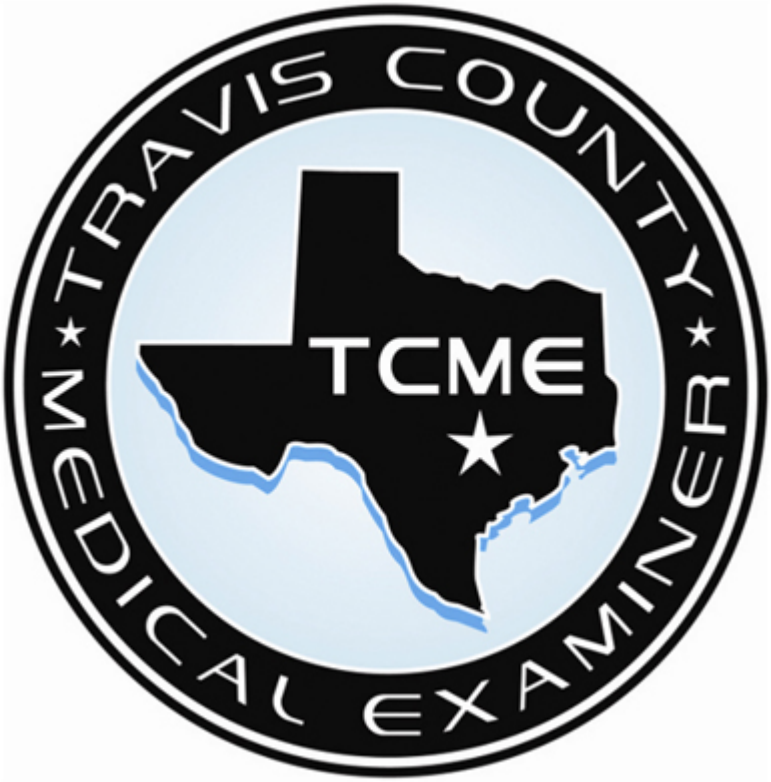
TRAVIS COUNTY MEDICAL EXAMINER



Annual Report

2012

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INTRODUCTION

The Travis County Medical Examiner's Office (TCMEO) provides medicolegal death investigation for Travis County, Texas, and a number of surrounding counties. Travis County is part of the Austin-Round Rock metropolitan area and covers 989 square miles of land and 33 square miles of water. The county seat is Austin, which is also the capital of Texas. In 2012, the population of Travis County was approximately 1,095,500.

The TCMEO was established in 1977. It is located at 1213 Sabine Street, Austin and is a three story free-standing building. The first floor houses investigations, the morgue, and the body coolers. The second floor houses the toxicology department and histology laboratory. The third floor houses the administrative section, including doctor offices.

NAME ACCREDITATION

The National Association of Medical Examiners (NAME) is a national professional organization of physician medical examiners, medical death investigators and death investigation system administrators who perform the official duties of the medicolegal investigation of deaths of public interest in the United States. NAME developed accreditation standards for the purpose of improving the quality of the medicolegal investigation of death. Accreditation applies to offices and systems, not individual practitioners. NAME accreditation is an endorsement by NAME that the office or system provides an adequate environment for a medical examiner in which to practice his or her profession and provides reasonable assurances that the office or system well serves its jurisdiction. There are hundreds of standards that an office must comply with in order to achieve NAME accreditation.

In 2009 TCMEO received full accreditation from the National Association of Medical Examiners (NAME). Our office will be up for reinspection and reaccreditation in 2014.

AMERICAN BOARD OF FORENSIC TOXICOLOGY (ABFT) ACCREDITATION

The Travis County medical examiner's toxicology laboratory first achieved accreditation by ABFT on August 1, 2005. An on-site inspection is required every two years to demonstrate that laboratory practices are meeting accreditation requirements. The objective of the Board is to establish, enhance, and maintain standards of qualification for those laboratories that practice postmortem forensic toxicology or human performance toxicology, and to accredit as qualified laboratories those applicants who comply with the requirements of the Board. In this way, the Board aims to establish a practical and equitable system of readily identifying laboratories who have demonstrated the requisite qualifications and competence in forensic toxicology.

ABFT accreditation is based upon compliance with professional standards, as assessed by peer review, including an on-site inspection, and successful achievement in one or more proficiency testing programs recognized by the Board. The toxicology laboratory was reaccredited by ABFT in 2012.

STAFF

The TCMEO is staffed by 37 Travis County employees and is composed of the following personnel sections: Administration, Medical Examiners, Investigation, Autopsy Technicians, and Toxicology. There are five Medical Examiner positions at the TCMEO including the Chief Medical Examiner, the Deputy Chief Medical Examiner, and three Deputy Medical Examiners.

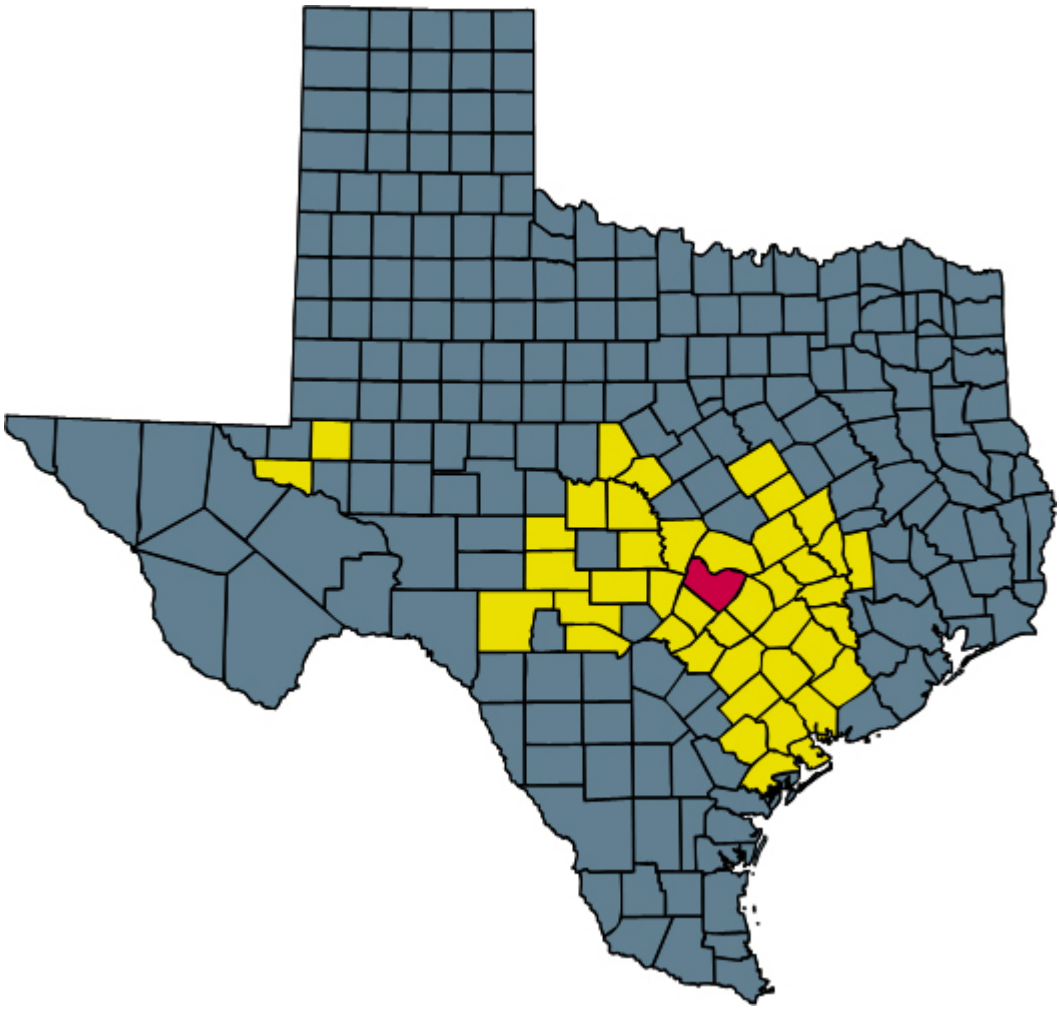
ORGANIZATIONAL CHART

* FTE designates Full Time Employee

CASE JURISDICTION

The Travis County Medical Examiner's Office is responsible for the investigation and certification of cause and manner of death of all sudden, unexpected, violent, suspicious, or unnatural deaths that occur in Travis County. The cause of death is a disease, injury, drug toxicity, or combination of factors that causes a physiologic derangement severe enough to result in death. The manner of death refers to the circumstances surrounding how the death came about and is divided into five categories: natural, accident, suicide, homicide, and undetermined. The TCMEO also investigates similar-type deaths occurring in 42 central Texas counties at the written request of the local authorities.

Graphic of TCMEO service region



Red -Travis County
Yellow -Counties serviced by TCMEO through Interlocal Agreements

REPORTABLE DEATHS

Pursuant to the Texas Code of Criminal Procedure, Chapter 49.25, the TCMEO has jurisdiction over the following deaths that occur within the boundaries of Travis County:

- When a person dies while in prison or in jail;
- When any person is killed; or from any cause dies an unnatural death, except under sentence of the law; or dies in the absence of one or more good witnesses;
- When the body or a body part of a person is found, the cause or circumstances of death are unknown, and:
  - The person is identified; or
  - The person is unidentified;
- When the circumstances of the death of any person are such as to lead to suspicion that he/she came to his/her death by unlawful means;
- When any person commits suicide, or the circumstances of his death are such as to lead to suspicion that he/she committed suicide;

The following cases shall be reported to TCMEO. TCMEO may either accept or decline jurisdiction based upon the circumstances of the individual case.

- When a person dies within twenty-four hours after admission to a hospital.
- When a person dies without having been attended by a duly licensed and practicing physician, and the local health officer or registrar required to report the cause of death under Section 193.005, Health and Safety Code, does not know the person's likely cause of death.
- When the person is a child who is younger than six years of age and the death is reported under Chapter 264, Family Code and
- When a person dies who has been attended immediately preceding his death by a duly licensed and practicing physician, and the physician is not able to certify with reasonable certainty the cause of death as required by Section 193.004, Health and Safety Code.

Local deaths (those that occur within the boundaries of Travis County) that fall under TCMEO's jurisdiction are transported to the TCMEO for examination by a contract body transport company. In certain cases, a TCMEO investigator may attend the death scene in person and perform a preliminary examination of the body. An investigator usually attends all homicides, suicides, and accidental deaths, and select natural deaths. An investigator is on staff and available 24 hours/day, 365 days/year. TCMEO investigators do not physically perform scene investigations on cases that are reported to them from outside of the physical boundaries of Travis County. In these cases, the pertinent investigative information is collected over the telephone. On cases from outside of Travis County, an autopsy must be ordered by the referring Justice of the Peace and the body is transported to and from TCMEO by a funeral home company at the request of the referring Justice of the Peace.

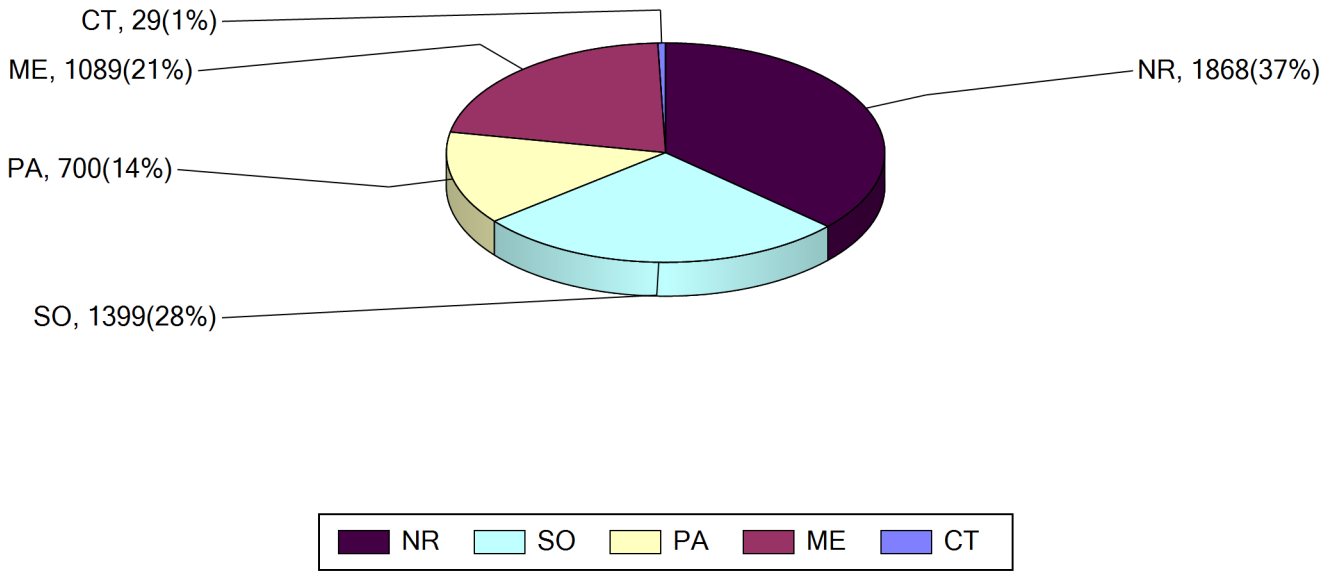
Not all bodies brought to the TCMEO for examination are autopsied. The Medical Examiner may choose to either perform a complete autopsy or to perform an external examination only (referred to as a “view-out”). Partial autopsies are not performed at the TCMEO. In all autopsies and view-out examinations, blood and vitreous fluid specimens are collected for toxicological analysis. Toxicological analysis is performed on the vast majority of all cases that are autopsied and on only select cases that are viewed-out.

Investigative reports are generated on all cases that fall under the jurisdiction of the TCMEO. All deaths that occur within the boundaries of Travis County that are brought to the TCMEO for examination (whether they are autopsied or not) are given the designation of “ME” before the case number. All cases referred to the TCMEO from outside Travis County are given the designation of “PA” before the case number. If the TCMEO declines jurisdiction on a case, it is given the designation of “SO” before the case number. If a case is reported to our office that does not fall within our jurisdiction, it is given the designation of “NR.” Occasionally, a death occurring within the boundaries of Travis County is not reported to the TCMEO when it should have been. The body may have already been buried or cremated. If the death can be adequately certified by review of the decedent’s medical records and other investigation without physically viewing and examining the body, the case is given the designation of “CT” before the case number. All cases are collectively numbered sequentially beginning January 1 of each year. If the case consists of nonhuman remains (animal remains), it is given the designation of "SR" before the case number.

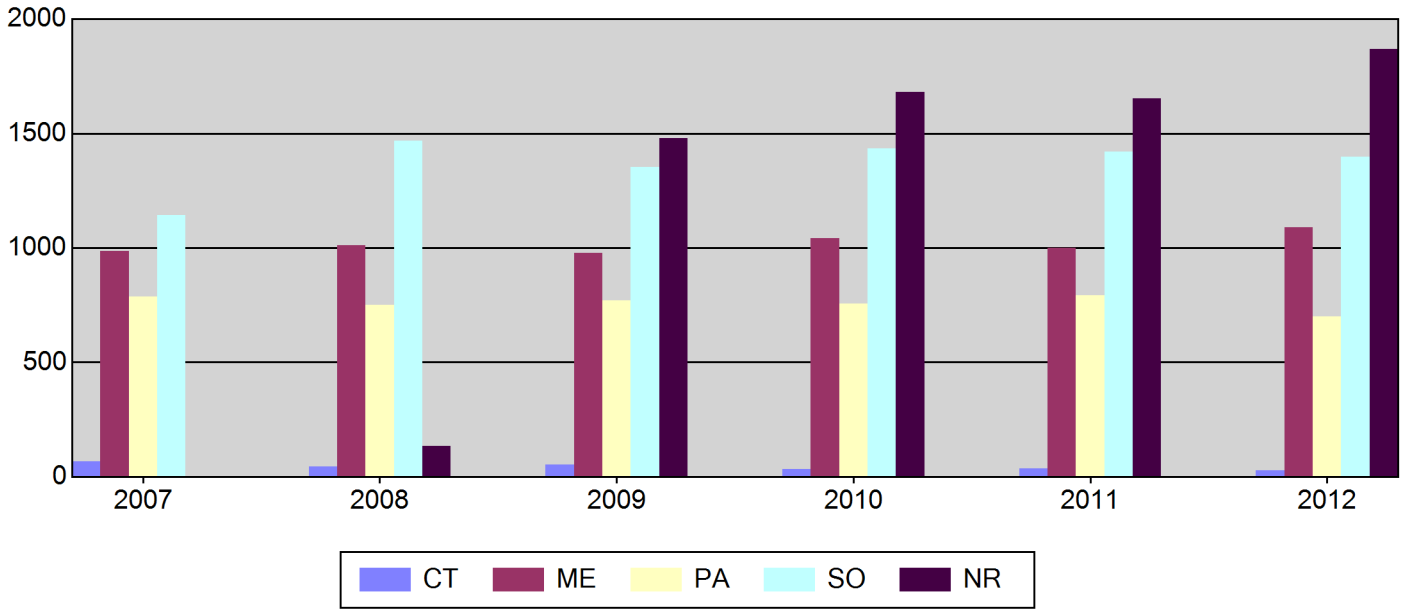
DEATHS REPORTED

In 2012, the TCMEO received a referral of 5085 cases. Every referral requires a preliminary screening by TCMEO investigative staff to determine if it falls under the jurisdiction of the Medical Examiner. Of those cases, 1089 were Travis County deaths that fell under the Medical Examiner jurisdiction, jurisdiction was accepted, and the bodies were physically examined at the TCMEO (ME cases). 29 cases were Travis County deaths that fell under the Medical Examiner jurisdiction, jurisdiction was accepted, but for various reasons, the bodies were not physically examined at the TCMEO (CT cases). 1399 cases were Travis County deaths that were under the Medical Examiner jurisdiction, and were reported to the TCMEO, but jurisdiction was declined by TCMEO (SO cases). TCMEO received reports of death on 1868 cases in Travis County that did not fall within its jurisdiction and the cases were declined for examination (NR cases). The TCMEO received a total of 700 cases from outside of Travis County for examination (PA cases), and a total referral of 14 cases that proved to be animal remains (SR cases). There were no hospital autopsies under medical examiner jurisdiction. There were no exhumations.

