Toxicologists may be called upon to discuss their methods for conducting toxicology studies to prove their validity; the Toxicology Laboratory Manager may also serve as an expert witness with insight as to interpretation of drug or medication levels. In 2014, Toxicology staff testified in two criminal court trials and gave deposition testimony in two civil court cases.

Pathologists provide testimony as expert witnesses regarding their autopsy findings, including evidence of trauma, natural disease, and any finding the court deems relevant. Their expertise in evaluation of trauma sheds valuable insight on critical aspects of legal issues. In 2014, pathologists testified in preliminary hearings, jury trials, and on several Grand Juries, providing a total of over 272 hours – nearly seven work weeks – of testimony (including preparation and local travel time).

In addition to criminal matters, Medical Examiner staff members are often subpoenaed for testimony in civil matters, most commonly by deposition. In this situation, the County bills the attorneys, depending on whether the subpoena is received from the plaintiff's or defendant's attorney, for the time that any of these County employees is called away from their responsibilities for the County to prepare or provide testimony. The County's fee for such civil court appearances is based on reimbursement for wages and benefits to the County, and is not the sort of "expert witness" fee that private employees might garner.

Lastly, pathologists frequently meet with various members of legal teams that might include district attorneys and their investigators, defense attorneys and their investigators, civil plaintiff or defense attorneys, or law enforcement personnel. These meetings generally take place prior

to hearings and trials, and various aspects of the autopsy findings may be discussed and clarified prior to a court appearance. We have an “open door” policy in that we will gladly meet with those on either side of a legal proceeding to describe our objective documentation and opinions. In conclusion, Medical Examiner staff members are available as resources and witnesses to those who call on them regarding legal matters of the County.

ORGAN AND TISSUE DONATION

Organ and tissue transplantation is an ever-growing field of medicine, and with new techniques, medications, and technology developing all the time, the need for lifesaving organ and tissue donation continues to increase. When a death occurs, organs such as the heart, lungs, liver, and kidneys can be transplanted to replace damaged or diseased organs in a recipient. Tissues, such as skin, bone, or cartilage, may be used for grafts in burn victims or reconstruction in trauma patients or those with degenerative disease.

A large number of the suitable organ and tissue donors fall under medical examiner jurisdiction. The Medical Examiner recognizes the need to permit organ and tissue recovery whenever possible and only when there is next-of-kin or prior consent**,** while balancing our statutory requirements to ensure the integrity of the body to allow determination of cause and manner of death, collection of evidence, and documentation of injuries and natural disease.

To those ends, we work closely with Lifesharing, the County's only organ and tissue procurement organization, and the San Diego Eye Bank, in order to allow for organ and tissue recovery prior to and following autopsy while at the same time ensuring that all necessary documentation is made in cases that fall under Medical Examiner jurisdiction. Maximization of donation benefits not only the recipients of organs and tissues, but also grieving families who may find some solace in the knowledge that even with the loss of a loved one, they were able to improve, or even save, the life of one or more recipients.

Tissue donation: During 2014, 413 donations were recovered in the Lifesharing Operating Suite at the Medical Examiner Facility. Twenty-seven percent of Lifesharing's tissue donors were Medical Examiner cases and 110 tissue donors were direct Medical Examiner referrals. Of the remaining cases, consent for donation was not permitted for medicolegal reasons, the patient had not preregistered to be a donor and the family did not give consent for donation, or other factors prevented donation. A single tissue donor can help multiple people. In fact, in 2014, approximately 4,550 lives were enhanced thanks to donors under Medical Examiner's jurisdiction.

Organ donation: Of Lifesharing's organ donors for 2014, 54% were Medical Examiner cases, resulting in the procurement of 179 organs. This translates into 179 lives saved!

Eye/cornea donation: In 2014, the San Diego Eye Bank recovered corneas from 664 donors at the Medical Examiner.

The above statistics highlight the importance of the Medical Examiner's close working relationships with Lifesharing and the Eye Bank. Our department not only assists the families of our cases, but is also a part of the chain that allows donation of organs and tissues to those in need.

BEYOND THE MEDICAL EXAMINER'S DEPARTMENT

In addition to the tasks that further our mission and support those of other agencies and institutions in the County of San Diego, our activities may also extend beyond the borders of our jurisdiction. As noted elsewhere, the Medical Examiner's Toxicology Laboratory performs testing not only for San Diego County cases but also for the San Bernardino County Coroner's Office. Our toxicologists and pathologists publish in internationally recognized professional literature and speak at national and state professional conferences. We also teach or speak at local hospitals, colleges and even high schools and elementary schools.

MASS DISASTER PREPARATION

Mass disasters or mass fatalities may take many different forms, including disease epidemics or pandemics like influenza, natural disasters such as earthquakes or wildfires, accidents such as aircraft crashes or industrial/nuclear incidents, and even terrorist attacks. Whether these fatalities involve natural or human causes, the Medical Examiner Department must be ready to respond as part of the greater community of essential emergency services. Annex F of the Unified San Diego County Emergency Services Organization and County of San Diego Operational Area Emergency Operations Plan was recently updated and provides a general outline for our plans in events of mass fatalities. Our office has given multiple presentations to various groups including the Red Cross, San Diego City Schools, and various hospital agencies on the Medical Examiner's role in mass disaster fatality response. This past year we participated in several county and statewide exercises involving mass fatalities, allowing us to interact and plan with a variety of civilian and military first responders. We have a representative involved in the continual planning and training as part of the Metropolitan Medical Strike Team, a multiagency group involved with organizing and facilitating disaster training. Responsive to emerging threats, our planning and training included our response to potential deaths caused by Ebola Virus.

DMORT

Some of our Investigators, and one Deputy Medical Examiner, have been members of the National Disaster Medical System (NDMS) Region IX Disaster Mortuary Operational Response Team (DMORT), a federally funded and operated team that may deploy within the United States or internationally to provide mortuary assistance (investigation, identification, pathology, and disposition of remains) on mass fatality incidents.

2014 DATA SECTION

California statute mandates that our department determine the cause and manner of death for each decedent who falls under the jurisdiction of the Medical Examiner. However, another important function of the Department is to identify patterns and trends of various types of deaths. This helps other agencies to identify issues that need additional resources or confirm that ongoing interventional efforts are accomplishing their goals. Coupled with the right data from other agencies, this information can potentially also be used to prevent harm to those living in our community.

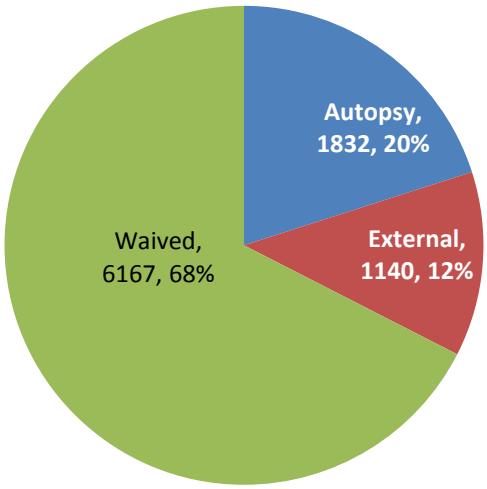
This section is designed to provide data in an easy-to-understand format so that the reader, including regional agencies and groups, can easily use the information to make decisions and stay informed. Most of the data is designed to speak for itself, but where applicable, a narrative or explanatory caption will be provided to further explain the data, point out caveats, and give background and context. In some areas, a multiyear perspective helps demonstrate trends over time and show how 2014 compares with previous years.

Keep in mind that this report represents investigation of only a certain subset of deaths in the county: approximately 14.9% (2,972) of the approximately 20,000 deaths in 2014. This subset consists of the deaths in which we chose to or were required to take jurisdiction (see Deaths We Investigate for more information) and includes ALL deaths due to non-natural causes (injury, drugs/alcohol, homicides, suicides, etc.) and a relatively small, but unique group of natural deaths (5% of all natural deaths) in the county.

OVERVIEW OF ALL CASES

In 2014, 9,139 deaths were reported to the San Diego County Medical Examiner's Department. The Department waived jurisdiction on 67% of these (6,167) cases and invoked it in 33% (2,972). We performed 1,832 autopsies (62% of jurisdiction cases, 20% of all deaths reported to us, and 8.6% of all deaths in the County) and 1,140 external examinations (38% of jurisdiction cases).

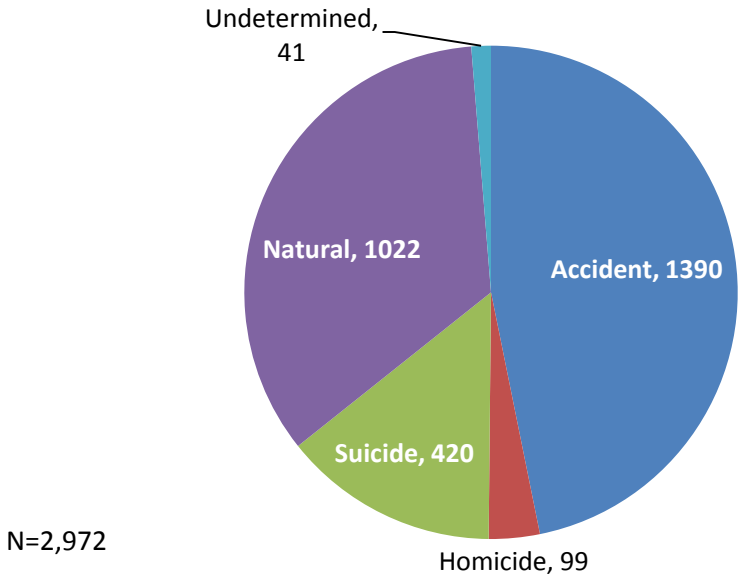
ALL DEATHS REPORTED TO M.E, 2014



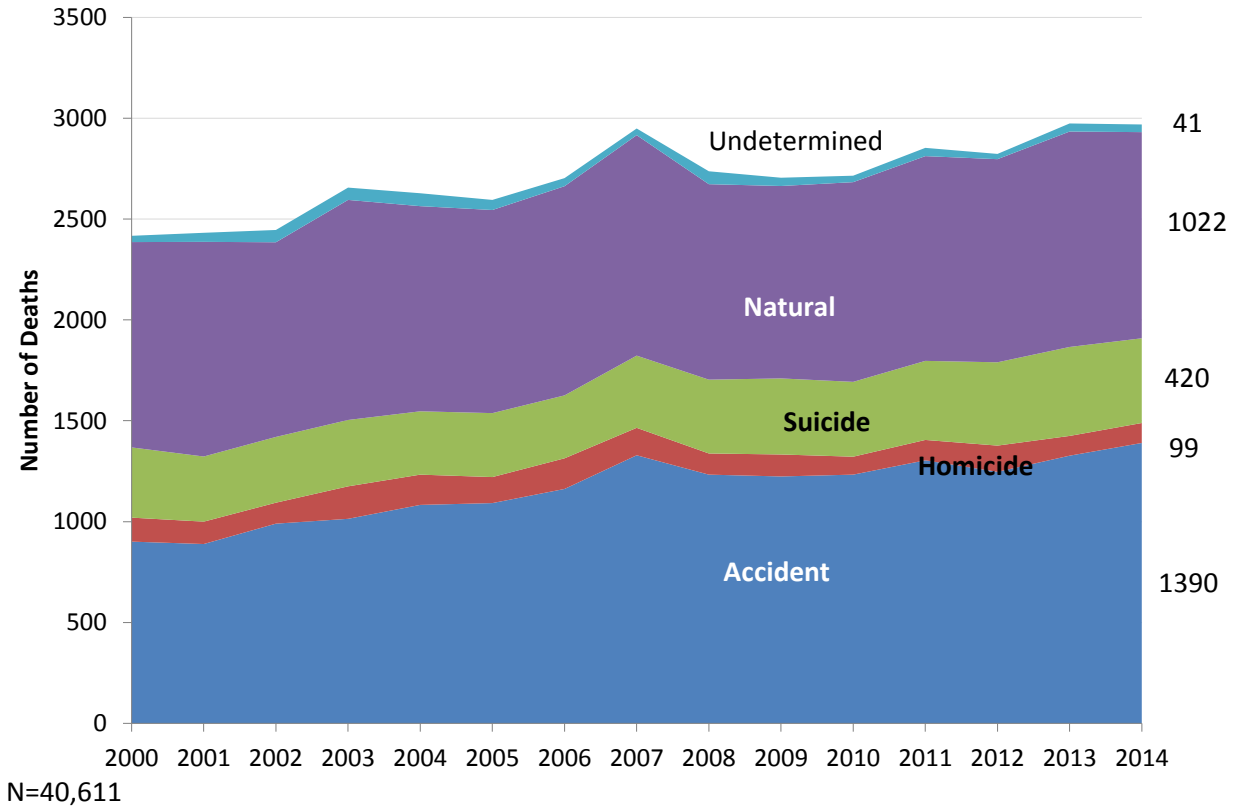
N=9,139

The San Diego County Medical Examiner Department performs an average of 5 autopsies per day, and 3.1 external examinations. In 2014, 47% of investigations represented unintentional (accident) manners of death, followed by natural causes (34%), suicides (14%), and homicides (3.3%). The manner of death was undetermined for 1.3% of deaths (41).

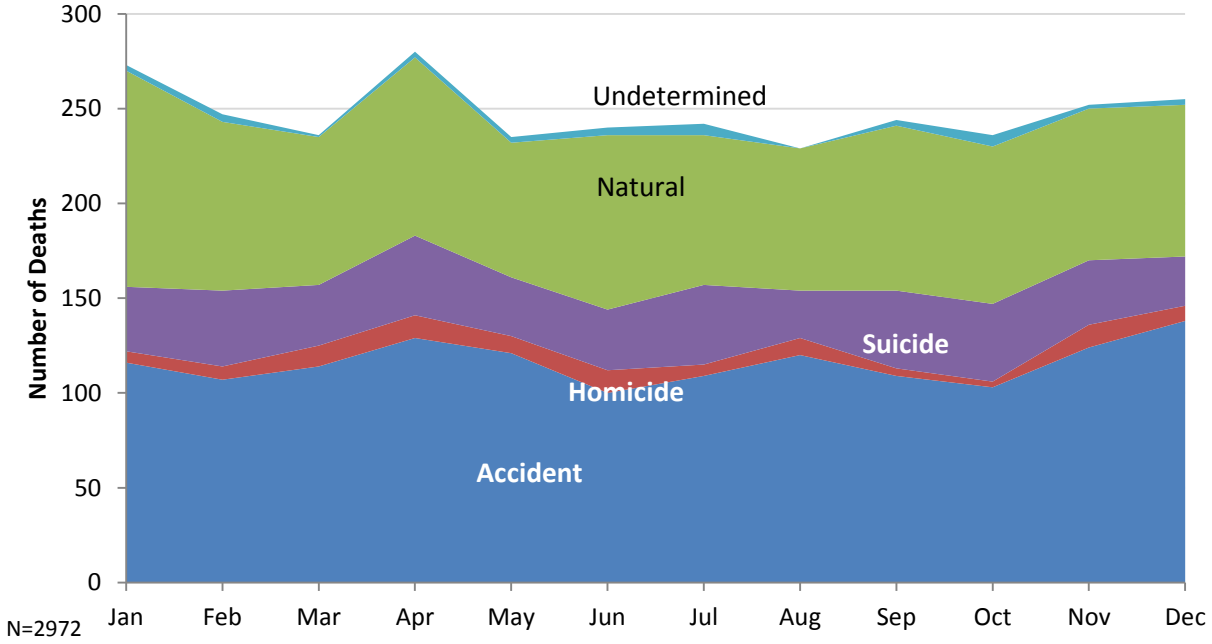
MANNERS OF DEATH, 2014



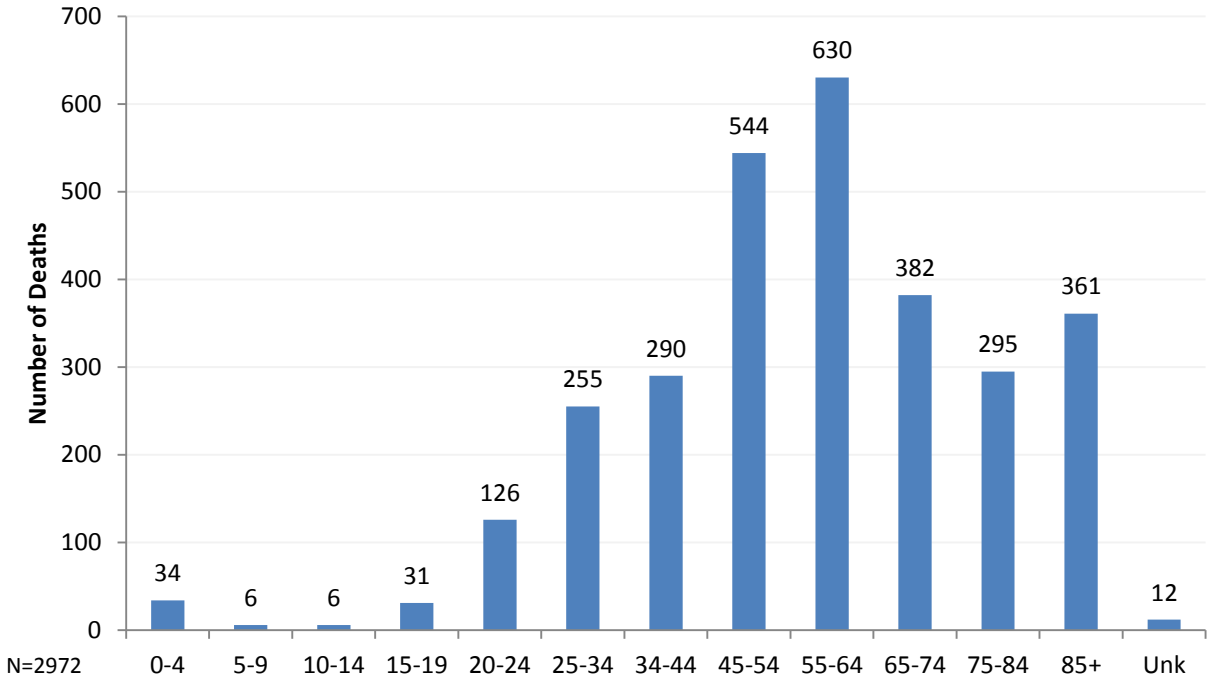
MANNER OF DEATH BY YEAR, 2000 – 2014



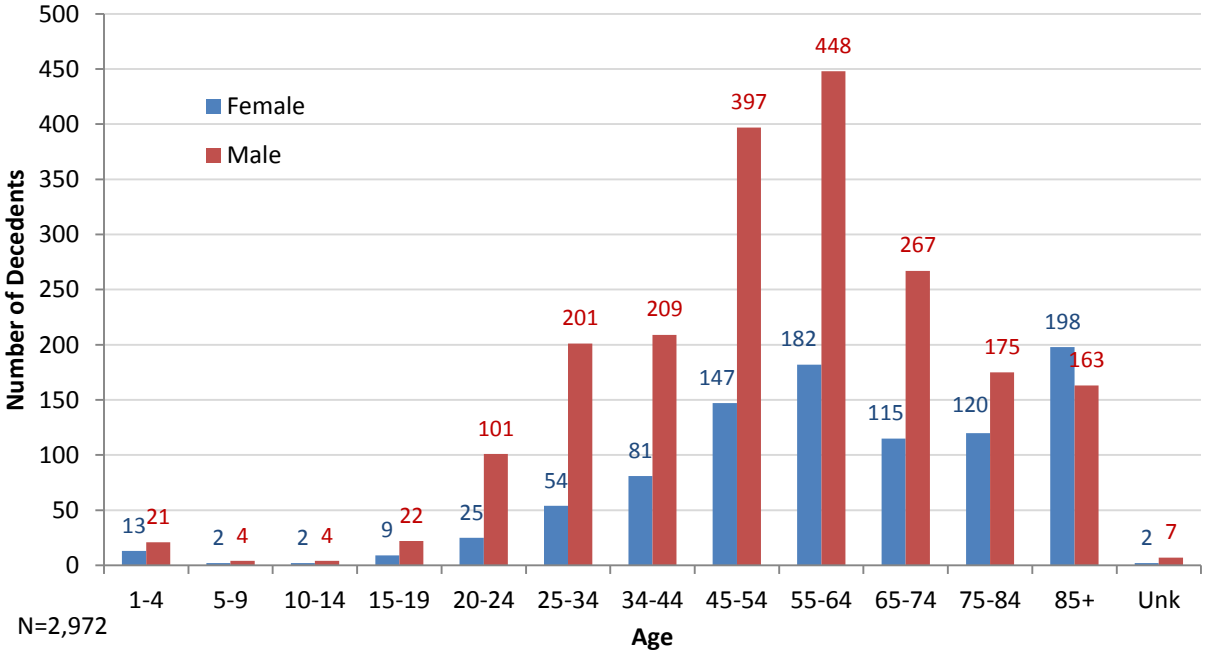
MANNER OF DEATH BY MONTH: 2014



AGE DISTRIBUTION OF DECEDENTS, 2014

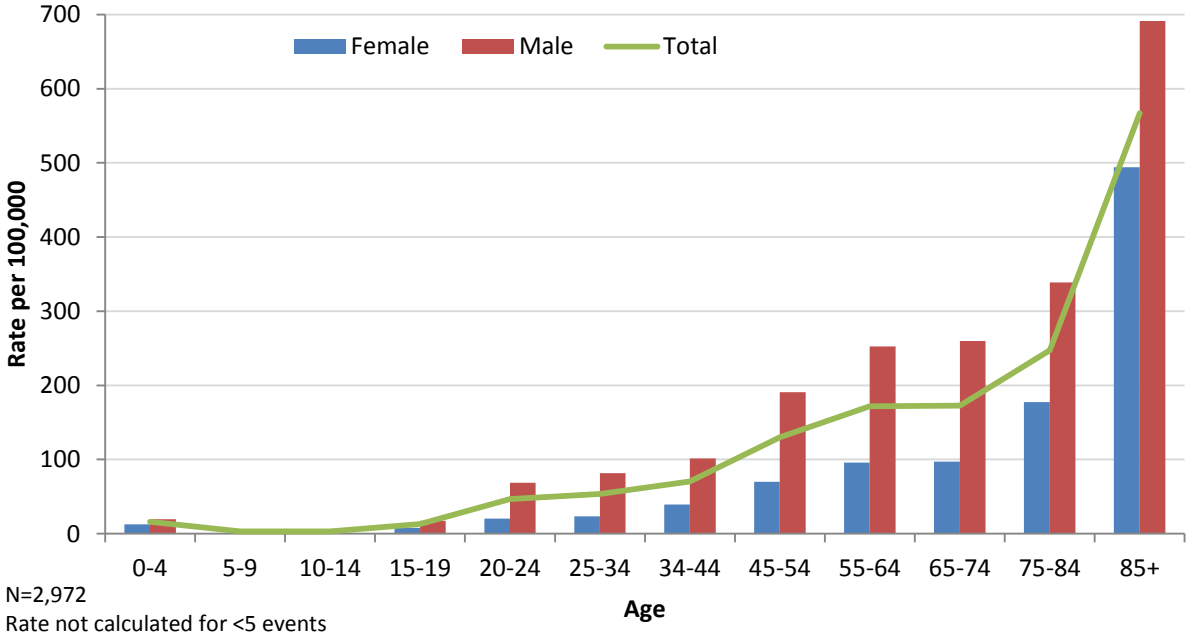


NUMBER OF DECEDENTS BY AGE AND SEX, 2014



N=2,972

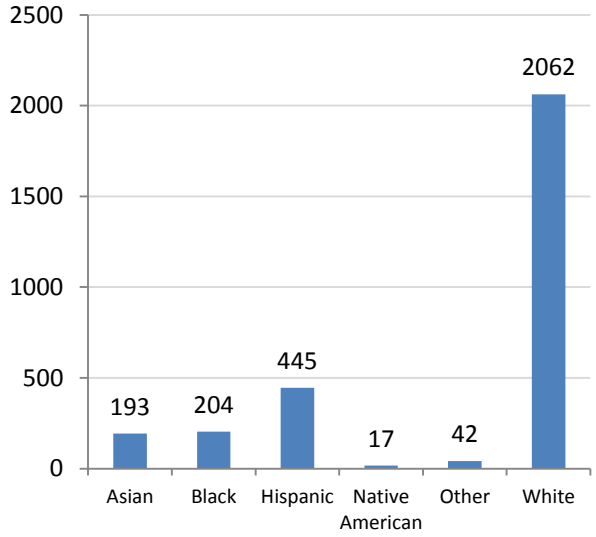
RATE PER 100,000 OF INVESTIGATIONS BY AGE AND SEX, 2014



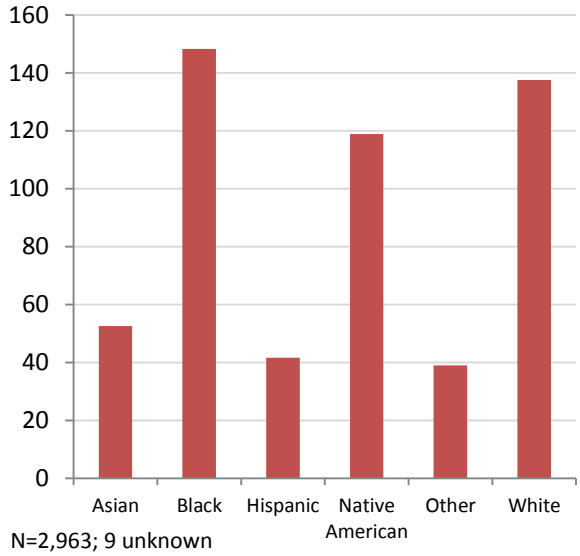
N=2,972
Rate not calculated for <5 events

