Opening Statement from the Coroner

Fellow Citizens,

This statistical report from the Coroner's Office documents the activities of the office for the calendar year 2010 only.

The Coroner's Office receives requests for information about the cause of death and the circumstances surrounding death from many agencies and groups, including law enforcement, criminal justice systems, insurance companies, attorneys, physicians, employers, a variety of watchdog groups, and many others. None, however, is more important than the survivors of the deceased. A thorough investigation can answer many of their questions and help ease their period of grief. While there is not much we can do that will help the deceased directly, there is a great deal that we can do to help their survivors. Although our work involves investigation of death, our responsibility is also to the living.

As with previous reports, the data is presented in various forms and viewed from a variety of perspectives. The reader should resist the temptation to come to interpretive conclusions based solely on this year of data. Although there may be fluctuations in the number of certain types of death from year to year, these may not reflect true trends.

Please feel free to contact our office at 303-441-3535 if you have questions, requests, or suggestions.

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Emma R. Hall
Boulder County Coroner

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Introduction

Function/Goal of the Office

The Office of the Boulder County Coroner is a creation of the Colorado Constitution and the Colorado Revised Statues (C.R.S.) 30-10-601 through 621. Under those statutes the Coroner is required to make all proper inquiry regarding the cause and manner of death of any person under his/her jurisdiction.

The cause of death may be defined as the disease or injury that resulted in the death of an individual. Examples of causes of death may include: "heart disease", "pneumonia", "gunshot wound", or "blunt force trauma". The manner of death is a medico-legal term that describes the circumstances of an individual's death, and is an opinion based on the "preponderance of evidence". When a natural disease process, such as heart disease or diabetes, causes death, the manner of death typically would be classified as **Natural**. The manner of death is classified as **Accident** when the death is the result of a hostile environment, and the event is not expected, foreseen, or intended. The manner of death is classified as **Suicide** when the person acts with the intent of causing his or her own death. When the death is the result of the killing of one human being by another, the manner of death is classified as **Homicide.** Homicide is a medico-legal term and should not be confused with such terms as "murder" or "manslaughter" which are used by the criminal justice system to describe the degree of criminal intent in a particular homicide. When there is insufficient evidence to determine the cause and/or manner of death, both the cause and manner of death may be classified as **Undetermined**. In other instances, the cause of death may be readily apparent, but the evidence that indicates manner of death may be equivocal, thereby leading to a manner of death of **Undetermined**. The manner of death is classified primarily to aid survivors in understanding the events surrounding an individual's death and for statistical purposes.

It is the goal of our office to provide competent medico-legal investigation of deaths falling under our jurisdiction, and to provide compassionate and sensitive assistance to the survivors of the deceased. It is the philosophy of our office that we exist for the benefit of the living.

Description of Reportable Cases

The following deaths are **reportable** to the Boulder County Coroner's Office:

1. All patients who die within twenty-four hours of admission to a hospital.
2. All deaths in which a physician is not in attendance or has not been in actual attendance of the decedent within thirty days prior to death.
3. All deaths that occur in a hospital Emergency Department.
4. All traumatic, chemical or violent deaths; deaths due in part to trauma, chemicals, or violence, whether apparently homicidal, suicidal, or accidental, including, but not limited to deaths due to mechanical, thermal, chemical, or radiation injury; maternal deaths due to abortion, whether apparently induced or not. The length of time between injury and demise does not alter the need to report the death. For example, if someone sustains a fractured hip, is treated, and dies three months later, the death should still be reported. If a person dies of pneumonia after being hospitalized in a nursing home for injuries sustained five years prior in an auto accident, the death is still a Coroner's case.
5. All deaths occurring in a hospital Operating Room.
6. All deaths associated with diagnostic or therapeutic procedures.
7. All deaths in which the attending physician is unable to certify the cause of death.
8. All deaths due to unexplained cause or under suspicious circumstances.
9. Any deaths suspected to be due to infectious or contagious disease wherein the diagnosis and extent of disease are undetermined at the time of death.
10. Any sudden death of a person in apparent good health.
11. Deaths of individuals who were in the custody of law enforcement officials or who were incarcerated in a public institution.
12. All newborn infants who die within twenty-four hours of birth regardless of the duration of life.
13. Any fetal death due to or as a consequence of criminal abortion.

Every death that occurs outside of a hospital or nursing home is reportable to the Coroner's Office.

Any death in which there is a question as to whether or not it is a Coroner's case should be reported.

It should be emphasized that, although a particular death may be "reportable" to the Coroner's Office, an autopsy may not be necessary depending upon the circumstances.

Staff

The 2010 staff of the Boulder County Coroner's Office consisted of the following:

Coroner: Thomas Faure. Mr. Faure is responsible for final decisions regarding cause and manner of death. He is a Diplomate of the American Board of Medico legal Death Investigators. He also has a Masters Degree in Public Administration.

Deputy Coroner/Chief Pathologist: John E. Meyer, MD. Dr. Meyer is a physician, board certified in Forensic Pathology, a subspecialty in the medico legal investigation of sudden, unexpected, and violent death. Dr. Meyer is an integral part of the day-to day functions of the office.

Senior Medical Investigator: Susan Nichols. Ms. Nichols has over ten years experience as an EMS educator, is a state certified EMT-B, and has a Bachelors Degree in Human Resource Science. Ms. Nichols also handles a portion of the caseload, as well as handling various operations of the office.

Medical Investigator: Deron Dempsey. Mr. Dempsey has a Bachelors Degree in Criminal Justice and is a state certified EMT-B. Mr. Dempsey also handles a portion of the caseload, as well as handling various day-to-day operations of the office.

Medical Investigator: Lindsey Wolman. Ms. Wolman has experience as an EMT-B and Firefighter, is a nationally certified EMT-B, and has a Bachelors degree in Health, Leisure, and Sports Studies with a minor in Psychology. Ms. Wolman also handles a portion of the caseload, as well as handling various day-to-day operations of the office.

Medical Investigator: Carolina Nicolosi. Ms. Nicolosi has a Bachelors Degree in Psychology and is nationally certified as an EMT-B and a Pharmacy Technician. Ms. Nicolosi has over eight years of combined experience working in pharmacy and EMS settings. Ms. Nicolosi also handles a portion of the caseload, as well as handling various day-to-day operations of the office.

Medical Investigator: Amber Maggio. Ms. Maggio is a certified EMT-B and has completed extensive undergraduate training in Linguistics and Biological Psychology at the University of Colorado at Boulder. Ms. Maggio also handles a portion of the caseload, as well as handling various day-to-day operations of the office. Ms. Maggio also assists with the compilation of the annual report.

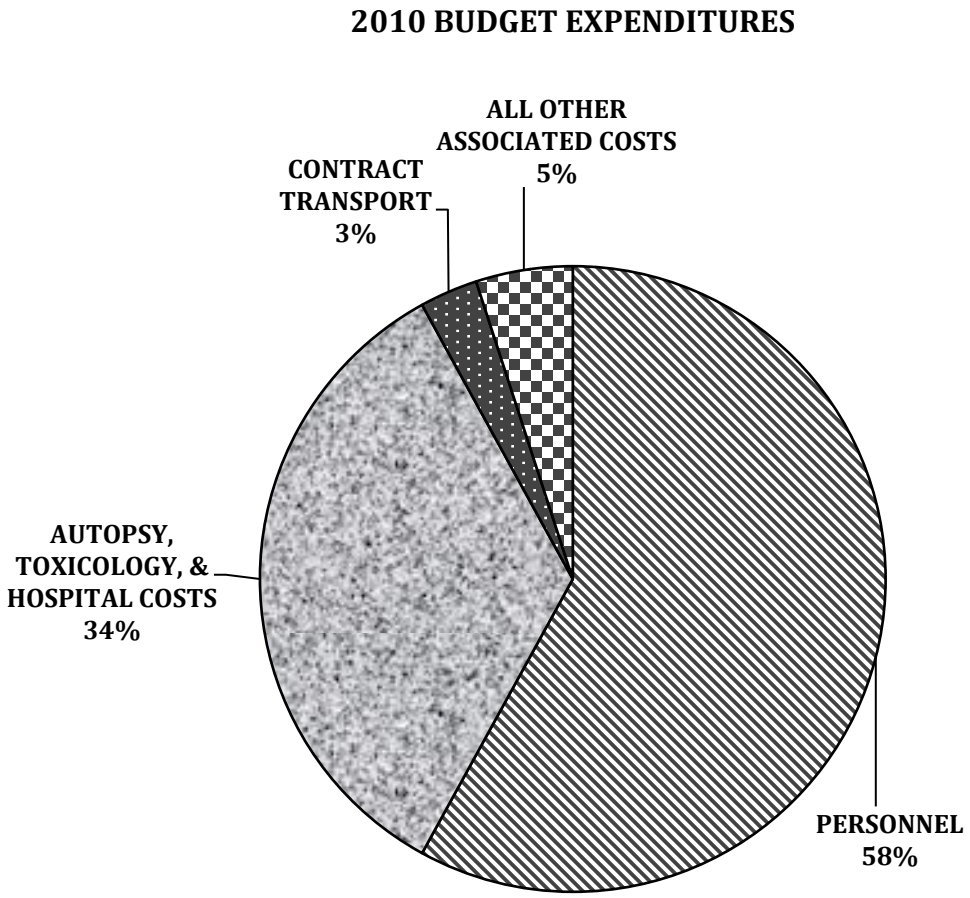
Medical Investigator: Brittney McCoy (part-time, temporary). Ms. McCoy has a Bachelors Degree in Human Services and is a state and nationally certified EMT-B. Ms. McCoy also handles a portion of the caseload.