DEATHS REPORTED TO TCMEO 2012

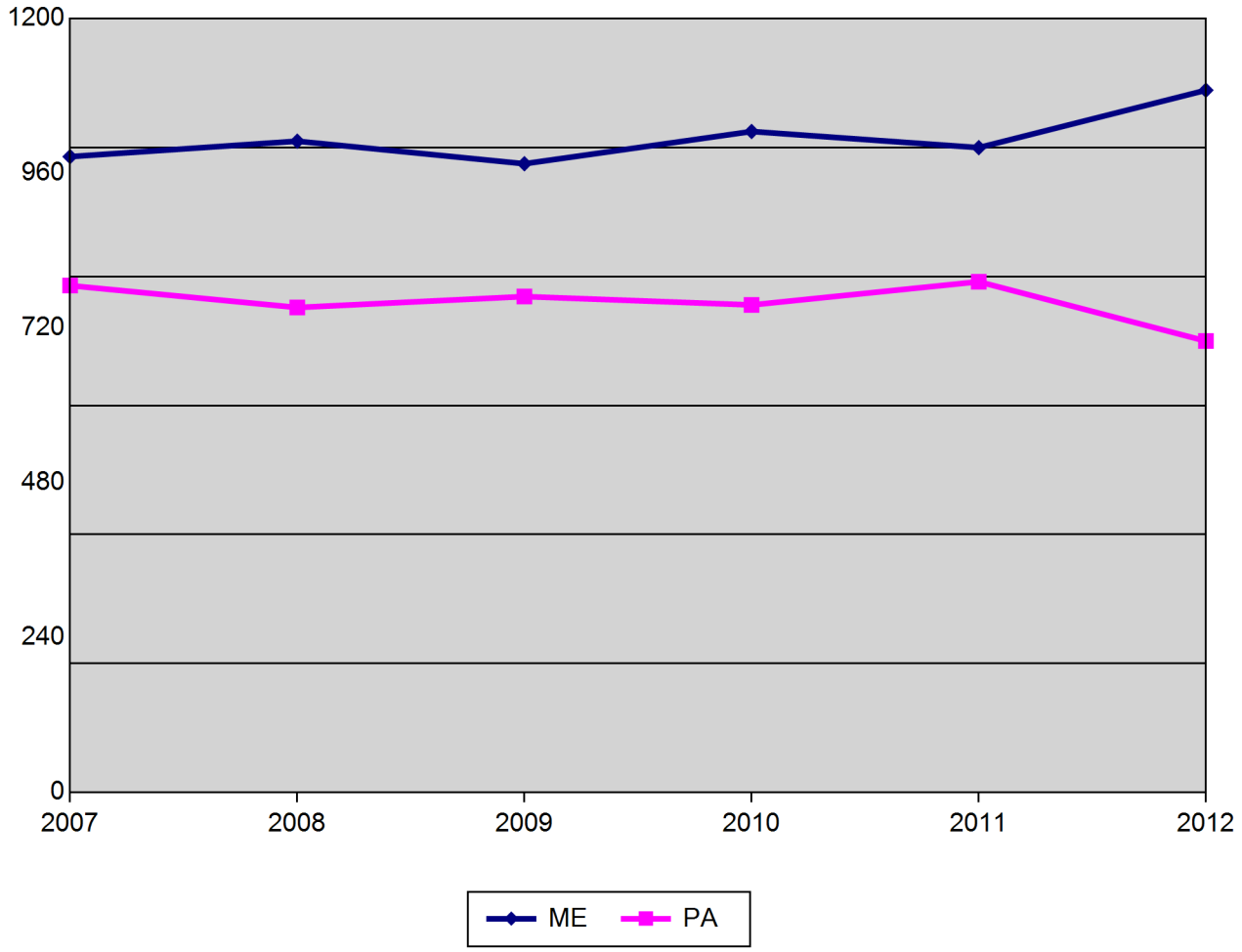


DEATHS REPORTED TO TCMEO 2007-2012



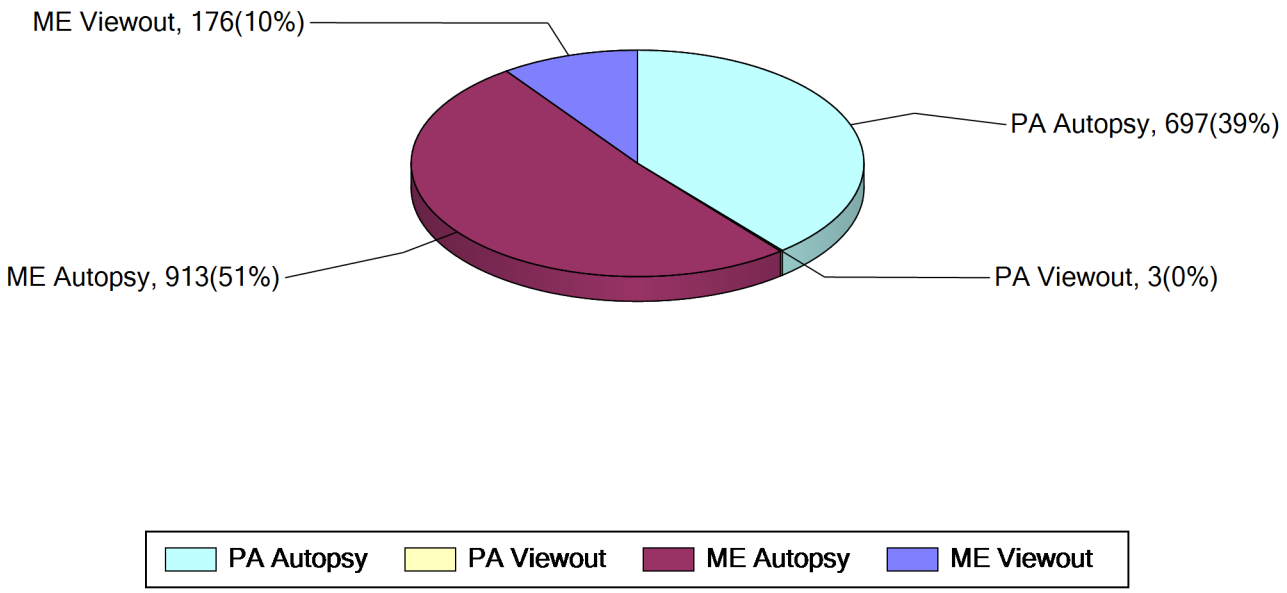
The yearly number of Travis County (ME) cases fluctuates along with the population of Travis County. The yearly number of out-of-county (PA) cases fluctuates along with many different factors, including the population of the surrounding counties, and changes in the fee charged for the performance of autopsies for the surrounding counties.

YEARLY CASELOAD TREND OF TRAVIS COUNTY (ME) AND OUT-OF-COUNTY (PA) CASES, 2007-2012

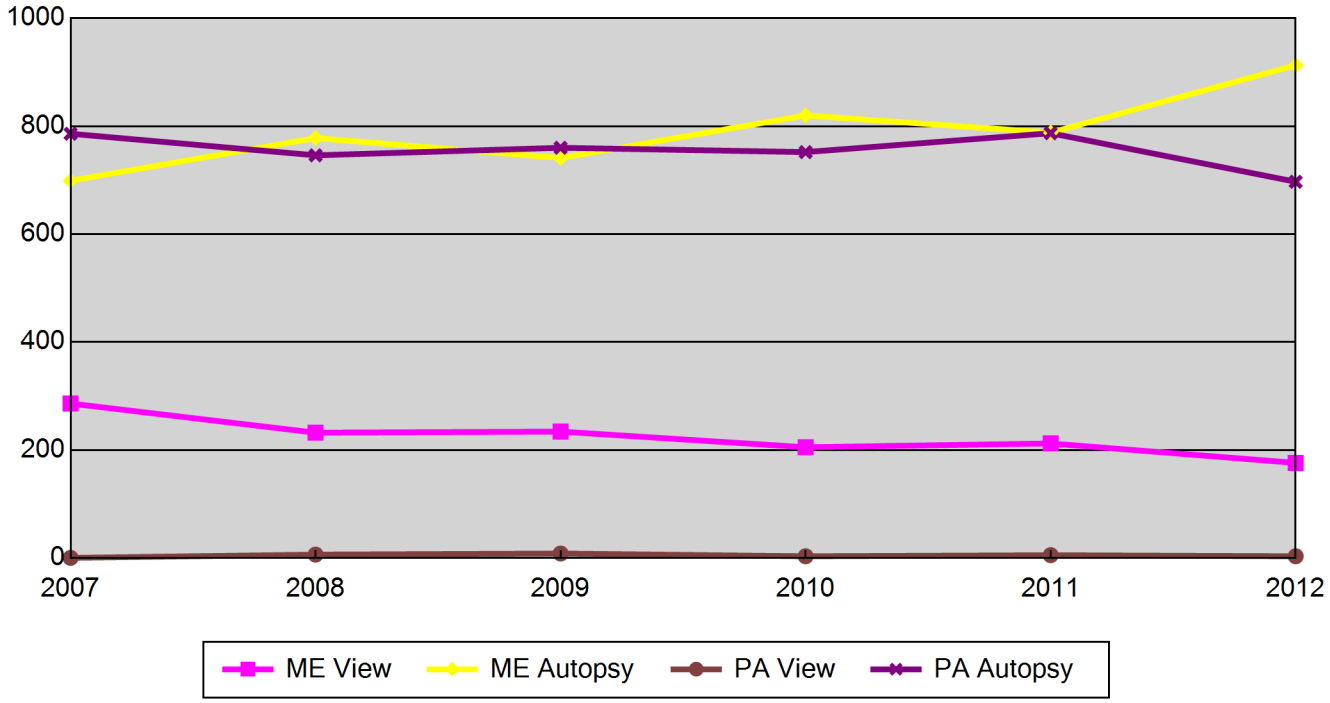


EXAM TYPES

The autopsy numbers represent complete autopsies. Partial autopsies are not performed at our office. Bodies that are not autopsied, but rather receive an external examination only, are termed "view-outs." Percentages are rounded in the chart below to the nearest whole percentage.