NUMBER AND RATE OF DEATHS BY RACE/ETHNICITY, 2014

NUMBER OF DEATHS

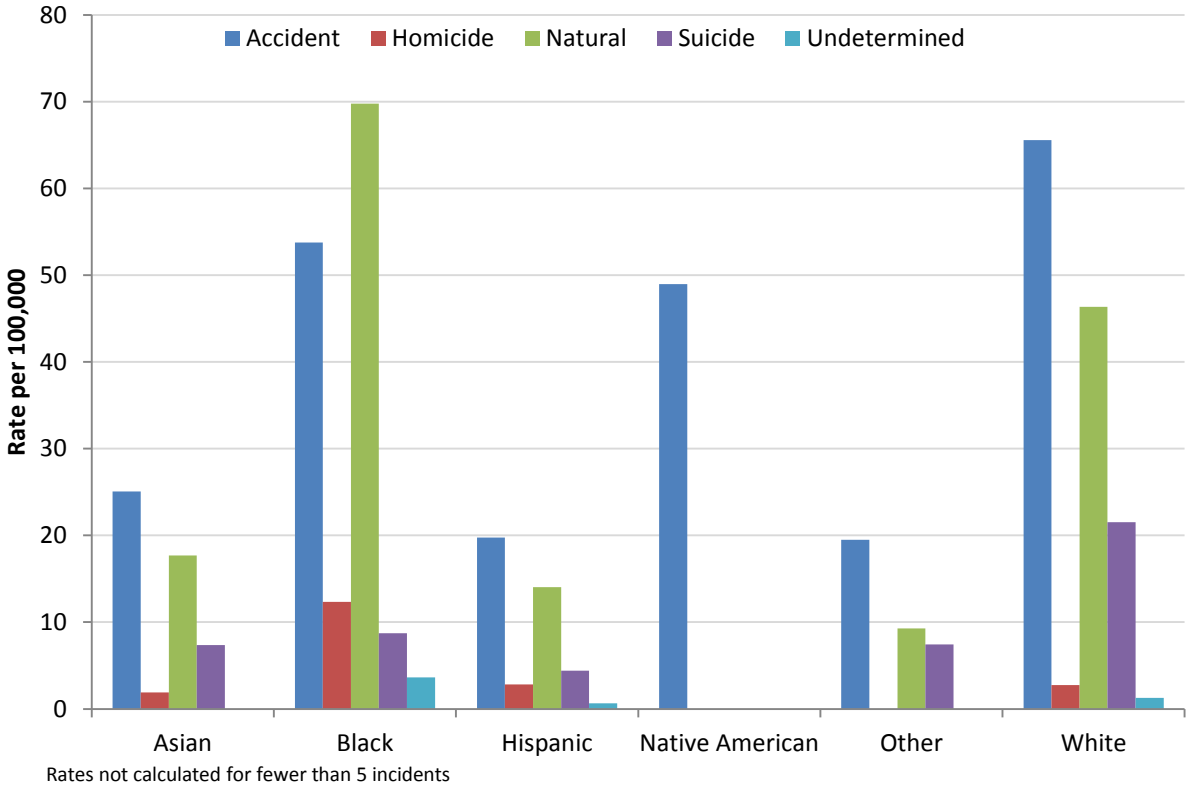


RATE OF DEATHS PER 100,000



N=2,963; 9 unknown

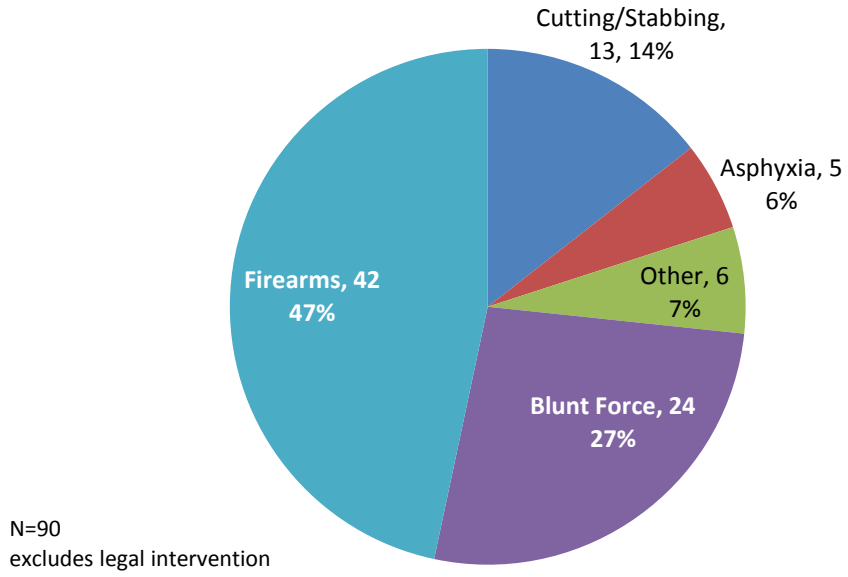
RATES OF MANNER BY RACE/ETHNICITY, 2014



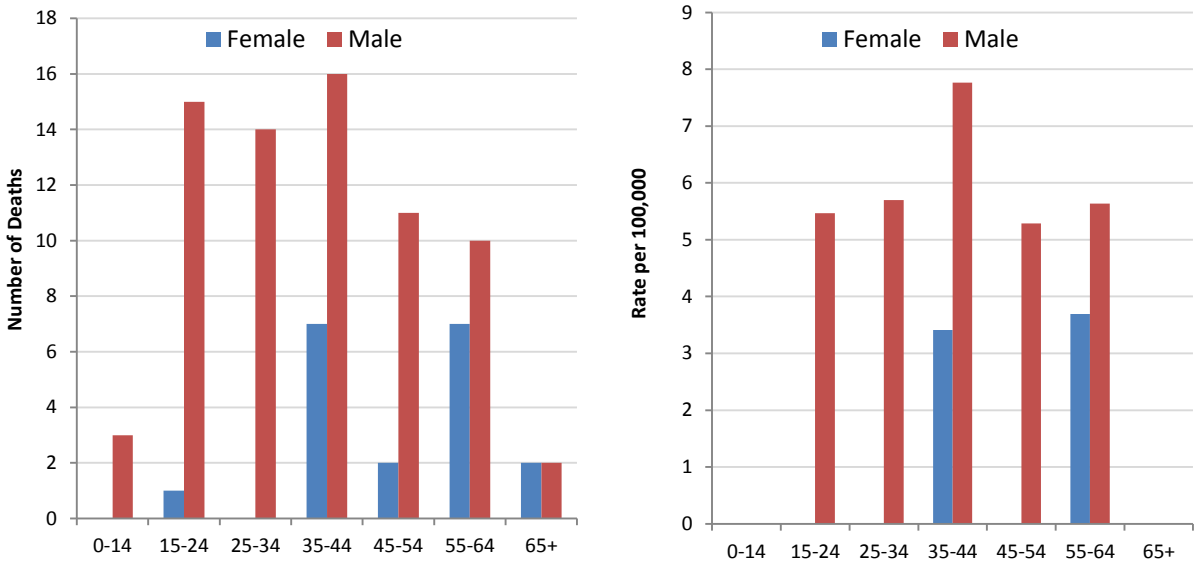
Rates not calculated for fewer than 5 incidents

HOMICIDE

HOMICIDE METHODS: 2014

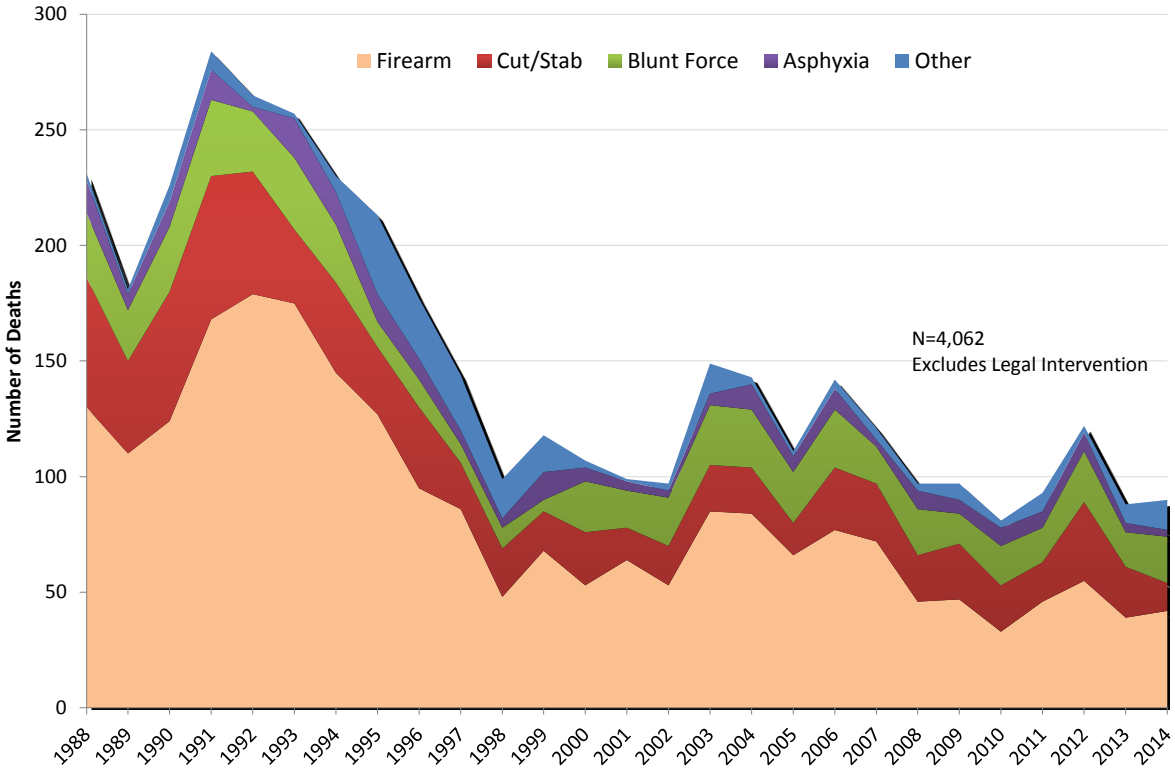


NUMBER AND RATE OF HOMICIDE VICTIMS BY AGE AND GENDER, 2014

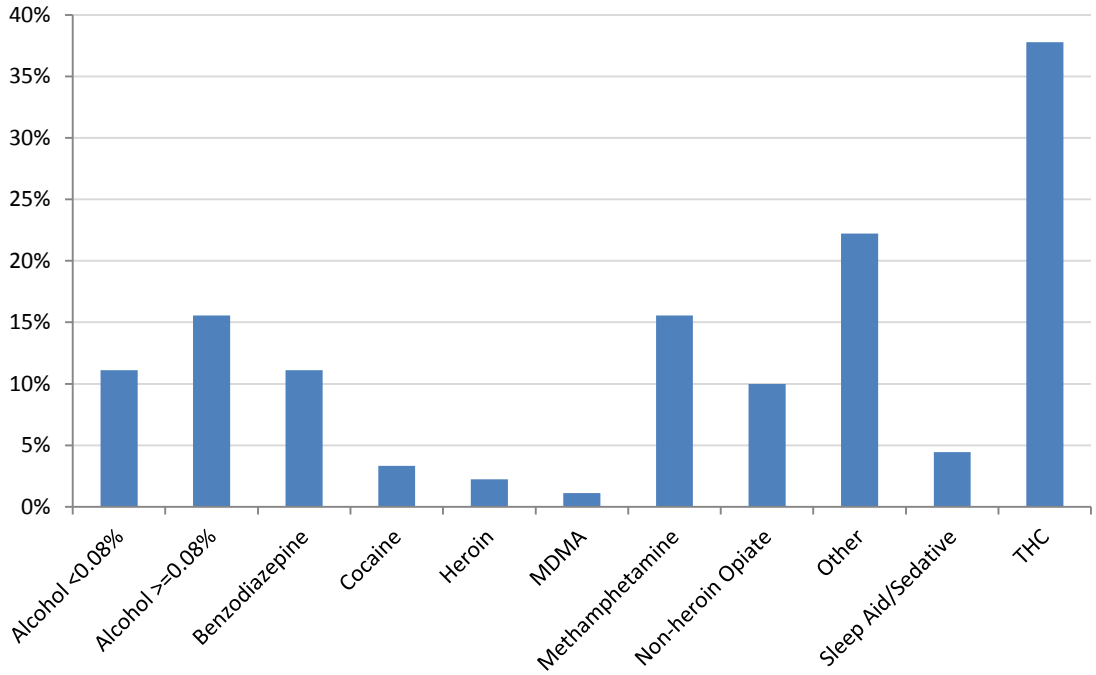


N=90, excludes legal intervention. Rates not calculated for fewer than 5 incidents

HOMICIDE METHOD BY YEAR: 1988 - 2014

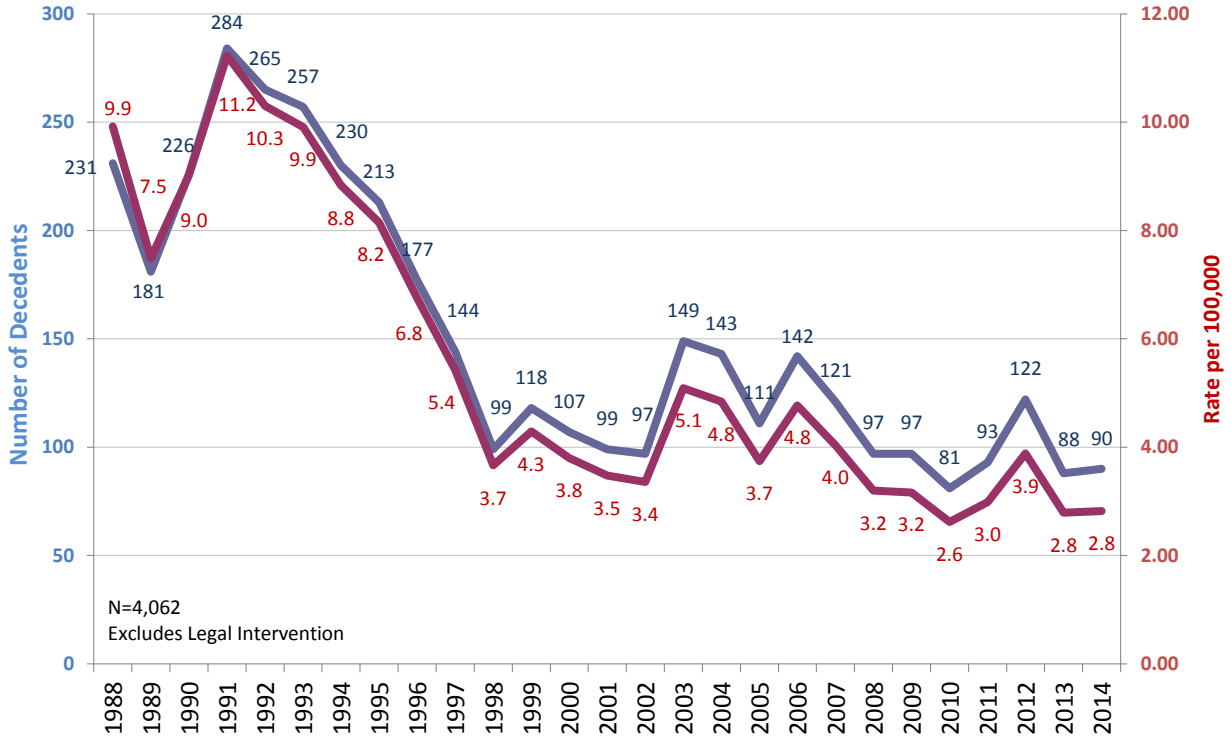


TOXICOLOGY RESULTS - PERCENT OF HOMICIDE: 2014



Percent of homicides in which testing was performed. Excludes legal intervention; N=78

HOMICIDE COUNT AND RATE BY YEAR, 1988 - 2014

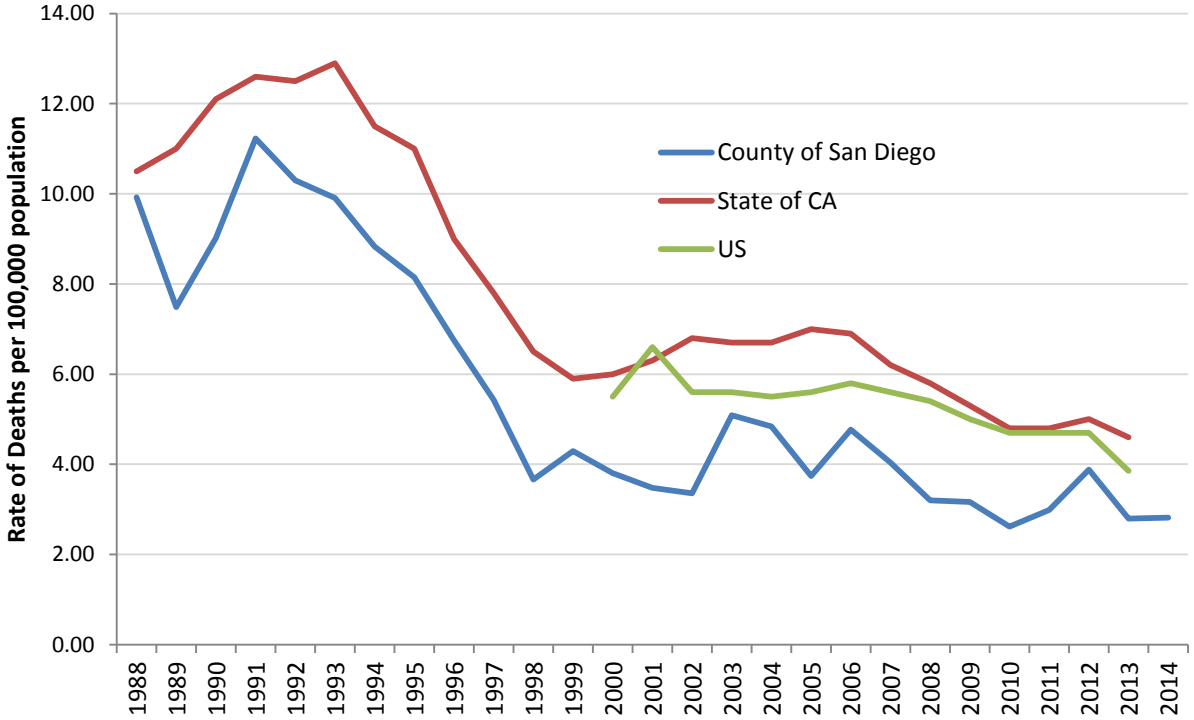


Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number	231	181	226	284	265	257	230	213	177	144	99	118
Rate per 100,000	9.9	7.5	9.0	11.2	10.3	9.9	8.8	8.2	6.8	5.4	3.7	4.3

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number	107	99	97	149	143	111	142	121	97	97	81	93
Rate per 100,000	3.8	3.5	3.4	5.1	4.8	3.7	4.8	4.0	3.2	3.2	2.6	3.0

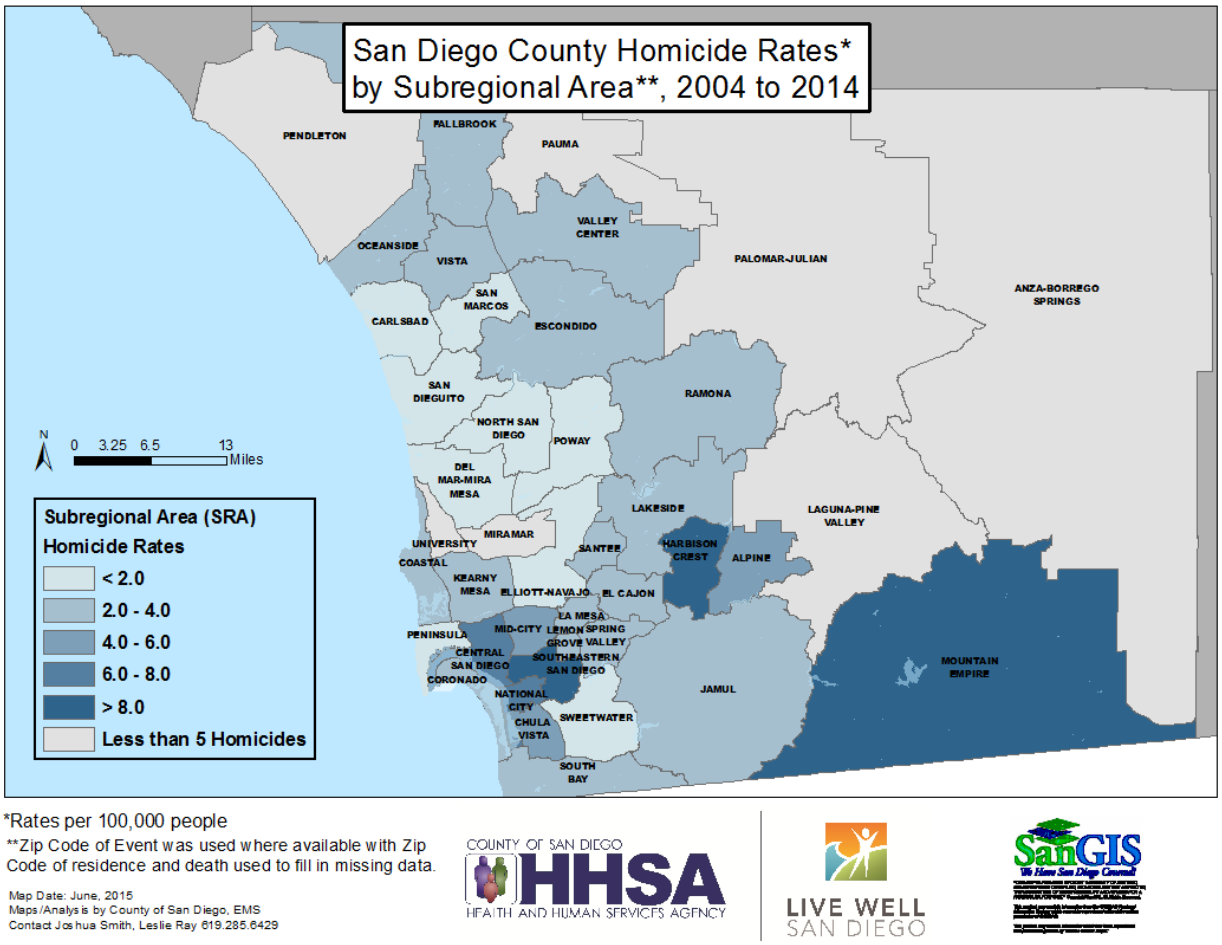
Year	2012	2013	2014
Number	122	88	90
Rate per 100,000	3.9	2.8	2.8

HOMICIDE RATE PER 100,000 COMPARED TO NATIONAL AND STATE RATES



Sources: United Nations Office on Drugs and Crime (UNODC) website, Global Study on Homicide, https://data.unodc.org/#state:0, accessed June 2, 2015. *Homicide in California 2013*, Kamala D. Harris, Atty General, California Department of Justice. *Homicide in California*, several previous years.