Administrative Technician: Chris Arnaud. Mrs. Arnaud has over 20 years combined experience as a legal secretary and recruiter in a major San Francisco law firm and as an administrative assistant in the development department of the Catholic Youth Organization in San Rafael, CA. She is responsible for the administrative and accounting duties and the day-to-day operation of the office. Mrs. Arnaud also assists with the compilation of the annual report.

Facilities

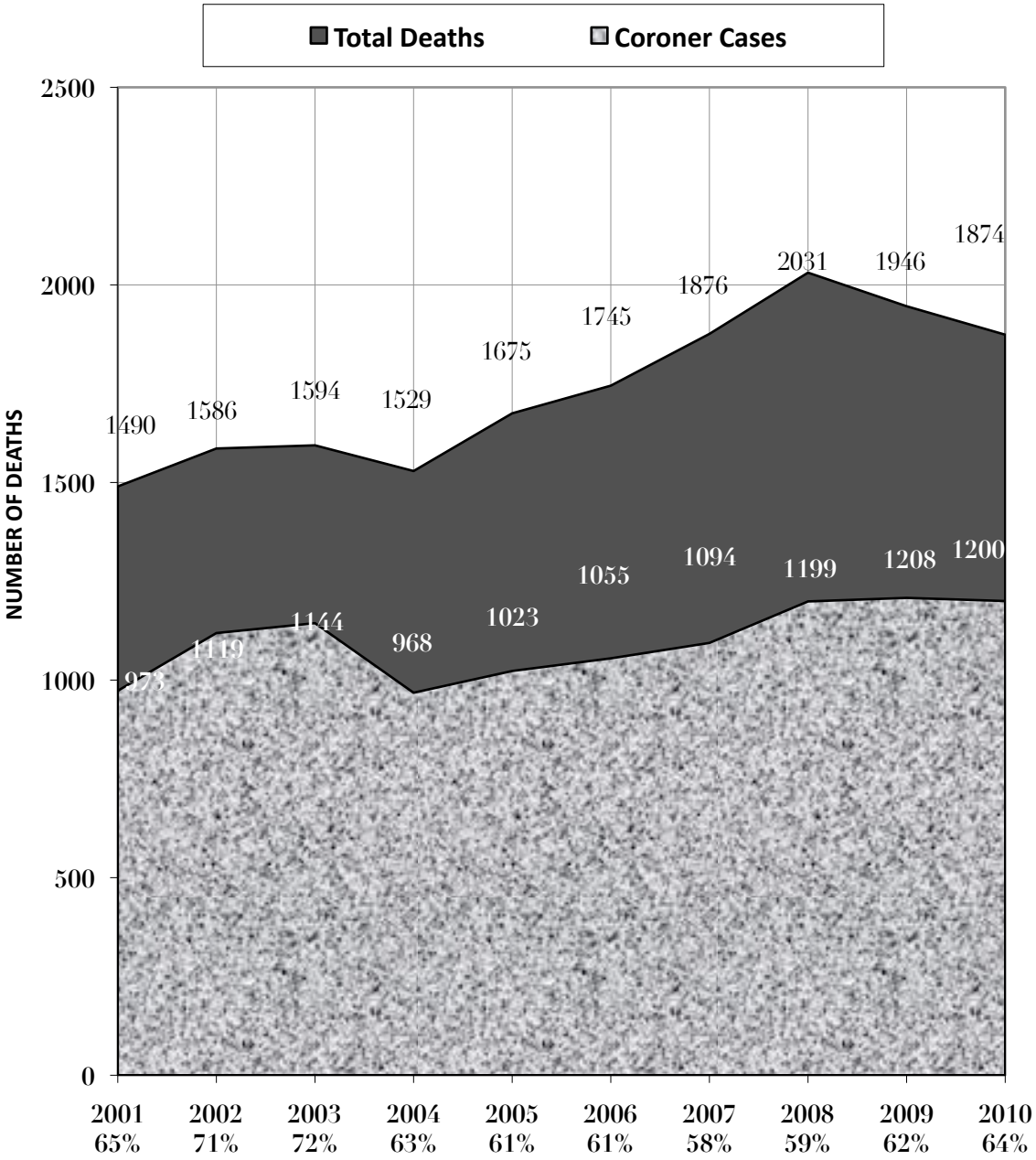
The administrative offices of the Boulder County Coroner are located in the Criminal Justice Center at 6th Street and Canyon Boulevard in Boulder. The Boulder County Coroner's Office utilizes the morgue and autopsy facility at Boulder Community Hospital on a contract basis.

Budget



The 2010 budget for the Boulder County Coroner's Office was $764,909. This is 0.27% of the total adopted 2010 Boulder County budget of $286,865,615.

TOTAL BOULDER COUNTY DEATHS VS. DEATHS REPORTED TO THE CORONER

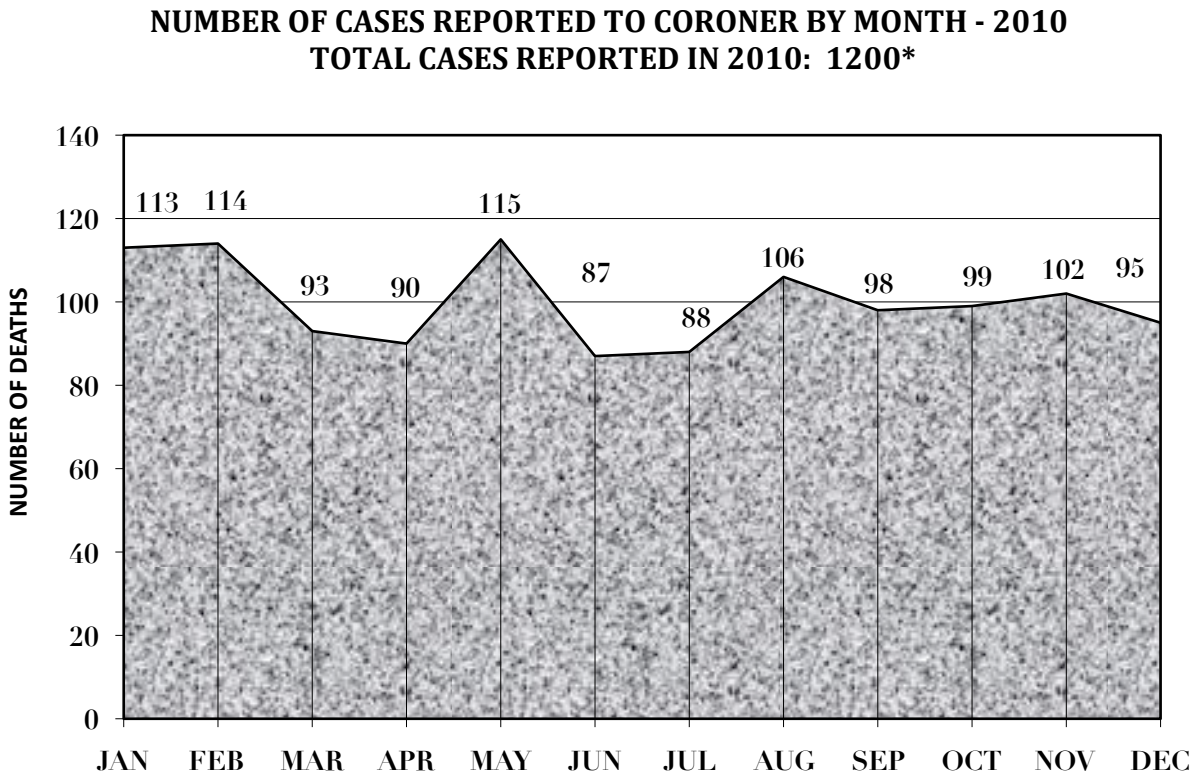


PERCENTAGE* OF BOULDER COUNTY DEATHS REPORTED TO CORONER

The 2010 estimated population of Boulder County is 294,567.