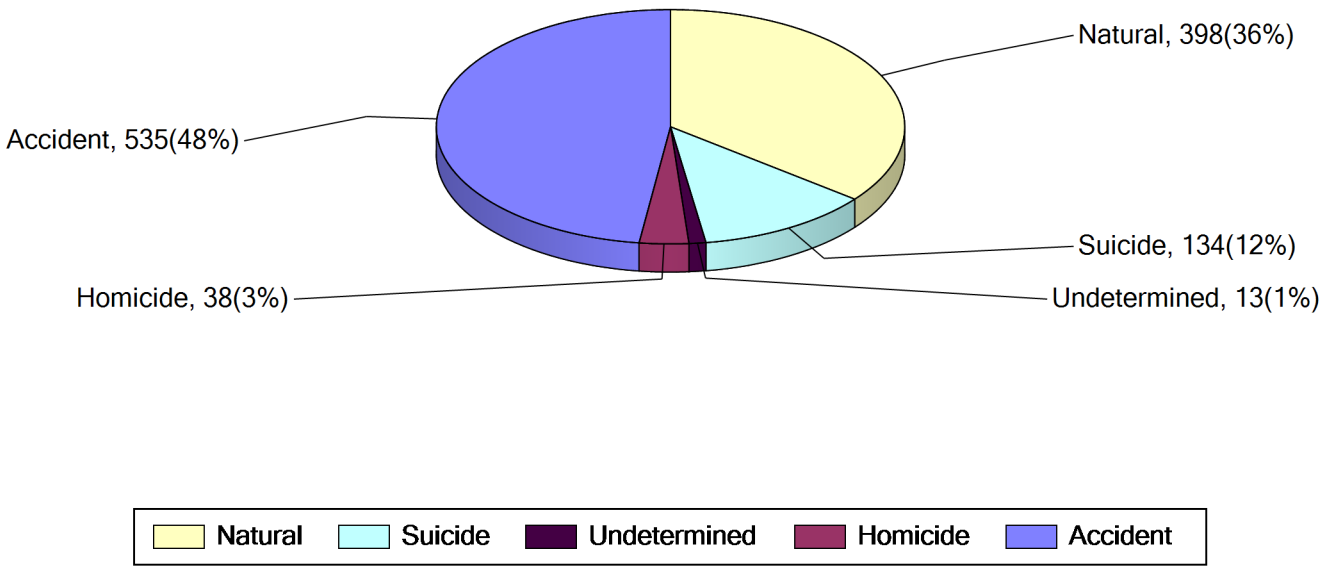


AUTOPSY AND VIEW-OUT EXAMINATION TRENDS 2007-2012

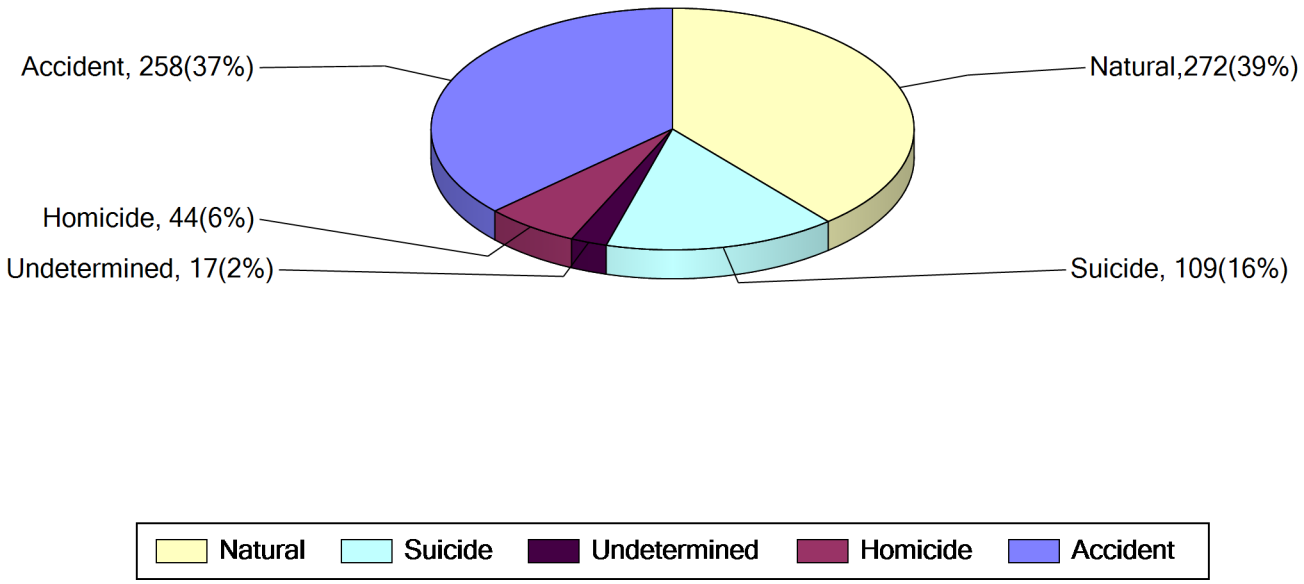


MANNER OF DEATH

TRAVIS COUNTY CASES 2012

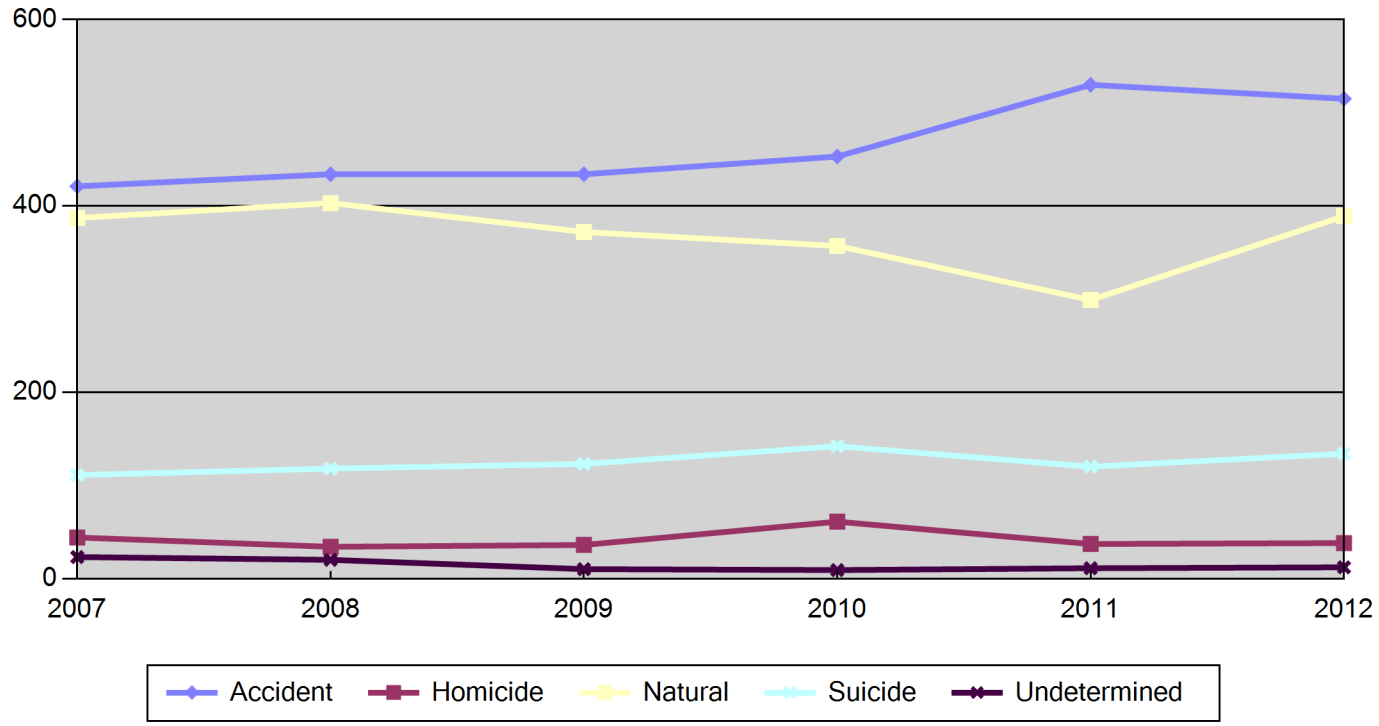


OUT-OF-COUNTY CASES, 2012

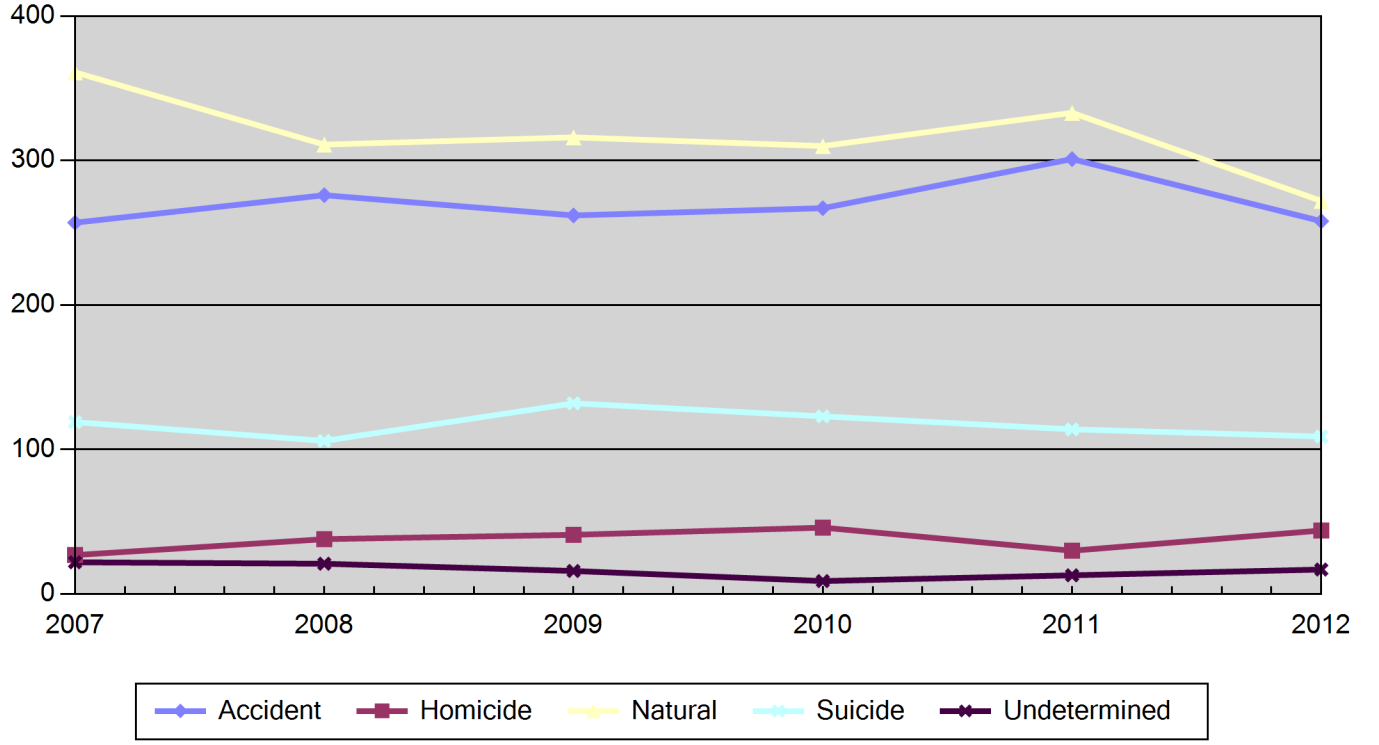


TRENDS IN MANNER OF DEATH, 2007-2012

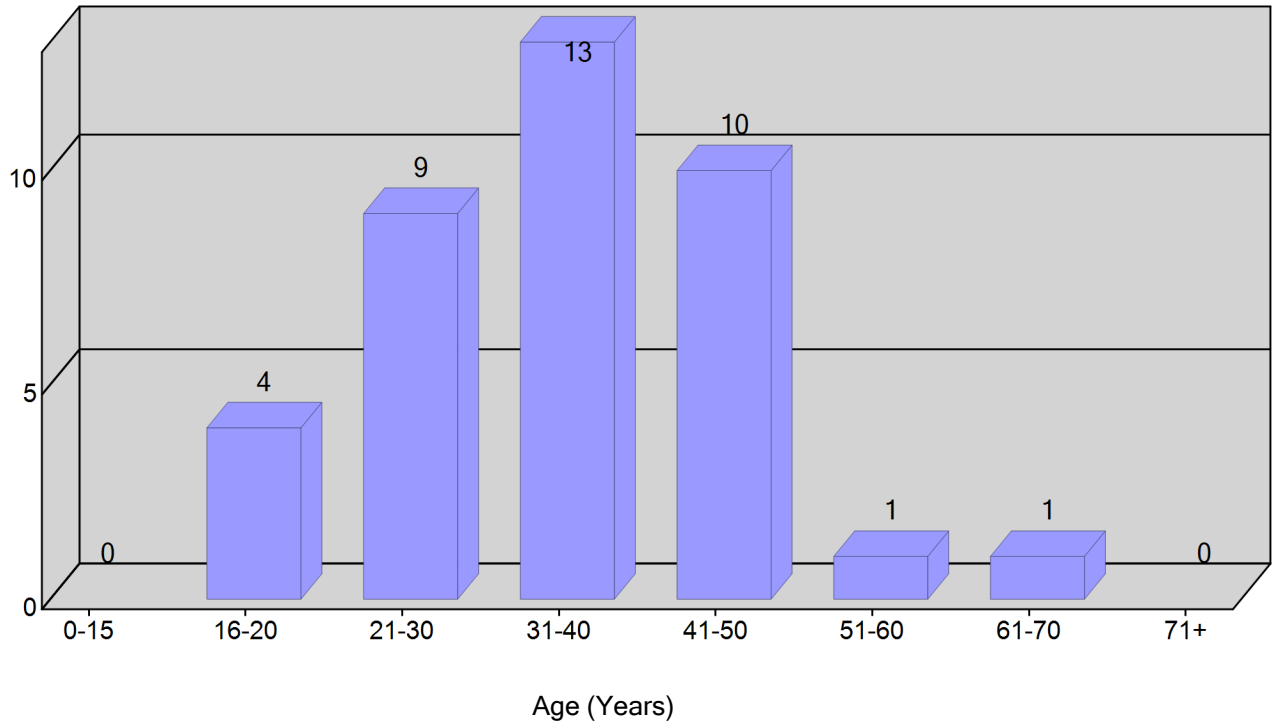
TRAVIS COUNTY CASES



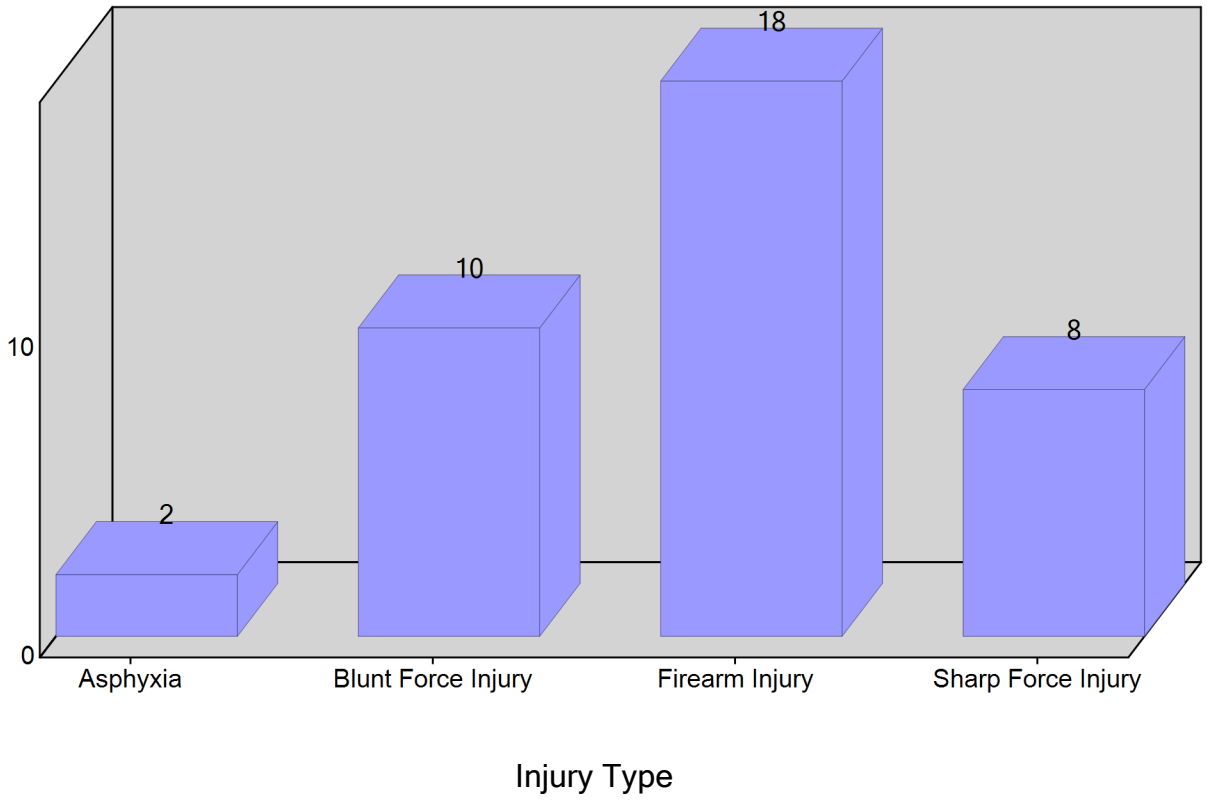
OUT-OF-COUNTY CASES



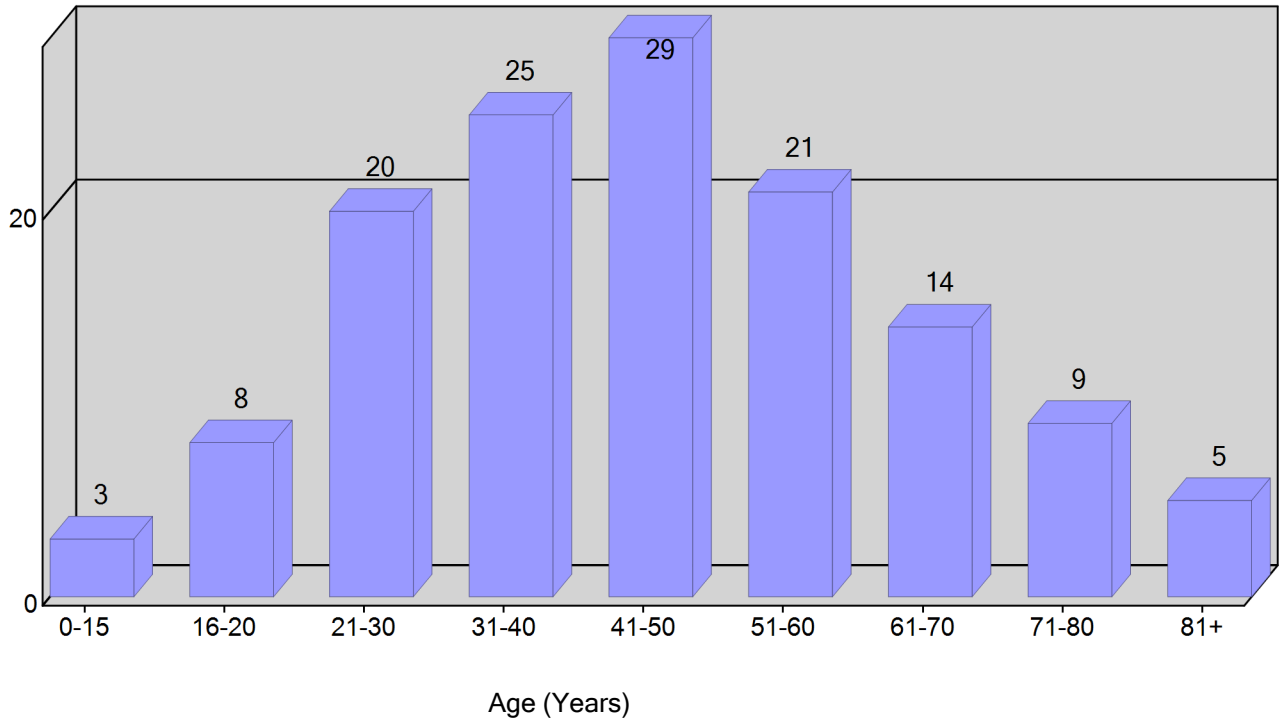
HOMICIDES IN TRAVIS COUNTY, 2012
BY AGE OF DECEDENT IN YEARS



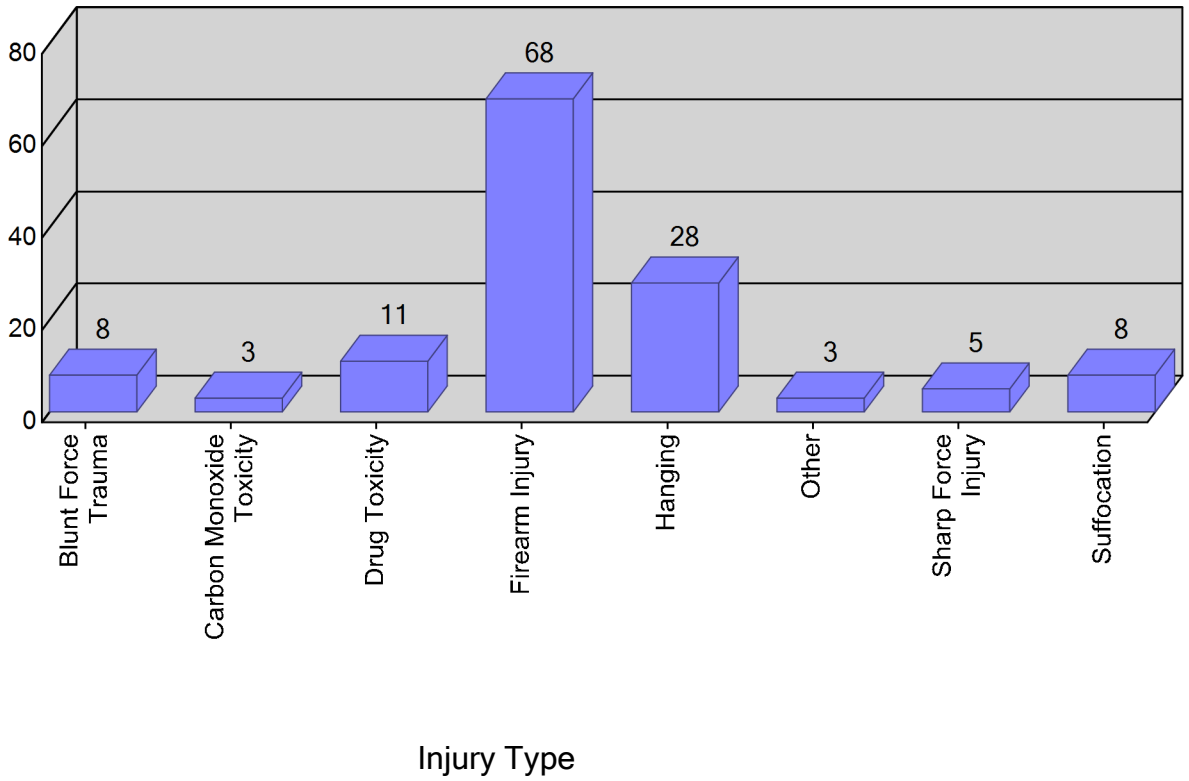
HOMICIDES BY INJURY TYPE



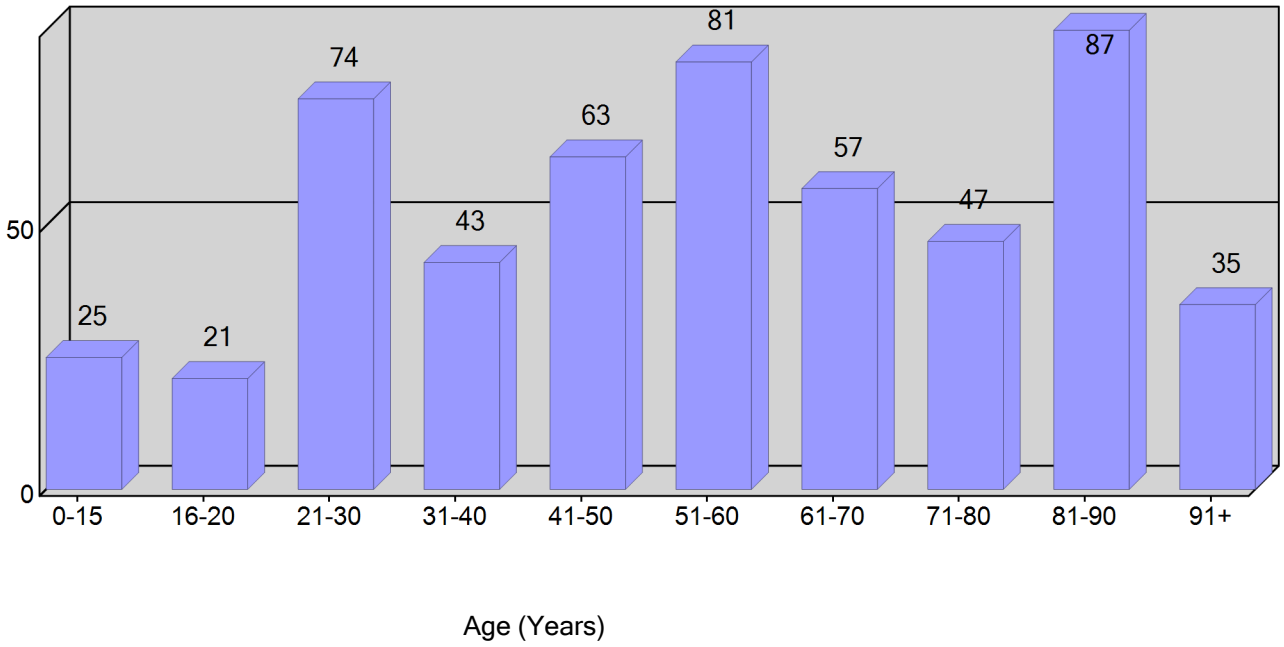
SUICIDES IN TRAVIS COUNTY, 2012
BY AGE OF DECEDENT (IN YEARS)



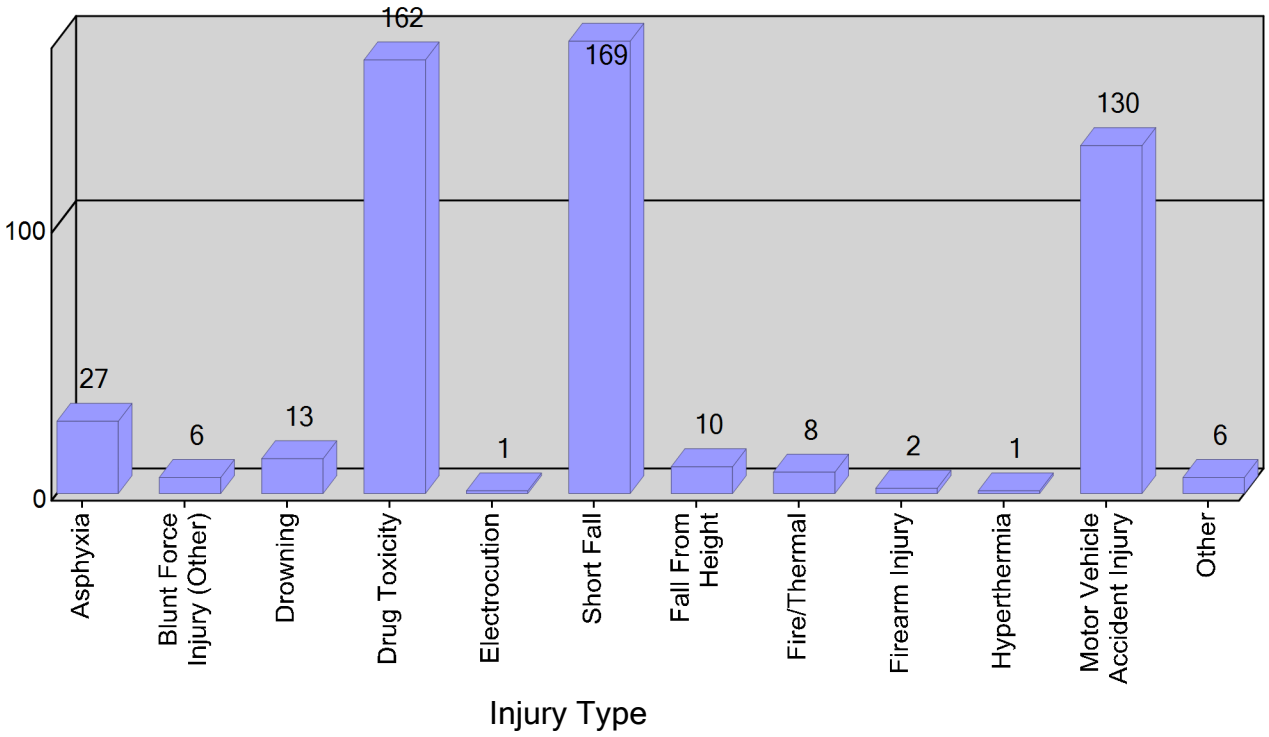
SUICIDES BY INJURY TYPE



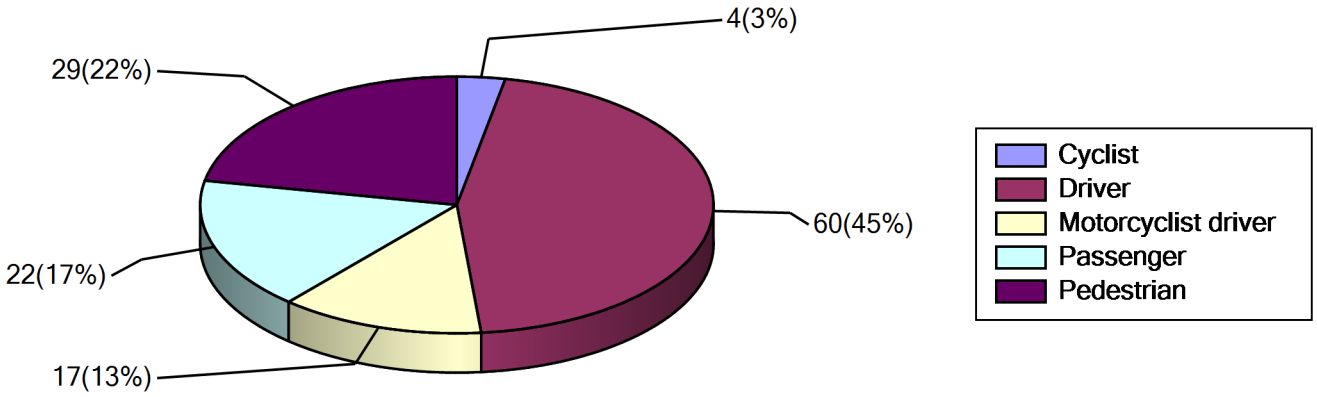
ACCIDENTAL DEATHS IN TRAVIS COUNTY, 2012
BY AGE OF DECEDENT (IN YEARS)