HOMICIDE RATE PER 100,000 BY SUBREGIONAL AREA



*Rates per 100,000 people

**Zip Code of Event was used where available with Zip Code of residence and death used to fill in missing data.

Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

LIVE WELL SAN DIEGO

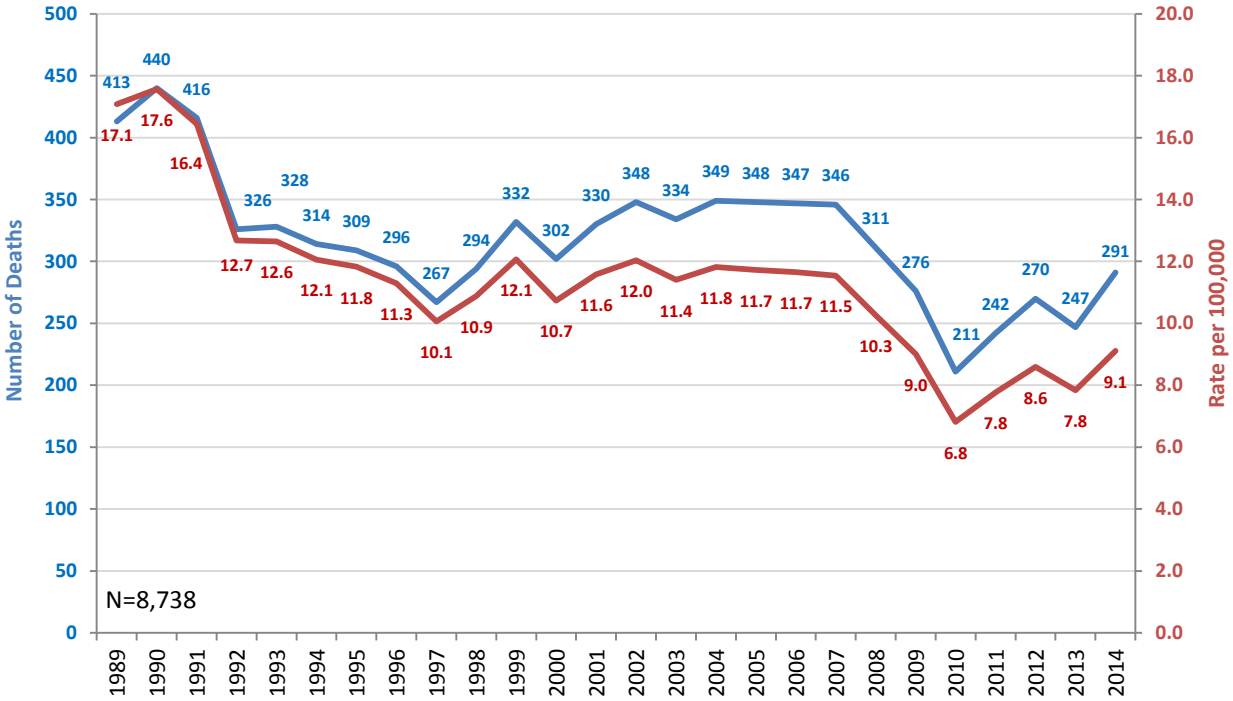
SanGIS We Know San Diego County

0.8	North San Diego	2.3	Ramona	5.5	Mid-City
0.8	Poway	2.4	Lemon Grove	6.2	National City
1.3	San Dieguito	2.7	Coronado	8	Central San Diego
1.3	San Marcos	2.7	Vista	9.2	Mountain Empire
1.4	Elliott-Navajo	3.1	Escondido	10.9	Harbison Crest
1.5	Del Mar-Mira Mesa	3.2	Spring Valley	11.1	Southeastern San Diego
1.5	Sweetwater	3.3	Kearny Mesa	*	University
1.8	Peninsula	3.6	Valley Center	*	Miramar
1.9	Carlsbad	3.7	Fallbrook	*	Pendleton
2.2	Santee	3.8	South Bay	*	Pauma
2.2	Lakeside	3.9	Jamul	*	Palomar-Julian
2.3	Coastal	3.9	Oceanside	*	Laguna-Pine Valley
2.3	La Mesa	4.1	Chula Vista	*	Anza-Borrego Springs
2.3	El Cajon	4.2	Alpine		

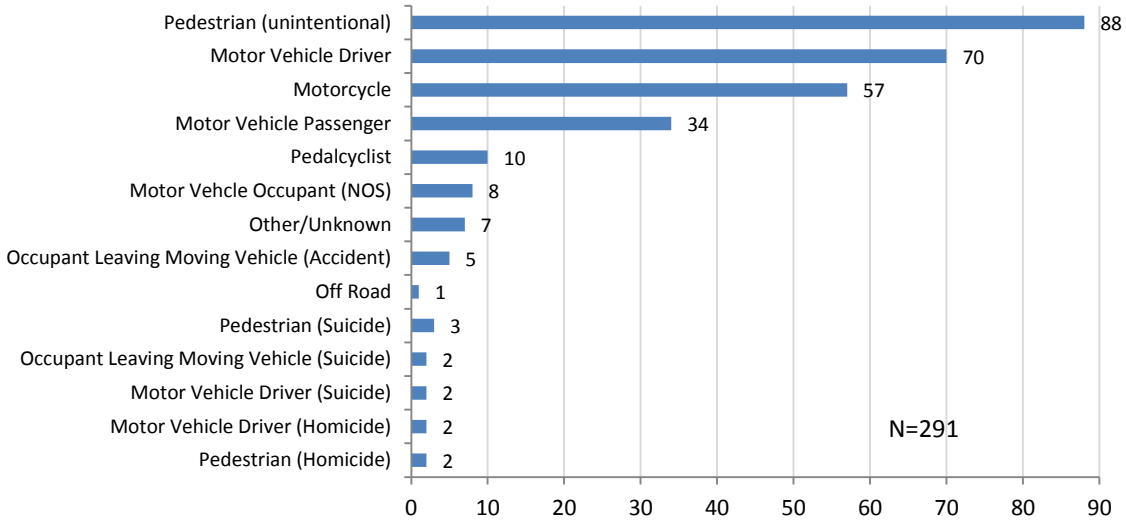
*Rates not calculated for fewer than 5 events

MOTOR VEHICLE FATALITIES

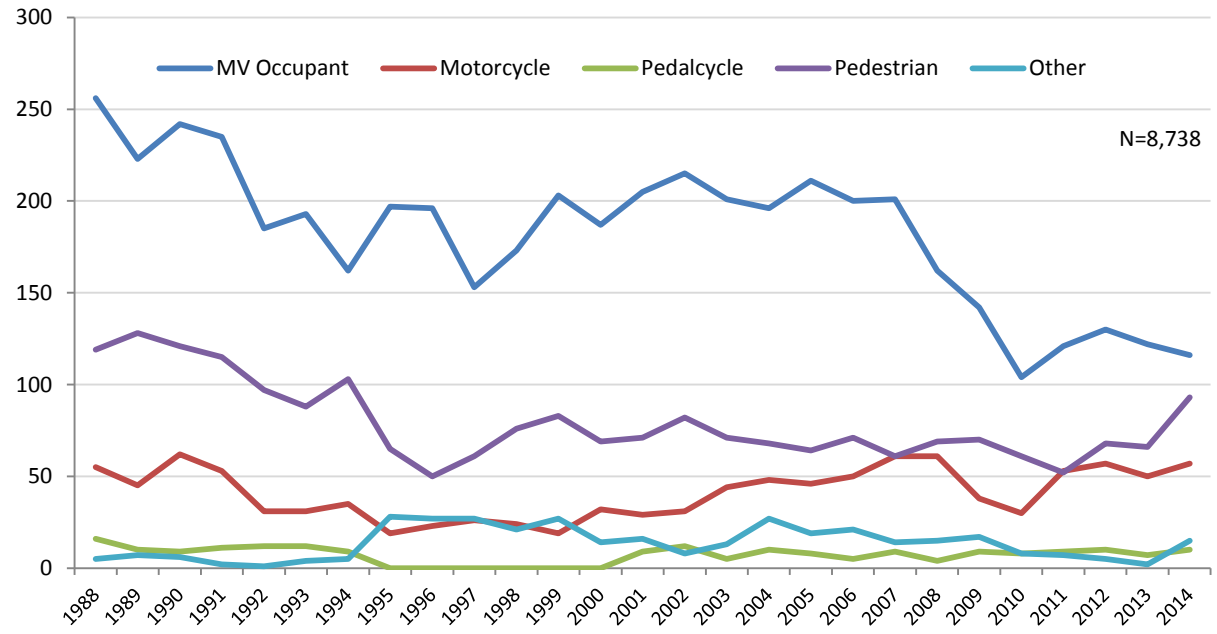
MOTOR VEHICLE-RELATED FATALITIES: 1988 - 2014



MOTOR VEHICLE-RELATED FATALITIES BY VICTIM TYPE: 2014



TRAFFIC-RELATED FATALITIES BY YEAR, 1988 - 2014



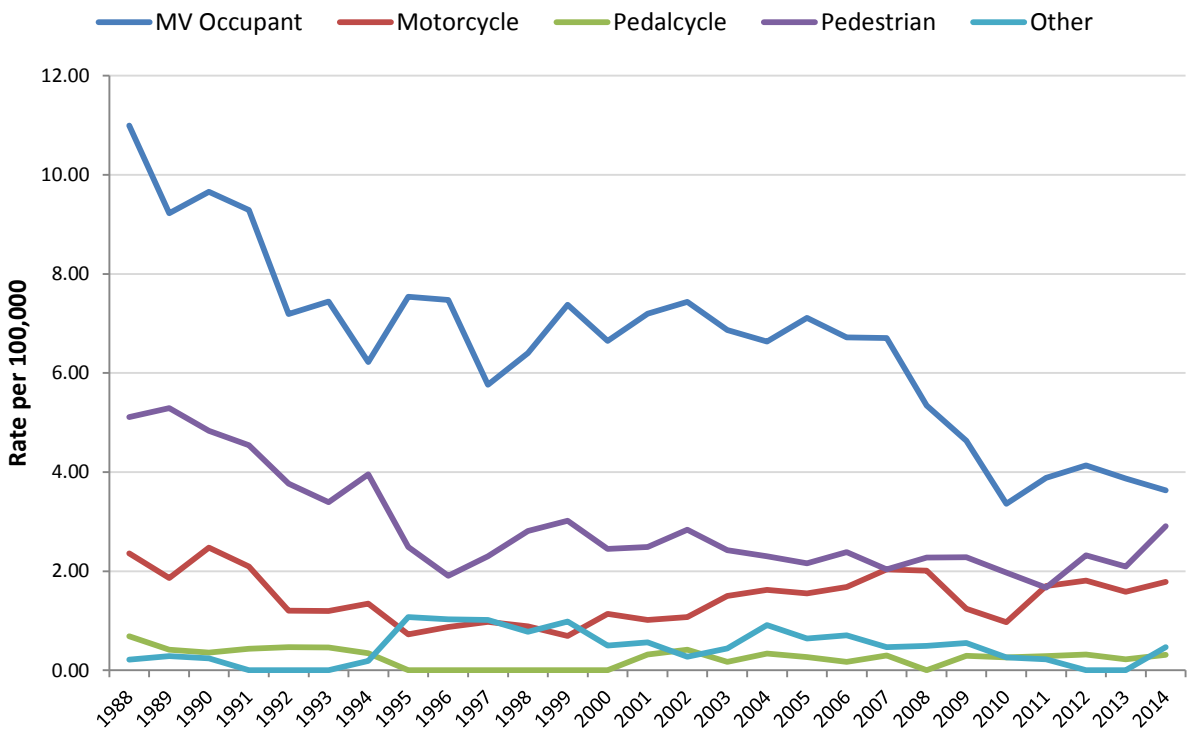
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MV Occupant	**256**	**223**	**242**	**235**	**185**	**193**	**162**	**197**	**196**	**153**	**173**	**203**
Motorcycle	**55**	**45**	**62**	**53**	**31**	**31**	**35**	**19**	**23**	**26**	**24**	**19**
Pedalcycle	**16**	**10**	**9**	**11**	**12**	**12**	**9**	**0**	**0**	**0**	**0**	**0**
Pedestrian	**119**	**128**	**121**	**115**	**97**	**88**	**103**	**65**	**50**	**61**	**76**	**83**
Other	**5**	**7**	**6**	**2**	**1**	**4**	**5**	**28**	**27**	**27**	**21**	**27**
Total	**451**	**413**	**440**	**416**	**326**	**328**	**314**	**309**	**296**	**267**	**294**	**332**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
MV Occupant	**187**	**205**	**215**	**201**	**196**	**211**	**200**	**201**	**162**	**142**	**104**	**121**
Motorcycle	**32**	**29**	**31**	**44**	**48**	**46**	**50**	**61**	**61**	**38**	**30**	**53**
Pedalcycle	**0**	**9**	**12**	**5**	**10**	**8**	**5**	**9**	**4**	**9**	**8**	**9**
Pedestrian	**69**	**71**	**82**	**71**	**68**	**64**	**71**	**61**	**69**	**70**	**61**	**52**
Other	**14**	**16**	**8**	**13**	**27**	**19**	**21**	**14**	**15**	**17**	**8**	**7**
Total	**302**	**330**	**348**	**334**	**349**	**348**	**347**	**346**	**311**	**276**	**211**	**242**

	2012	2013	2014
MV Occupant	**130**	**122**	**116**
Motorcycle	**57**	**50**	**57**
Pedalcycle	**10**	**7**	**10**
Pedestrian	**68**	**66**	**93**
Other	**5**	**2**	**15**
Total	**270**	**247**	**291**

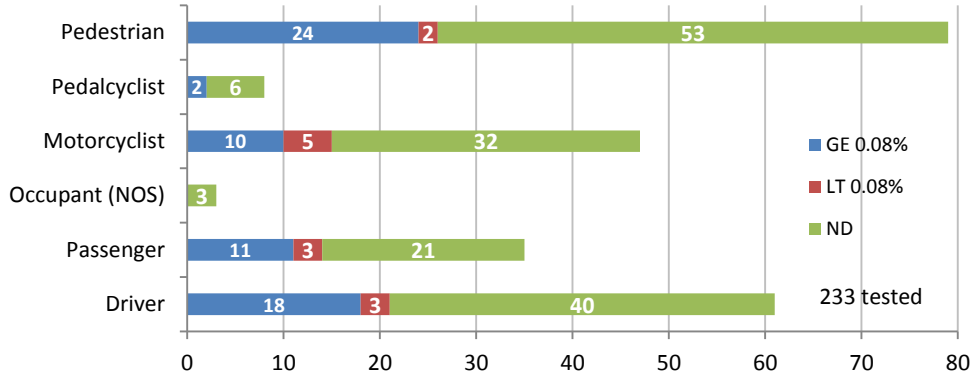
*Pedestrian includes all incidents, including unintentional (accident), suicide, and homicide. Pedalcycle refers to a vehicle powered by pedals regardless of the number of wheels.

TRAFFIC-RELATED FATALITY RATE BY YEAR, 1988 - 2014

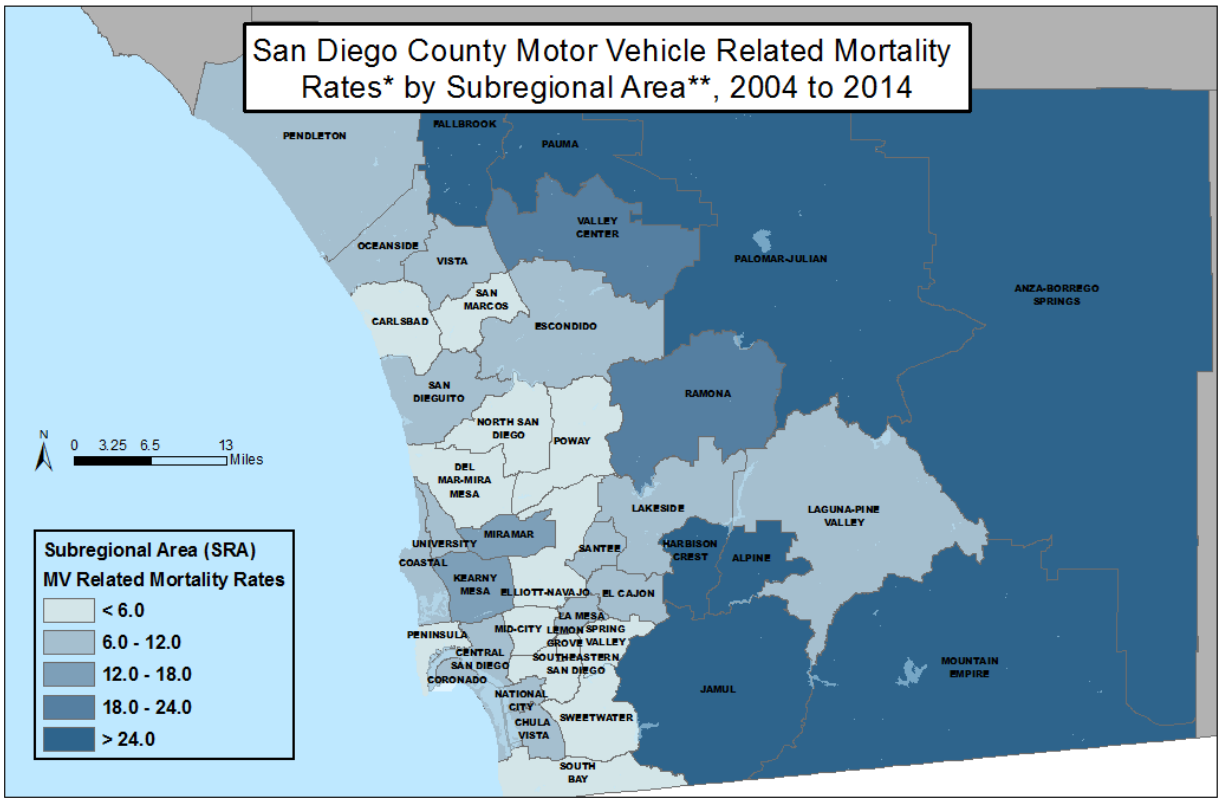


Motor vehicle occupant death rates have dropped by more than half from the late 1980's to 2010. Motorcyclist deaths saw a sharp decline from 1988 to the late 1990's, coinciding with the implementation of California's mandatory helmet law. Motor vehicle-related deaths have remained relatively consistent over the last several years, with the exception of unintentional pedestrian fatalities, which increased 35% (64 to 88) from 2013 to 2014.

ALCOHOL TOXICOLOGY BY MOTOR VEHICLE VICTIM TYPE: 2014



MOTOR VEHICLE-RELATED DEATH RATES BY SUBREGIONAL AREA, 2004 – 2014



*Rates per 100,000 people

**Zip Code of Event was used where available with Zip Code of residence and death used to fill in missing data.

Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

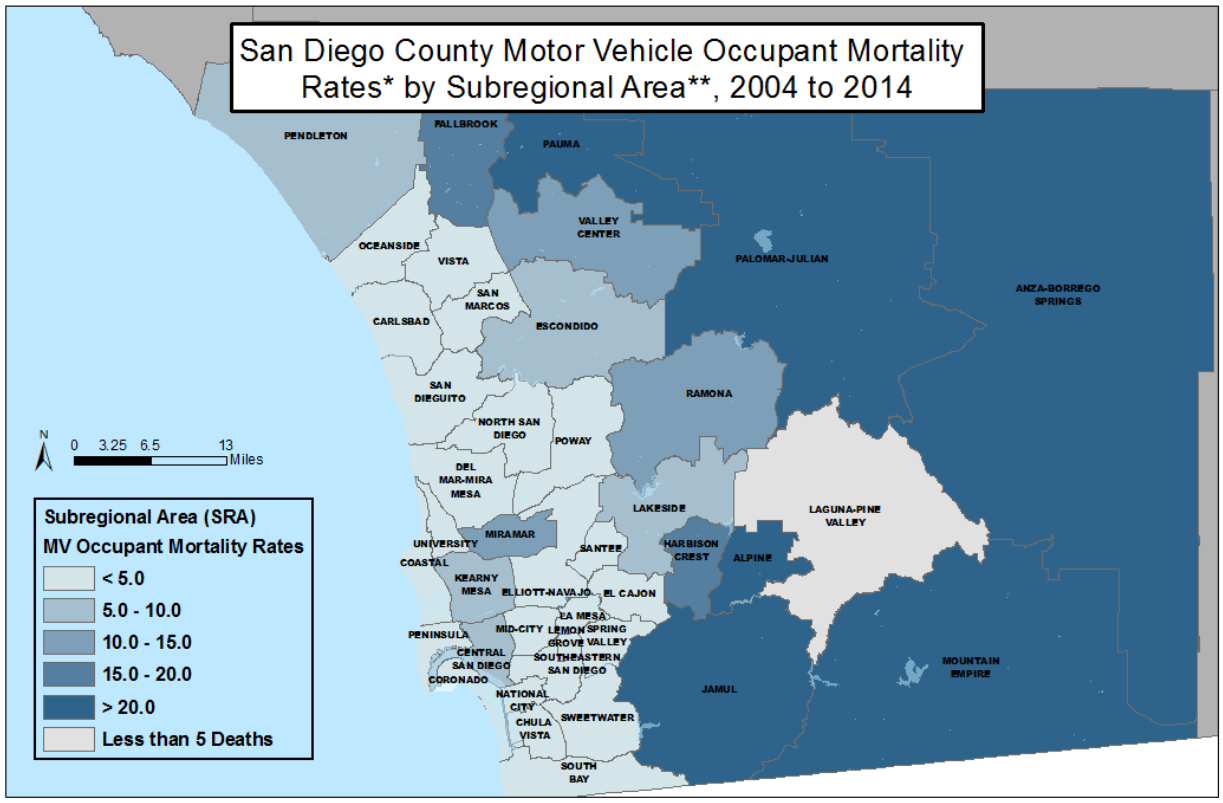
COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

LIVE WELL SAN DIEGO

SanGIS We Know San Diego County!

2.2	Sweetwater	6.2	El Cajon	11.5	Central San Diego
3.5	Peninsula	7.0	San Dieguito	13.4	Kearny Mesa
4.3	Spring Valley	7.4	Coronado	17.9	Miramar
4.4	Del Mar-Mira Mesa	7.7	Santee	21.4	Ramona
4.6	Poway	7.7	Oceanside	23.8	Valley Center
5.0	North San Diego	8.1	La Mesa	25.6	Fallbrook
5.1	Carlsbad	9.0	Vista	37.7	Alpine
5.3	Southeastern San Diego	9.4	National City	41.3	Harbison Crest
5.5	Elliott-Navajo	9.7	Chula Vista	44.0	Jamul
5.8	Mid-City	9.8	Laguna-Pine Valley	69.5	Palomar-Julian
5.8	South Bay	10.1	Coastal	80.5	Pauma
5.8	San Marcos	10.2	Pendleton	124.9	Mountain Empire
6.0	Lemon Grove	10.3	Lakeside	130.9	Anza-Borrego Springs
6.1	University	11.0	Escondido		

MOTOR VEHICLE OCCUPANT DEATH RATES BY SUBREGIONAL AREA, 2004 – 2014



*Rates per 100,000 people

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Maps/Analysis by County of San Diego, EMS
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COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

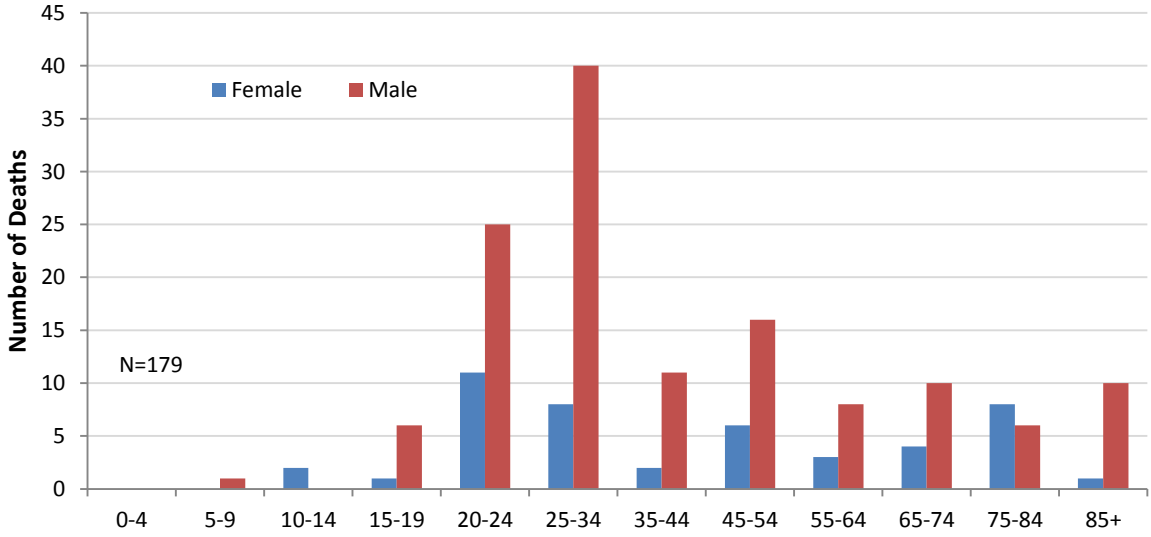
LIVE WELL SAN DIEGO

SanGIS We Know San Diego County

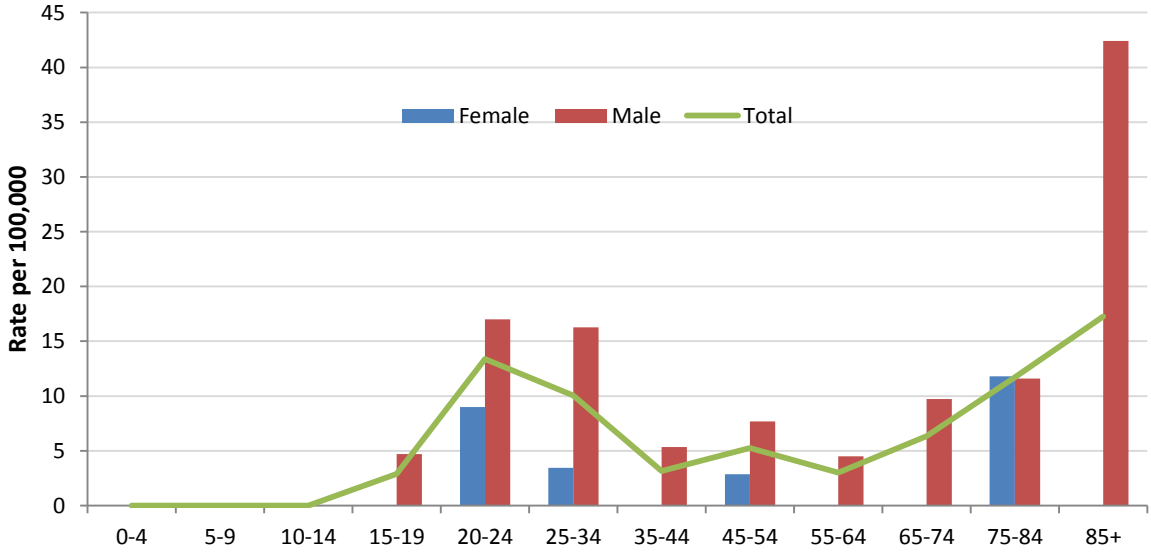
1.3	Sweetwater	3.6	Lemon Grove	7.9	Pendleton
2.0	Peninsula	3.7	Chula Vista	10.7	Miramar
2.3	Southeastern San Diego	3.8	Oceanside	12.4	Ramona
2.3	Mid-City	3.9	University	13.7	Valley Center
2.4	Del Mar-Mira Mesa	4.0	La Mesa	18.1	Fallbrook
2.4	Poway	4.2	Vista	18.2	Harbison Crest
2.5	Spring Valley	4.5	San Dieguito	27.3	Jamul
2.6	San Marcos	4.6	Coastal	28.7	Alpine
2.7	South Bay	4.6	Santee	40.3	Palomar-Julian
2.8	North San Diego	4.7	Coronado	47.2	Pauma
2.8	El Cajon	5.2	Central San Diego	55.8	Anza-Borrego Springs
3.0	Elliott-Navajo	6.1	Lakeside	86.7	Mountain Empire
3.0	Carlsbad	6.1	Escondido	*	Laguna-Pine Valley
3.5	National City	7.4	Kearny Mesa		