*(Percentages are rounded to the nearest whole number.)
‡ Beginning in mid-June 2004, natural deaths occurring in the Hospice Care Center were no longer reported to the Coroner's Office (unless there was an injury).

Cases by Month



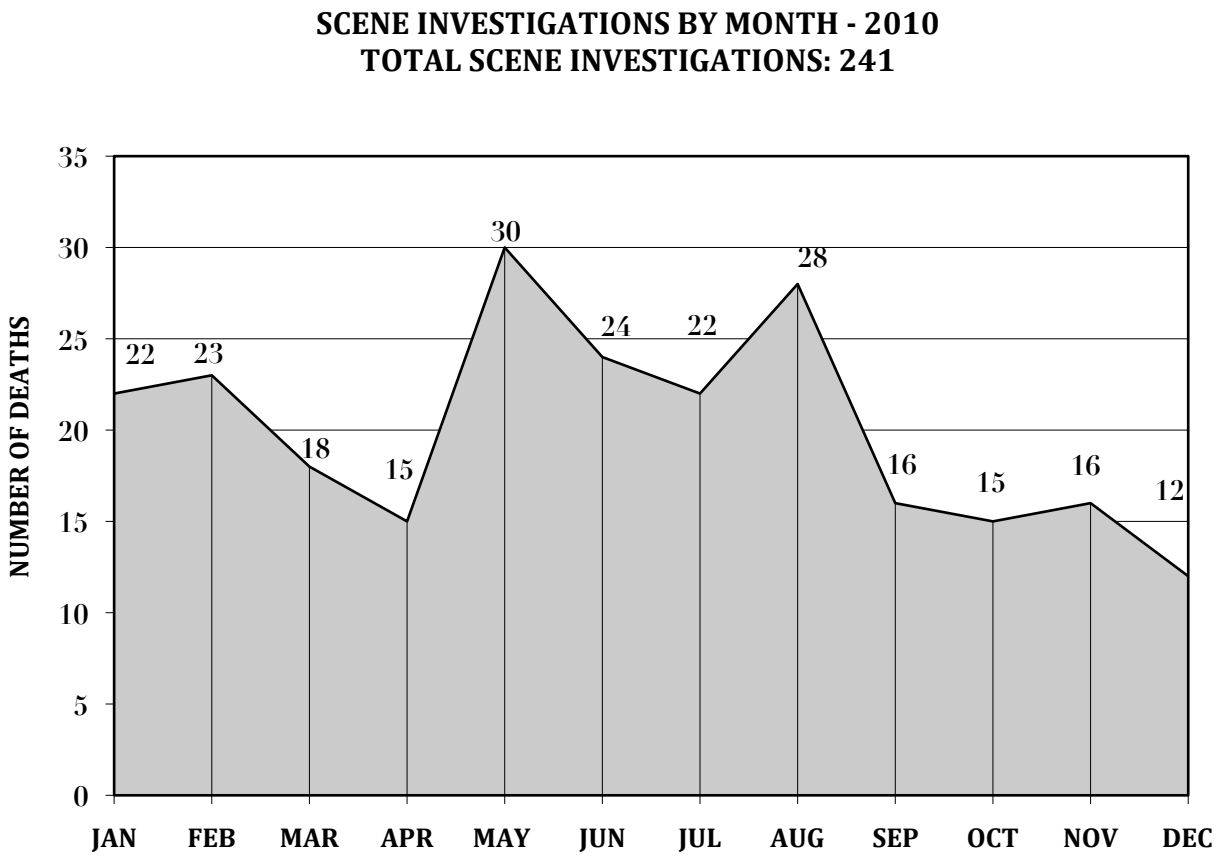
The total number of cases reported includes 50 cases that were transferred to other coroners/physicians.

*Four (4) of these 1200 cases reported were determined to be non-human remains.

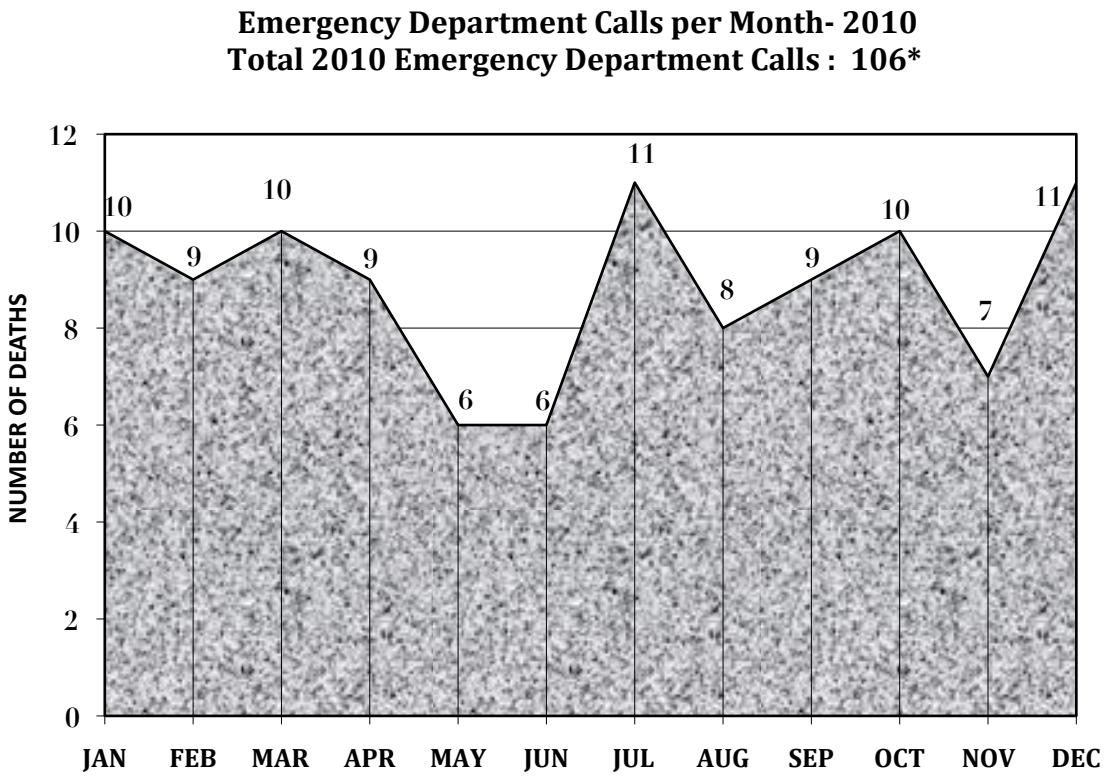
See page 11 of this report for explanation.

Scene Investigations by Month

Many deaths require a scene investigation by the on-call Medical Investigator. This includes a response when a deceased individual is found, or it may be to a hospital emergency department. In 2010, Medical Investigators conducted 241 scene investigations, or in 20% of all of the deaths reported to the Coroner's Office.