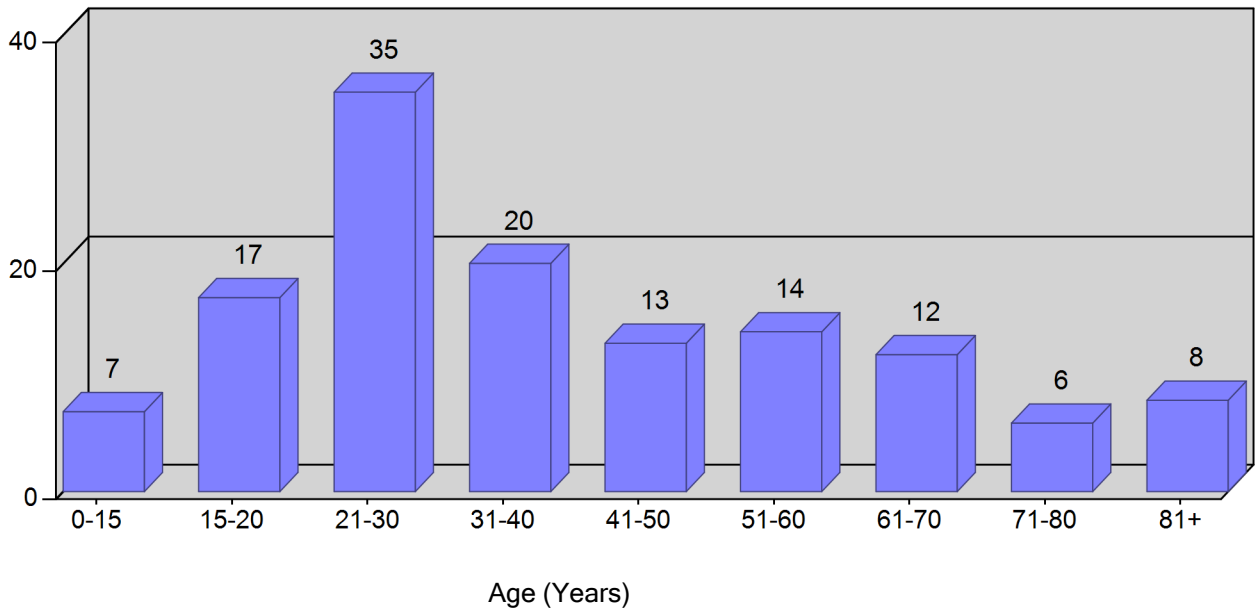
ACCIDENTS BY INJURY TYPE



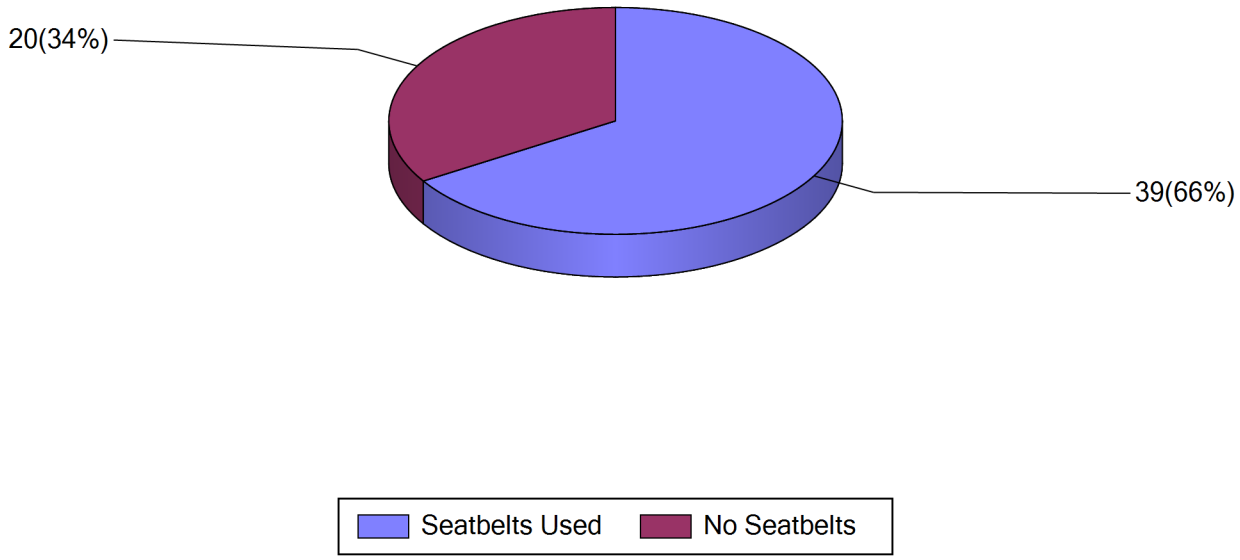
MOTOR VEHICLE FATALITIES, TRAVIS COUNTY, 2012
BY TYPE OF INCIDENT



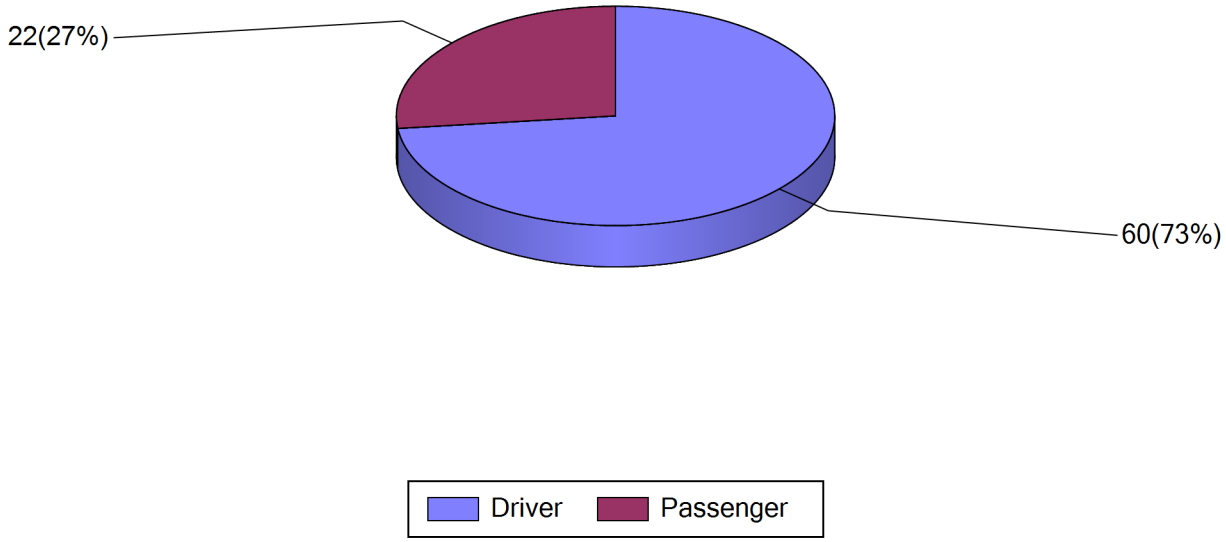
MOTOR VEHICLE FATALITIES
BY AGE OF VICTIM (IN YEARS)



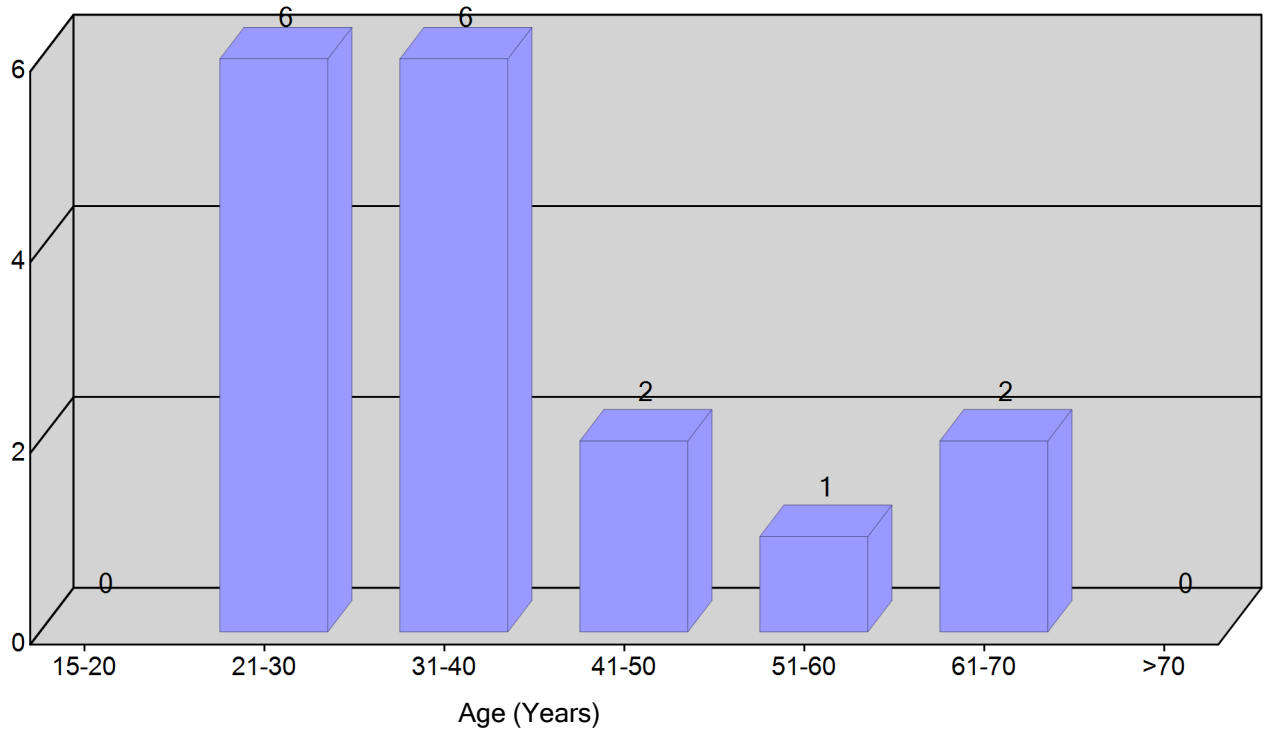
AUTOMOBILE FATALITIES IN TRAVIS COUNTY, 2012
SEATBELTS IN USE AT TIME OF FATALITY

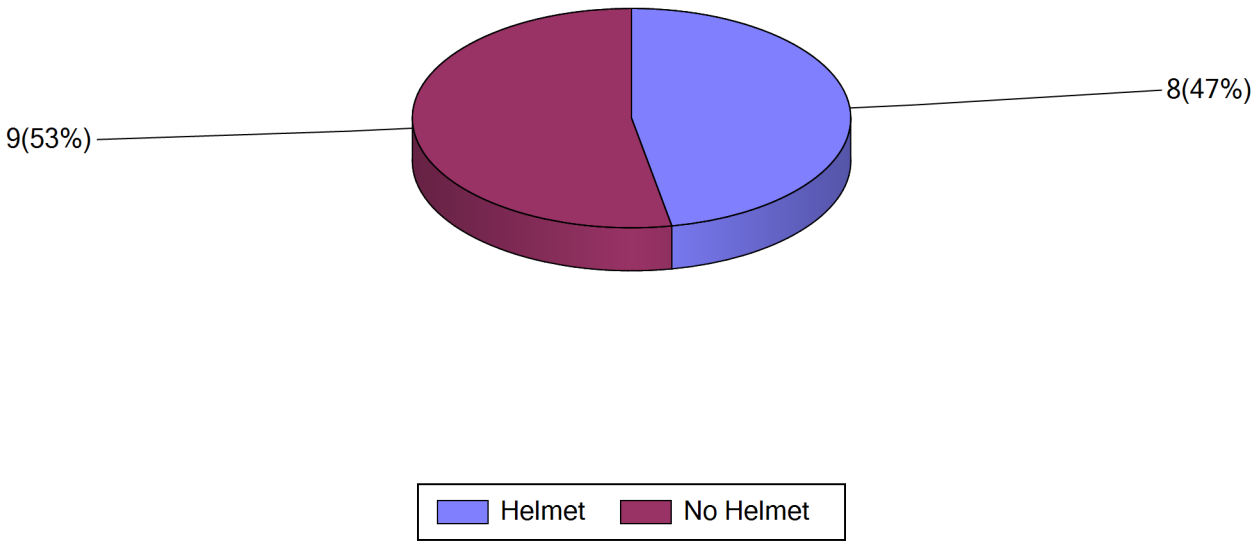


DECEDENT'S LOCATION WITHIN VEHICLE



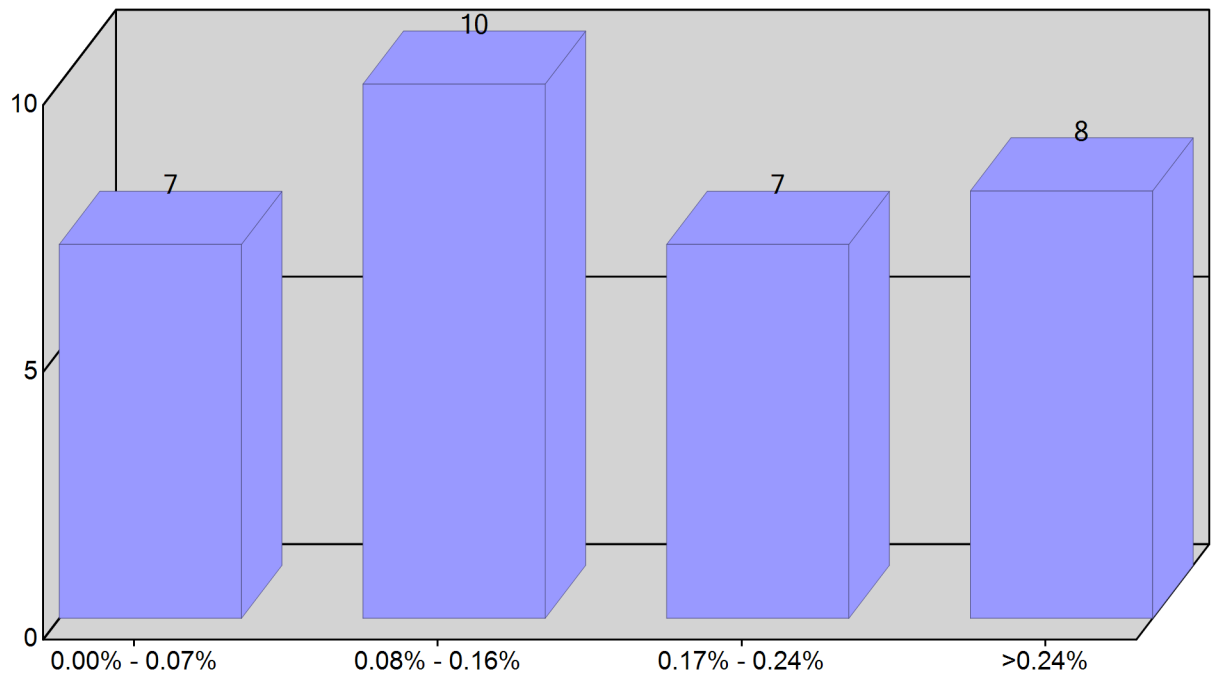
MOTORCYCLE FATALITIES IN TRAVIS COUNTY, 2012
BY AGE OF DECEDENT (IN YEARS)



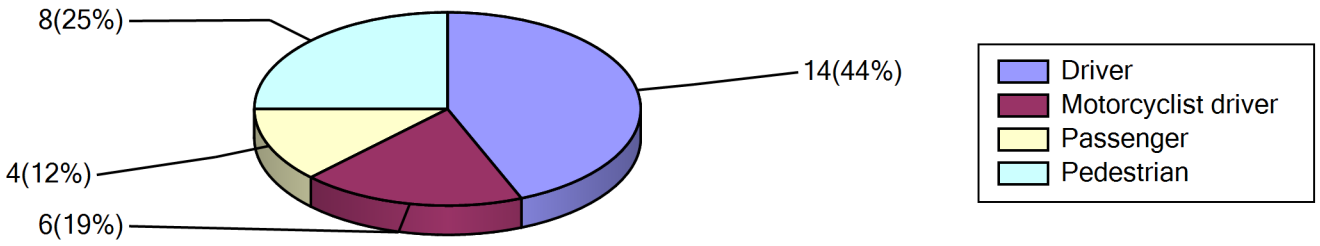


Alcohol was detected in 32 out of 108 (29%) traffic fatalities that occurred within the boundaries of Travis County in 2012.

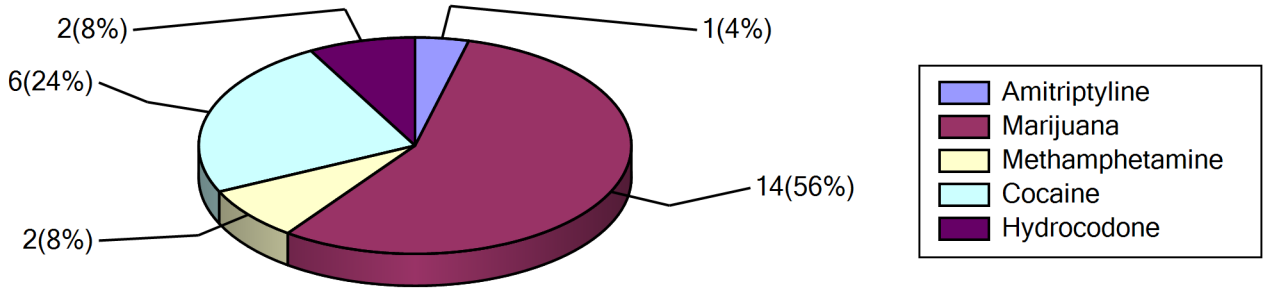
BLOOD ALCOHOL CONCENTRATION IN VICTIM WHEN ALCOHOL IS DETECTED IN TRAFFIC FATALITIES, TRAVIS COUNTY, 2012