*Rates not calculated for fewer than 5 events

NUMBER OF MOTOR VEHICLE OCCUPANTS DEATHS BY AGE AND SEX, 2014

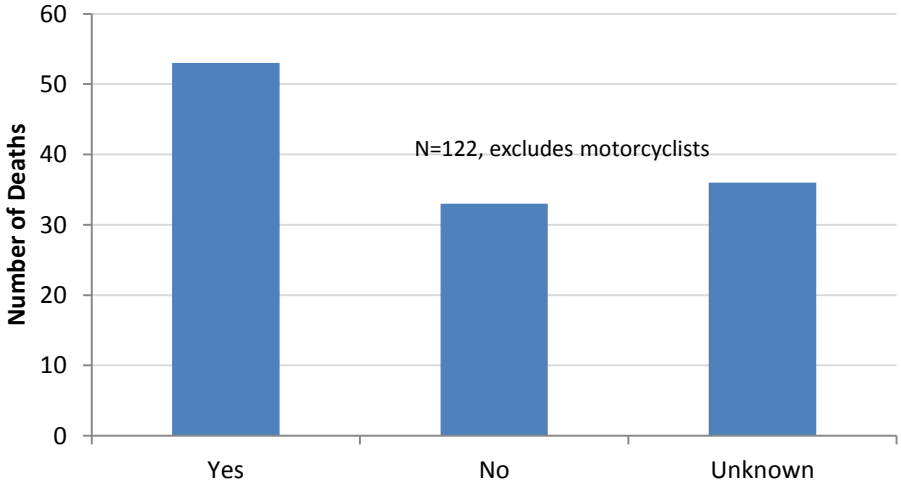


RATE OF MOTOR VEHICLE OCCUPANTS DEATHS BY AGE AND SEX, 2014

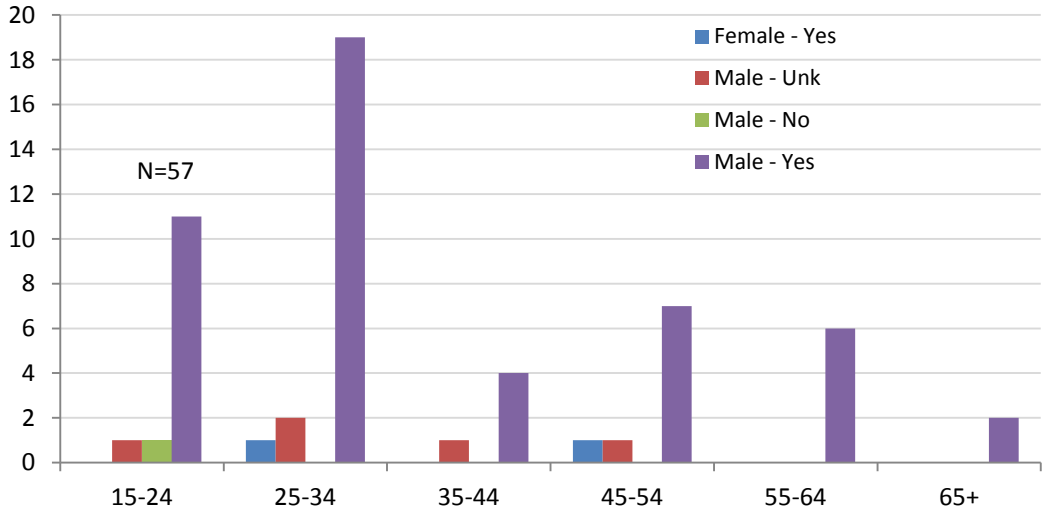


N=179
Rate not calulated for fewer than 5 incidents

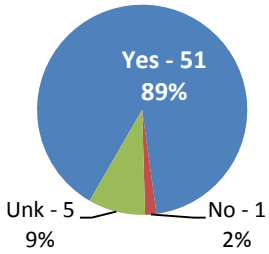
SEAT BELT USE: MOTOR VEHICLE OCCUPANTS, 2014



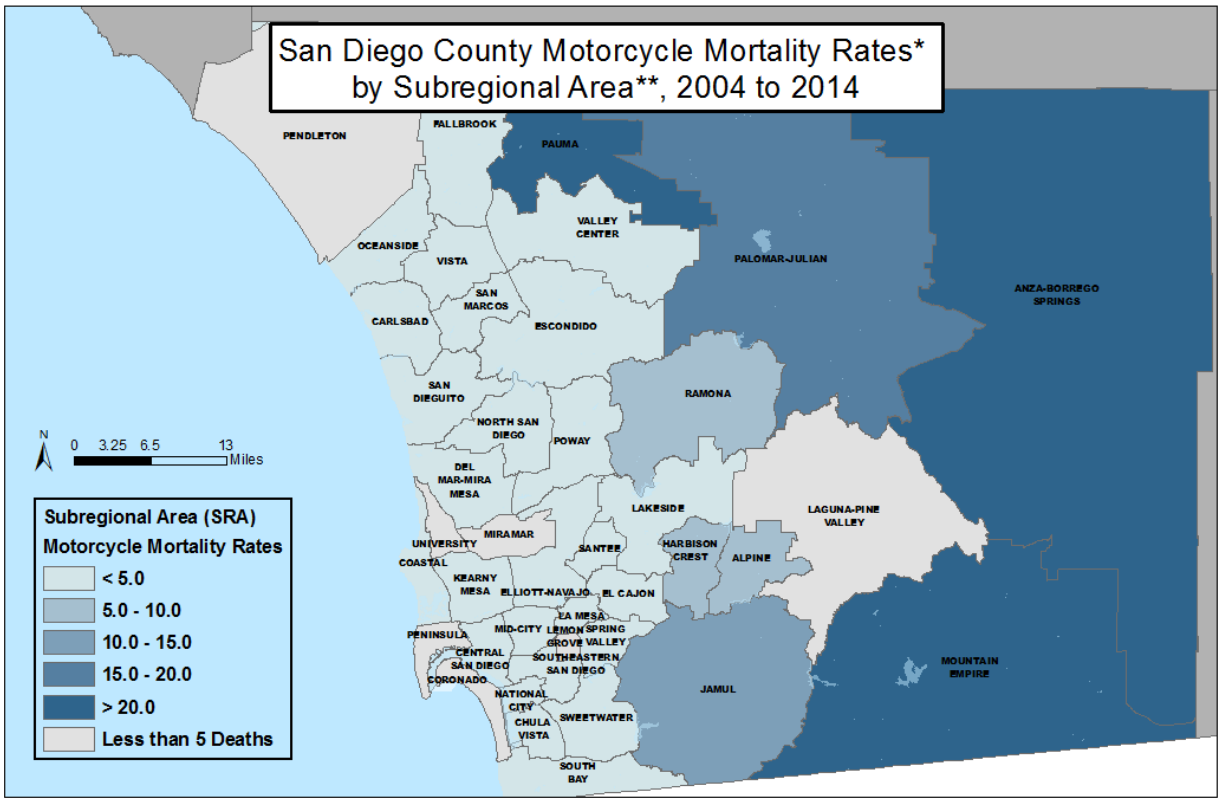
MOTORCYCLIST DEATHS BY AGE AND HELMET USE, 2014



HELMET USE: MOTORCYCLISTS, 2014



MOTORCYCLE DEATHS BY SUBREGIONAL AREA, 2004 – 2014



*Rates per 100,000 people

**Zip Code of Event was used where available with Zip Code of residence and death used to fill in missing data.

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COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

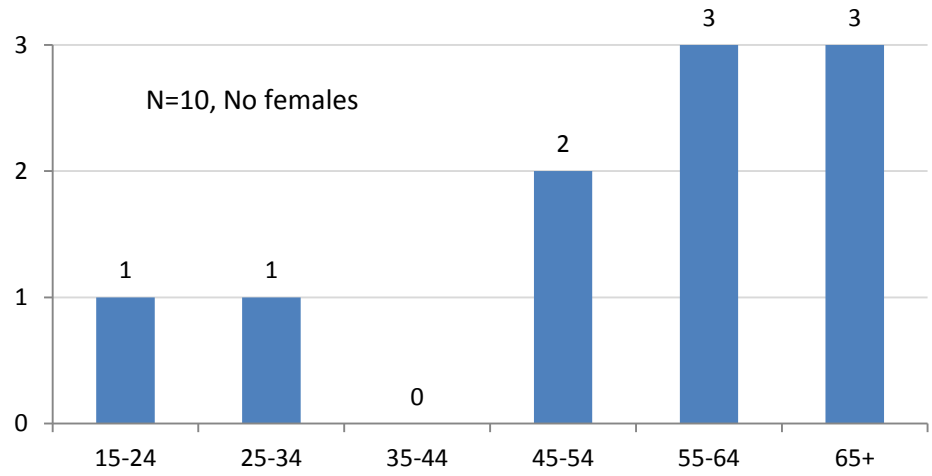
LIVE WELL SAN DIEGO

SanGIS We Know San Diego County

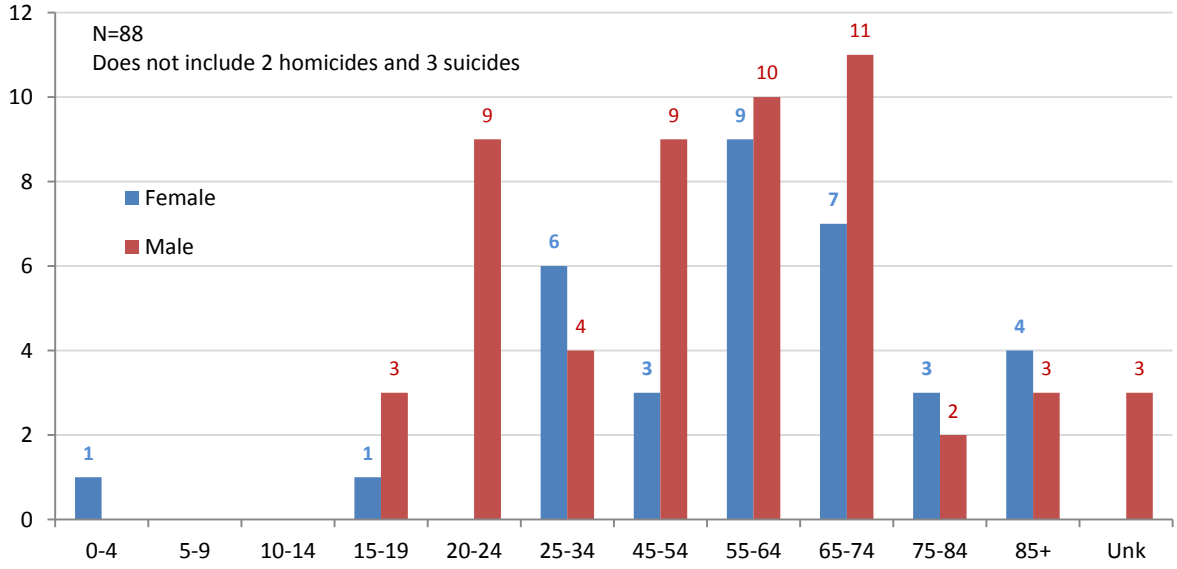
0.5	Sweetwater	1.3	Poway	6.7	Harbison Crest
0.5	Spring Valley	1.4	National City	13.4	Jamul
0.5	Carlsbad	1.4	Coastal	19.5	Palomar-Julian
0.7	Southeastern San Diego	1.5	Central San Diego	21.0	Mountain Empire
0.7	Elliott-Navajo	1.5	Santee	26.4	Pauma
0.8	Del Mar-Mira Mesa	1.6	San Marcos	61.6	Anza-Borrego Springs
0.8	South Bay	1.7	Vista	*	Peninsula
0.9	Mid-City	1.9	Lakeside	*	Coronado
0.9	North San Diego	2.0	Escondido	*	University
1.1	Chula Vista	2.2	Kearny Mesa	*	Miramar
1.1	El Cajon	4.1	Fallbrook	*	Lemon Grove
1.1	San Dieguito	4.4	Valley Center	*	Pendleton
1.1	Oceanside	5.7	Ramona	*	Laguna-Pine Valley
1.2	La Mesa	6.0	Alpine		

*Rates not calculated for fewer than 5 events

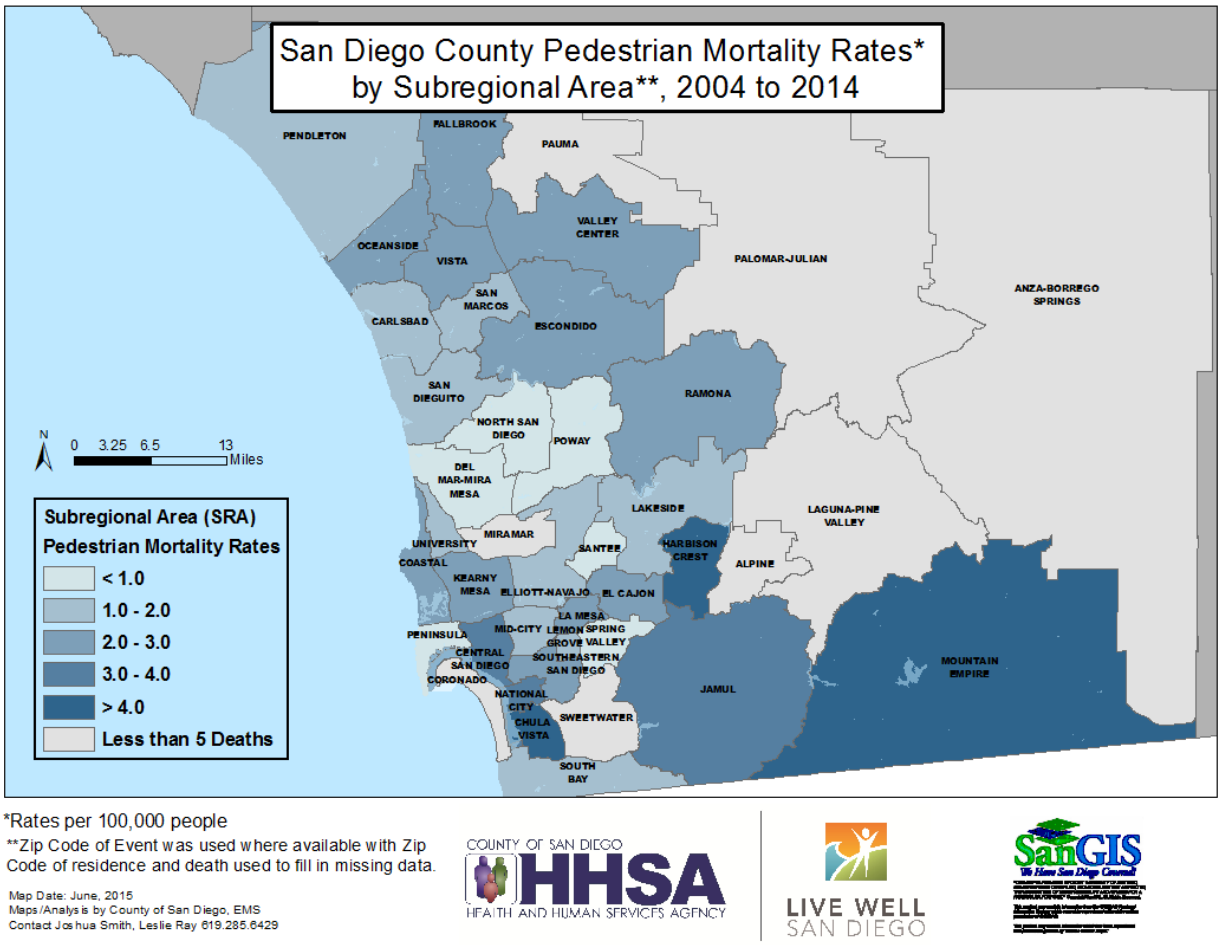
PEDALCYCLIST DEATHS BY AGE AND SEX, 2014



UNINTENTIONAL PEDESTRIAN DEATHS BY AGE AND SEX, 2014



PEDESTRIAN DEATHS PER 100,000 BY SUBREGIONAL AREA, 2004 – 2014



*Rates per 100,000 people

**Zip Code of Event was used where available with Zip Code of residence and death used to fill in missing data.

Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

LIVE WELL SAN DIEGO

SanGIS

0.7	Poway	1.6	South Bay	3.7	Central San Diego
0.8	Peninsula	2.0	Mid-City	3.8	National City
0.8	Spring Valley	2.1	Southeastern San Diego	4.1	Chula Vista
0.9	Santee	2.1	El Cajon	9.2	Mountain Empire
1.0	Del Mar-Mira Mesa	2.1	Fallbrook	11.6	Harbison Crest
1.0	North San Diego	2.3	Ramona	*	Coronado
1.2	San Dieguito	2.4	Oceanside	*	Miramar
1.2	Pendleton	2.4	Escondido	*	Sweetwater
1.3	Carlsbad	2.5	La Mesa	*	Alpine
1.3	San Marcos	2.8	Kearny Mesa	*	Pauma
1.4	Elliott-Navajo	2.8	Coastal	*	Laguna-Pine Valley
1.4	Lakeside	2.8	Valley Center	*	Anza-Borrego Springs
1.5	Lemon Grove	2.9	Vista	*	Palomar-Julian
1.6	University	3.3	Jamul		

*Rates not calculated for fewer than 5 events

UNINTENTIONAL DEATHS DUE TO MEDICATIONS, ALCOHOL, AND ILLICIT DRUGS

The following graphs represent medications, alcohol, and prescription drugs that were either alone or in combination responsible for being the primary cause of death or contributing to the death. In other words, these substances were on the death certificate as having played a role in the death. In this publication, the word “drug” refers to illicit drugs and the word “medication” refers to medications.

In some cases, the intoxication contributed to the circumstances of the death and was required for an explanation of those circumstances, such as drowning in a bathtub while intoxicated (neurologically intact, sober adults should not drown in a bathtub unless they are unwilling or unable to get above the water line). However, in other cases – such as motor vehicle fatalities – although the crash may have been made more likely to occur because of the intoxication, by convention we do not include intoxications as part of the cause of death in these circumstances. The death certificate lists the death as due to the physical injuries.

Where numbers of deaths related to an individual drug or medication are provided, one should not add the values of different substances to reach a total. This is because several medications may be involved in one case. In other words, the same case may be represented multiple times by different drugs or medications.

Some notable trends:

1. 2014 saw an overall decline in this group of deaths compared to 2013, but prescription medication deaths remained relatively flat.

2. The largest groups of medications and drugs were the opiates (heroin, morphine, and related compounds) and benzodiazepines, similar to previous years.

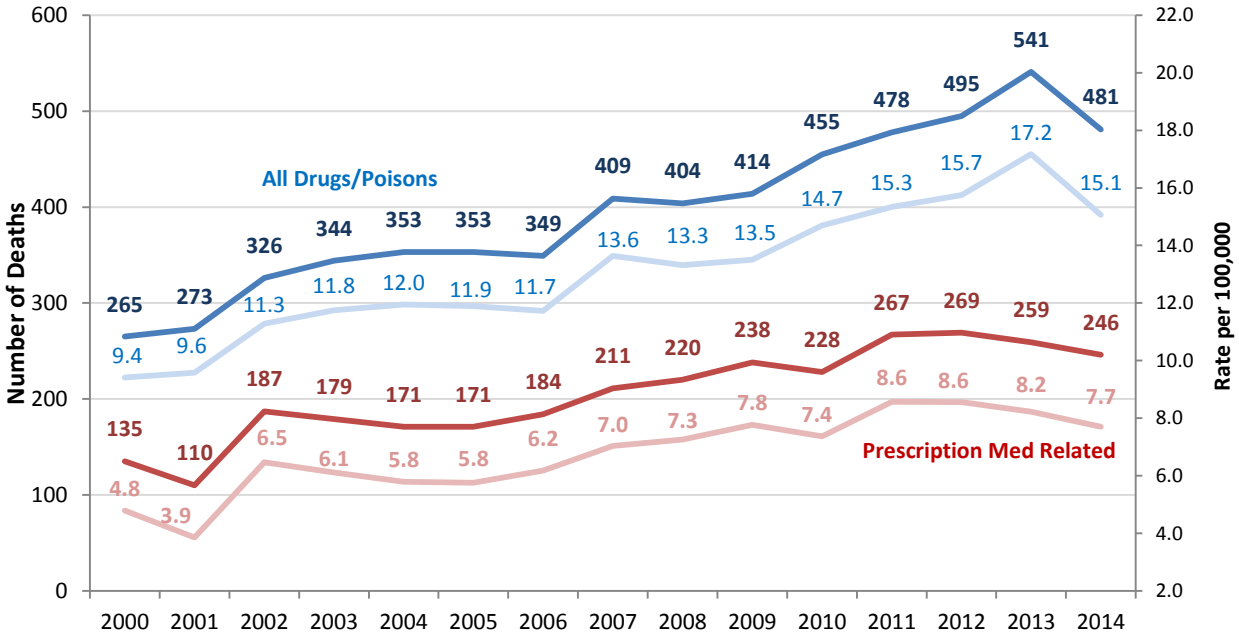
3. Heroin has continued its increase in frequency seen after 2005/2006 and was the most common drug/medication in those between 20 and 39 years of age. Over the last five years, heroin was the most common substance in those 20 – 29 years old.

4. Methamphetamine was still the number one cause of drug/medication-related deaths for the population as a whole. It dropped somewhat from 2013, and was the number one or two ranked substance in those between 20 and 69 years of age.

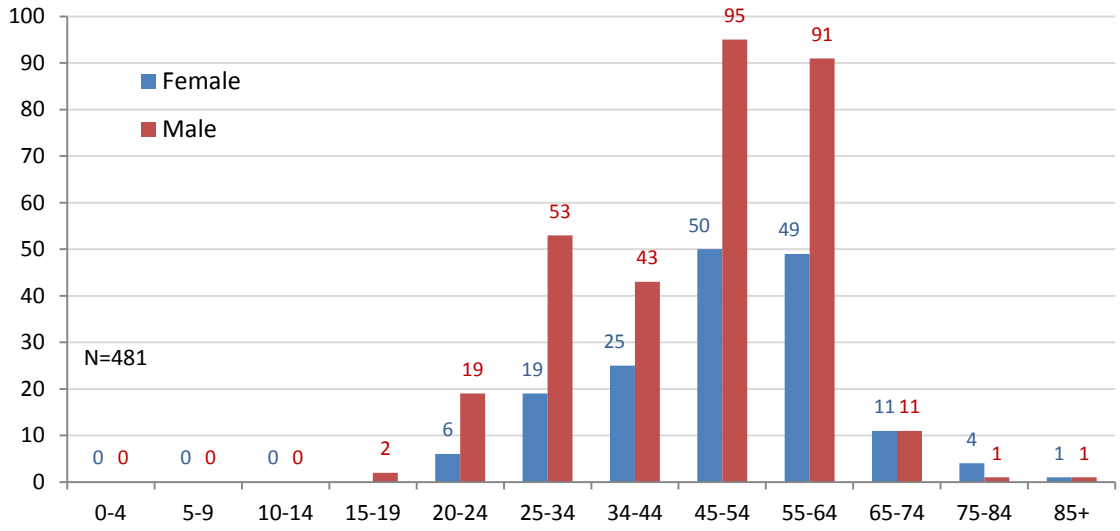
5. The highest rate of drug/medication deaths is between the ages of 45-64, with an approximately 2:1 male:female ratio.

6. There was one death each related to "Bath Salts" and ecstasy in 2014.

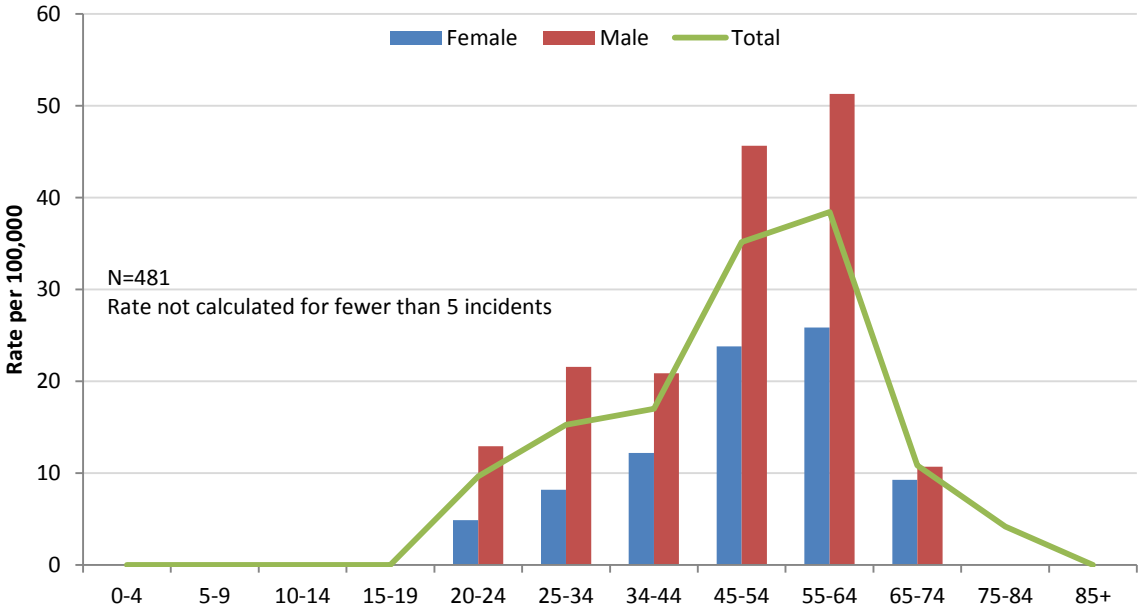
NUMBER OF UNINTENTIONAL DRUG/ALCOHOL RELATED DEATHS, 2000 – 2014



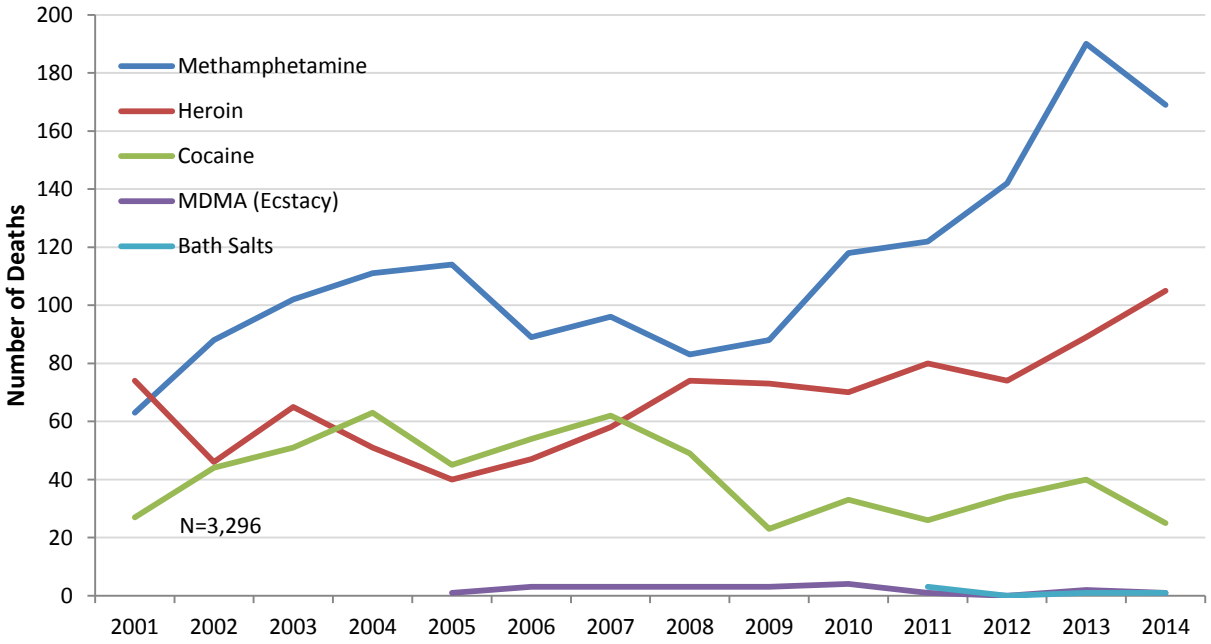
NUMBER OF DRUG/ALCOHOL OVERDOSE DEATHS BY AGE AND SEX, 2014



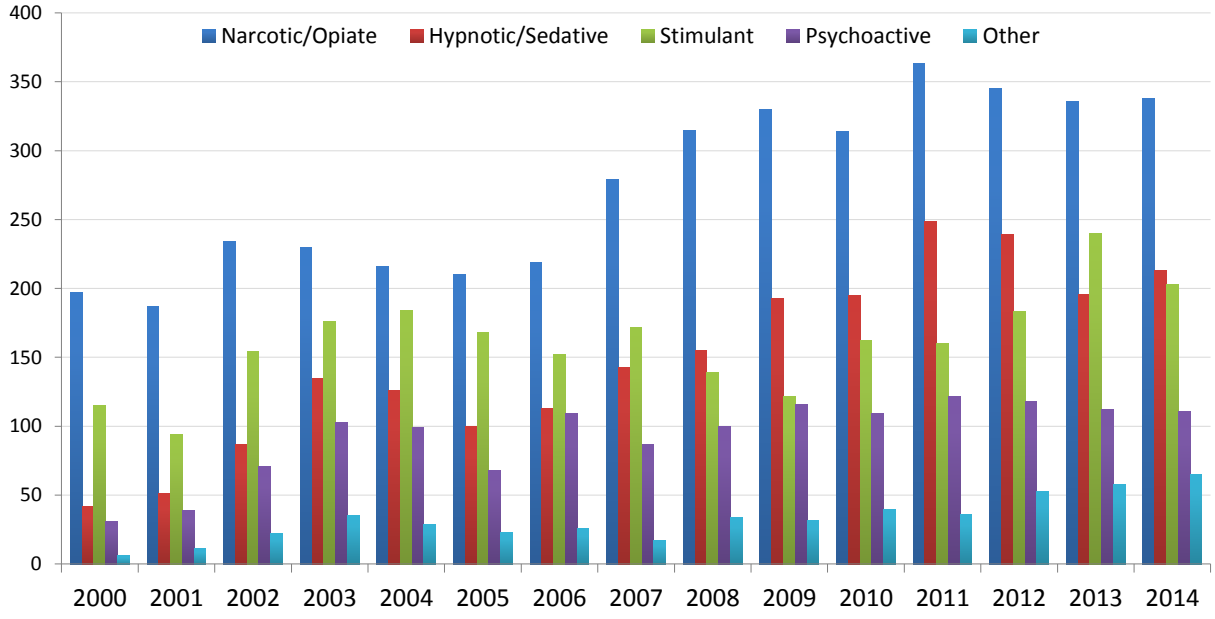
RATES OF DRUG/ALCOHOL OVERDOSE DEATHS BY AGE AND SEX, 2014