Emergency Department Calls by Month

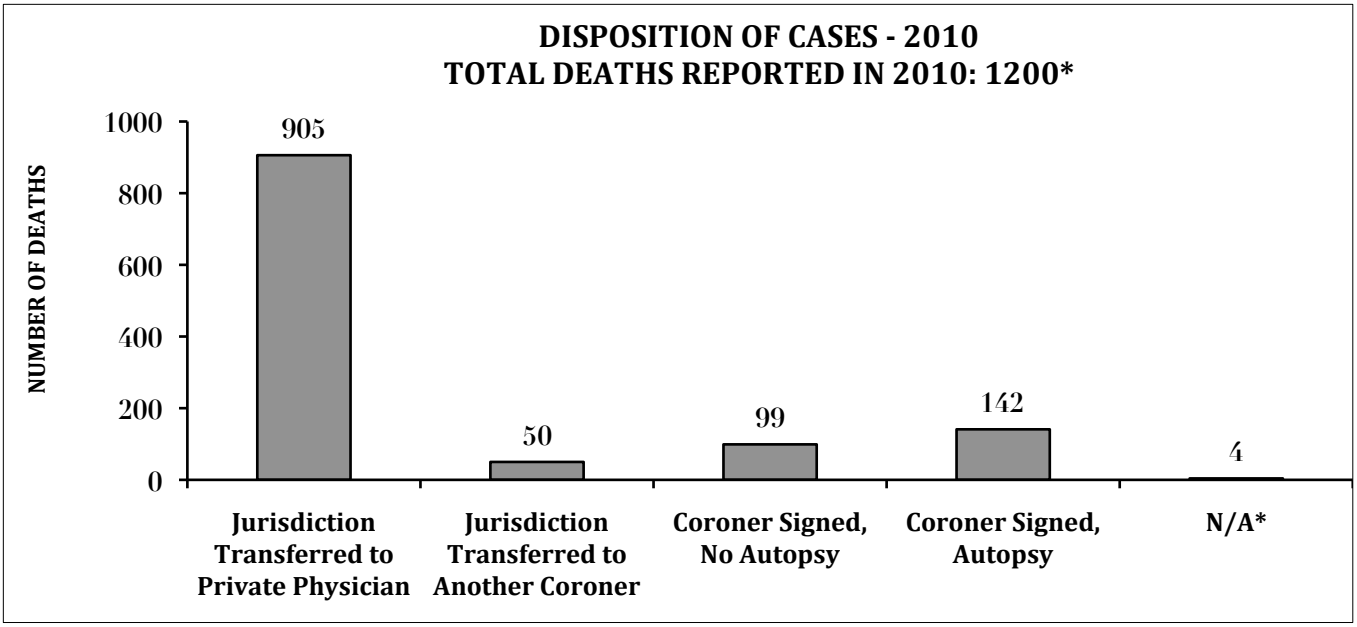


*The total number of cases reported includes 26 cases that were transferred to other coroners.

See page 11 of this report for explanation.

Disposition of Cases

Deaths that fall under the jurisdiction of the Coroner are handled in one of four ways. First, the Coroner may assume jurisdiction over the death and conduct an investigation and an autopsy to determine cause and manner of death and then issue a Death Certificate. Second, the Coroner may assume jurisdiction of a death and conduct an investigation, but not perform an autopsy. Third, if the death is due to natural disease and if a private physician who has treated the decedent within thirty days is confident in his/her opinion as to the cause of death, the Coroner may transfer jurisdiction to the private physician to sign the Death Certificate. Finally, even though a death may have occurred in the county, a "transfer of jurisdiction" may occur to the Coroner of the county where the initiating event causing death occurred or where the decedent was transported (i.e. by ambulance) from prior to death. The transfer of jurisdiction is allowed according to Colorado Revised Statute 30.10.606 (1–8).



*Note: There were four cases of remains reported that were determined to be non-human.

Transfer of Jurisdiction to Other County Coroners

Occasionally deaths that occur in Boulder County are due to an "initiating event" that occurred in another county. For example, an individual may die in a hospital from injuries that he/she sustained in an accident that occurred in another county, or an individual may collapse at his/her residence (in another county), be transported to a hospital in Boulder County, and subsequently die in that hospital. In these cases, the Boulder County Coroner will transfer jurisdiction (subsequent investigation and certification) to the Coroner of the county in which the "initiating event" occurred.

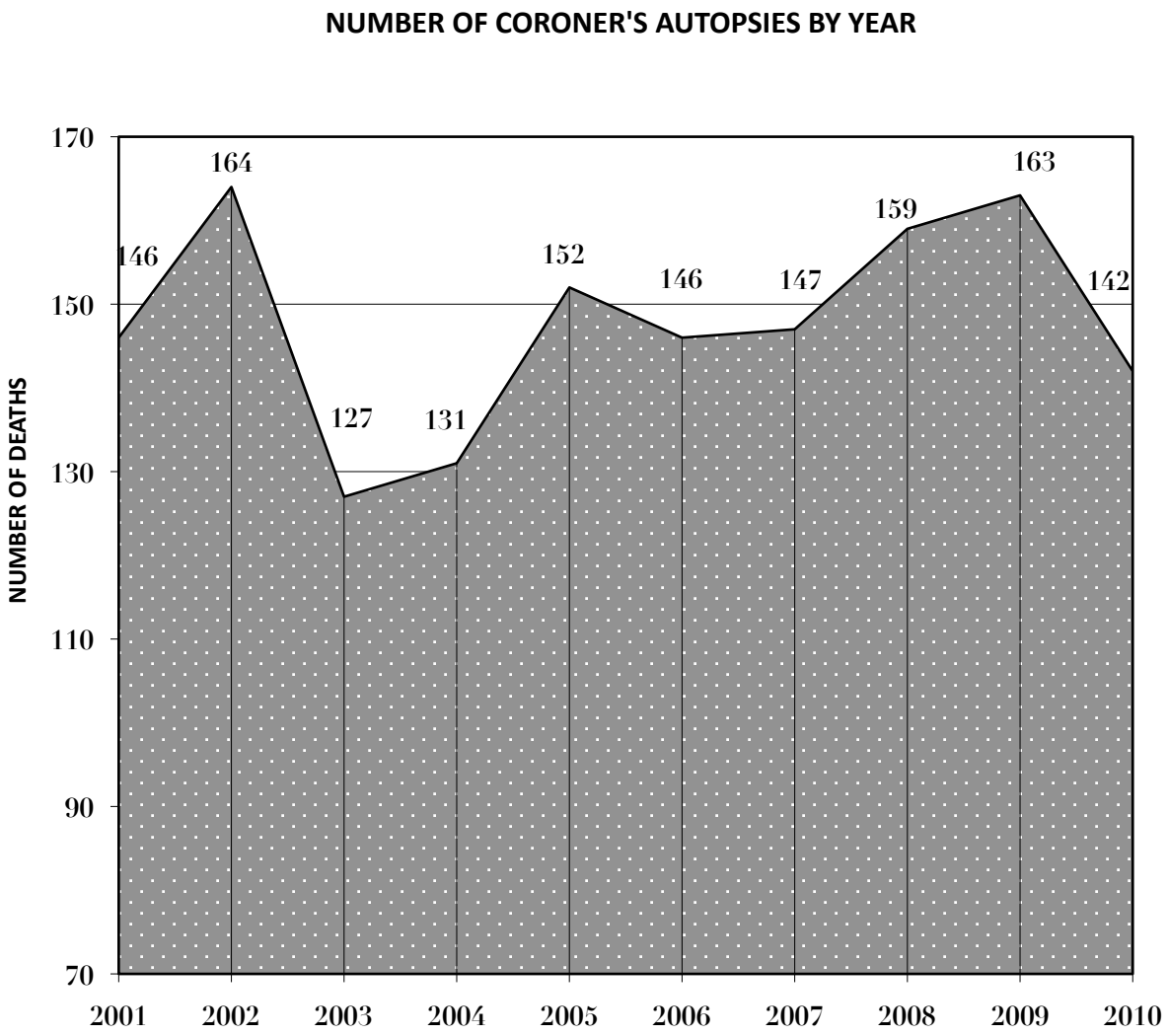
In 2010, the jurisdiction of fifty* cases were transferred to other coroners in surrounding counties. Thirty-five cases were natural deaths, thirteen were non-traffic accidents, and two were suicide. Thirty of the cases were transferred to Adams County, thirteen were transferred to Weld County, six were transferred to Jefferson County, and one was transferred to Gilpin County.