ROLE OF VICTIM IN TRAVIS COUNTY TRAFFIC FATALITIES IN WHICH ALCOHOL WAS DETECTED IN THE DECEDENT

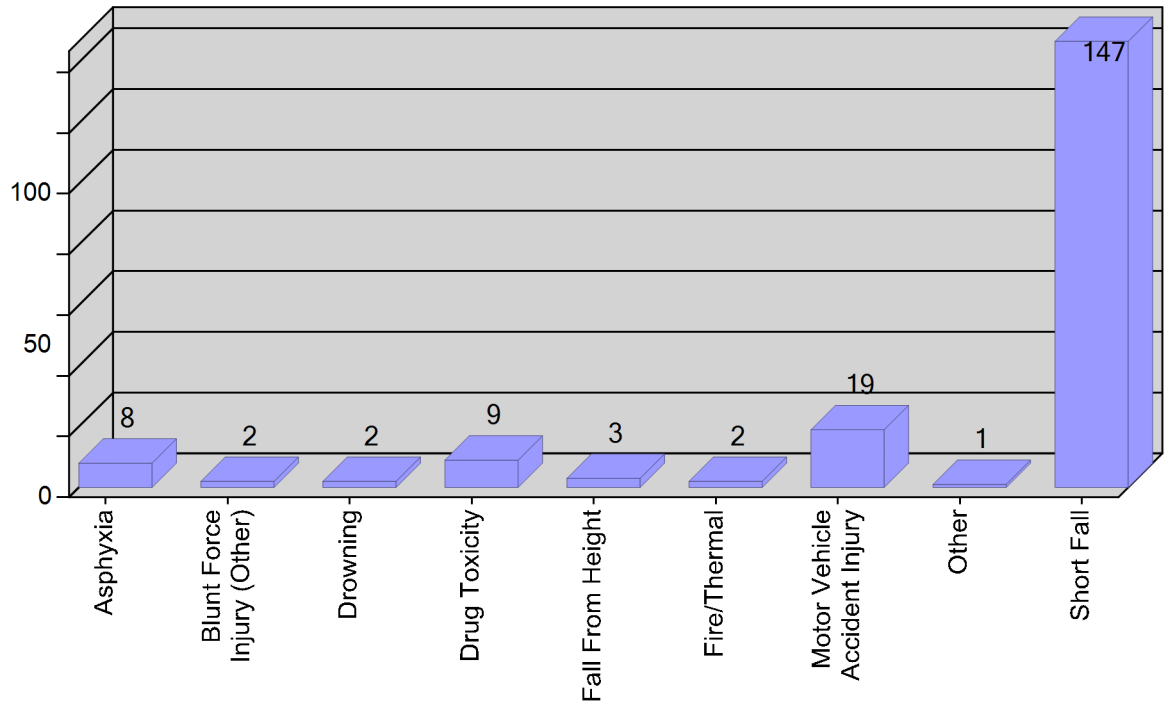


MOST COMMON DRUGS DETECTED IN COMBINATION WITH ALCOHOL IN TRAVIS COUNTY TRAFFIC FATALITIES IN 2012

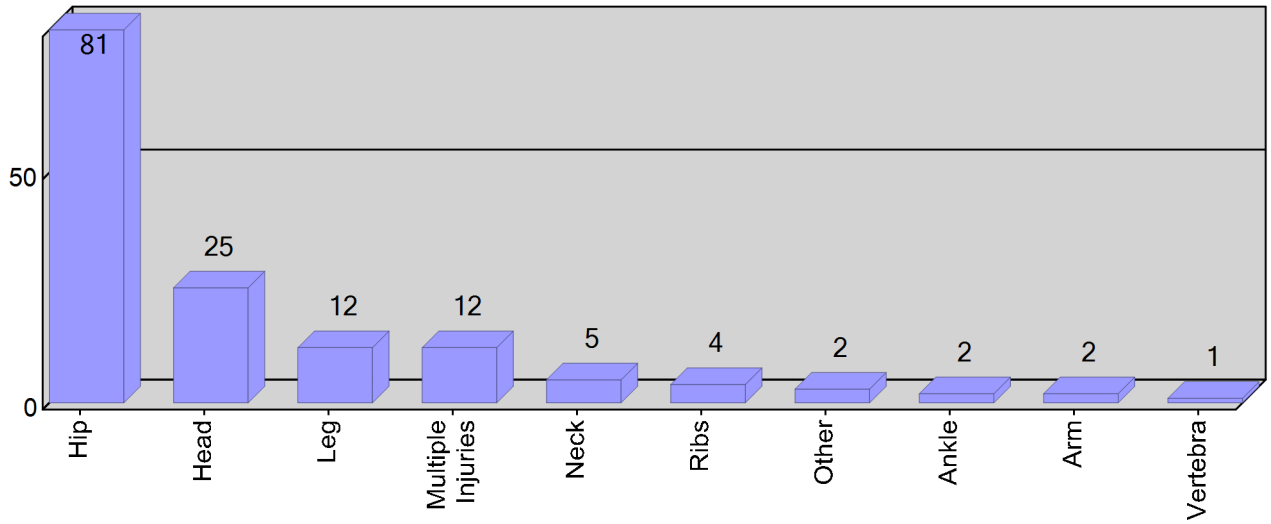


ACCIDENTAL DEATHS IN TRAVIS COUNTY ELDERLY INDIVIDUALS (>65 YEARS OF AGE)

MECHANISM OF INJURY



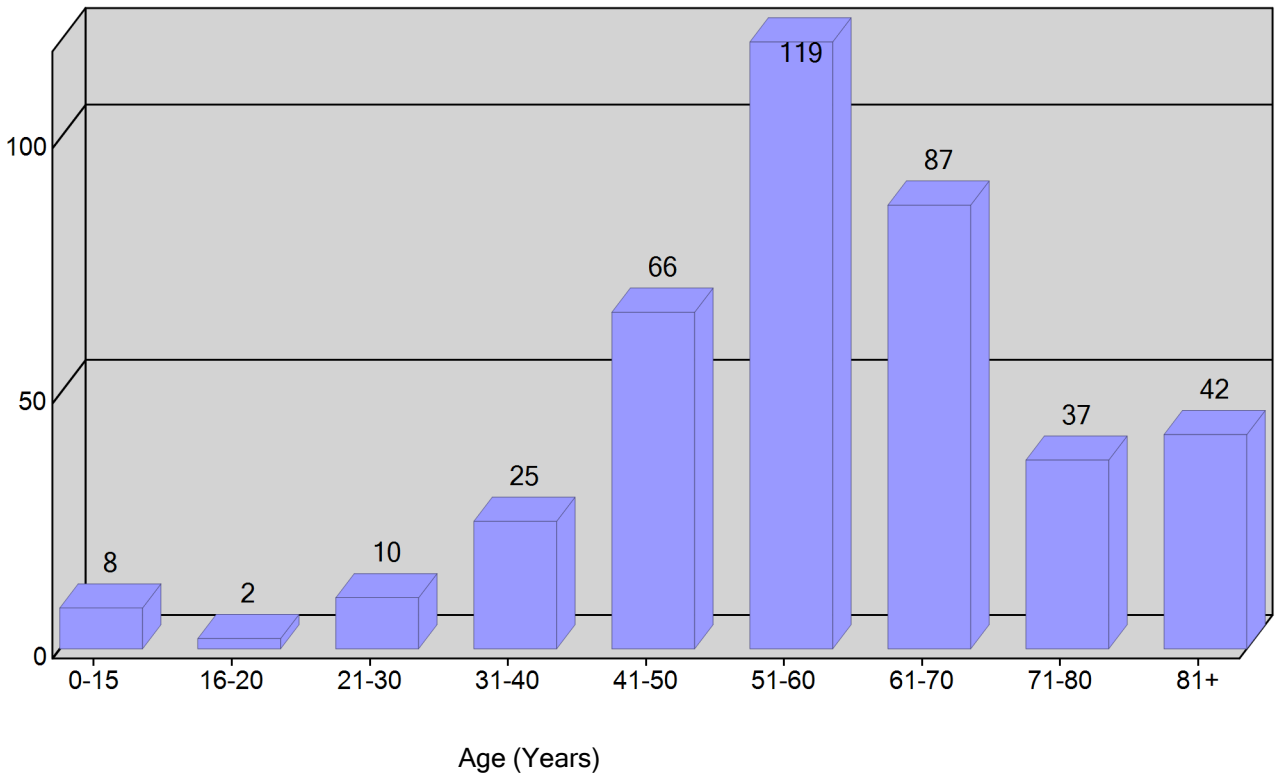
ANATOMIC LOCATION OF INJURY/FRACTURE IN FALL-RELATED DEATHS IN ELDERLY INDIVIDUALS



NATURAL DISEASE DEATHS

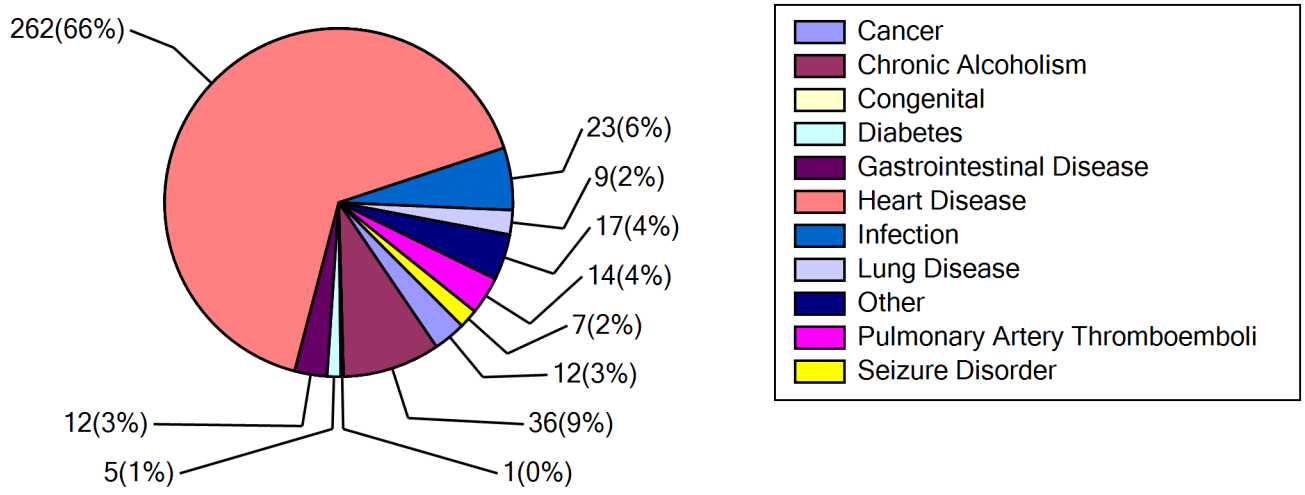
In 2012, 36% of Travis County medical examiner cases and 39% of out-of-county cases died of natural disease.

NATURAL DISEASE DEATHS IN TRAVIS COUNTY EXAMINED BY TCMEO IN 2012 BY AGE OF DECEDENT (IN YEARS)



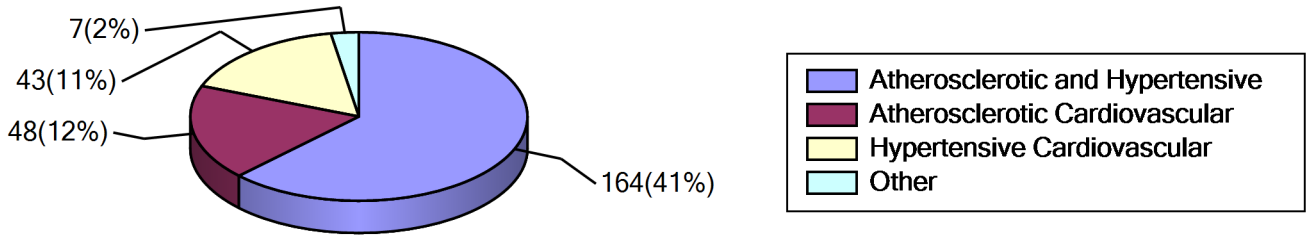
NATURAL DEATH IN TRAVIS COUNTY BY DISEASE PROCESS

As the following graph demonstrates, the greatest percentage of the deaths from natural disease are due to heart disease.



Heart disease is generally subdivided into atherosclerotic cardiovascular disease, hypertensive cardiovascular disease, and atherosclerotic and hypertensive cardiovascular disease. Atherosclerotic cardiovascular disease is a term used to describe hardening and narrowing of the arteries by atherosclerotic plaque, which often becomes calcified with age. Hypertensive cardiovascular disease refers to enlargement of the heart that occurs because of hypertension (high blood pressure). Atherosclerotic and hypertensive cardiovascular disease refers to a situation in which both disease processes are present.

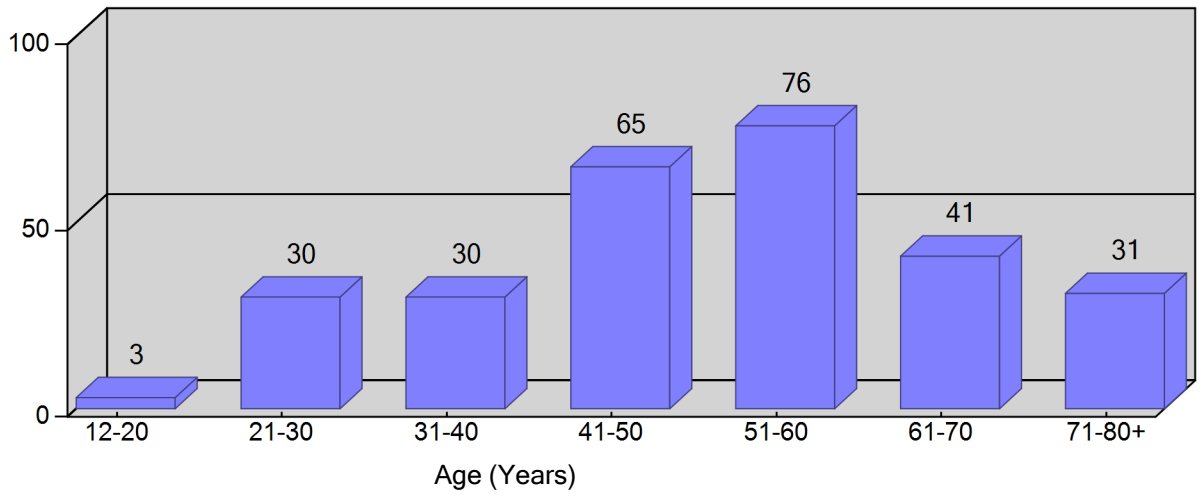
HEART DISEASE BY TYPE



OBESITY

276 out of 1055(26%) of deaths of Travis County residents 12 years or older in 2012 that were examined at TCMEO were obese. Obesity is defined as body mass index >30.

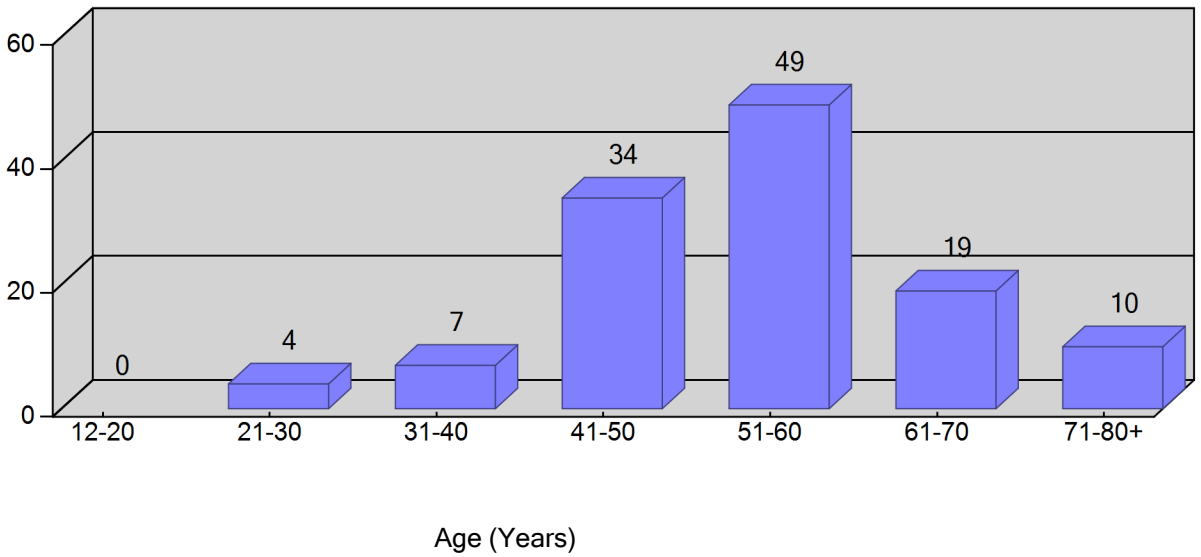
AGES OF DECEDENTS DETERMINED TO BE OBESE



DEATHS RELATED TO OBESITY

123 out of 389(32%) of natural deaths of Travis County residents 12 years or older in 2012 that were examined at TCMEO were obesity-related.

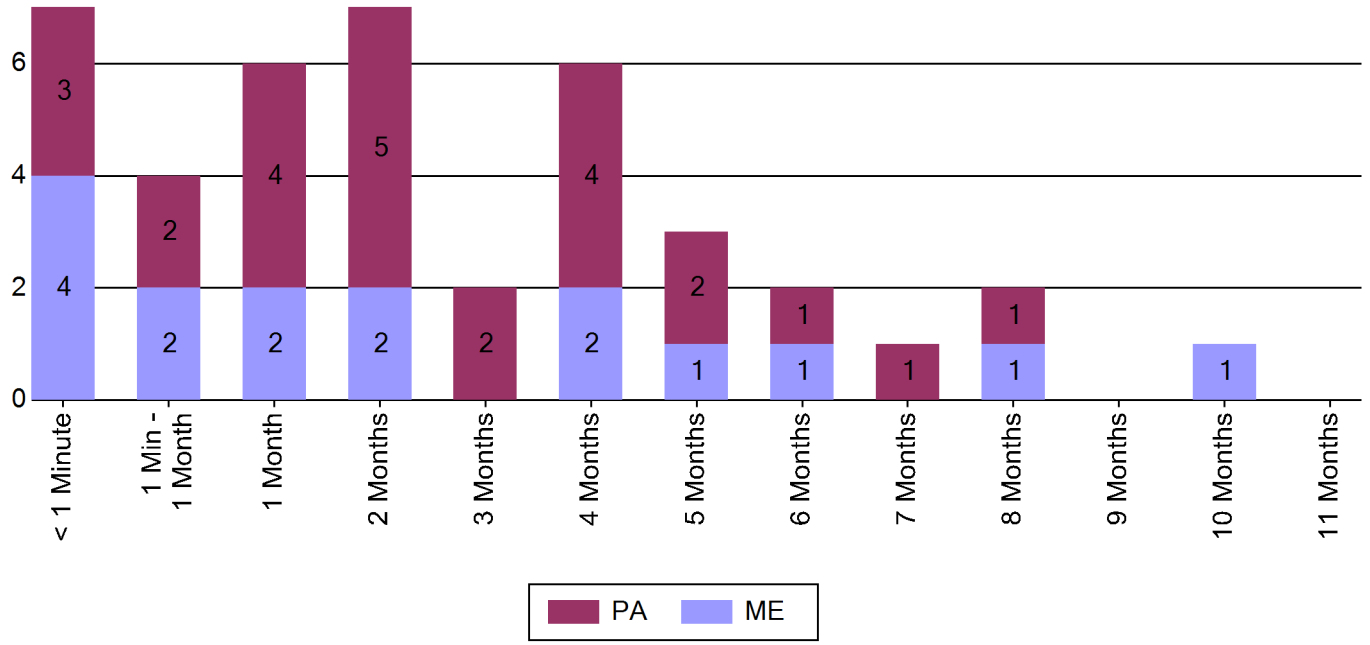
AGES OF DECEDENTS WHOSE DEATH WAS DETERMINED TO BE OBESITY RELATED



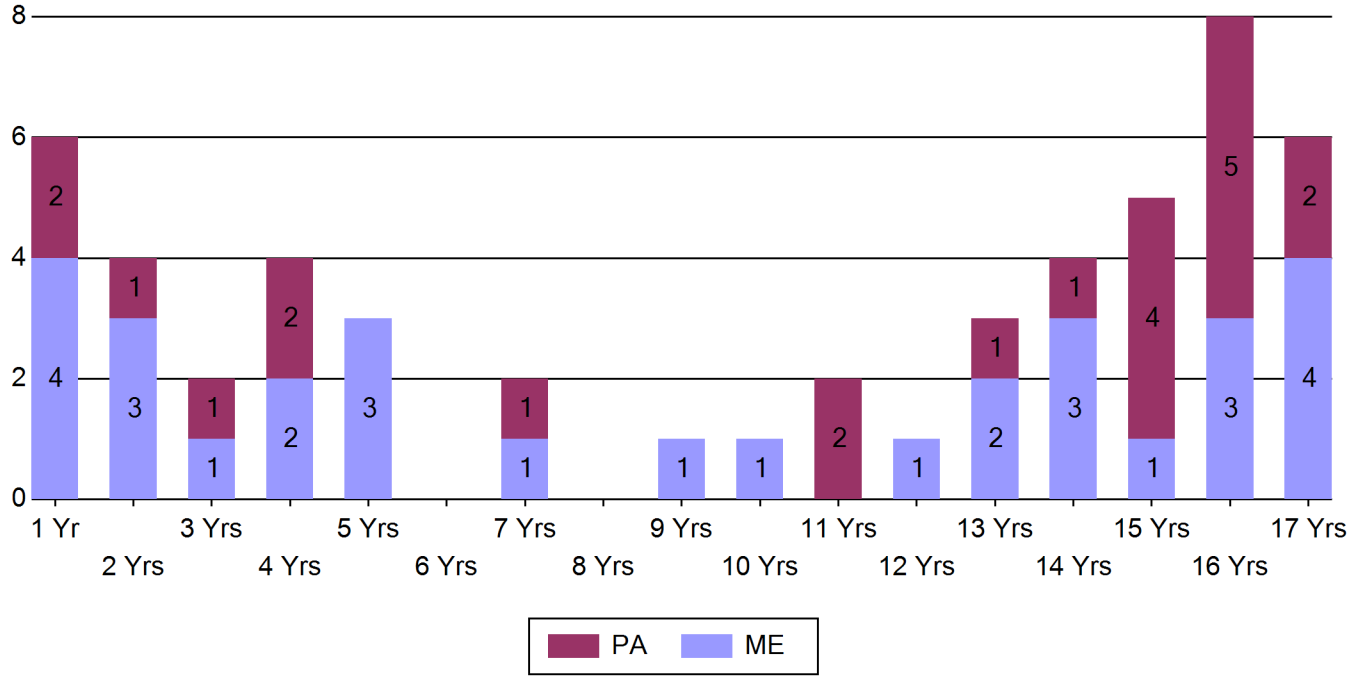
CHILD FATALITIES

In 2012, 46 child fatalities (1 minute through 17 years of age) in Travis County were reported to TCMEO. An additional 47 child fatalities in other counties were reported to our office.