UNINTENTIONAL DEATHS RELATED TO ILLICIT DRUGS, 2000 – 2014



UNINTENTIONAL DEATHS DUE TO DRUG/MEDICATIONS, 2000 – 2014



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Narcotic/ Opiate	**197**	**187**	**234**	**230**	**216**	**210**	**219**	**279**	**315**	**330**	**314**	**363**	**345**	**336**	**341**
Hypnotic/ Sedative	**42**	**51**	**87**	**135**	**126**	**100**	**113**	**143**	**155**	**193**	**195**	**249**	**239**	**196**	**213**
Stimulant	**115**	**94**	**154**	**176**	**184**	**168**	**152**	**172**	**139**	**122**	**162**	**160**	**183**	**240**	**202**
Psychoactive	**31**	**39**	**71**	**103**	**99**	**68**	**109**	**87**	**100**	**116**	**109**	**122**	**118**	**112**	**111**
Other	**6**	**11**	**22**	**35**	**29**	**23**	**26**	**17**	**34**	**32**	**40**	**36**	**53**	**58**	**65**

UNINTENTIONAL DEATHS - SELECTED DRUGS & MEDICATIONS, 2000 – 2014

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Methamphetamine	62	63	88	102	111	114	89	96	83	88	118	122	142	190	169
Alcohol	63	80	61	45	58	64	81	84	95	127	132	124	142	127	133
Heroin	57	74	46	65	51	40	47	58	74	73	70	80	74	89	105
Morphine	69	38	81	52	40	45	37	49	33	48	37	38	57	45	31
Cocaine	52	27	44	51	63	45	54	62	49	23	33	26	34	40	25
Diazepam	16	18	34	38	36	28	35	46	50	47	48	40	59	35	33
Methadone	7	10	18	20	29	32	35	43	47	41	53	53	44	47	30
Oxycodone	8	17	21	16	16	19	17	45	52	43	48	65	59	49	71
Hydrocodone	10	14	23	23	26	21	32	28	34	44	37	52	49	48	34
Diphenhydramine	2	5	14	13	14	10	14	21	17	21	21	30	25	30	26
Alprazolam		5	1	7	6	15	13	13	15	23	28	52	55	27	30
Tramadol	5	5	2	10	8	2	4	8	4	10	17	16	19	19	20
Fentanyl	7	5	9	9	8	19	23	20	23	23	12	14	12	14	16
MDMA (Ecstasy)	1			1		1	3	3	3	3	5	1		2	1
Phencyclidine (PCP)										1				2	1
Bath Salts												3		1	1
Other Synthetics														1*	1*

*2013: one case with both methoxetamine (a derivative of ketamine) and AH-7921 (opioid). 2014: one case of methoxyphencyclidine (4-MeO-PCP or methoxydine)

2014 UNINTENTIONAL DRUG/MED/ALCOHOL DEATHS BY COMBINATION

Illicit	166
Prescription	124
Prescription and Alcohol	45
Prescription	43
Prescription and Illicit	42
Illicit and Alcohol	23
Prescription, Illicit and alcohol	20
Prescription and OTC	11
Other	7
Prescription, alcohol and OTC	2
OTC	1
Illicit and Other	1
Prescription, Illicit and OTC	1
Illicit and OTC	1
Prescription and Other	1

Note: includes all medication/alcohol/drug-related deaths whether the substance(s) were the primary cause of death or contributory to the death. Illicit – heroin, cocaine, ecstasy, methamphetamine, PCP, synthetics above. Prescription – medications *normally* obtained by prescription. OTC – over the counter medications. Other includes six difluoroethane deaths and one ethylchloride death.

RELATIVE FREQUENCY OF SUBSTANCES IN CAUSE OF DEATH BY AGE, 2014

	10-19	20-29	30-39	40-49	50-59	60-69
1	Oxycodone (2)	Heroin (28)	Heroin (31)	Alcohol (35)	Methamphetamine (80)	Methamphetamine (21)
2	Alprazolam (1) Codeine (1)	Methamphetamine (18)	Methamphetamine (21)	Methamphetamine (28)	Alcohol (51)	Alcohol (12)
3		Alcohol (14)	Alcohol (18)	Heroin (18)	Oxycodone (29)	Oxycodone (11)
4		Oxycodone (9)	Oxycodone (11)	Gabapentin (10)	Heroin (21)	Morphine (8)
5		Opiate, NOS (7) Alprazolam (7) Cocaine (7)	Cocaine (7)	Oxycodone (9)	Hydrocodone (16)	Heroin 6) Hydromorphone (6) Diazepam (6) Diphenhydramine (6)
6		Methadone (5) Hydrocodone (5) Benzodiazepine (5)	Alprazolam (6)	Methadone (7)	Diazepam (14)	Trazodone (5) Gabapentin (5) Hydrocodone (5)

RELATIVE FREQUENCY OF SUBSTANCES IN CAUSE OF DEATH BY AGE, 5 YEAR CUMULATIVE, 2000-2014

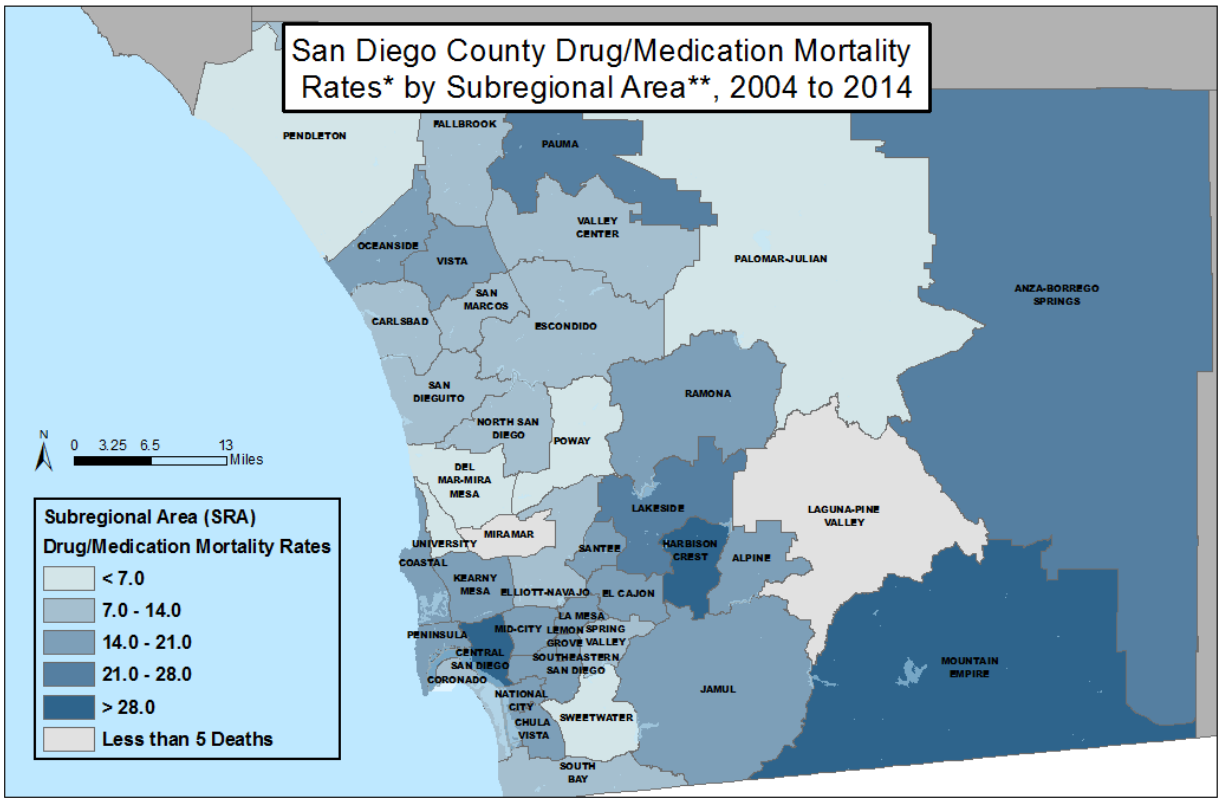
	10-19	20-29	30-39	40-49	50-59	60-69
1	Methamphetamine (12)	Heroin (88)	Methamphetamine (111)	Methamphetamine (182)	Methamphetamine (279)	Alcohol (86)
2	Alcohol (7) Oxycodone (7)	Methamphetamine (80)	Alcohol (100)	Alcohol (159)	Alcohol (223)	Methamphetamine (67)
3	Heroin (6)	Alcohol (64)	Heroin (89)	Heroin (88)	Heroin (111)	Oxycodone (36)
4	Alprazolam (5)	Alprazolam (39)	Oxycodone (48)	Oxycodone (62)	Oxycodone (110)	Hydrocodone (34)
5	Hydrocodone (4)	Cocaine (30)	Alprazolam (40)	Morphine (59) Methadone (59)	Diazepam (85)	Methadone (32) Heroin (32)
6	Methadone (3) Citalopram (3)	Methadone (26)	Methadone (33)	Diazepam (58)	Hydrocodone (70) Morphine (70) Methadone (70)	Morphine (29)

MOST FREQUENT DRUG/MEDICATION UNINTENTIONAL DEATHS BY AGE, 2014

Substance	15-19	20-24	25-34	34-44	45-54	55-64	65+	Total
Methamphetamine		6	21	24	53	61	4	169
Alcohol		9	14	16	59	29	6	133
Heroin		13	38	13	27	13	1	105
Oxycodone	2	4	8	10	18	22	7	71
Hydrocodone		2	5	4	8	14	1	34
Diazepam		2	6	1	12	12		33
Morphine		2	2	3	7	13	4	31
Alprazolam	1	3	7	3	5	10	1	30
Methadone		1	8	4	9	6	2	30
Gabapentin			3	4	11	5	5	28
Diphenhydramine		1	4	2	8	9	3	26
Cocaine		2	9	3	5	3	3	25
Benzodiazepine		2	4	3	6	5	1	21
Tramadol			5	2	4	6	3	20
Quetiapine			3	2	10	3	1	19
Trazodone			1		4	9	3	17
Carisoprodol		1	1	4	5	5		16
Fentanyl		1	1	1	4	6	3	16
Opiate		4	3	2	5	1		15
Clonazepam		1	3	2	6	2		14
Citalopram					4	5	3	12
Chlordiazepoxide			2	1	8	1		12
Fluoxetine			4	1	2	3	1	11
Hydromorphone				1	3	7		11
Temazepam			2	3	3	1	1	10

Note: Because an individual case may be due to a combination of medications, the medications are not mutually exclusive.

DRUG/MEDICATION-RELATED DEATH RATES BY SUBREGIONAL AREA: 2004 – 2014



*Rates per 100,000 people

**Zip Code of Residence was used where available with Zip Code of event and death used to fill in missing data.

Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

LIVE WELL SAN DIEGO

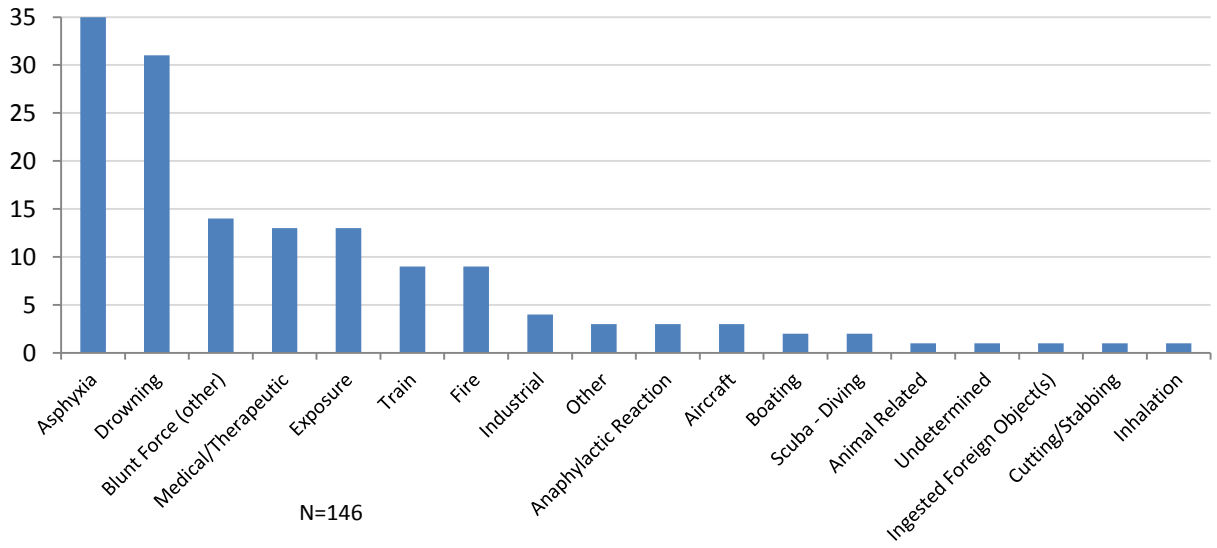
SanGIS We Know San Diego County

1.9	Pendleton	13.1	Fallbrook	16.9	La Mesa
2.3	Sweetwater	13.4	Spring Valley	17.3	Kearny Mesa
4.5	Del Mar-Mira Mesa	13.9	Escondido	17.9	Alpine
4.6	University	14.1	El Cajon	18.7	Lemon Grove
5.4	Poway	15.0	Ramona	18.9	Jamul
7.0	Palomar-Julian	15.2	Peninsula	21.8	Lakeside
7.3	North San Diego	15.6	Oceanside	22.2	Pauma
8.3	Carlsbad	16.0	Southeastern San Diego	26.9	Anza-Borrego Springs
8.4	Elliott-Navajo	16.1	Mid-City	34.8	Central San Diego
8.9	San Dieguito	16.1	National City	40.7	Mountain Empire
9.4	Coronado	16.3	Santee	93.0	Harbison Crest
10.6	San Marcos	16.3	Vista	*	Laguna-Pine Valley
12.9	Valley Center	16.7	Coastal	*	Miramar
13.0	South Bay	16.8	Chula Vista		

*Rates not calculated for fewer than 5 events

UNINTENTIONAL DEATHS, OTHERS

OTHER ACCIDENTAL MANNERS OF DEATH, 2014

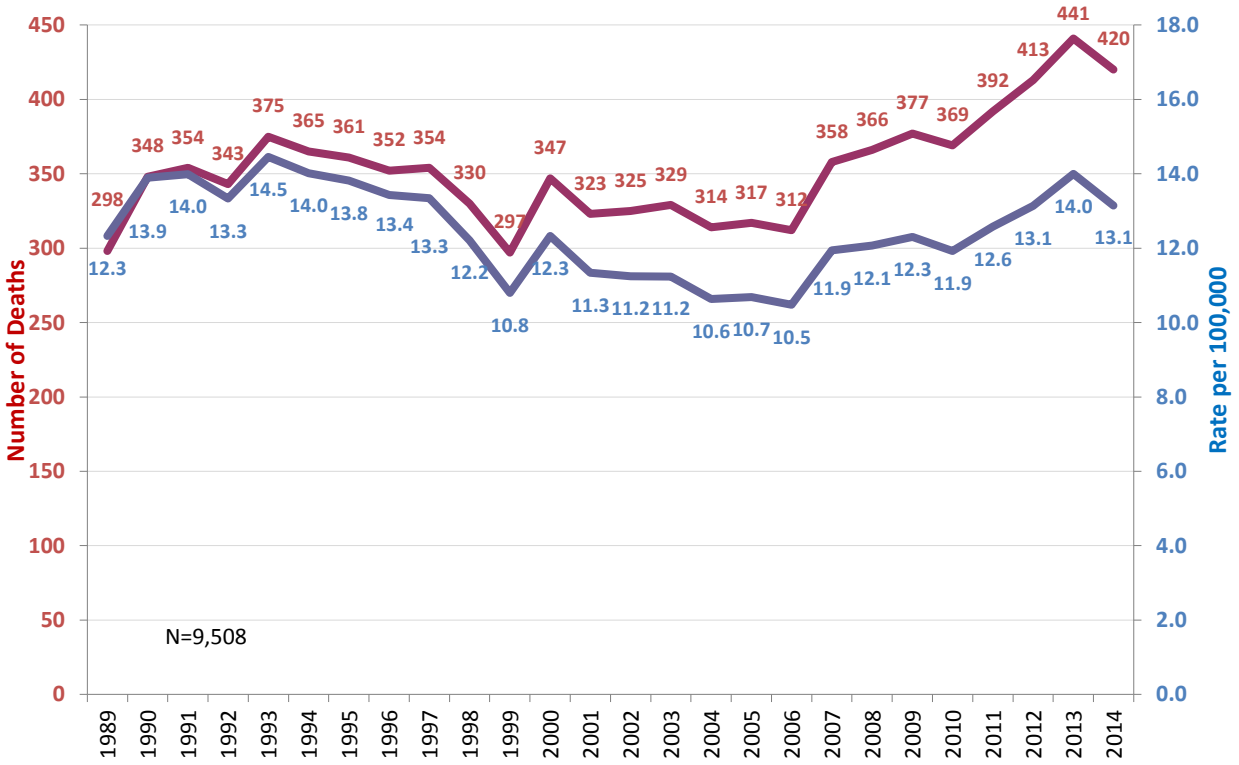


OTHER MECHANISMS OF ACCIDENTAL DEATH: AGE GROUP BY MECHANISM, 2014

	0-14	15-24	25-34	35-44	45-54	55-64	65+	Unk	Total
Asphyxia	8		3	2	1	4	19		37
Blunt Force (other)		1			2	4	6	1	14
Drowning	8	3	2	5		5	8		31
Exposure		2			3	3	5		13
Fire						2	7		9
Medical/Therapeutic				2		3	8		13
Other	1	2	1	1	3	2	10		20
Train		2		2	2	2	1		9

SUICIDES

SUICIDES BY YEAR: 1988 – 2014



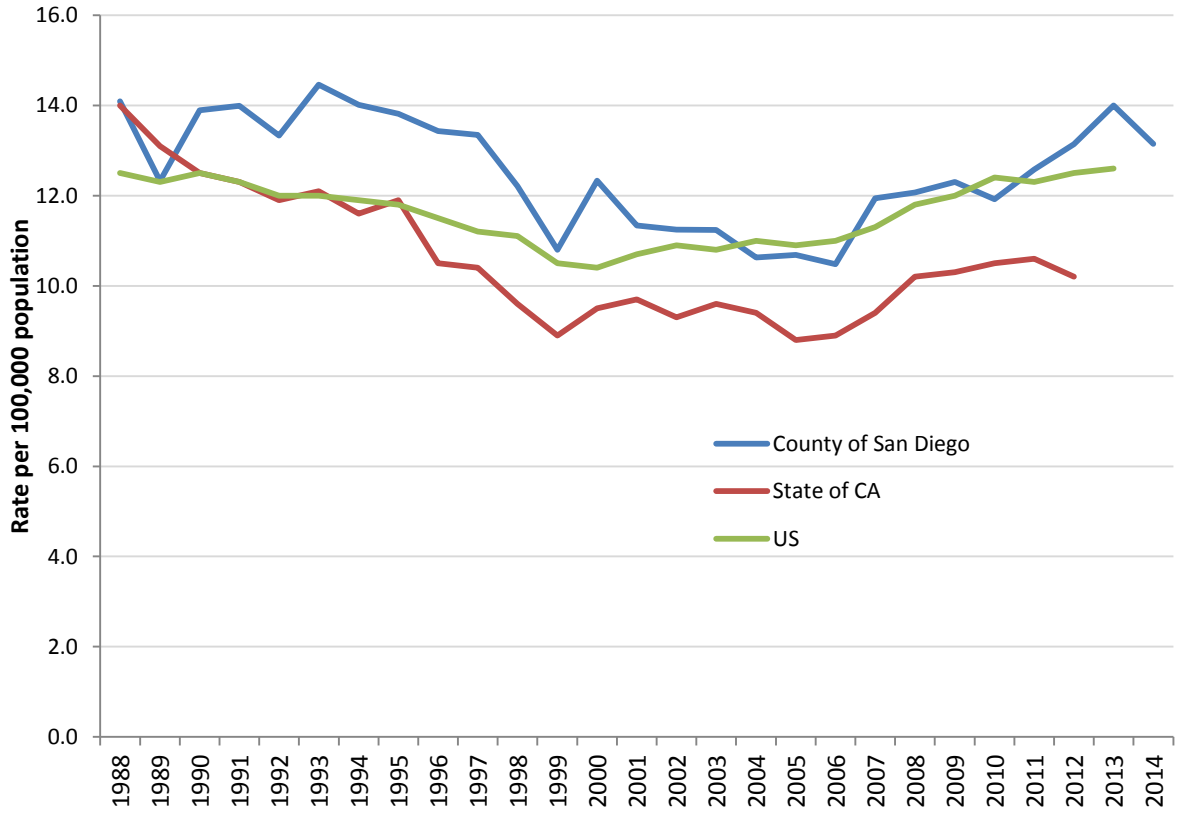
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number	**328**	**298**	**348**	**354**	**343**	**375**	**365**	**361**	**352**	**354**	**330**	**297**
Rate/100,000	**14.1**	**12.3**	**13.9**	**14.0**	**13.3**	**14.5**	**14.0**	**13.8**	**13.4**	**13.3**	**12.2**	**10.8**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Number	**347**	**323**	**325**	**329**	**314**	**317**	**312**	**358**	**366**	**377**	**369**	**392**
Rate/100,000	**12.3**	**11.3**	**11.2**	**11.2**	**10.6**	**10.7**	**10.5**	**11.9**	**12.1**	**12.3**	**11.9**	**12.6**

	2012	2013	2014
Number	**413**	**441**	**420**
Rate/100,000	**13.1**	**14.0**	**13.1**

In 2013 data from the Centers for Disease Control and Prevention (CDC), which is the most recent available, the national rate of suicide was highest among adults aged 45 to 64 years at 19.1 per 100,000 people. In 2014, the highest rate of suicide was in men over 85, at 31 per 100,000.