In thirty-five (70%) of the cases that were transferred to other coroners, the decedents were transported to Exempla Good Samaritan Medical Center from areas outside of Boulder County.

For statistical purposes, in the sections to follow, transferred cases will not be counted among the deaths investigated by Boulder County.

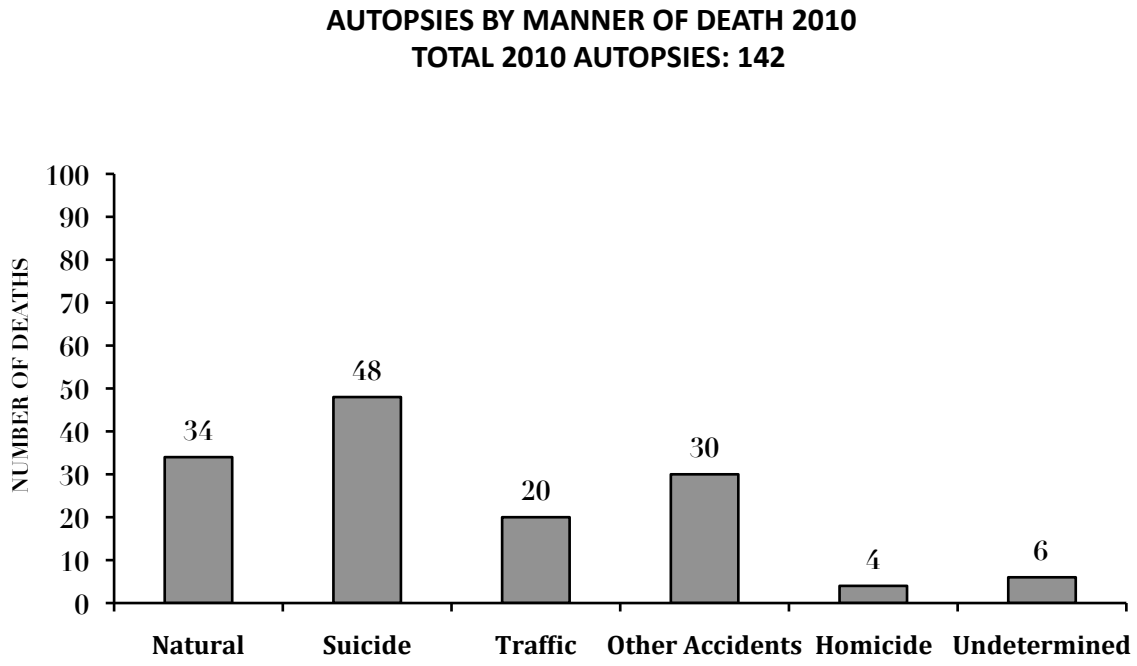
*26 of these cases were Emergency Department deaths.

Autopsies by Year



In approximately twelve percent of the deaths that were investigated by the Coroner's Office in 2010, an autopsy or skeletal postmortem examination was performed to aid in the determination of the cause and manner of death, to document disease, to identify injury patterns, or to recover evidence. Included in almost all autopsies are toxicology tests that may be helpful in determining the cause and manner of death. Toxicology testing is performed on various specimens collected at autopsy. Several laboratories are used for drug testing. Screening tests include alcohol, illicit drugs, commonly abused prescription and non-prescription drugs, and other substances as needed.

Autopsies by Manner of Death

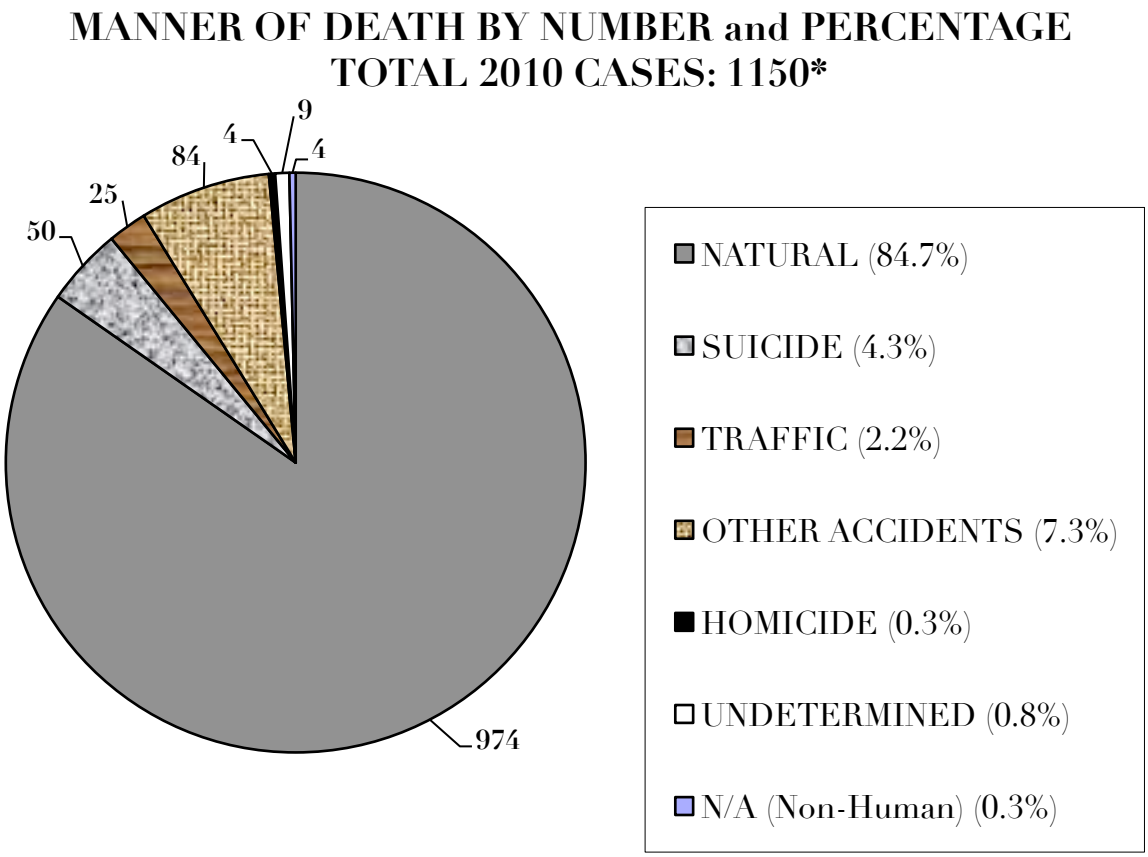


Note: For statistical purposes accidental deaths due to traffic accidents will be separated from accidental deaths due to other causes.

The Coroner weighs many factors in order to determine whether an autopsy should be performed. Autopsies are performed in all homicides, most infant deaths, most deaths of individuals without an established medical history, deaths involving possible criminal action, most motor vehicle accident deaths, and most suicides.

Manner of Death By Number and Percentage

A large majority of the cases investigated by any Medical Examiner or Coroner are natural deaths. In Boulder County that figure was 974 cases, or 84.7% in 2010. Included within these natural deaths were reports of 671 Hospice cases.