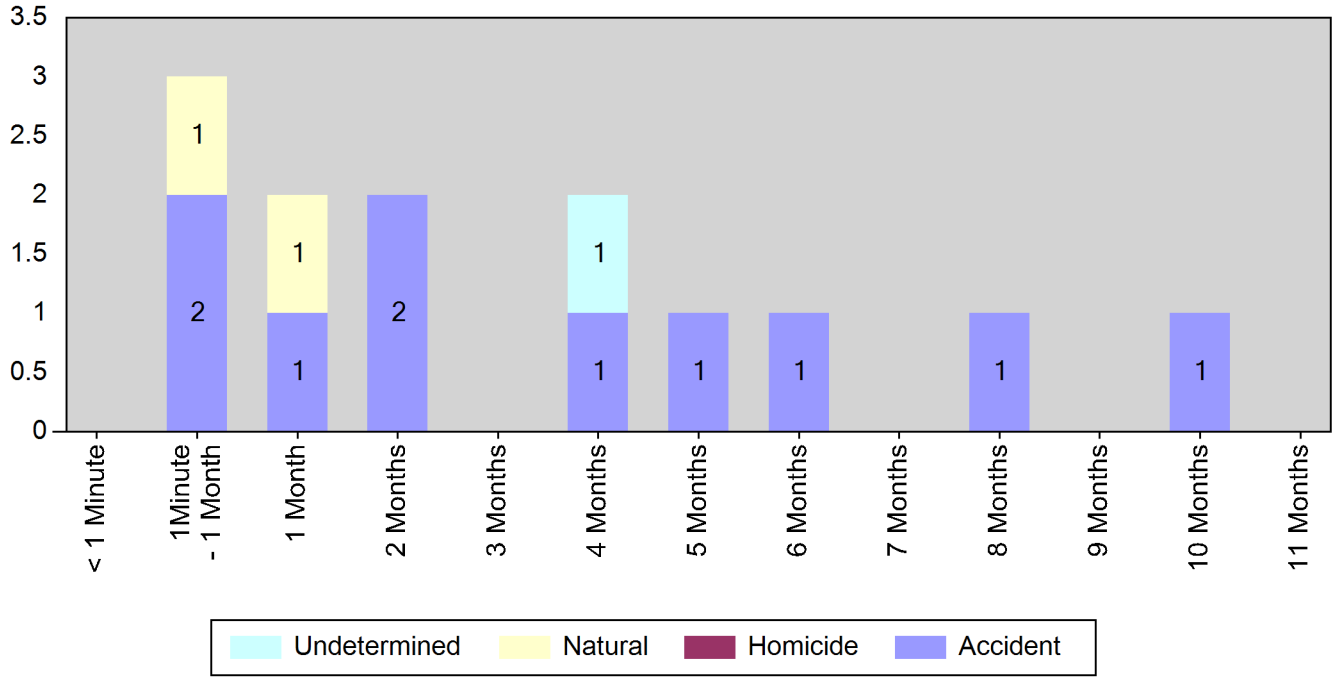
AGES AT DEATH OF CHILD FATALITIES

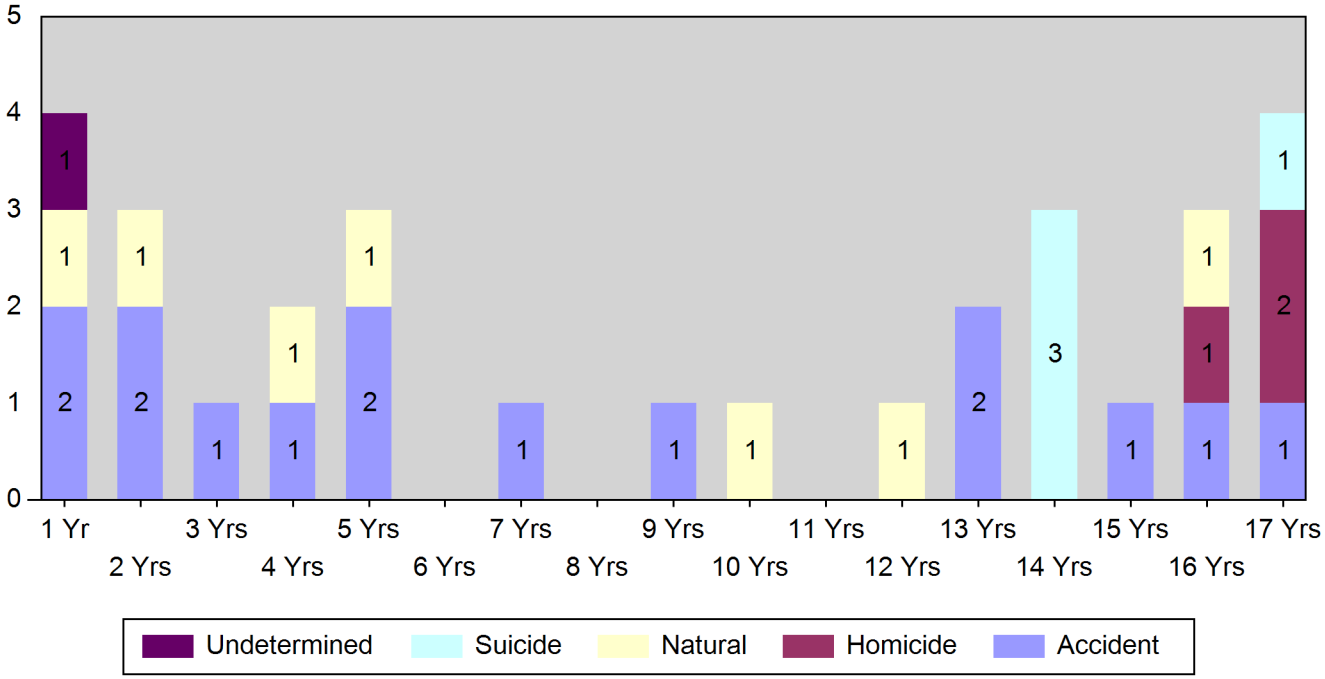


AGES AT DEATH OF CHILD FATALITIES (CONTINUED)



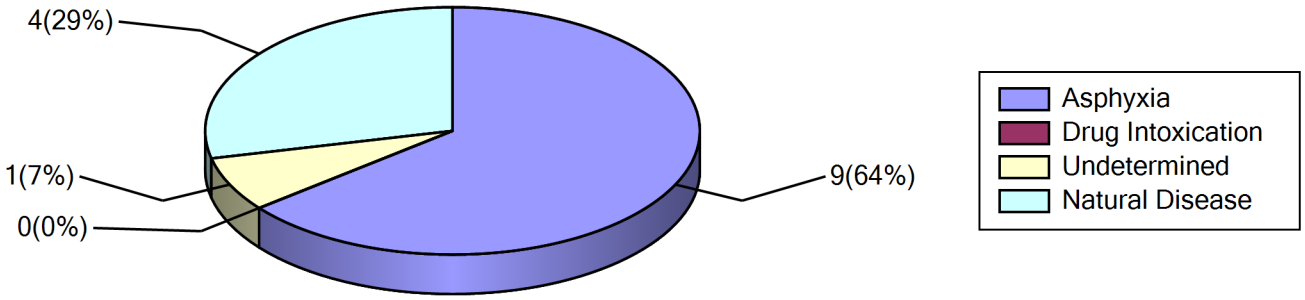
MANNER OF DEATH IN CHILD FATALITIES IN TRAVIS COUNTY





INFANT DEATHS (1 DAY TO 1 YEAR OF AGE) IN TRAVIS COUNTY, 2012

MECHANISM OF DEATH, NUMBER OF CASES

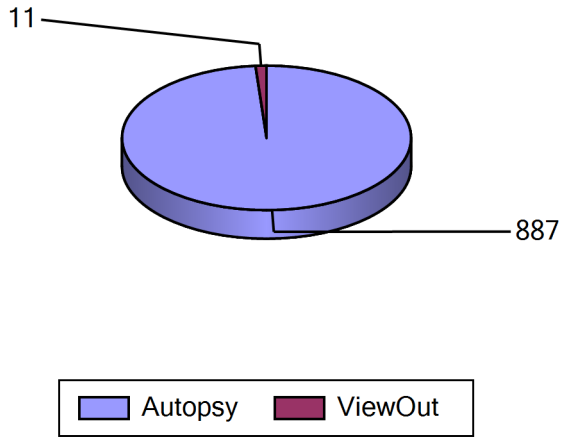


The majority of asphyxia deaths in these infants were related to unsafe sleeping conditions such as bedsharing in adult beds with other individuals and/or the use of unsafe/adult-type bedding materials. One suffocation death was unexplained.

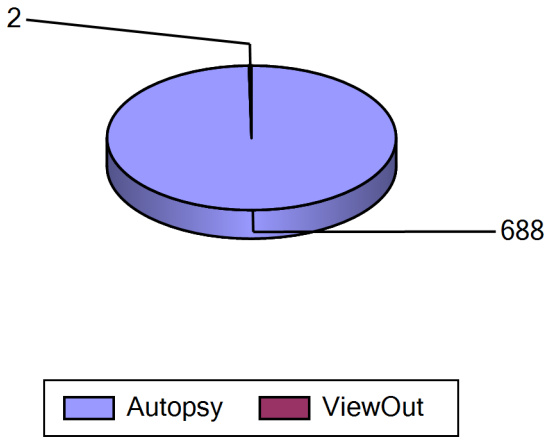
TOXICOLOGY TESTING IN 2012

Toxicology testing is routinely performed on cases that are autopsied. Toxicology testing is not routinely performed on cases that are not autopsied and have no suspicion of drug abuse or misuse of medications. In 2012, toxicology and/or clinical testing was performed on 97% of Travis County medical examiner autopsies and on 99% of out-of-county autopsies. Toxicology and/or clinical testing was performed on 6% of Travis County medical examiner cases that were viewed out (no autopsy performed).

TOXICOLOGY TESTING IN TRAVIS COUNTY CASES

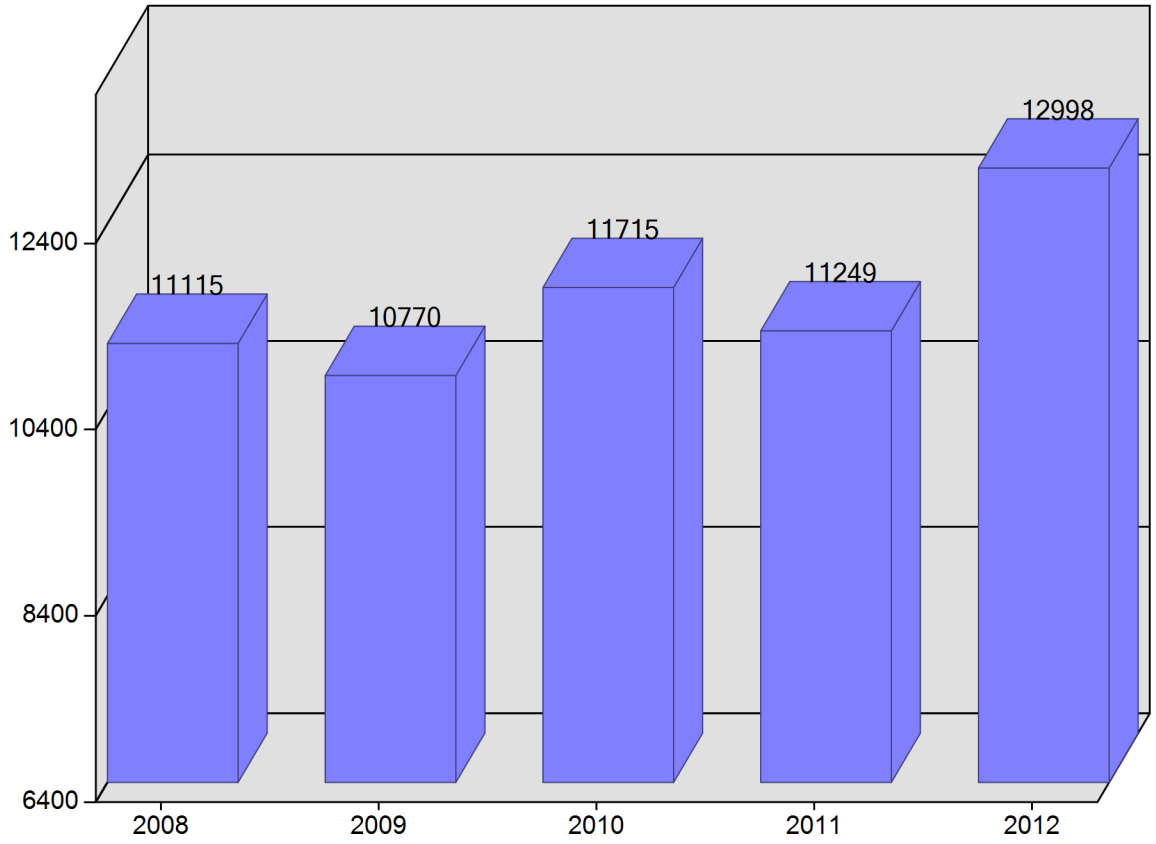


TOXICOLOGY TESTING IN OUT-OF-COUNTY CASES



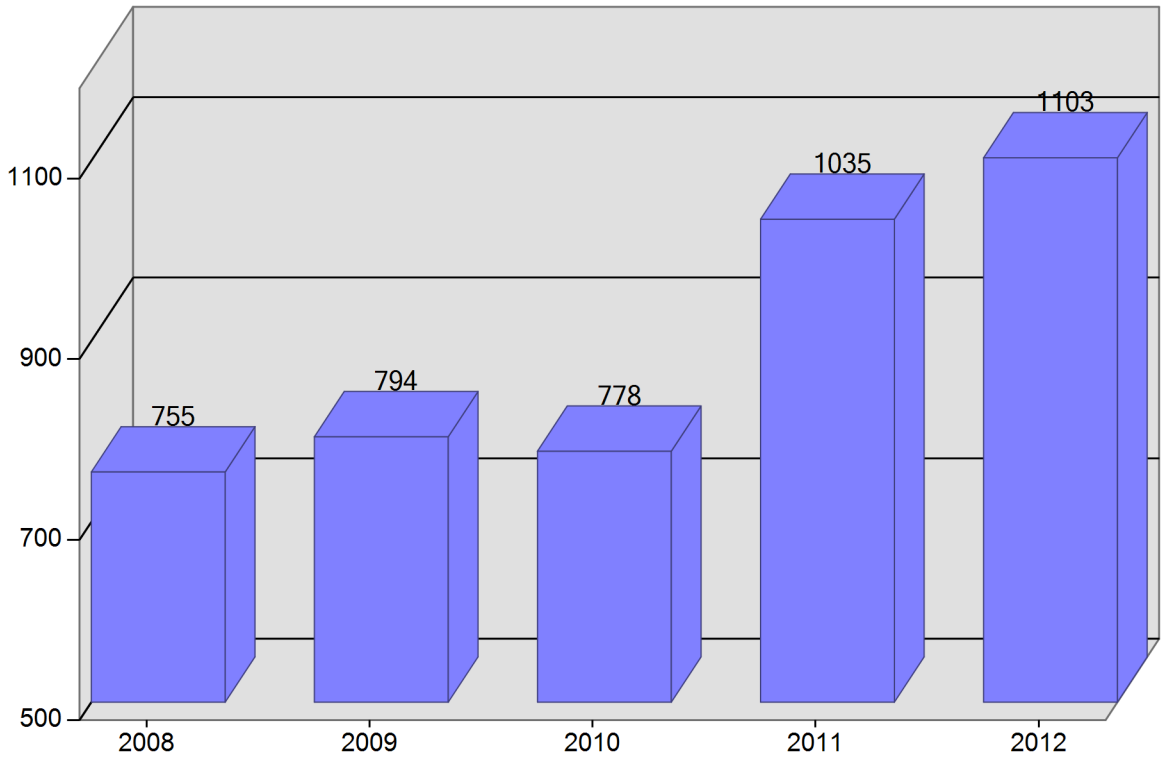
NUMBER OF TOXICOLOGY TESTS PERFORMED

The toxicology laboratory is accredited by the American Board of Forensic Toxicology. The laboratory is housed within the Medical Examiner's office and provides testing and support for a vast array of drugs and poisons to assist the Medical Examiners in the determination of cause and manner of death. The laboratory utilizes advanced techniques and equipment including enzyme linked immuno-sorbent assay (ELISA), gas chromatography-mass spectrometry (GC/MS), and liquid chromatography-mass spectrometry (LC/MS) to aid in the detection and measurement of these drugs and poisons in physiological specimens collected at autopsy. The toxicology laboratory is staffed by professional scientists with experience in forensic toxicology, analytical chemistry, and pharmacology. The following chart illustrates the raw number of complex screens and quantification tests performed on Travis County cases for the past five years.