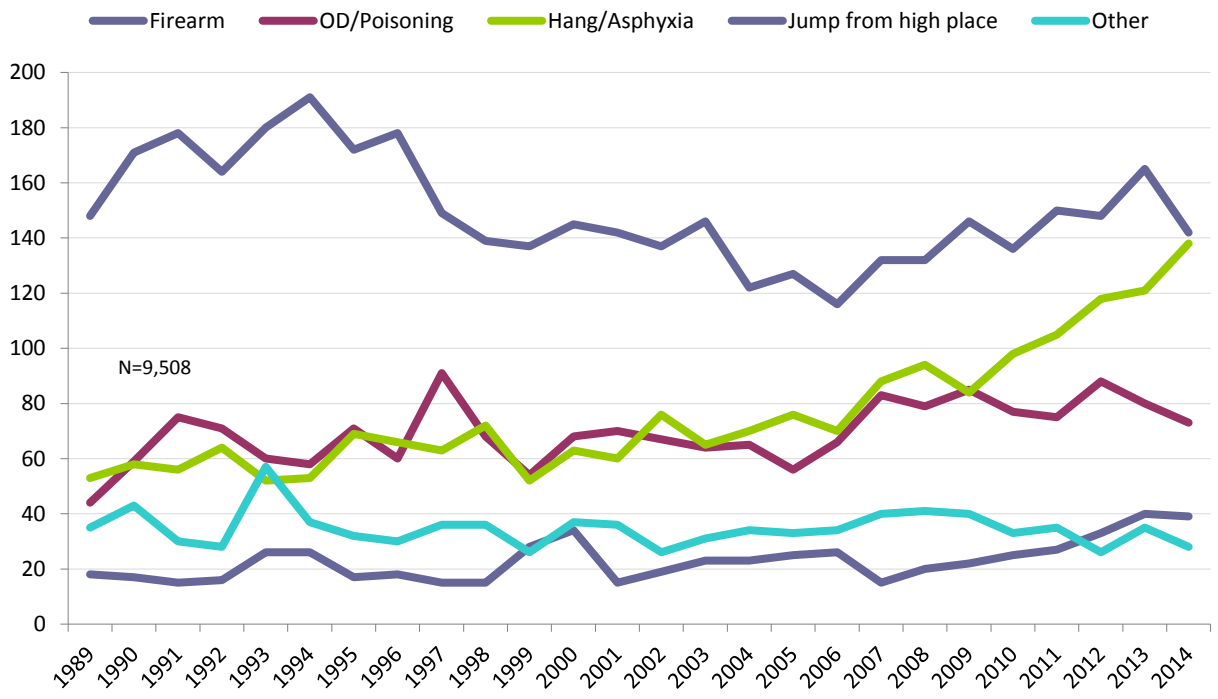
SUICIDE RATES BY YEAR: COUNTY, STATE, AND NATIONAL COMPARISON



Historically, suicide rates have followed national rates. However, San Diego County has a rate higher than that of California as a whole.

Sources: Centers for Disease Control and Prevention (CDC) data on American Foundation for Suicide Prevention website http://www.afsp.org/understanding-suicide/facts-and-figures accessed June 2, 2015. California Department of Public Health website; *Suicide Deaths, California* (various years), http://www.cdph.ca.gov/programs/OHIR/Pages/OHIRreports.aspx#s, accessed June 16, 2015.

SUICIDE METHOD BY YEAR: 1988 - 2014

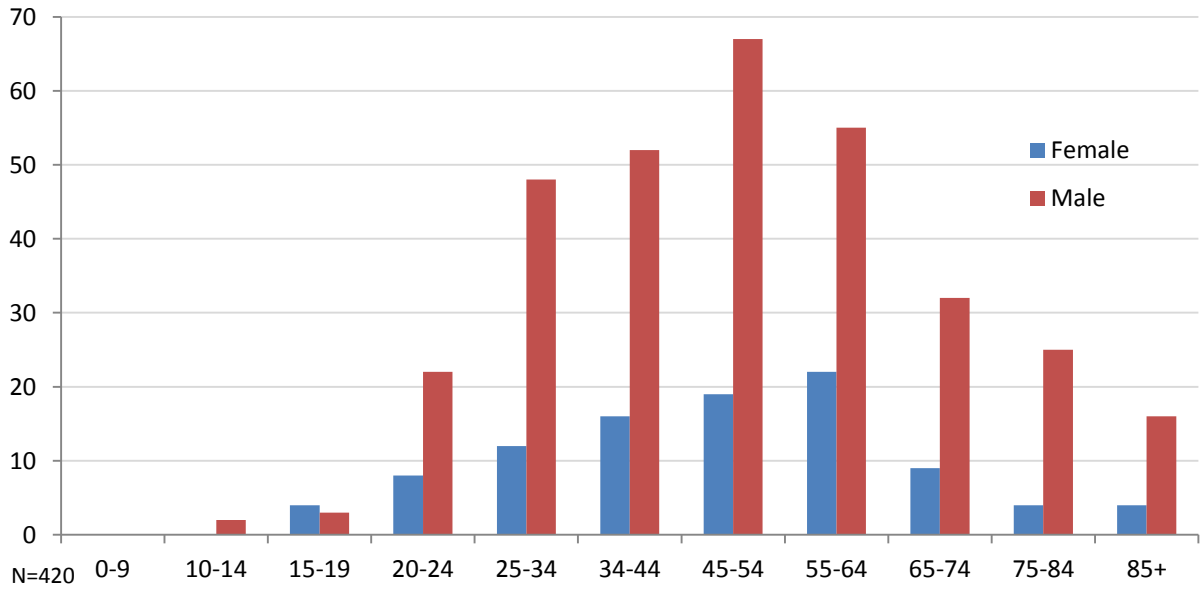


	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Firearm	**179**	**148**	**171**	**178**	**164**	**180**	**191**	**172**	**178**	**149**	**139**	**137**
OD/Poisoning	**42**	**44**	**59**	**75**	**71**	**60**	**58**	**71**	**60**	**91**	**68**	**54**
Hang/Asphyxia	**53**	**53**	**58**	**56**	**64**	**52**	**53**	**69**	**66**	**63**	**72**	**52**
Jump	**19**	**18**	**17**	**15**	**16**	**26**	**26**	**17**	**18**	**15**	**15**	**28**
Other	**35**	**35**	**43**	**30**	**28**	**57**	**37**	**32**	**30**	**36**	**36**	**26**

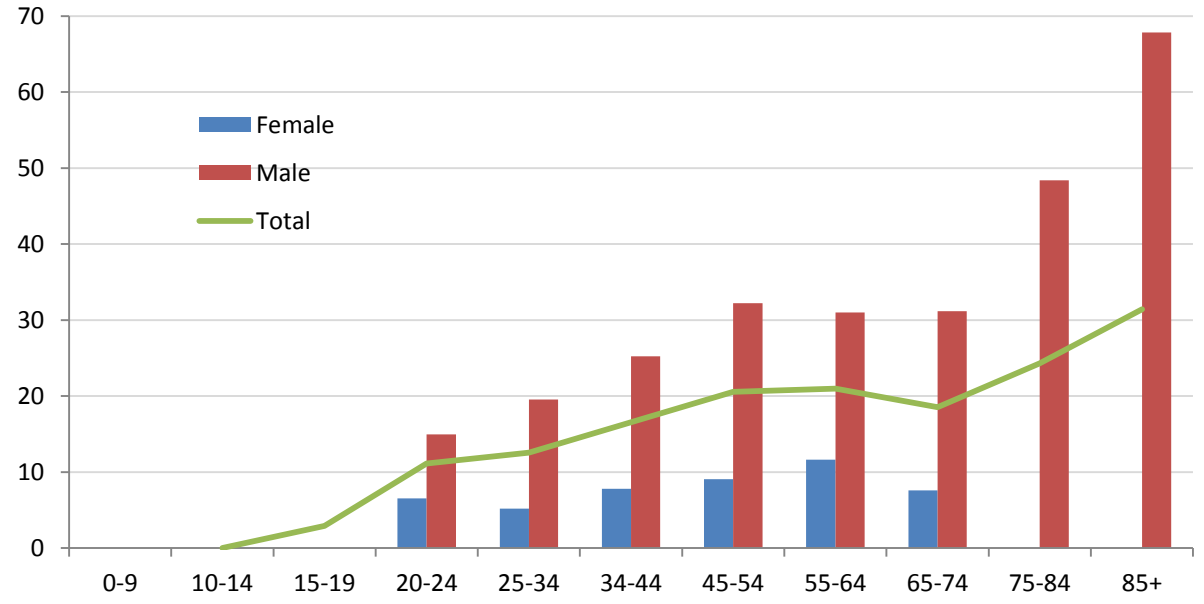
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Firearm	**145**	**142**	**137**	**146**	**122**	**127**	**116**	**132**	**132**	**146**	**136**	**150**
OD/Poisoning	**68**	**70**	**67**	**64**	**65**	**56**	**66**	**83**	**79**	**85**	**77**	**75**
Hang/Asphyxia	**63**	**60**	**76**	**65**	**70**	**76**	**70**	**88**	**94**	**84**	**98**	**105**
Jump	**34**	**15**	**19**	**23**	**23**	**25**	**26**	**15**	**20**	**22**	**25**	**27**
Other	**37**	**36**	**26**	**31**	**34**	**33**	**34**	**40**	**41**	**40**	**33**	**35**

	2012	2013	2014
Firearm	**148**	**165**	**143**
OD/Poisoning	**88**	**80**	**73**
Hang/Asphyxia	**118**	**121**	**138**
Jump	**33**	**40**	**39**
Other	**26**	**35**	**27**

NUMBER OF SUICIDES INVESTIGATED BY AGE AND SEX, 2014



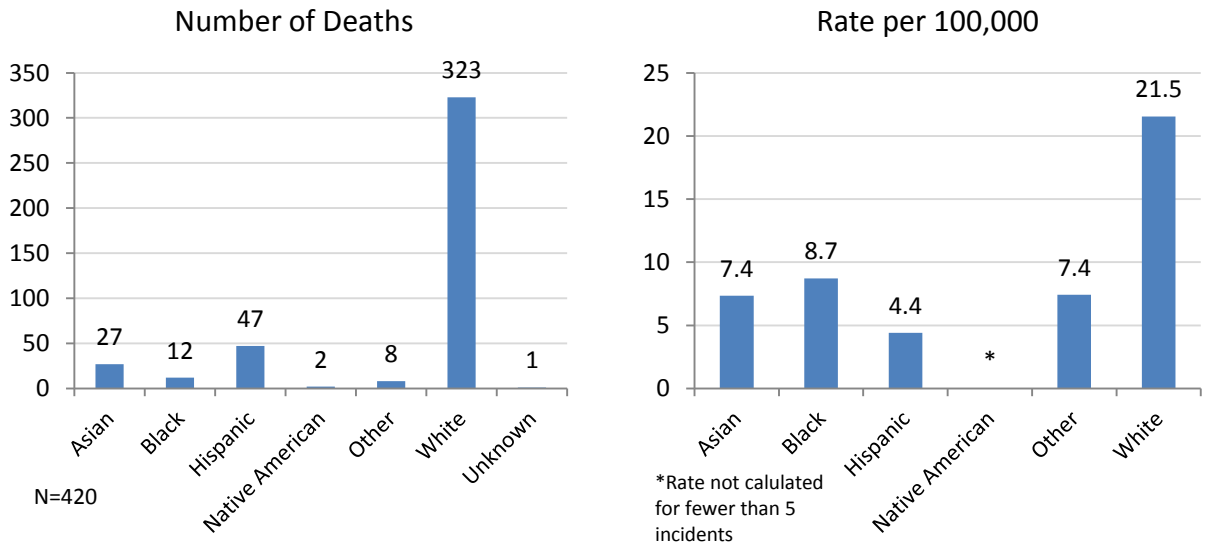
SUICIDE RATES BY AGE AND GENDER, 2014



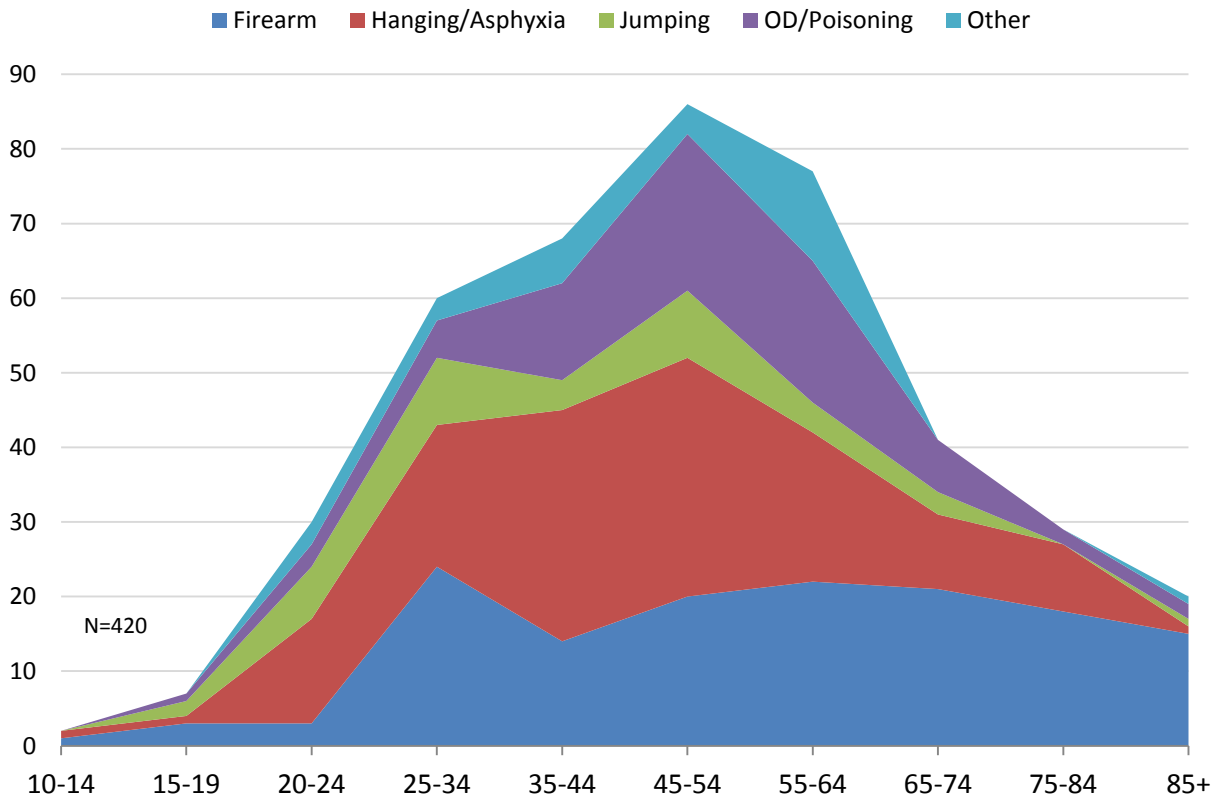
Rates not calculated for fewer than 5 incidents

Historically, the highest suicide rate has been among men 85 years and older. In 2014, men over 75 had the highest rate of suicide.

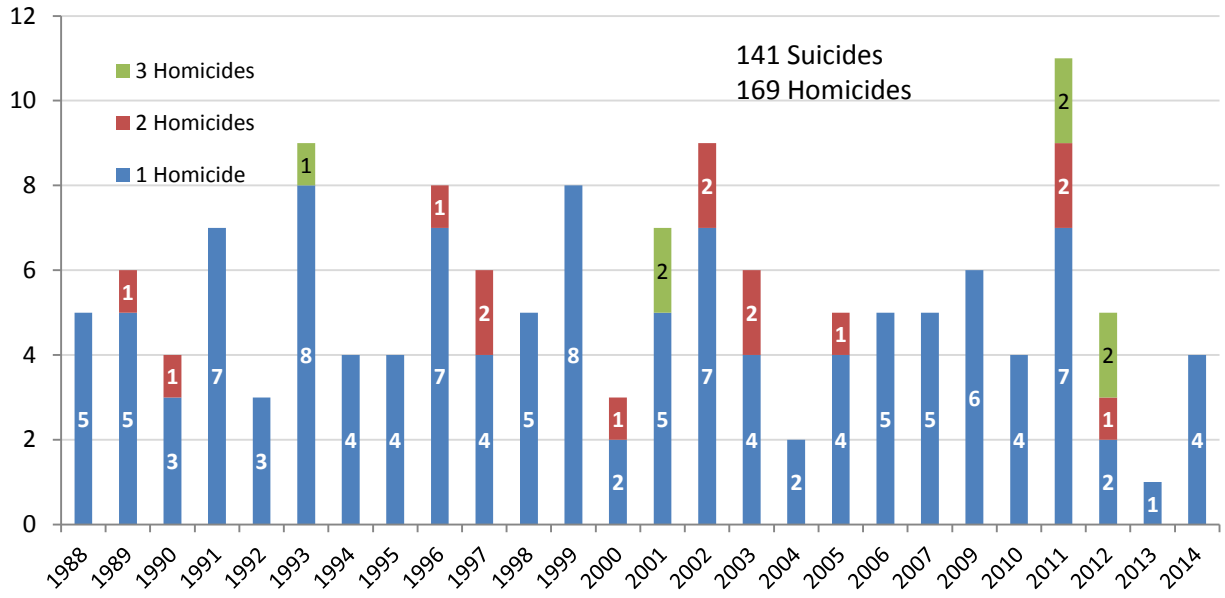
SUICIDE NUMBERS AND RATES BY ETHNICITY, 2014



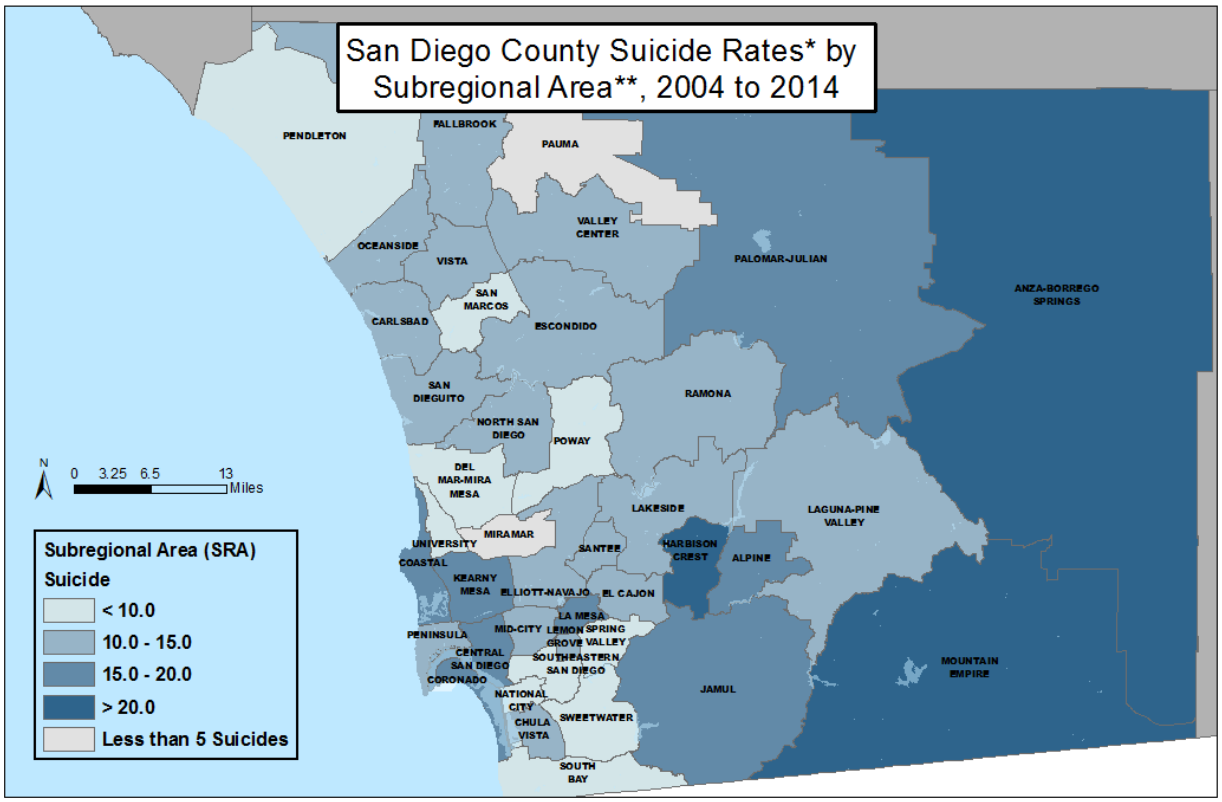
SUICIDE DEATHS BY AGE AND MECHANISM, 2014



HOMICIDE/SUICIDE EVENTS, 1988 – 2014



SUICIDE RATE PER 100,000 BY SUBREGIONAL AREA, 2004 – 2014



*Rates per 100,000 people

**Zip Code of Residence was used where available with Zip Code of event and death used to fill in missing data.

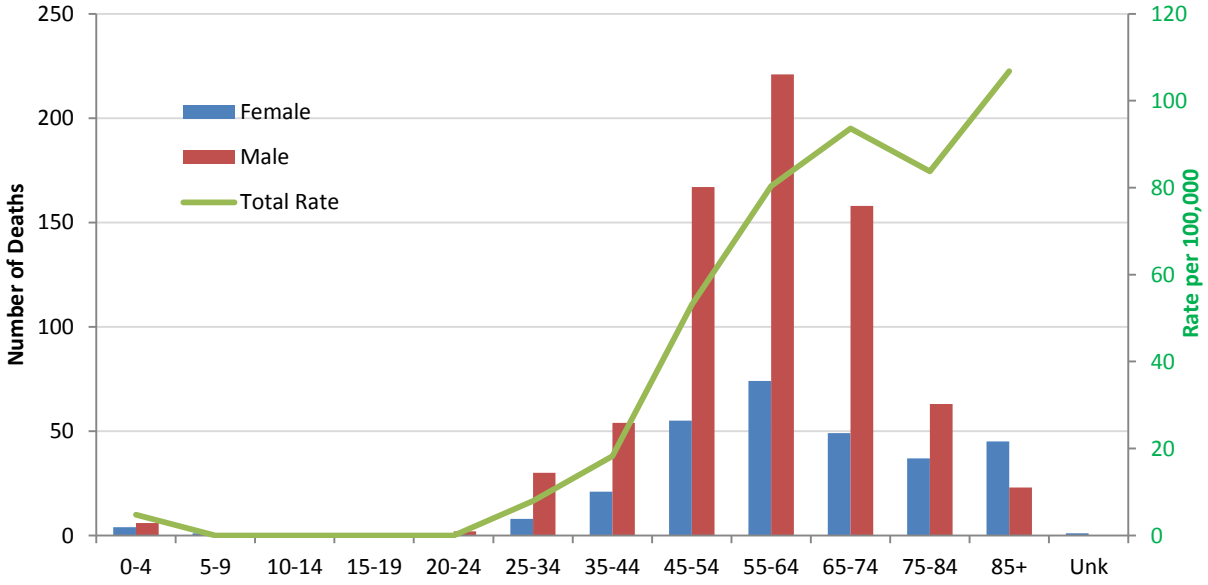
Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

2.3	Pendleton	11.2	El Cajon	15.6	Jamul
5.2	Sweetwater	11.8	Mid-City	16.4	Coronado
7.2	Southeastern San Diego	11.8	Lemon Grove	16.7	Coastal
7.2	Del Mar-Mira Mesa	11.9	Ramona	17.1	La Mesa
7.8	National City	12.2	Elliott-Navajo	17.5	Kearny Mesa
8.3	South Bay	12.4	Lakeside	18.5	Alpine
8.3	Spring Valley	12.8	Santee	19.5	Palomar-Julian
9.1	University	12.9	Escondido	19.8	Central San Diego
9.1	Poway	12.9	Valley Center	36.8	Mountain Empire
9.2	San Marcos	13.4	Peninsula	44.3	Anza-Borrego Springs
10.2	North San Diego	13.8	Oceanside	60.2	Harbison Crest
10.3	Chula Vista	14.3	Vista	*	Miramar
10.3	San Dieguito	14.6	Fallbrook	*	Pauma
10.7	Carlsbad	14.7	Laguna-Pine Valley		

*Rates not calculated for fewer than 5 events

NATURAL DEATHS

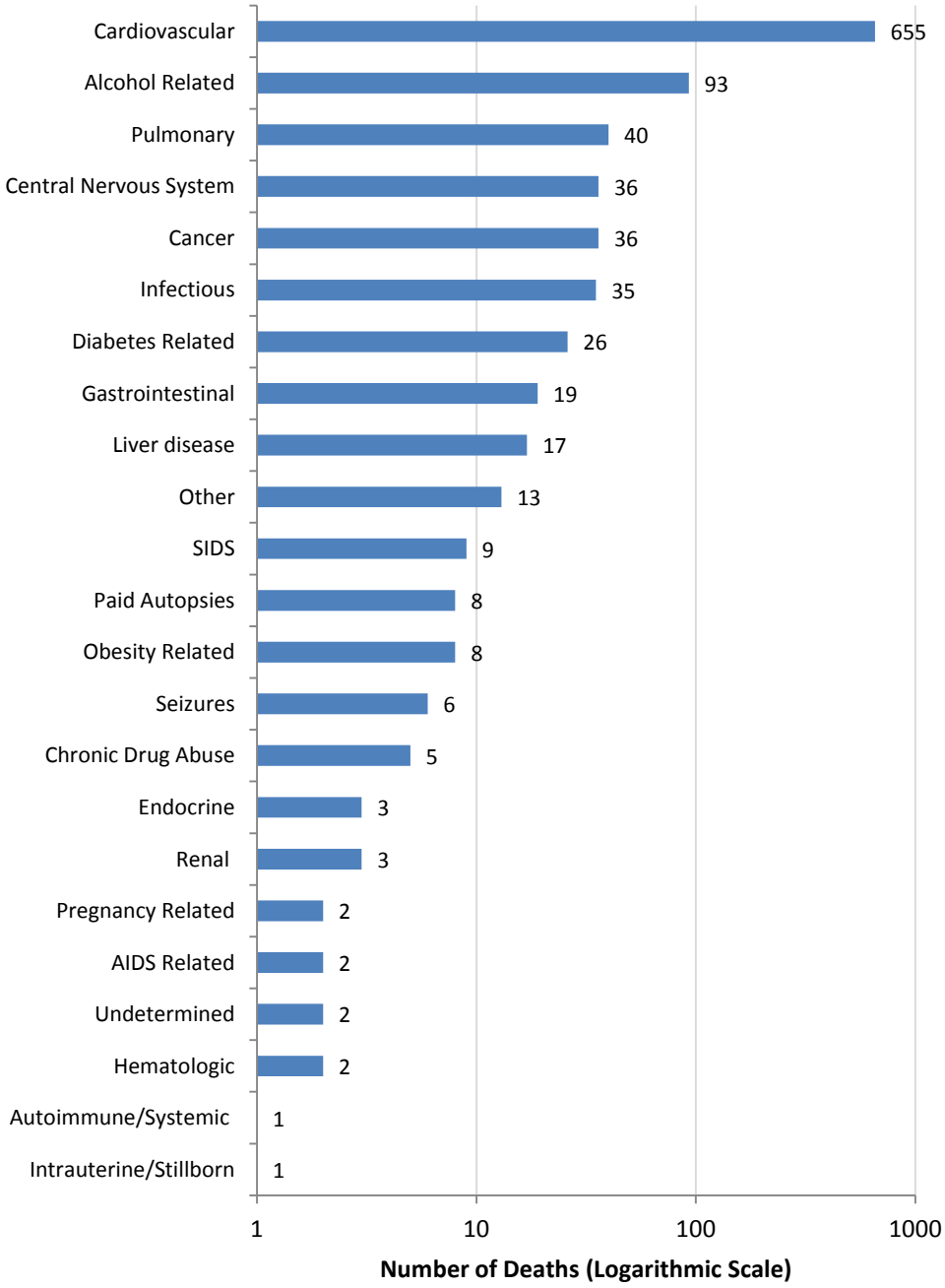
DEATHS DUE TO NATURAL CAUSES BY AGE AND SEX AND TOTAL RATE, 2014



N=1,022; Rate not calculated for fewer than 5 incidents

The peak rate in individuals between 55 and 64 years old represents a bias in Medical Examiner cases towards sudden and unexpected natural deaths, often due to undiagnosed fatal disease in middle-aged adults.