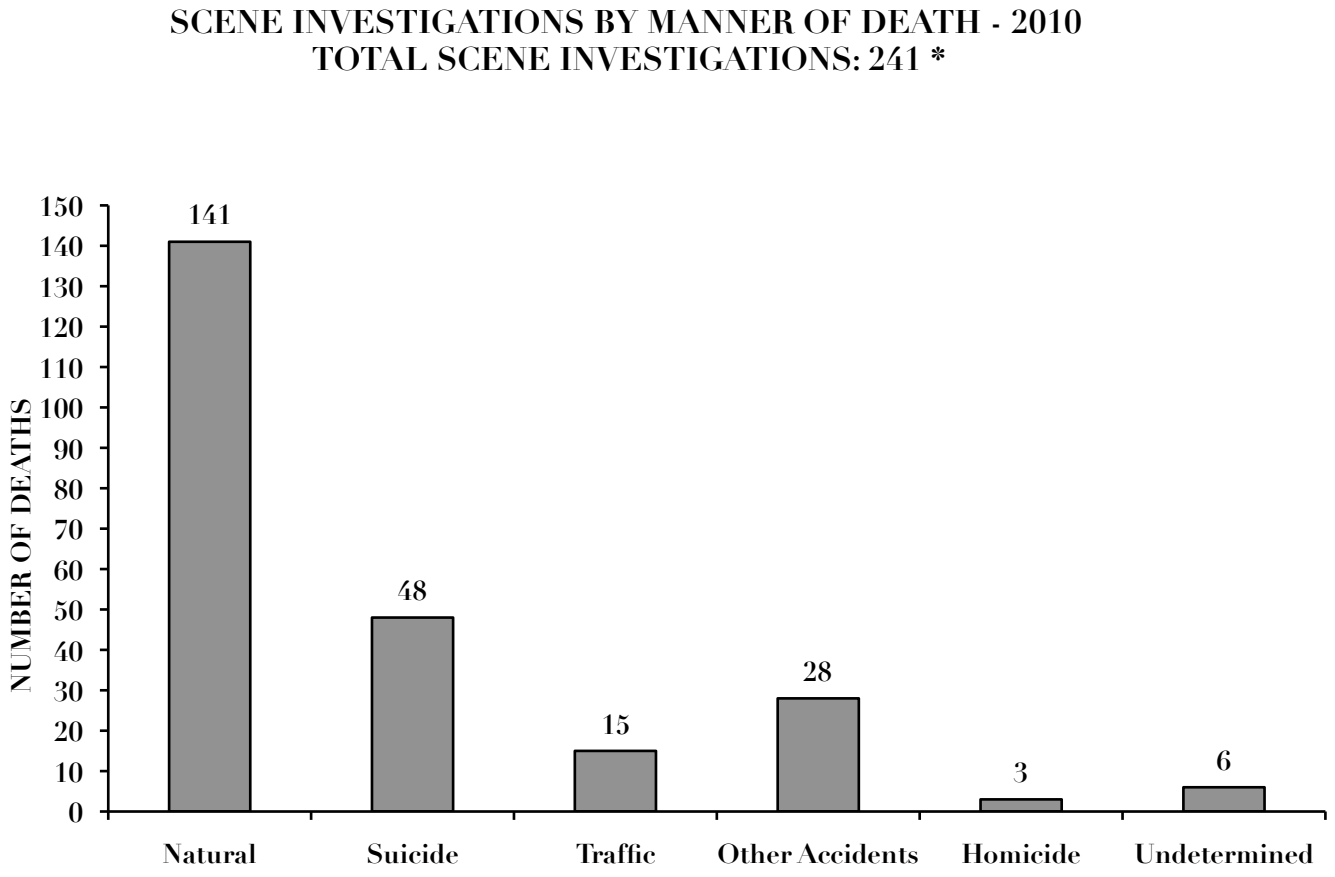


***Note:** The fifty cases transferred to other coroners are not included in this total.

Note: Statistical information may not coincide with information available from the Colorado Health Department. The State Health Department tracks death statistics by the county of residence, not by the county where the injury or death occurred.

Note: Four cases that were reported were determined to be non-human remains and therefore no manner of death was determined.

Scene Investigation

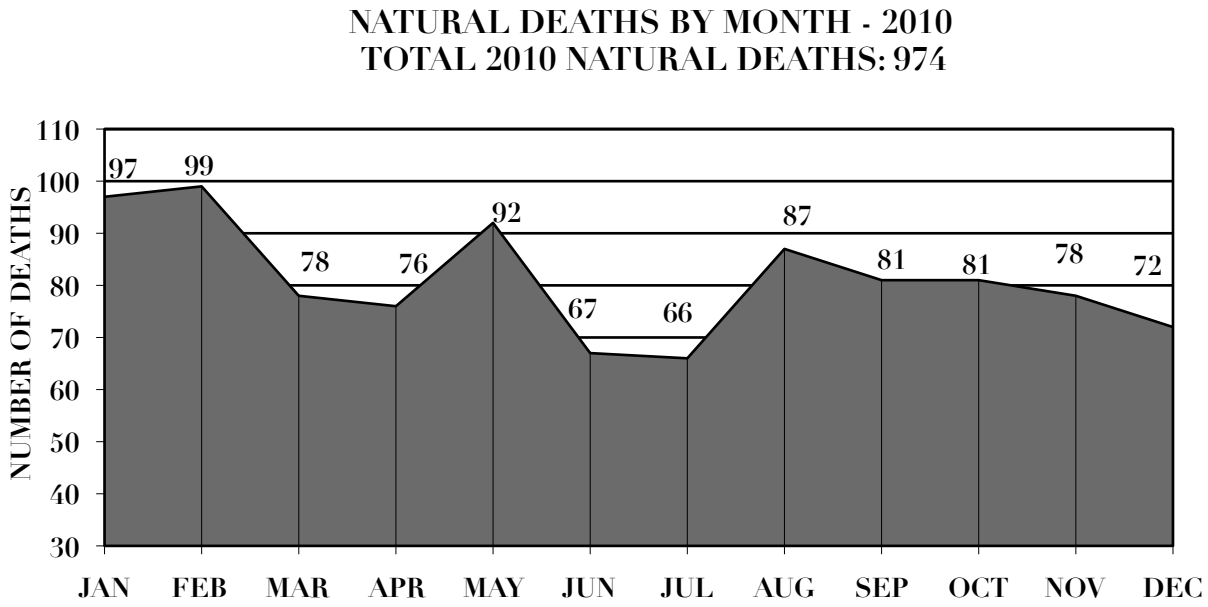


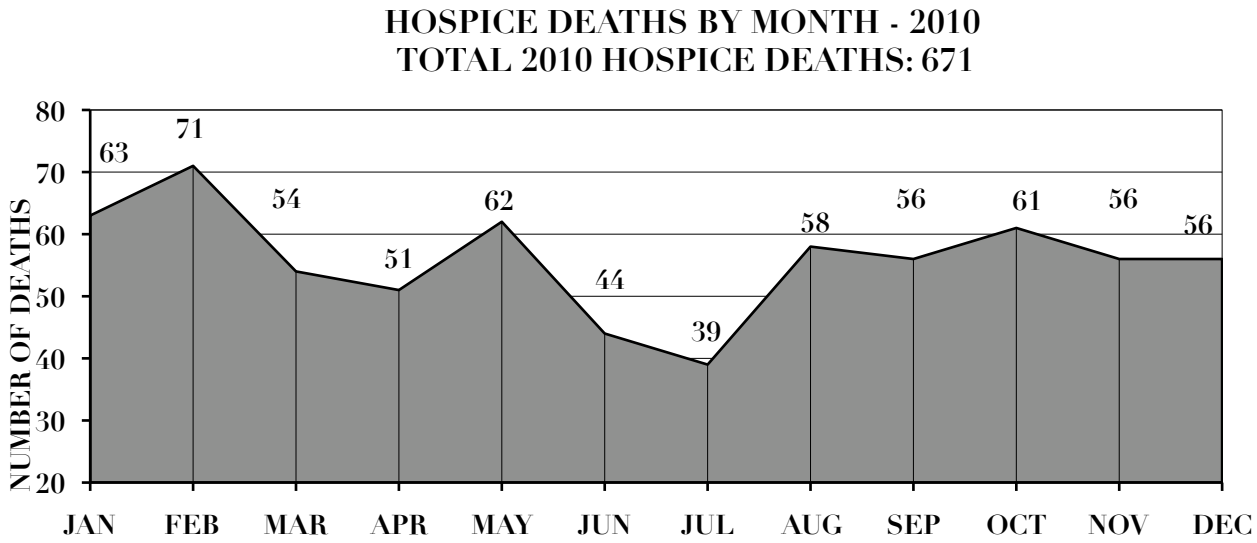
Note: The apparent absence of a scene investigation in some suicides, motor vehicle, and other accident cases may be due to extended survival of the victim in a hospital, or because the victim was transported by emergency personnel to a hospital outside the county and subsequently died away from the scene.

*No scene investigations were later transferred to other Coroner's.