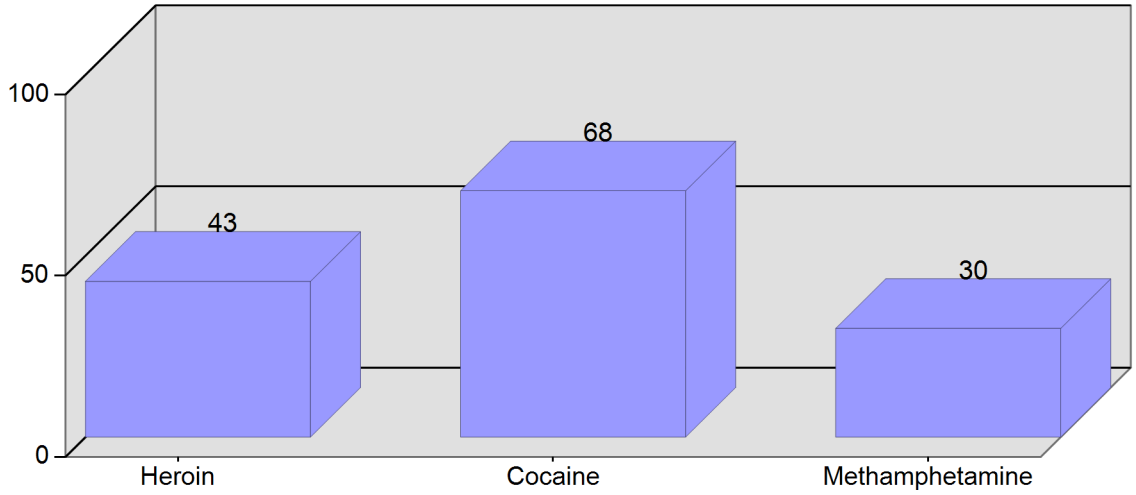


LIQUID CHROMATOGRAPHY/MASS SPECTROMETRY (LC/MS) TESTING

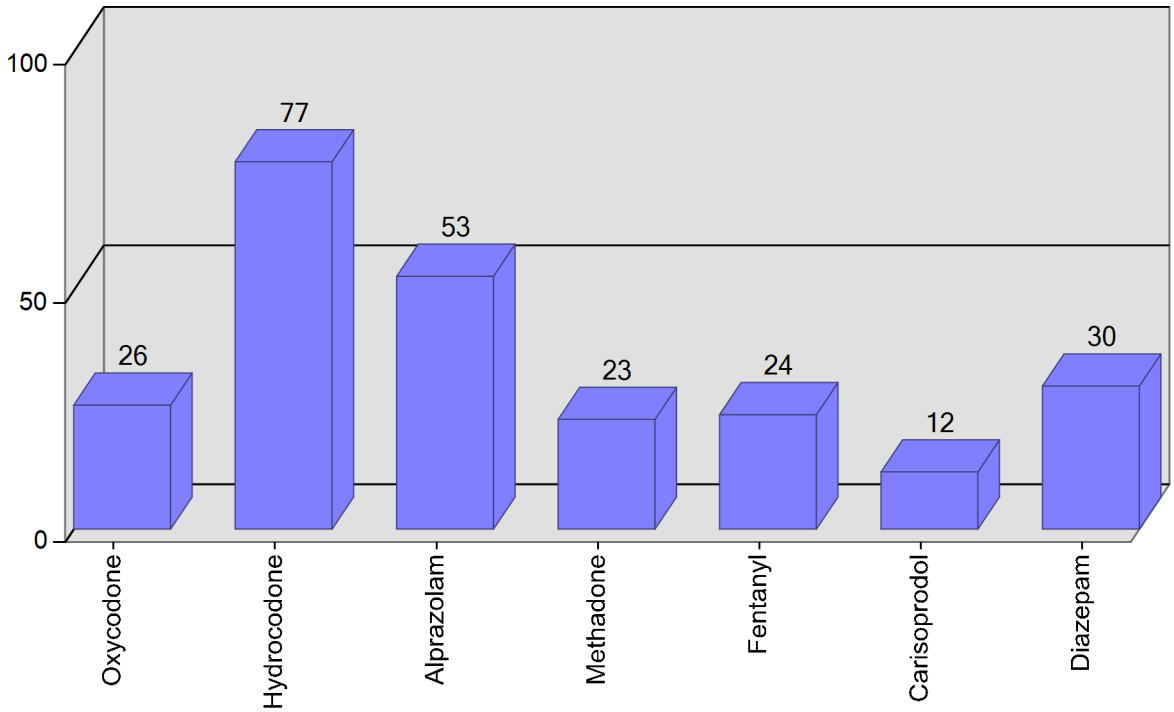
In 2002 the Travis County Medical Examiner's office was fortunate to be one of the first Medical Examiner toxicology laboratories in Texas and the USA to acquire LC/MS technology. Currently, we have two such instruments. LC/MS has afforded our office the opportunity to advance our scope of drug screening and quantification and improve upon quality control in those analyses. In fact, LC/MS is utilized by major drug companies in the development and testing of new drugs that will be introduced to the general public. Therefore it is important for the Medical Examiner's office to test for these drugs as well. The chart below illustrates the upward trend in LC/MS testing in our laboratory on all cases for the past five years. It is the goal of our laboratory to keep up with technological advances in order to provide the best toxicological information to the Medical Examiners, the judicial system, law enforcement, and the general public.



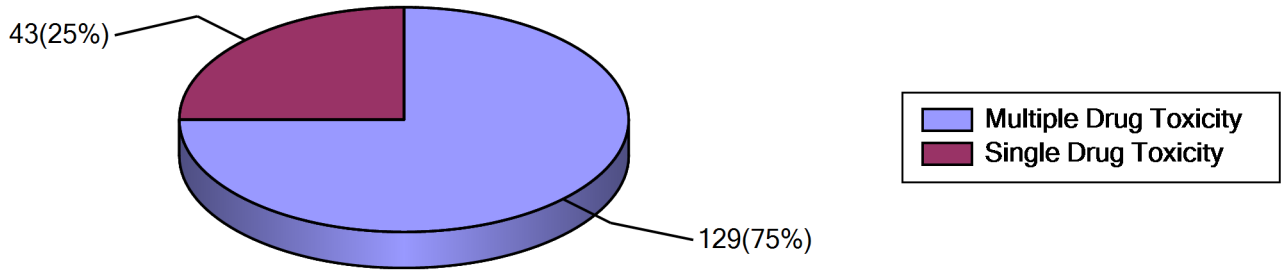
ILLICIT DRUGS MOST COMMONLY DETECTED IN TRAVIS COUNTY DECEDENTS EXAMINED AT TCMEO IN 2012 (not necessarily drug overdose deaths)



TYPICALLY ABUSED MEDICATIONS MOST COMMONLY DETECTED IN TRAVIS COUNTY DECEDENTS EXAMINED AT TCMEO IN 2012 (not necessarily drug overdose deaths)

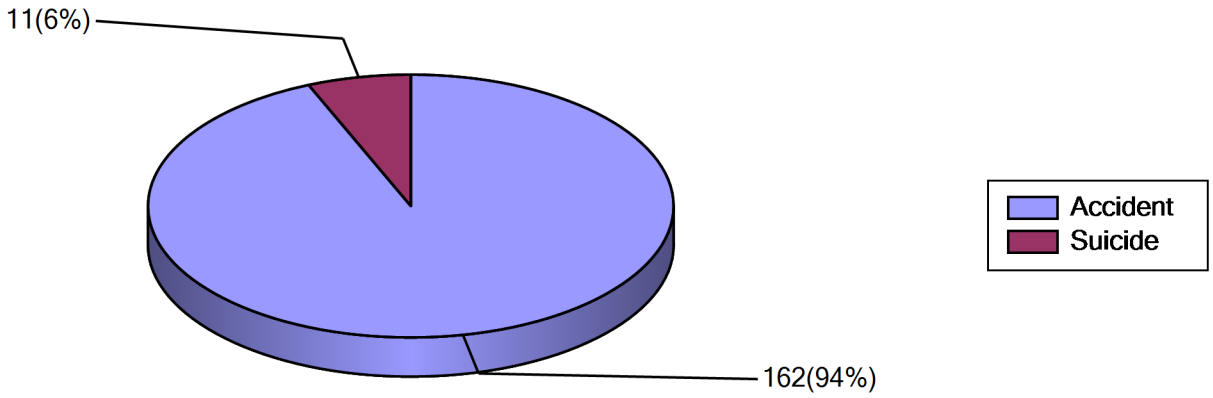


TYPES OF DRUG-RELATED DEATHS IN TRAVIS COUNTY IN 2012: MULTIPLE DRUG TOXICITY VERSUS SINGLE DRUG TOXICITY



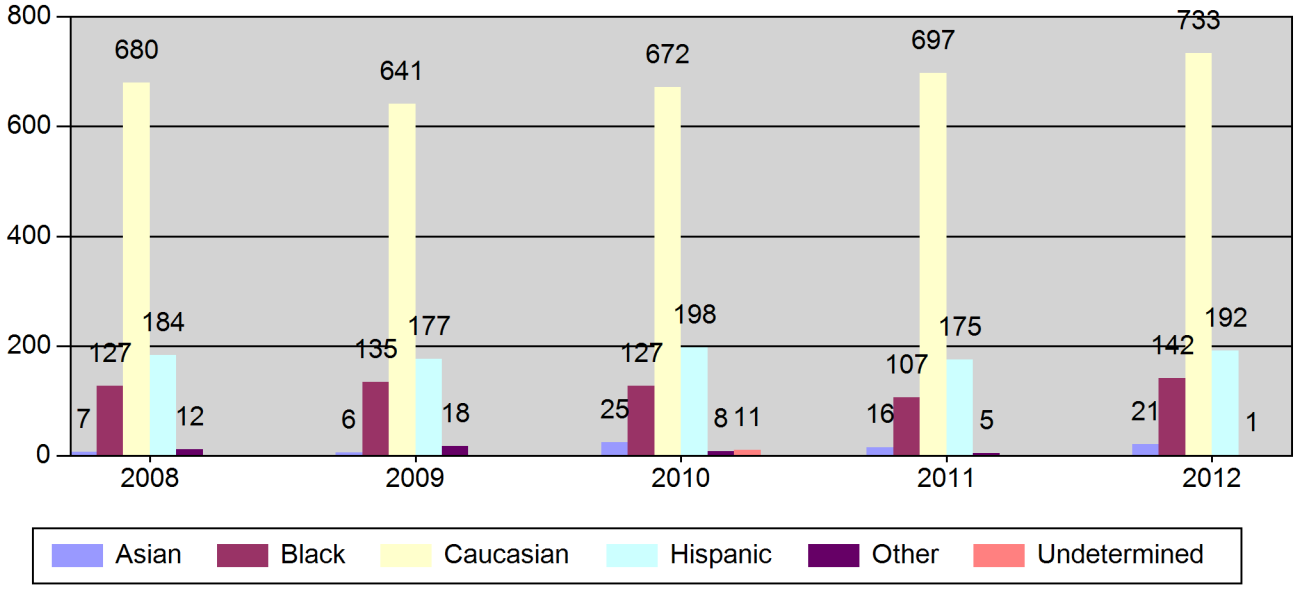
DEATHS BY INTOXICATION IN TRAVIS COUNTY, 2012

MANNER OF DEATH

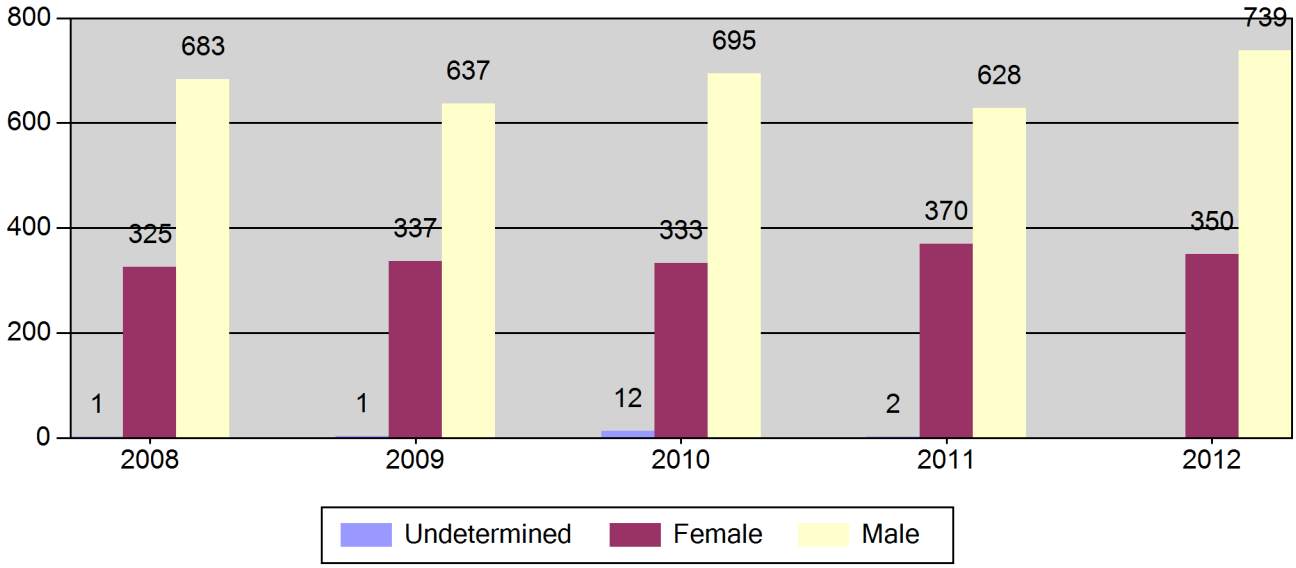


DEMOGRAPHIC INFORMATION

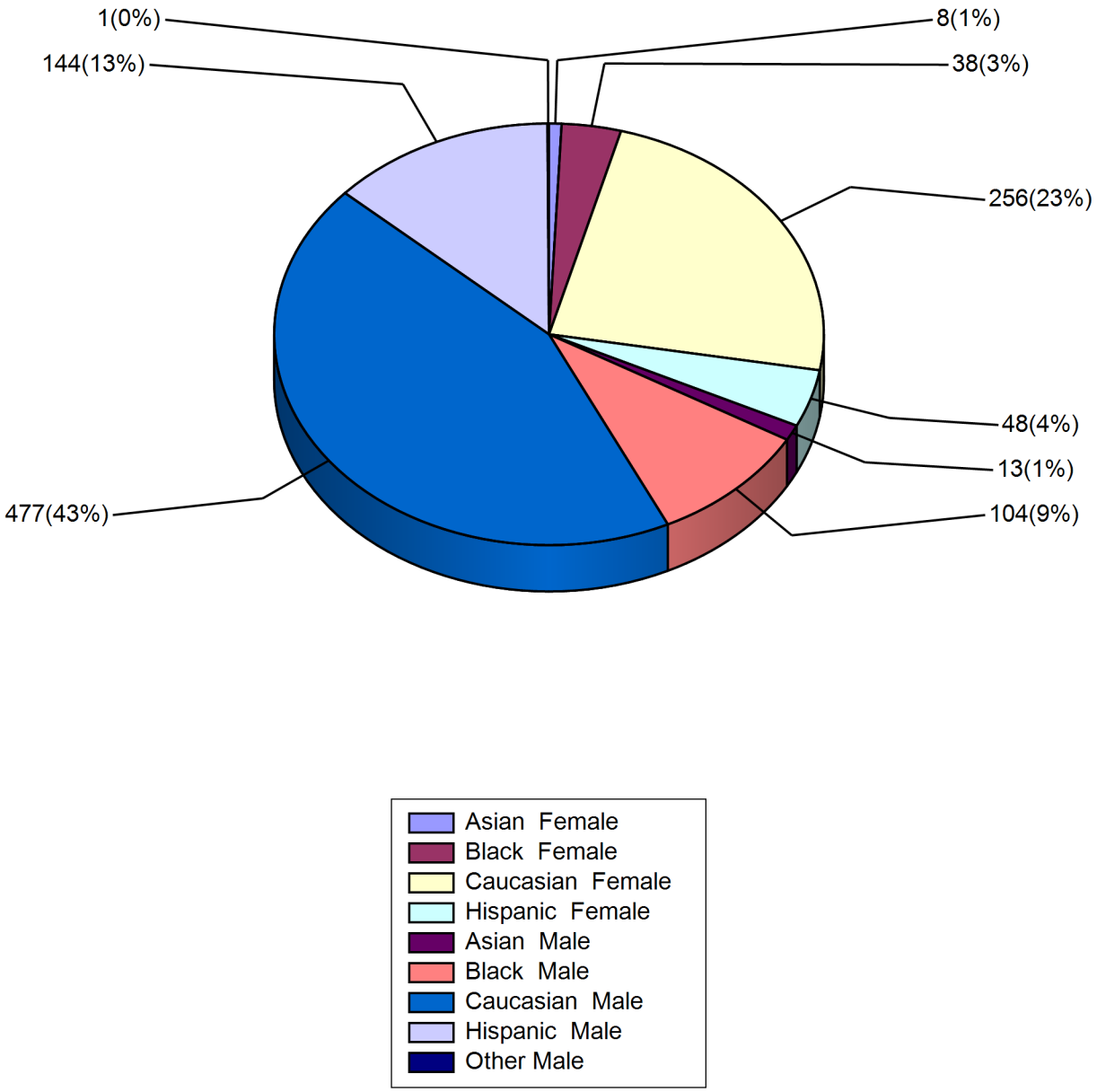
DECEDENT'S RACE, 2012 TRAVIS COUNTY CASES AS COMPARED TO CASES OCCURRING IN THE PREVIOUS FOUR YEARS



DECEDENT'S GENDER, 2012 TRAVIS COUNTY CASES AS COMPARED TO CASES OCCURRING IN THE PREVIOUS FOUR YEARS



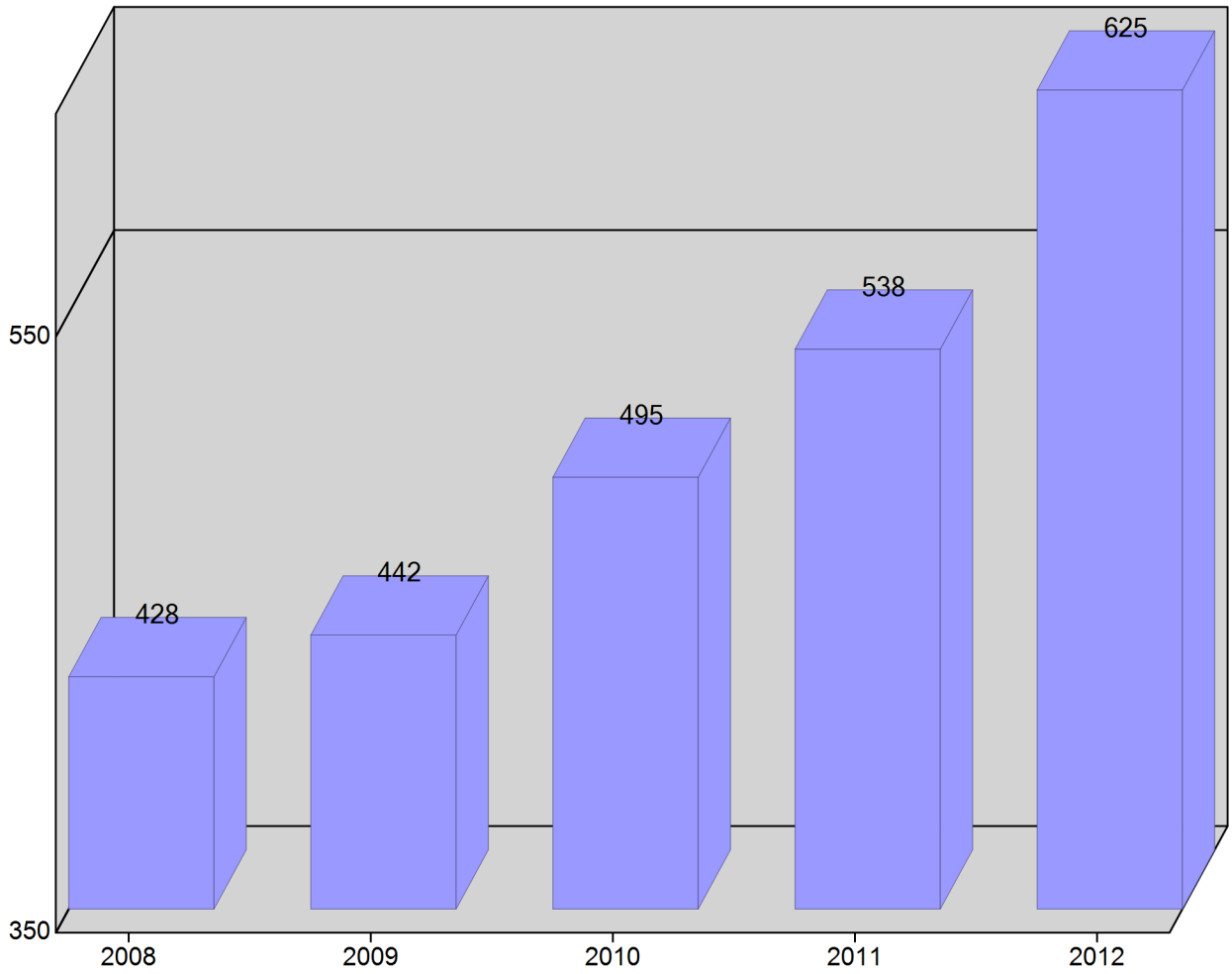
BREAKDOWN BY RACE AND GENDER OF TRAVIS COUNTY DEATHS AS INVESTIGATED BY TCMEO IN 2012



SCENE INVESTIGATION

Scene investigation is an important component of proper medicolegal death investigation. TCMEO forensic investigators attended 625 death scenes in Travis County in 2012. TCMEO investigators do not attend death scenes that are located outside of Travis County boundaries. Types of scenes investigated include all suspected homicides, suicides, and accidental deaths, and select cases suspected to have died of natural disease.