DEATHS FROM NATURAL CAUSES BY TYPE, 2014

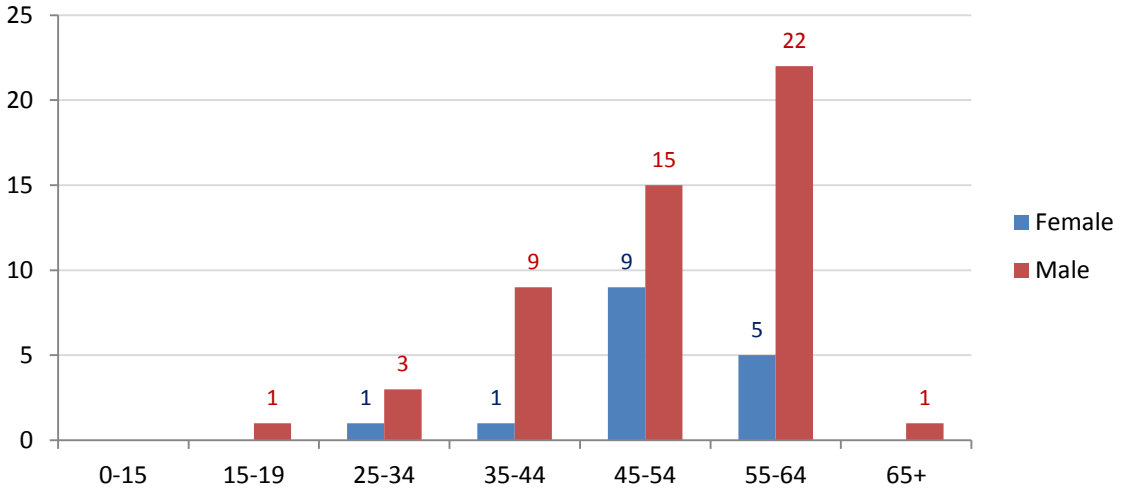


N=1,022
Represents natural deaths in which Medical Examiner jurisdiction was taken. These cases represent approximately 5% of all natural deaths in the County of San Diego.

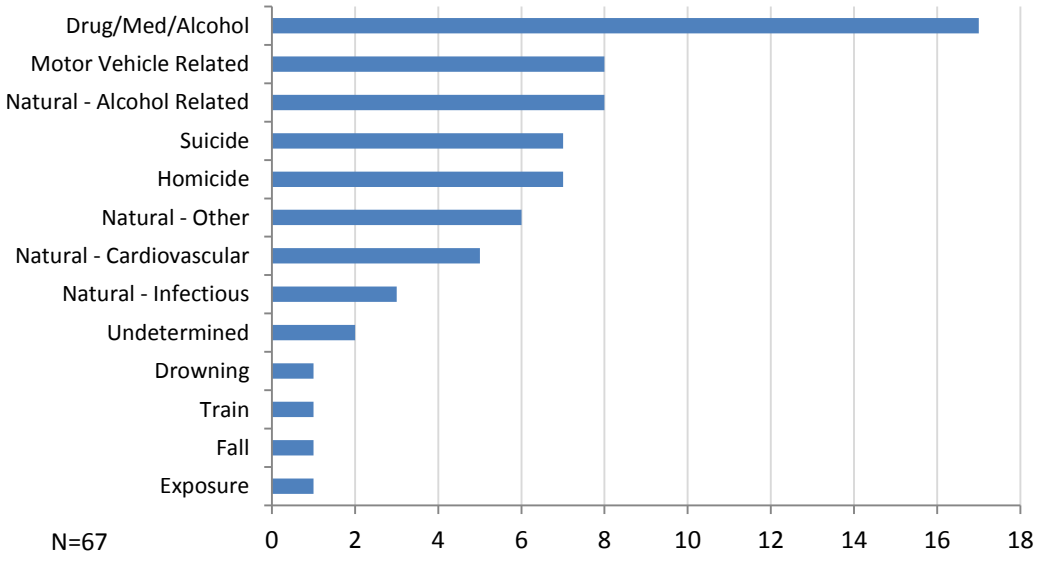
HOMELESS

According to the 2014 San Diego Regional Homeless Profile, 8,506 homeless individuals were identified in the County by the Point-in-Time Count conducted by the Regional Task Force on the Homeless (www.rtfhsd.org) in January, 2014.

DEATHS IN THE HOMELESS BY AGE AND SEX, 2014



DEATHS IN THE HOMELESS, 2014



PEDIATRIC DEATHS & SIDS

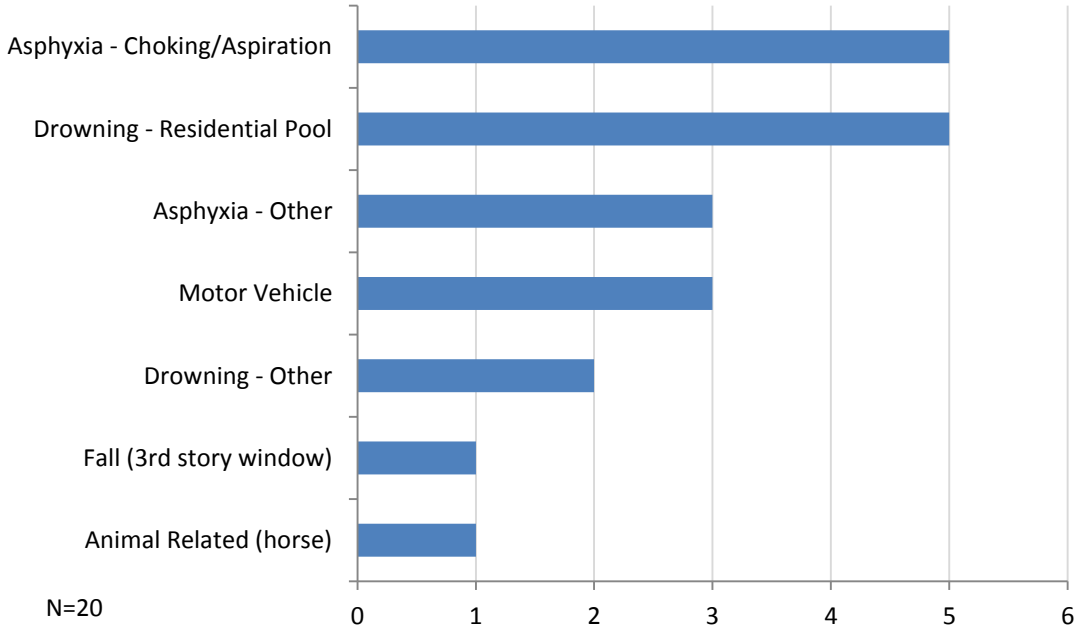
PEDIATRIC DEATHS BY AGE AND MANNER OF DEATH, 2014

Age	Accident	Homicide	SIDS	Other Natural	Suicide	Undetermined	Total
<1	4	1	9	5		5	24
1	5	1		1		1	8
2	3					1	4
3	1	1					2
4	1						1
5	1						1
6	1						1
7				1			1
8	2						2
9	1						1
10							0
11	1						1
12					2		2
13				1			1
14	1						1
15	3				1		4
16	2			1	1		4
17	2				2		4
Total	28	3	9	9	6	7	62

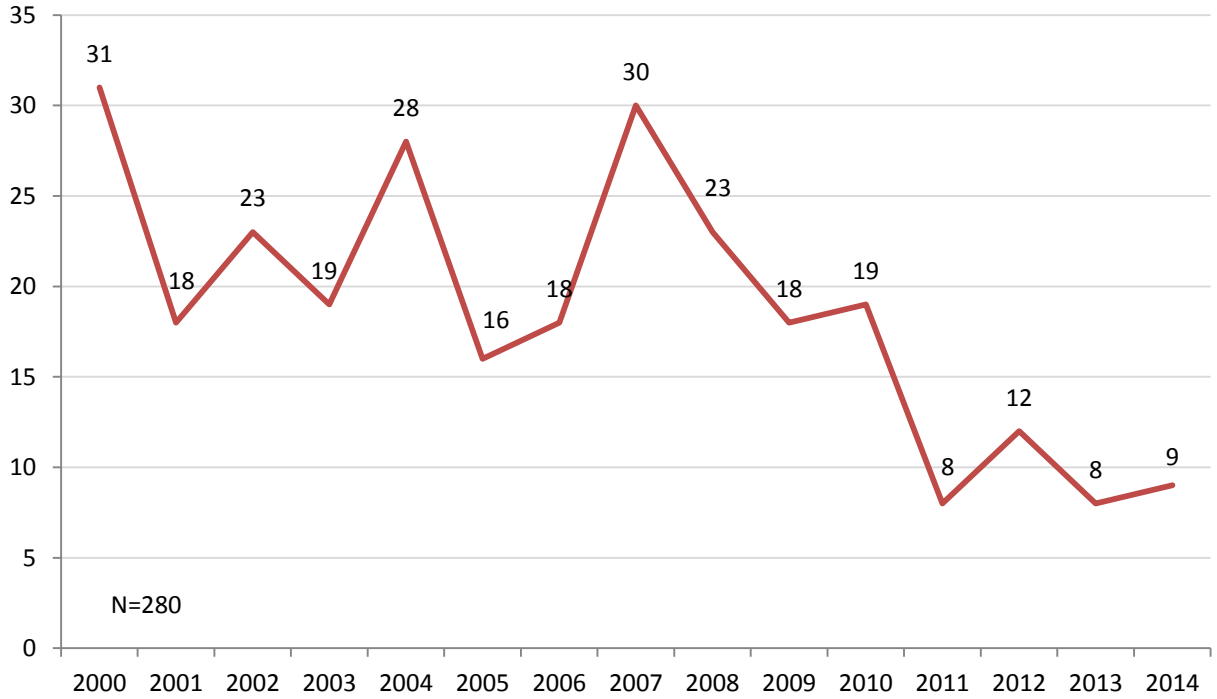
*There were 7 cases certified with a manner undetermined. They were as follows:

Undetermined Type	Number
Bed sharing	4
Undetermined	1
Sudden unexplained death in infancy	1
Blunt force head trauma	1

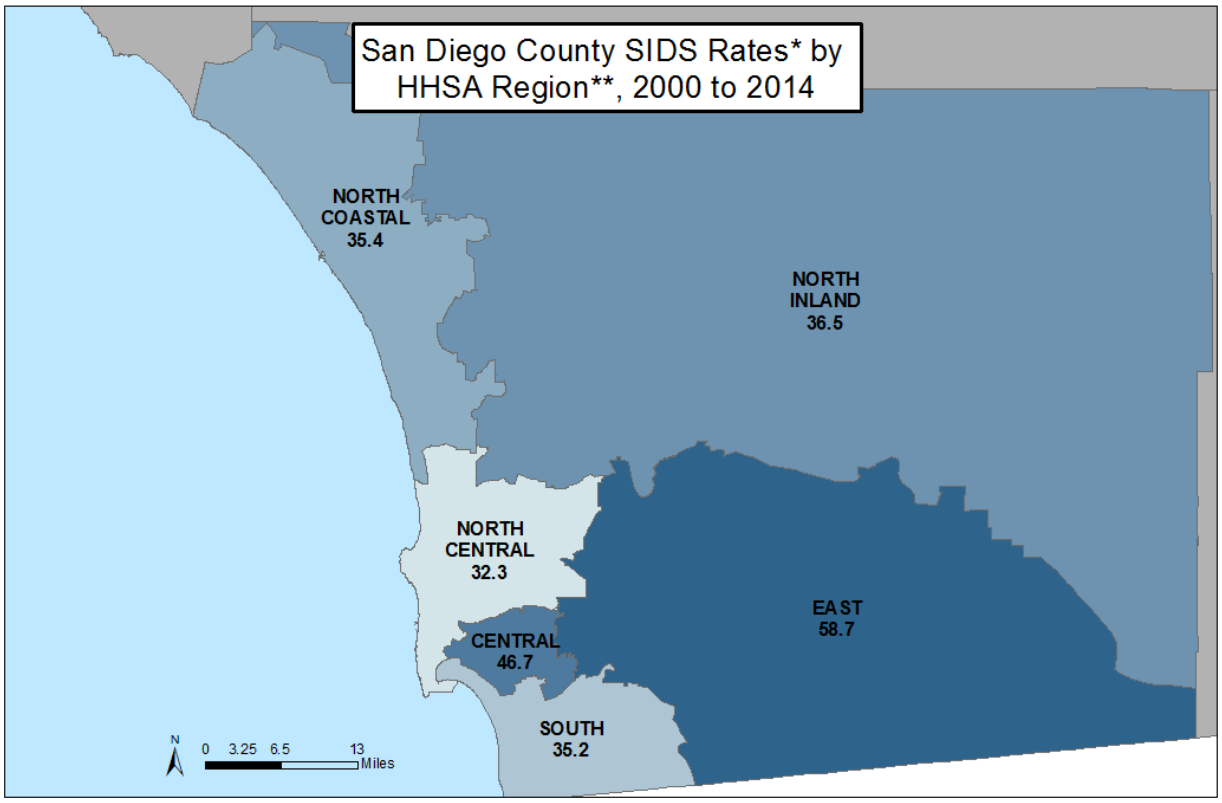
ACCIDENTAL DEATHS AGE 0 TO 13 BY MECHANISM, 2014



SIDS DEATHS BY YEAR, 2000 – 2014



SIDS DEATH RATES BY REGIONAL AREA, 2000 – 2014



*Rates per 100,000 Infants less than 1 year of age

**Zip Code of Residence was used where available with Zip Code of event and death used to fill in missing data.

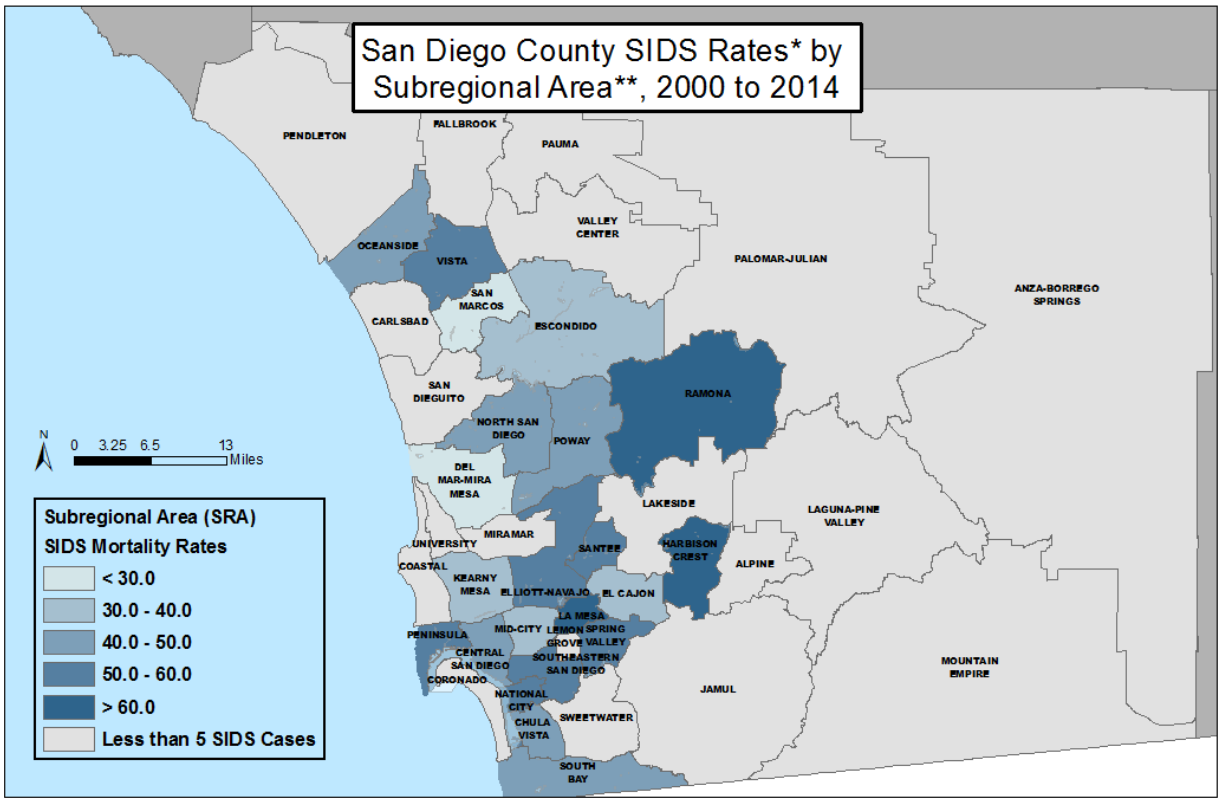
Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

LIVE WELL SAN DIEGO

SanGIS

SIDS DEATH RATES BY SUBREGIONAL AREA, 2000 – 2014



*Rates per 100,000 Infants less than 1 year of age
**Zip Code of Residence was used where available with Zip Code of event and death used to fill in missing data.

Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
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COUNTY OF SAN DIEGO HHSA HEALTH AND HUMAN SERVICES AGENCY

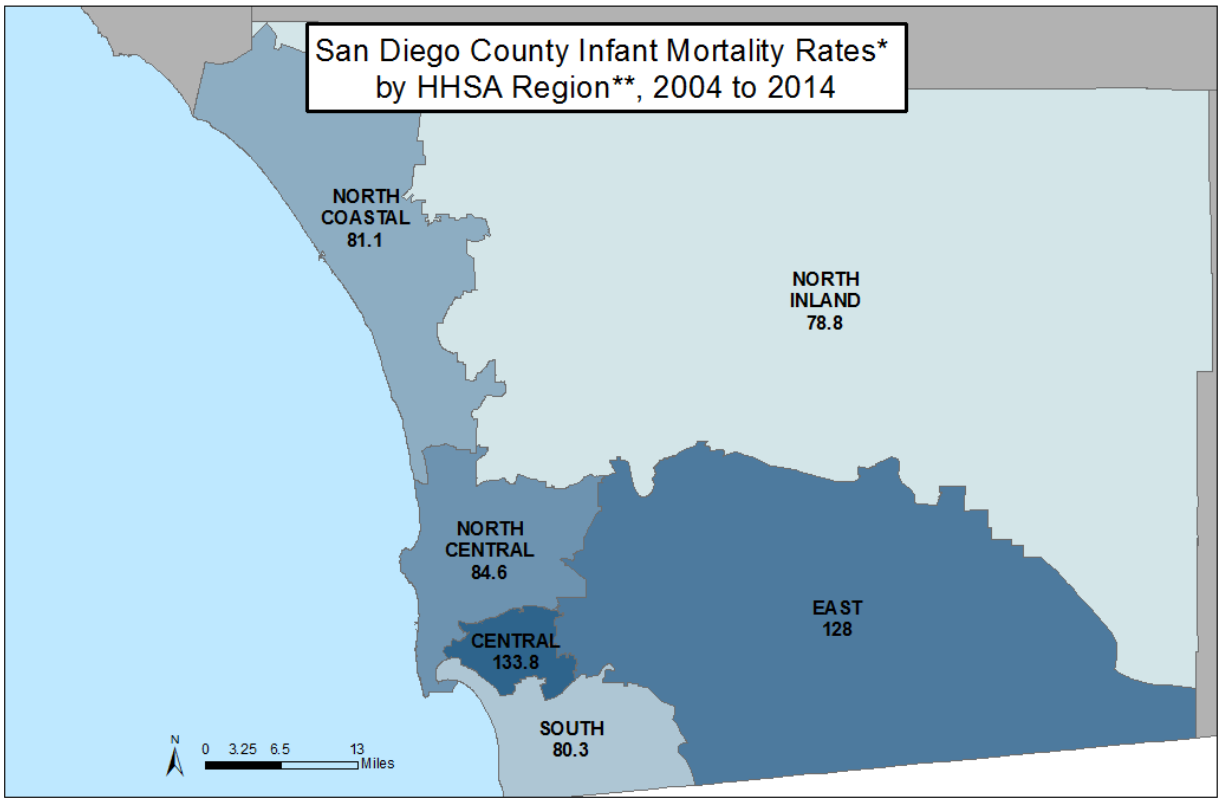
LIVE WELL SAN DIEGO

SanGIS We Know San Diego County

20.4	Del Mar-Mira Mesa	52.0	Spring Valley	*	Jamul
27.3	San Marcos	52.9	Elliott-Navajo	*	Laguna-Pine Valley
30.5	Kearny Mesa	53.4	Vista	*	Lakeside
30.5	Escondido	58.8	Peninsula	*	Lemon Grove
38.8	Mid-City	59.2	Southeastern San Diego	*	Miramar
39.7	El Cajon	77.3	Ramona	*	Mountain Empire
41.2	Central San Diego	83.4	La Mesa	*	Palomar-Julian
41.6	North San Diego	486.1	Harbison Crest	*	Pauma
41.7	South Bay	*	Alpine	*	Pendleton
42.0	Chula Vista	*	Anza-Borrego Springs	*	San Dieguito
44.3	Oceanside	*	Carlsbad	*	Sweetwater
46.5	Poway	*	Coastal	*	University
50.6	Santee	*	Coronado	*	Valley Center
50.7	National City	*	Fallbrook		

*Rates not calculated for fewer than 5 events

UNEXPECTED INFANT DEATH RATES BY REGIONAL AREA, 2004 – 2014

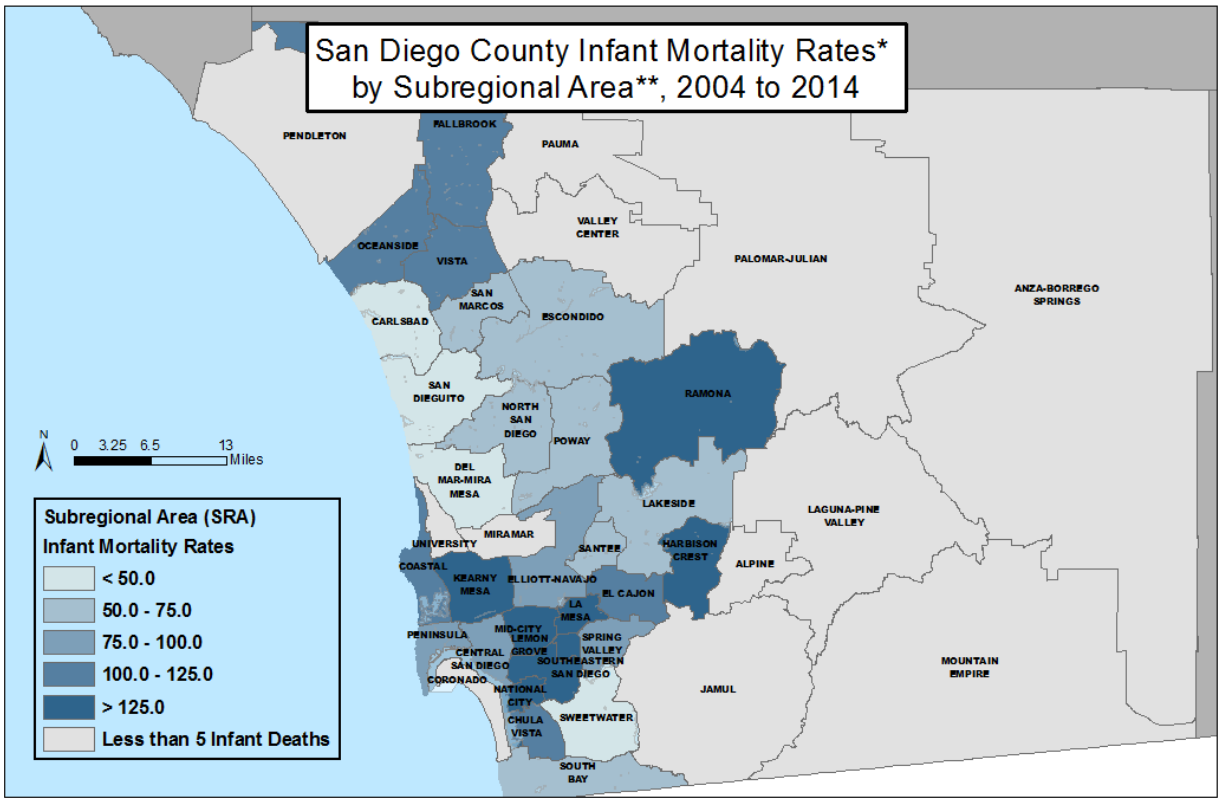


*Infant mortality among those cases investigated by Medical Examiner. Rates per 100,000 Infants less than 1 year of age

**Zip Code of Residence was used where available with Zip Code of event and death used to fill in missing data.

Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

UNEXPECTED INFANT DEATH RATES BY SUBREGIONAL AREA, 2004 – 2014



*Infant mortality among those cases investigated by Medical Examiner. Rates per 100,000 Infants less than 1 year of age