Natural Deaths

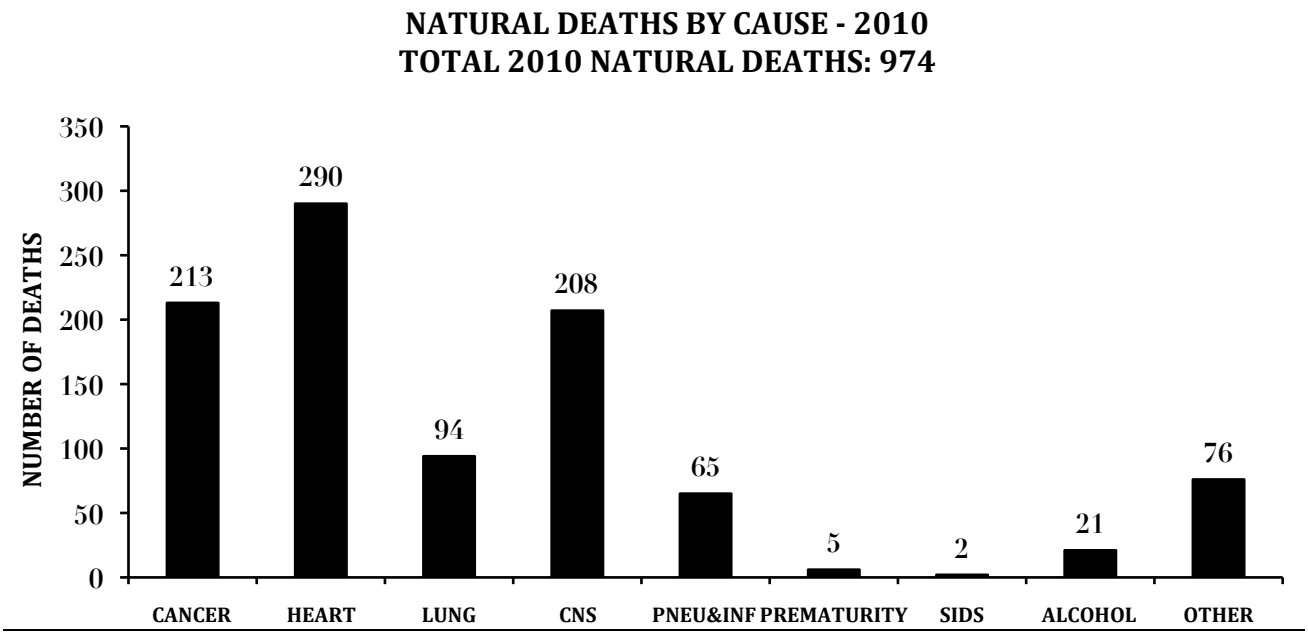
By Month





Note: Beginning in mid-June 2004, natural deaths occurring at the Hospice Care Center were no longer reported to the Coroner's Office.

Natural Deaths By Cause



CANCER: Deaths due to any type of cancer

HEART DISEASE: Deaths due to atherosclerotic cardiovascular disease, coronary artery disease, myocardial infarction, hypertensive heart disease, cardiomyopathy, valvular heart disease, and others

LUNG DISEASE: Deaths due to lung diseases including chronic obstructive pulmonary disease (COPD), asthma, pulmonary hypertension, and others

CNS: Central Nervous System. Deaths due to stroke, seizures, Alzheimer's disease, and others

PNEUM. & INFECTIOUS: Pneumonia and Infectious Disease, not including AIDS

PREMATURITY: Includes fetal demise, premature rupture of membranes and others.

SIDS: Sudden Infant Death Syndrome

ALCOHOL RELATED: Includes acute or chronic alcohol abuse, alcohol dependence, complications from chronic alcoholism, and others.

OTHER: Includes diabetes, alcoholism, renal failure, and others.

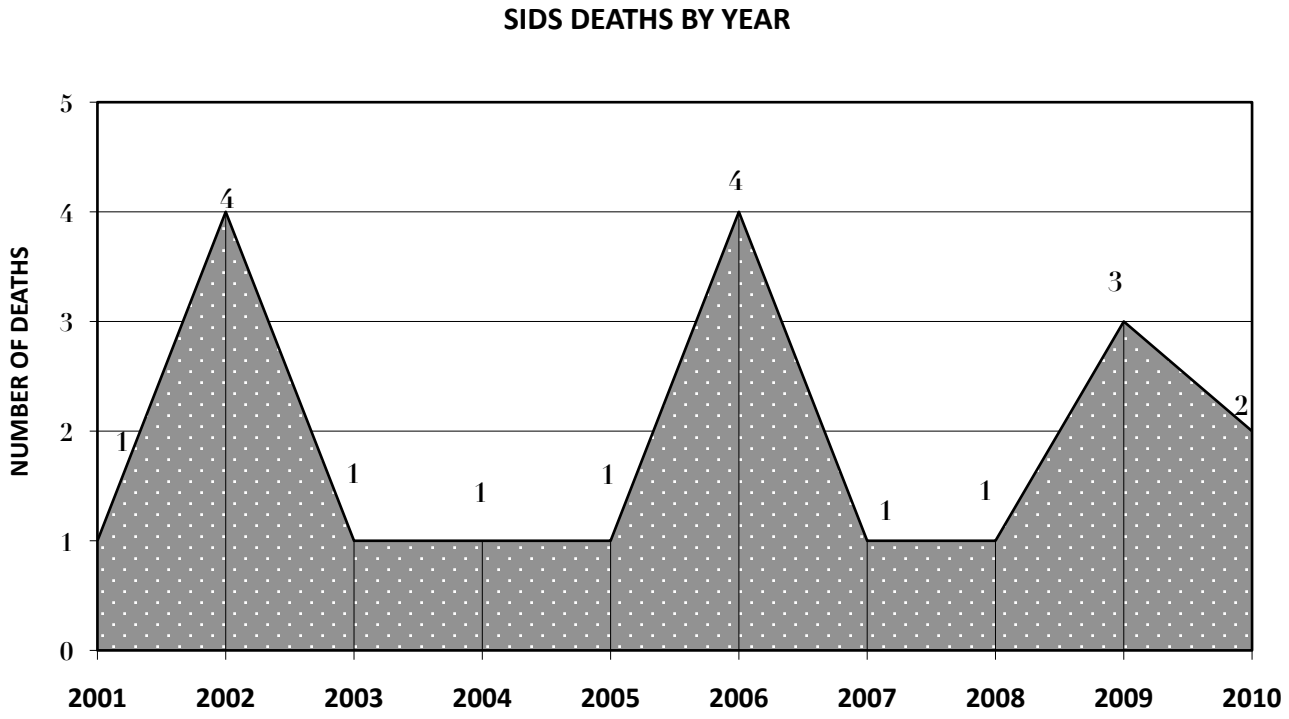
***Note:** This total excludes the cases that were transferred to other coroners.

In 2006 (2005 for National data), the most recent year for which information is available, the leading cause of death in the United States, Colorado, and Boulder County was heart disease. Cancer was the second leading cause of death. [1] Heart disease was also the leading cause of death in cases reported to the Boulder County Coroner's Office.

Sudden Infant Death Syndrome (SIDS)

SIDS is defined as "the sudden death of an infant less than one year of age, which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history." [2]