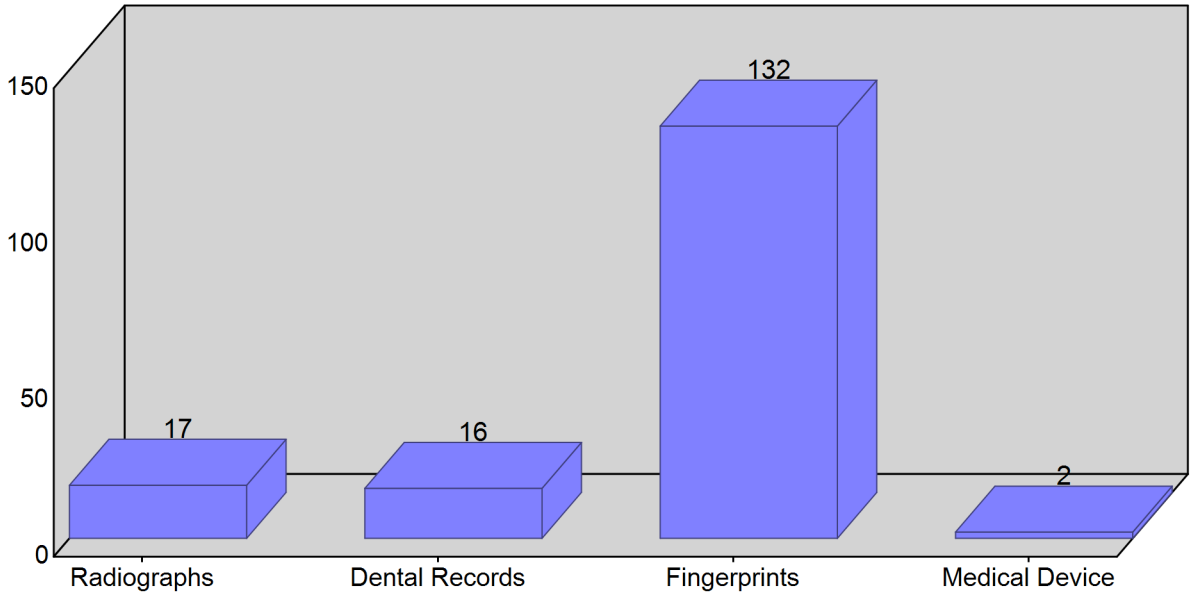
TRENDS IN SCENE INVESTIGATION, 2008-2012
NUMBERS OF SCENE INVESTIGATIONS



UNIDENTIFIED BODIES

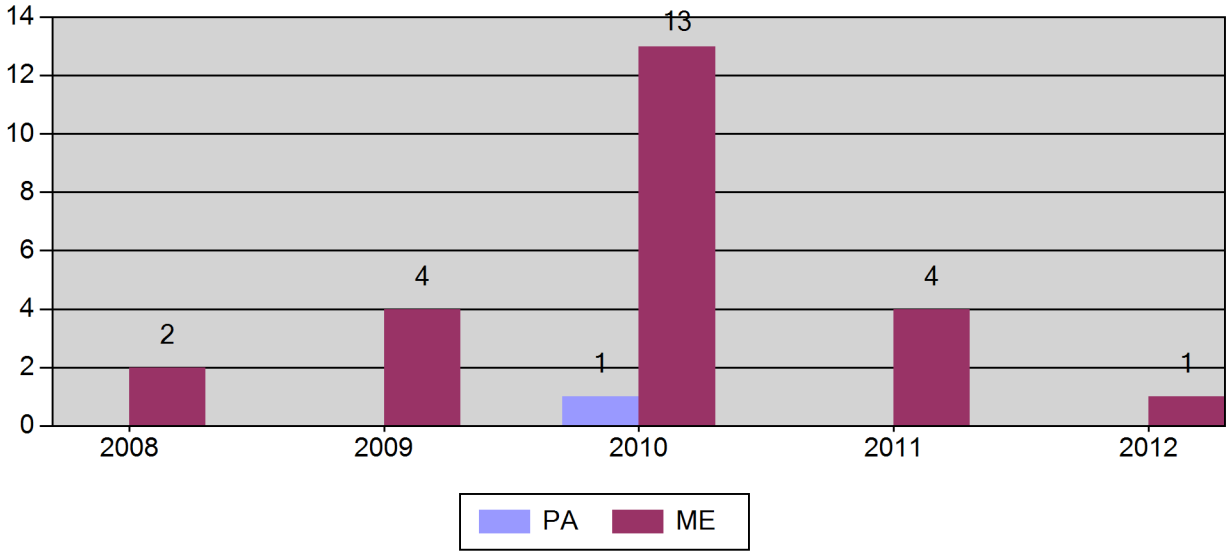
Occasionally, people who die have no identification on them, and it is either unknown or uncertain as to who they are. TCMEO, along with law enforcement agencies, work together using various techniques to scientifically identify these decedents. In 2012, 167 decedents examined at TCMEO were scientifically identified.

METHODS OF SCIENTIFIC IDENTIFICATION OF UNIDENTIFIED DECEDENTS, 2012 (ME and PA cases combined)



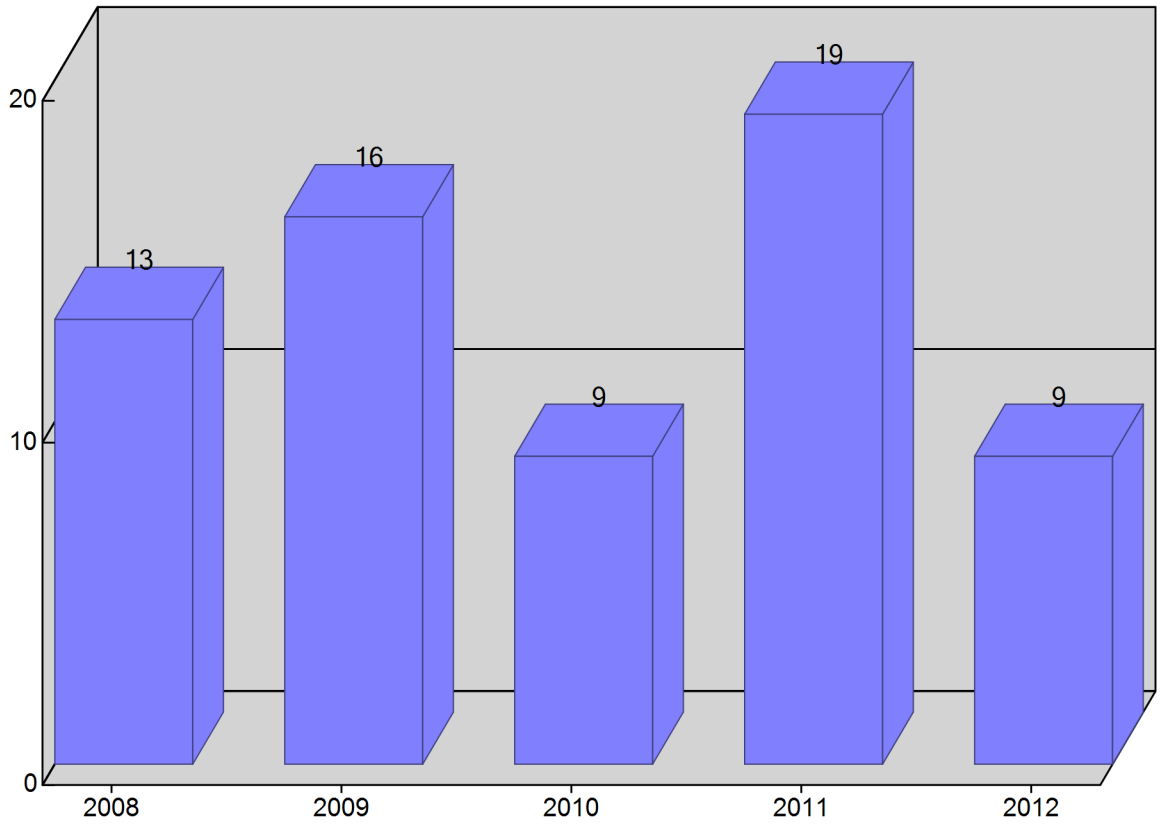
UNIDENTIFIED BODIES AT THE TCMEO 2008 - 2012

Despite best attempts at identifying unidentified individuals, occasionally, a body will remain unidentified. These cases most often are skeletal remains, where only bones are available for identification, ranging from a single bone fragment to an entire skeleton.



NUMBERS OF UNCLAIMED BODIES AT THE TCMEO
2008-2012

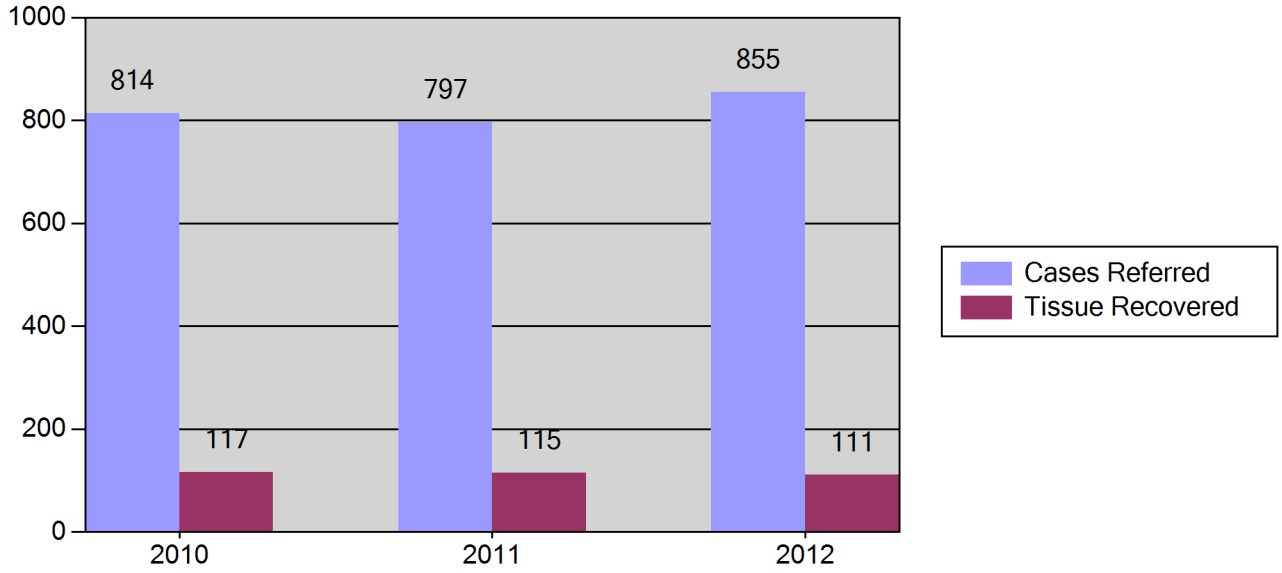
(All cases were referred to the Travis County Burial Assistance Program.)



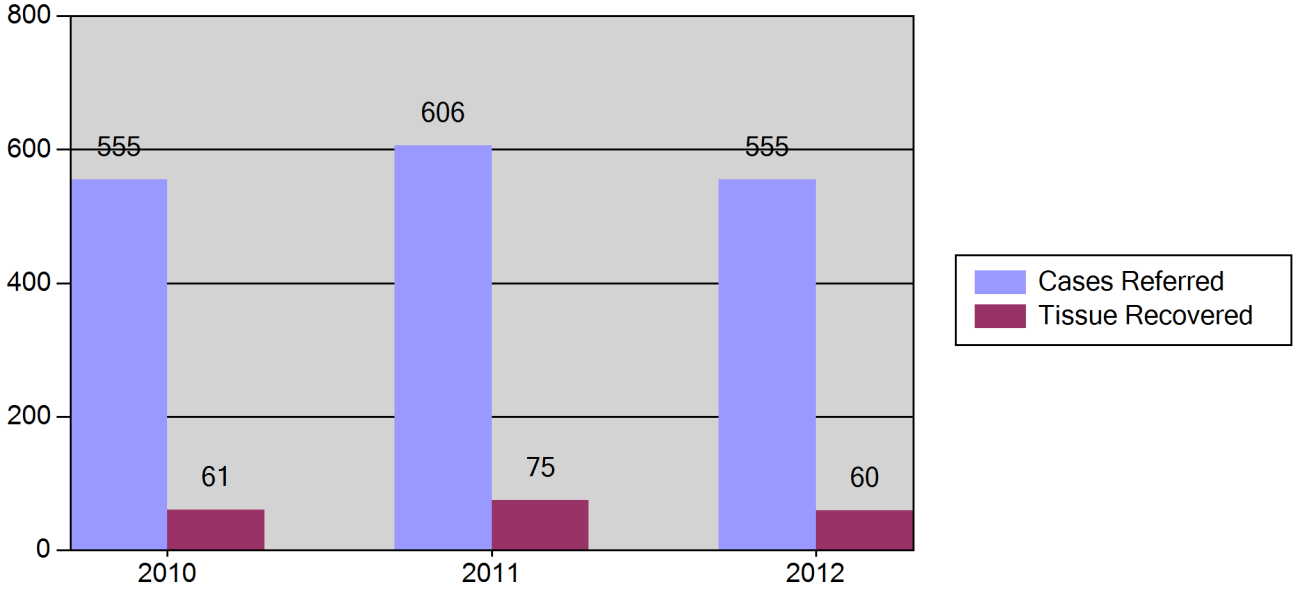
EYE AND TISSUE BANK REFERRALS 2010 - 2012

TCMEO refers all eligible cases to the Travis County Blood and Tissue Center and the Lone Star Lions Eye Bank of Central Texas for possible tissue recovery. Tissue may be recovered from select cases only upon consent from the decedent's family. The following charts indicate the number of cases referred to the recovery agencies by TCMEO, and the number of cases in which tissue was recovered.

Travis County



Out of County

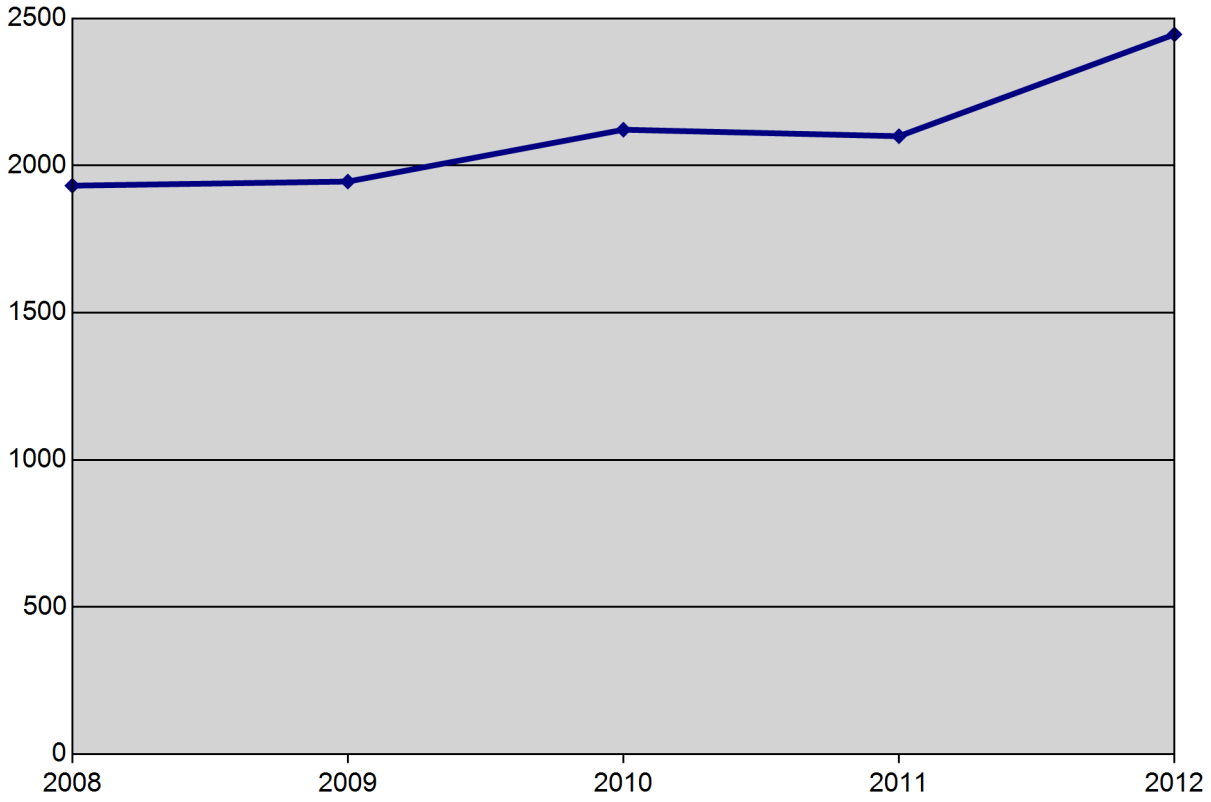


ORGAN DONATION IN 2012

If organ donation is to occur in a case, it takes place in a hospital setting before the body is received by TCMEO for its examination. In 2012, organ donors who died within the boundaries of Travis County gifted a large number of organs that were successfully transplanted into needy individuals across the United States. There were 16 organ donors from Travis County in 2012, the majority of whom died a traumatic death and subsequently underwent autopsy.

CREMATION AUTHORIZATIONS 2008 - 2012

In Texas, Medical Examiners or Justices of the Peace are required by law to sign cremation authorizations before a body is cremated. At the TCMEO, the cremation authorization form and death certificate of each decedent is reviewed by a forensic pathologist before authorizing cremation requested by the decedent's family. In 2012, TCMEO doctors authorized 2446 cremations. The following demonstrates the number of cremation authorizations signed by our pathologists over the recent years.



BODY TRANSPORT IN 2012

Travis County contracts with a company to provide transport services to our office on deaths that occur within the boundaries of Travis County. In 2012, 1042 bodies in Travis County were transported using our contracted provider, and 47 bodies were transported by TCMEO personnel. Out-of-county cases are transported by funeral homes retained by the referring Justice of the Peace or family.

COMMUNITY INVOLVEMENT IN 2012

TCMEO regularly interacts with, and impacts, the local community in a variety of ways. Such activities over the past few years included a variety of educational endeavors, including lectures on a college level to St. Edwards and University of Texas students. We provide an annual educational conference on medicolegal death investigation to regional law enforcement personnel. On a high school level, TCMEO staff lectured on death investigation at several schools, and participated in Shattered Dreams and Skillpoint Alliance programs. Staff members of TCMEO serve on the Travis County Child Fatality Death Review Team and attend AIM HIGH meetings, Safe Kids Austin, and Safe Sleep Task Force meetings. We have lectured on infant safety for teen mothers and on unsafe sleep environments. In addition, we gave presentations to area hospitals, hospice agencies, and nursing homes on proper reporting of medical examiner cases. We also provided lectures on proper death certification to physician and administration groups. One of our most important community interactions happens when physicians and hospitals receive post-mortem reports and gain insight on a disease or injury process. Over the past few years, TCMEO hosted interns from the St. Edwards University Forensic Science program, the University of Texas Nursing program, the University of Texas College of Pharmacy, and the Texas State University Anthropology program. We also provide training in forensic pathology for various regional medical students and pathology residents. TCMEO also fulfills legal obligations related to its function in medicolegal death investigation.