**Zip Code of Residence was used where available with Zip Code of event and death used to fill in missing data.

Map Date: June, 2015
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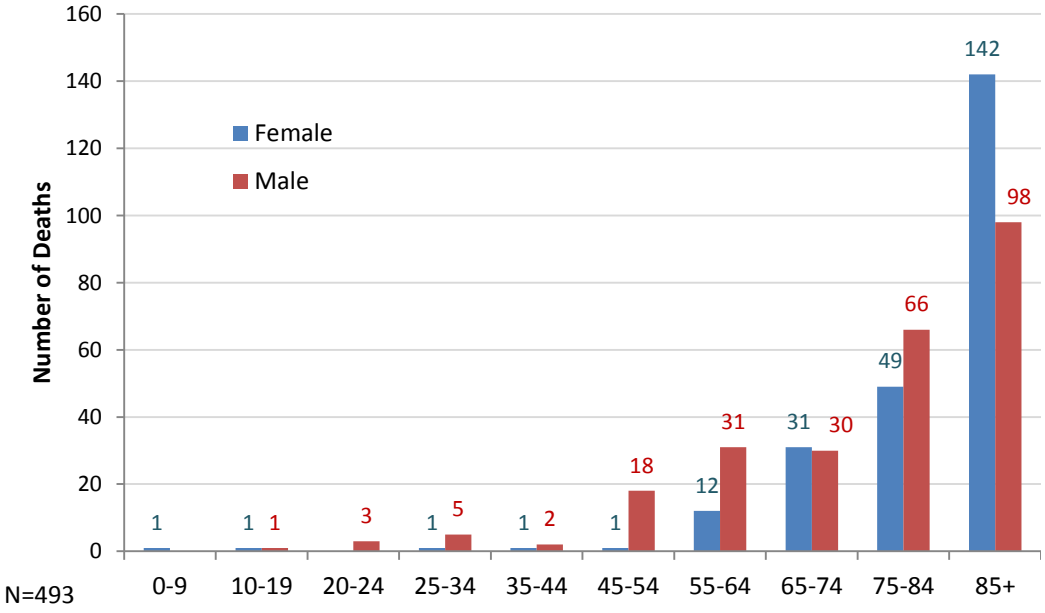
28.0	Sweetwater	94.3	Peninsula	1174.2	Harbison Crest
34.5	Carlsbad	103.4	Oceanside	*	Alpine
39.9	Del Mar-Mira Mesa	107.7	Fallbrook	*	Anza-Borrego Springs
45.6	San Dieguito	110.1	Coastal	*	Coronado
57.3	San Marcos	110.7	Vista	*	Jamul
59.1	Lakeside	113.6	El Cajon	*	Laguna-Pine Valley
62.3	Poway	120.3	Chula Vista	*	Miramar
65.1	North San Diego	127.7	National City	*	Mountain Empire
66.8	Santee	132.4	La Mesa	*	Palomar-Julian
68.0	South Bay	143.8	Kearny Mesa	*	Pauma
74.7	Escondido	146.4	Mid-City	*	Pendleton
82.6	Elliott-Navajo	149.0	Lemon Grove	*	University
93.3	Central San Diego	151.3	Southeastern San Diego	*	Valley Center
93.3	Spring Valley	185.8	Ramona		

*Rates not calculated for fewer than 5 events

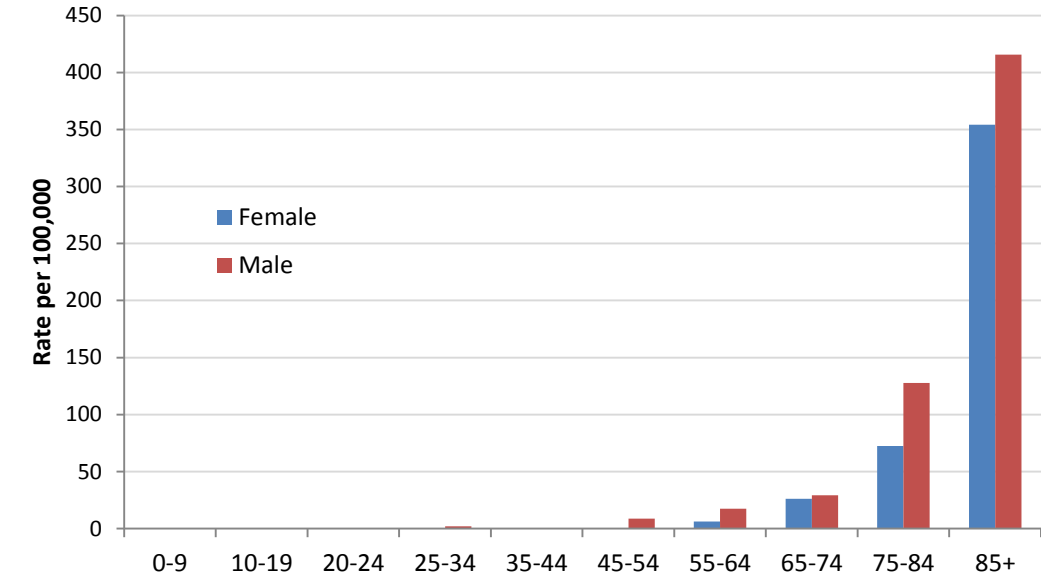
FALL-RELATED DEATHS

DEATHS FROM FALLS BY AGE AND SEX, 2014



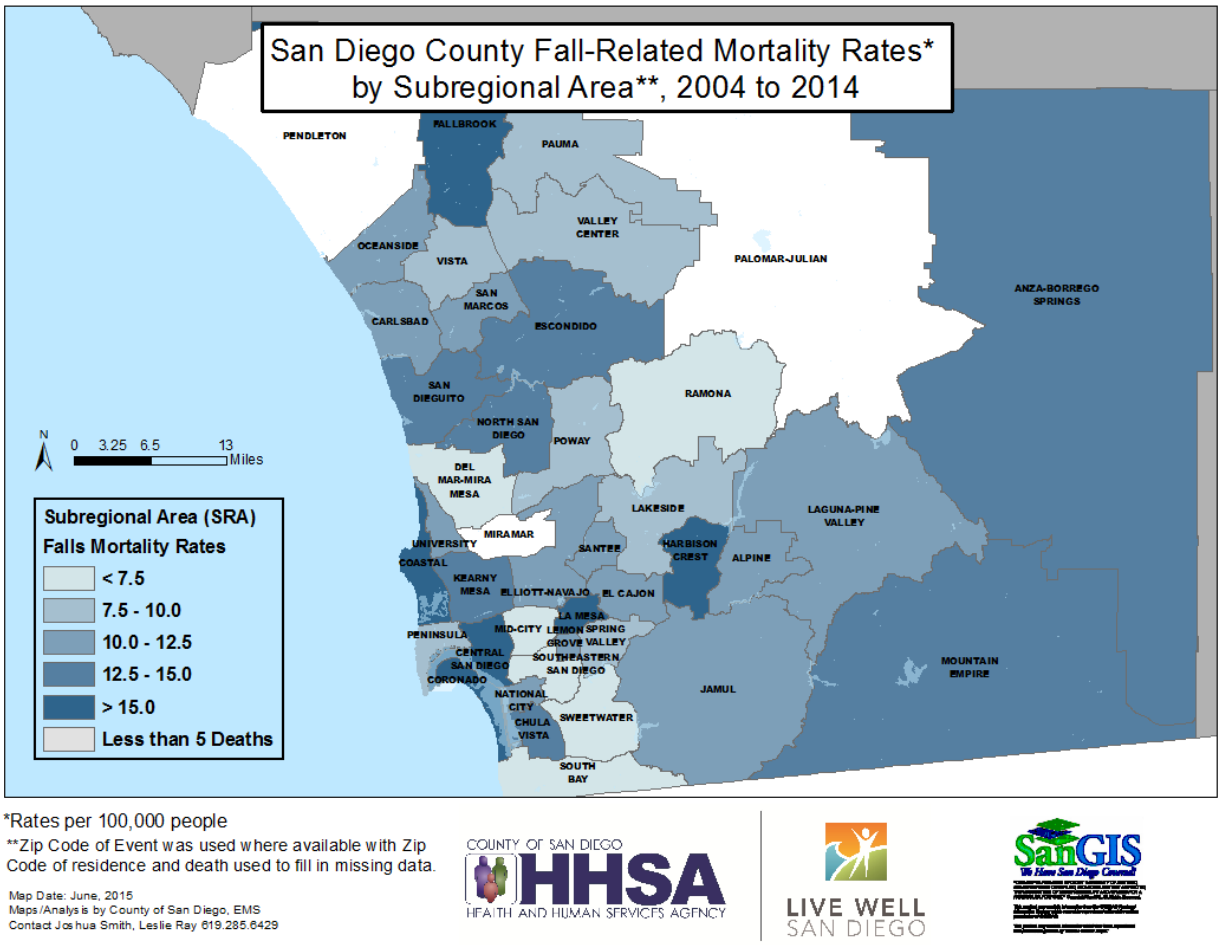
N=493

FALL-RELATED DEATH RATE BY AGE AND SEX, 2014



Rate not calculated for fewer than 5 incidents

FALL-RELATED DEATH RATES BY SUBREGIONAL AREA, 2004 – 2014



*Rates per 100,000 people

**Zip Code of Event was used where available with Zip Code of residence and death used to fill in missing data.

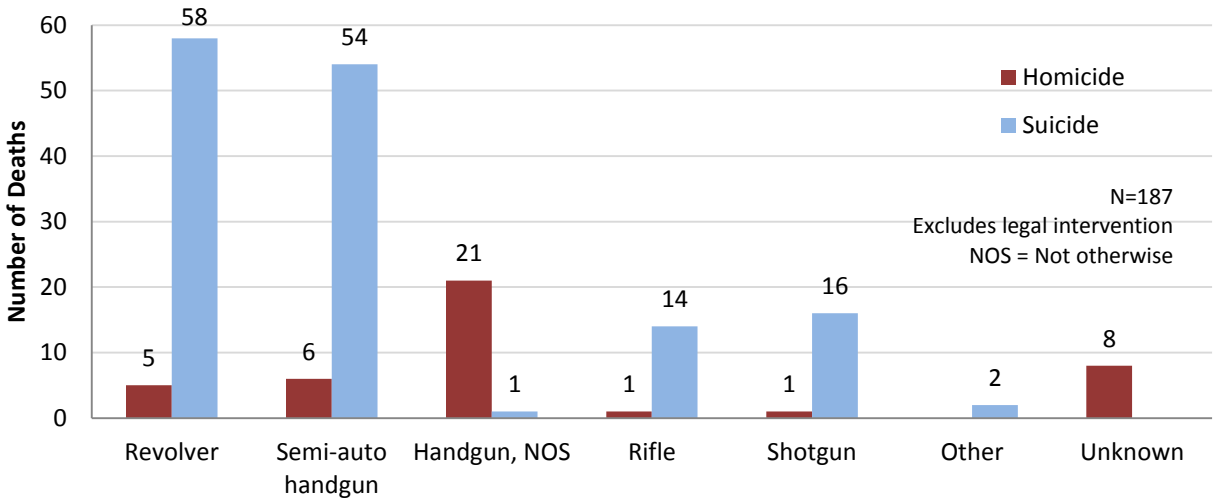
Map Date: June, 2015
Maps/Analysis by County of San Diego, EMS
Contact Joshua Smith, Leslie Ray 619.285.6429

3.3	Sweetwater	10.5	San Marcos	14.5	Escondido
5.8	South Bay	10.6	Santee	14.6	Kearny Mesa
6.0	Southeastern San Diego	10.9	Lemon Grove	14.7	Chula Vista
6.2	Del Mar-Mira Mesa	11.4	Alpine	14.7	North San Diego
6.2	Ramona	11.4	Laguna-Pine Valley	17.0	Central San Diego
7.0	Mid-City	11.5	Oceanside	17.0	Fallbrook
7.8	Spring Valley	11.7	Elliott-Navajo	19.1	Coronado
8.5	Poway	11.7	Jamul	21.2	La Mesa
8.8	Lakeside	12.3	Carlsbad	23.3	Coastal
9.1	Peninsula	12.4	National City	46.8	Harbison Crest
9.7	Pauma	12.5	El Cajon	*	Miramar
9.7	Valley Center	13.1	Mountain Empire	*	Palomar-Julian
10.0	Vista	13.5	Anza-Borrego Springs	*	Pendleton
10.1	University	13.8	San Dieguito		

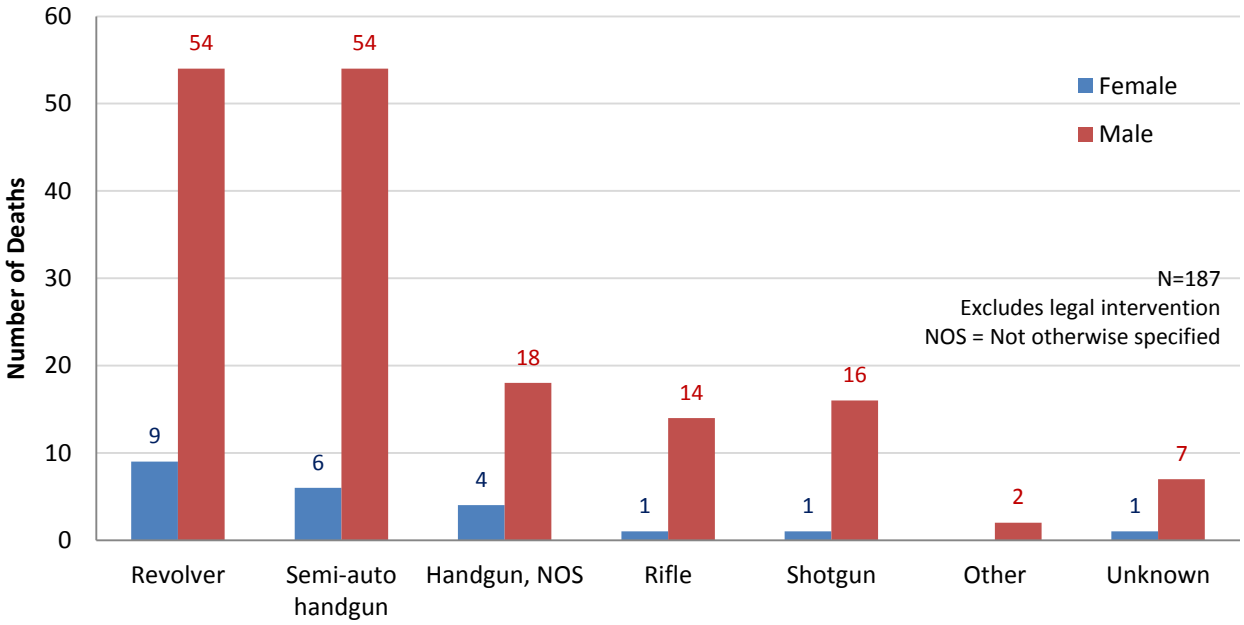
*Rates not calculated for fewer than 5 events

FIREARM-RELATED DEATHS

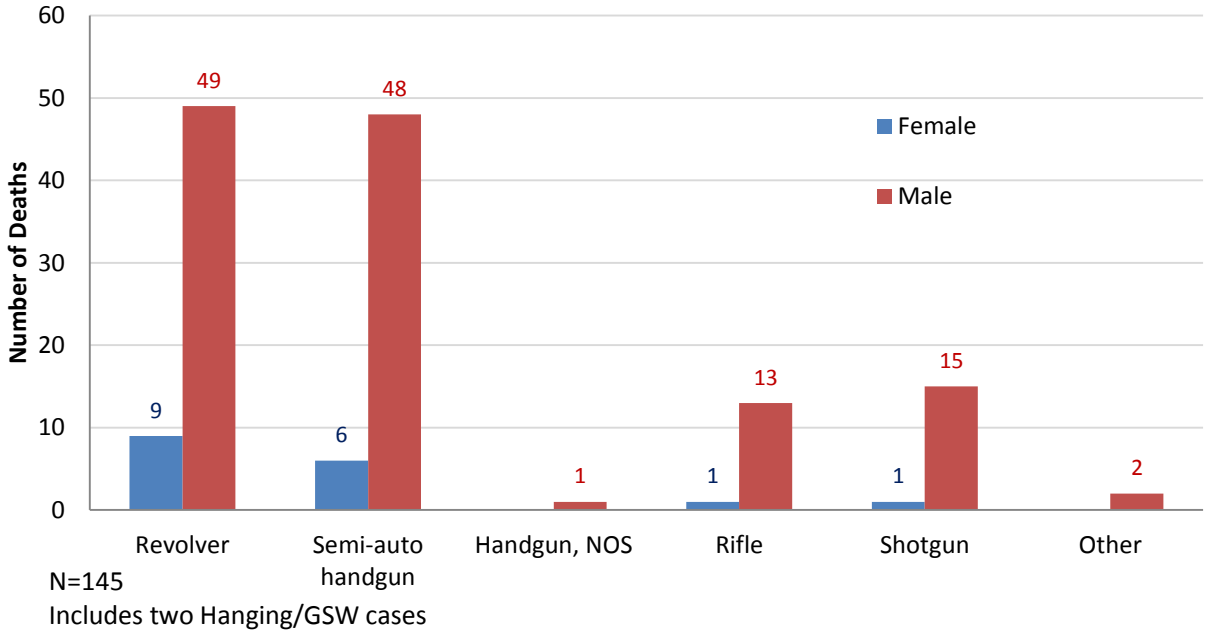
WEAPON TYPE BY MANNER (ALL MANNERS), 2014



WEAPON TYPE BY GENDER (ALL MANNERS), 2014

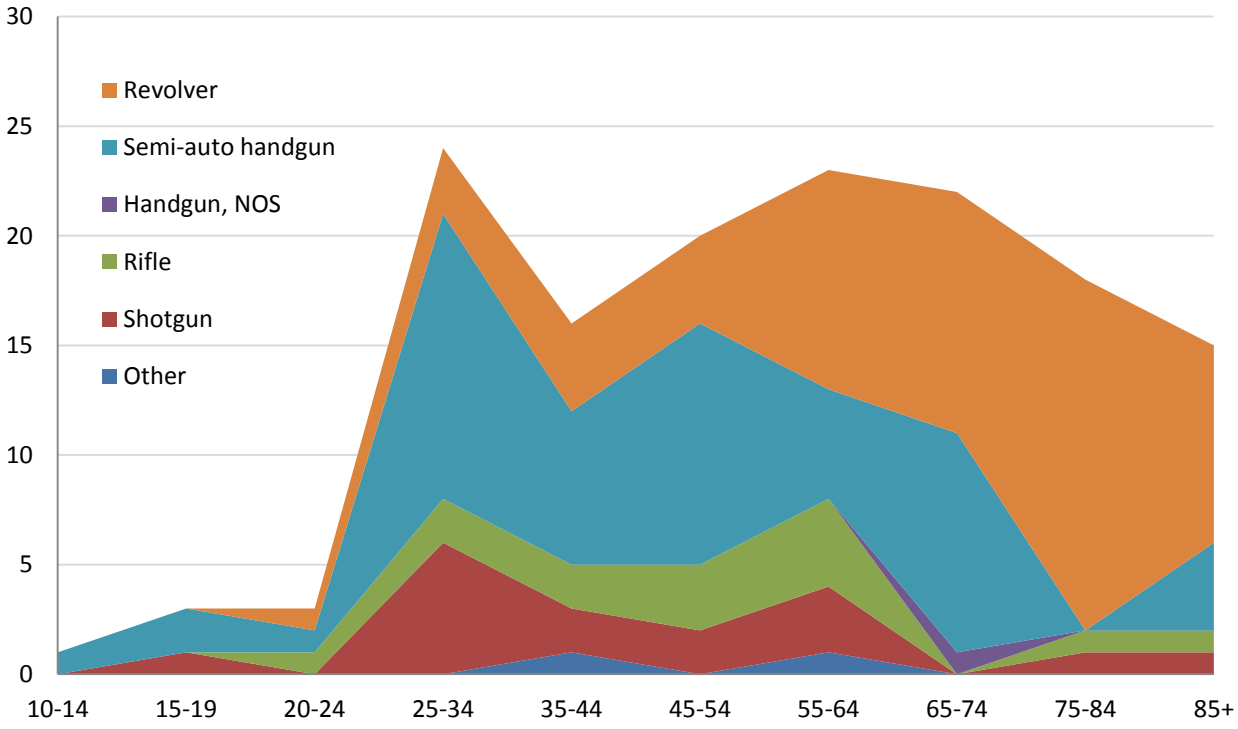


SUICIDE WEAPON TYPE BY GENDER, 2014



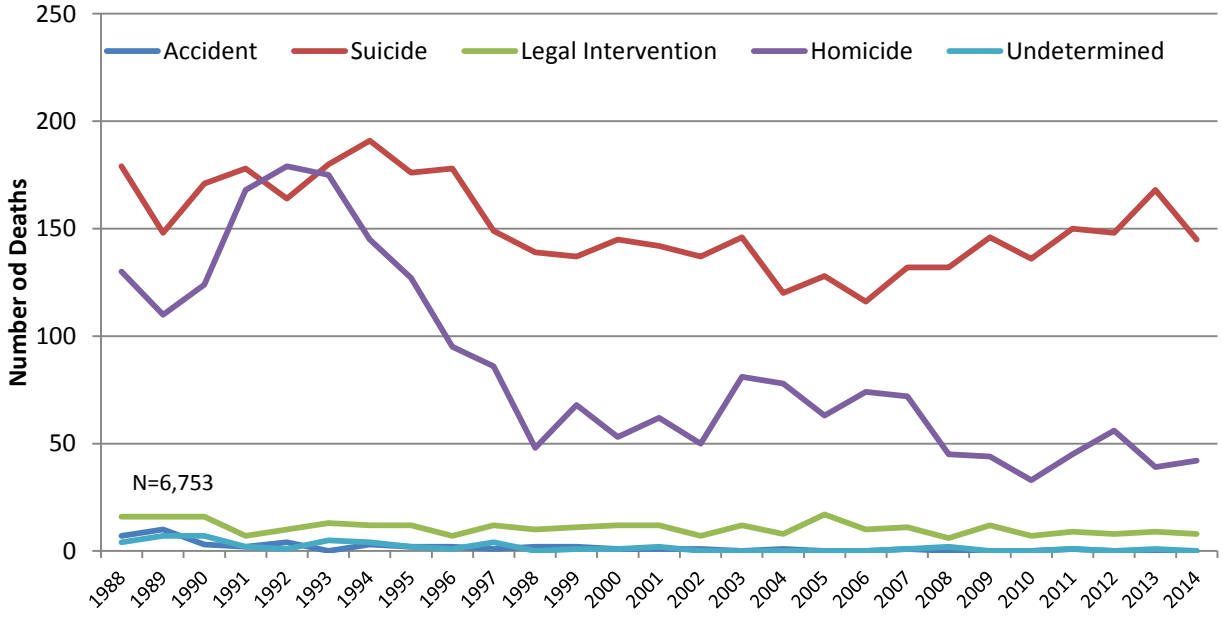
N=145
Includes two Hanging/GSW cases

SUICIDE WEAPON TYPE BY AGE RANGE, 2014

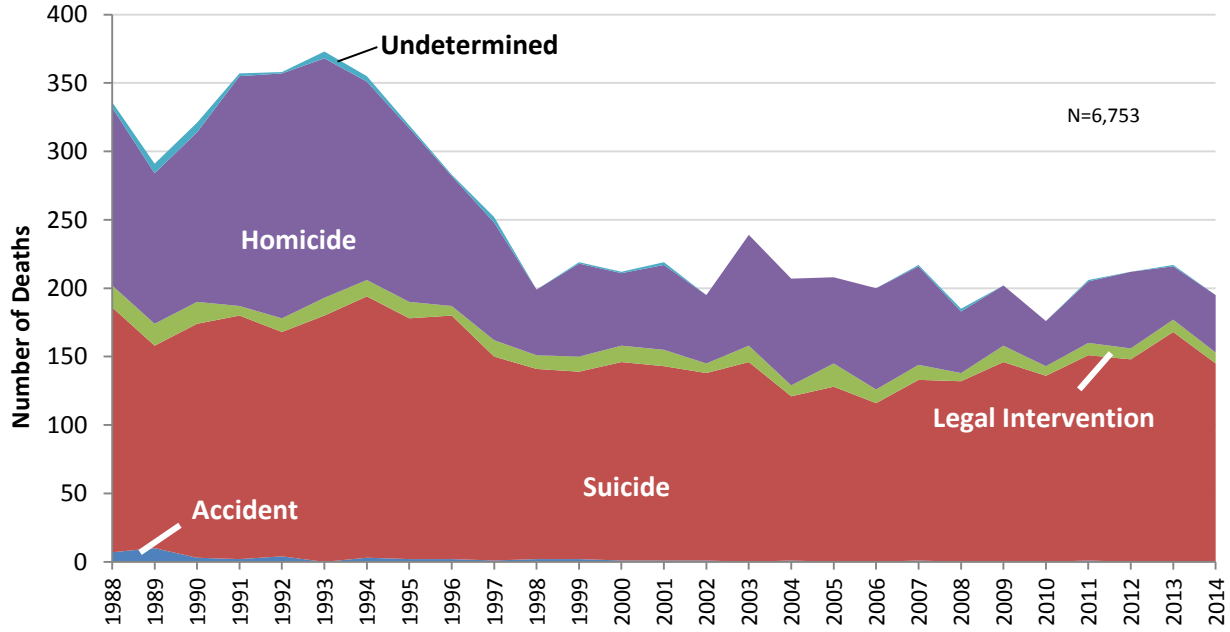


N=145
Includes two hanging/GSW cases

ALL FIREARM DEATHS BY MANNER, 1988 – 2014



CUMULATIVE FIREARM DEATHS BY MANNER, 1988-2014



Firearm deaths of all types reached the lowest numbers in 2010 since 1988 (as far back as available data is available) and have remained relatively steady since the late-1990's. The proportion of suicides has increased over the last several years as homicides have decreased.

ACKNOWLEDGEMENTS

The following individuals contributed to this document. It could not have been done without them:

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