By Year

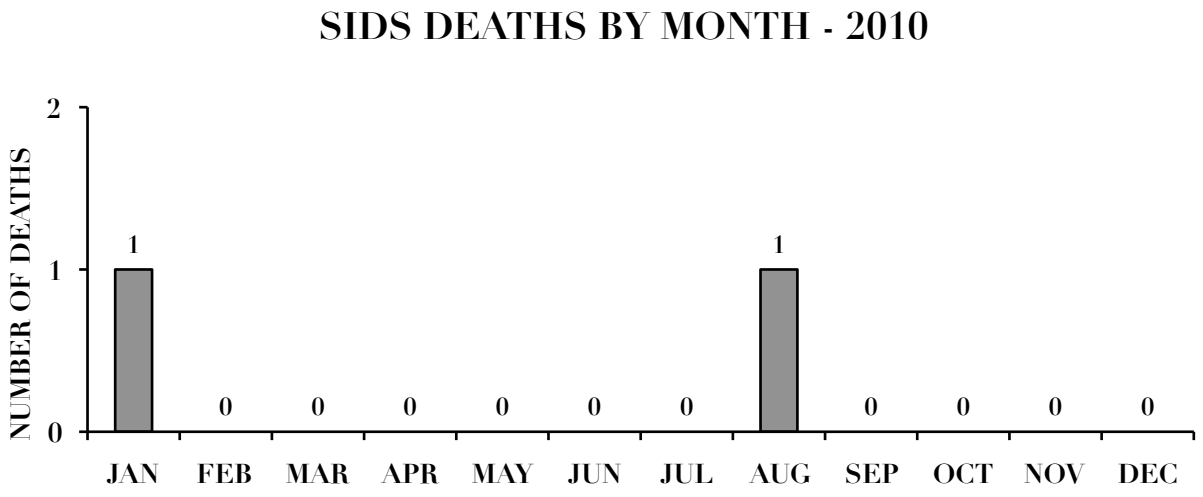


Approximately 2000-2500[3] infants die of Sudden Infant Death Syndrome every year in the United States and the phenomenon is reported in most countries of the world. SIDS is the number one cause of death after the first week of life. Premature and male infants seem to be at a greater risk for SIDS. Race does not appear to be a factor, and there is no evidence of genetic etiology. [4] The cause of SIDS remains unknown despite extensive ongoing research. Because the first symptom of SIDS is death, it is unpredictable and unpreventable. [5]

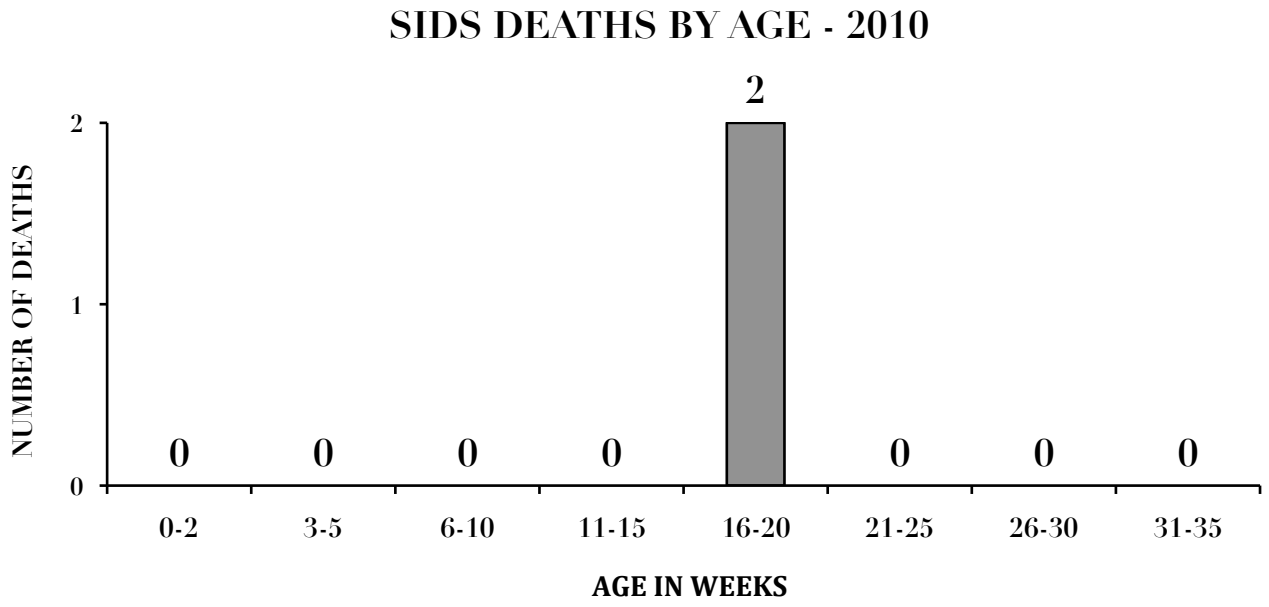
Angel Eyes (formerly the Colorado SIDS Program) supports placing infants on their backs to sleep. National SIDS rates declined approximately 38% since the initiation of the "Back to Sleep" campaign. [6]

Most SIDS deaths occur between two and four months of age, but occasionally an older or younger infant may die of SIDS. SIDS cannot be predicted or prevented, even by a physician. Infants who die of SIDS usually appear healthy prior to death. SIDS appears to occur in families at random, and siblings of SIDS victims probably have the same risk as the general population. In approximately 15% of the cases that are suspected to be SIDS, a different cause of death will be determined at autopsy. [7]

SIDS By Month



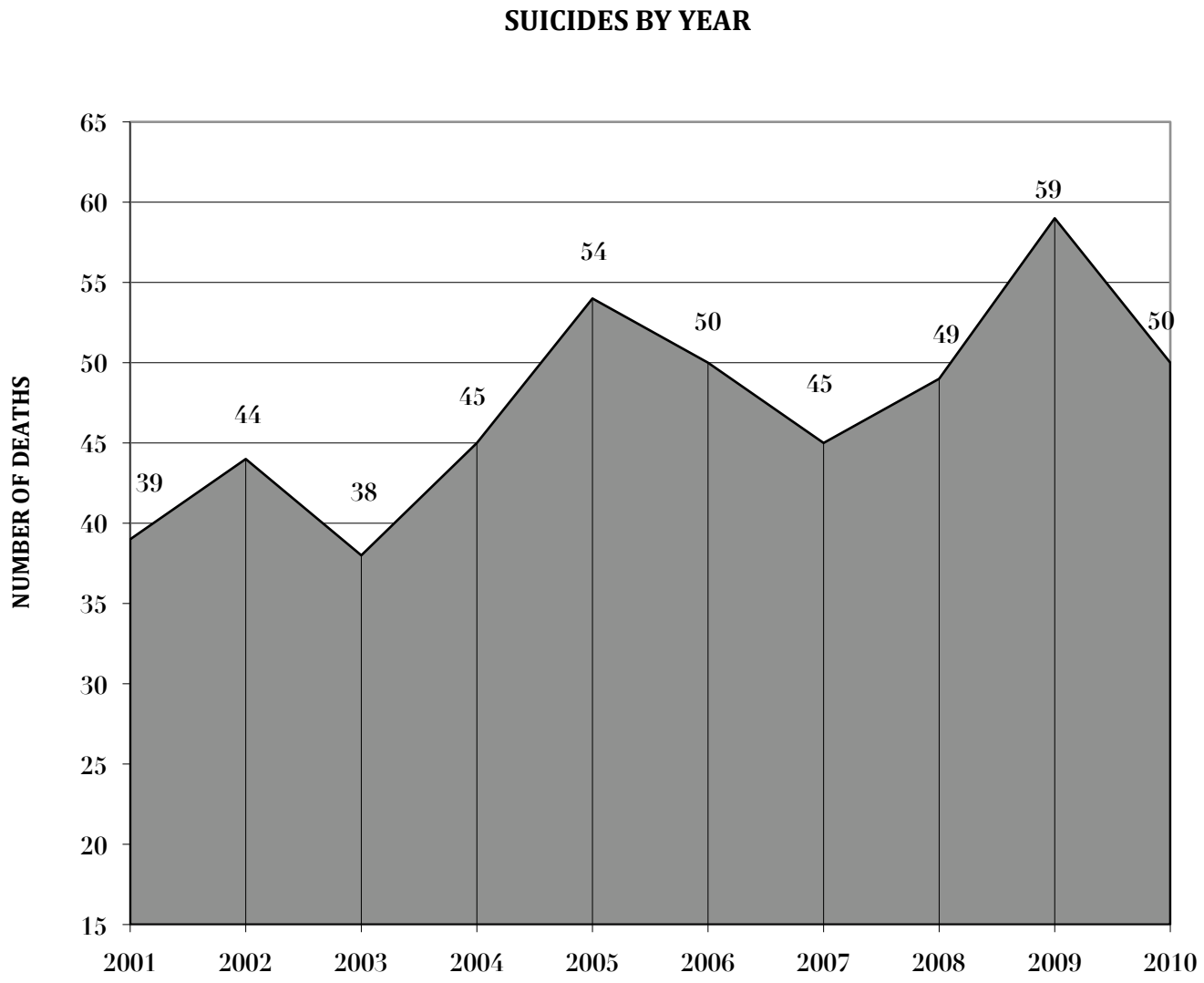
SIDS By Age



Suicides

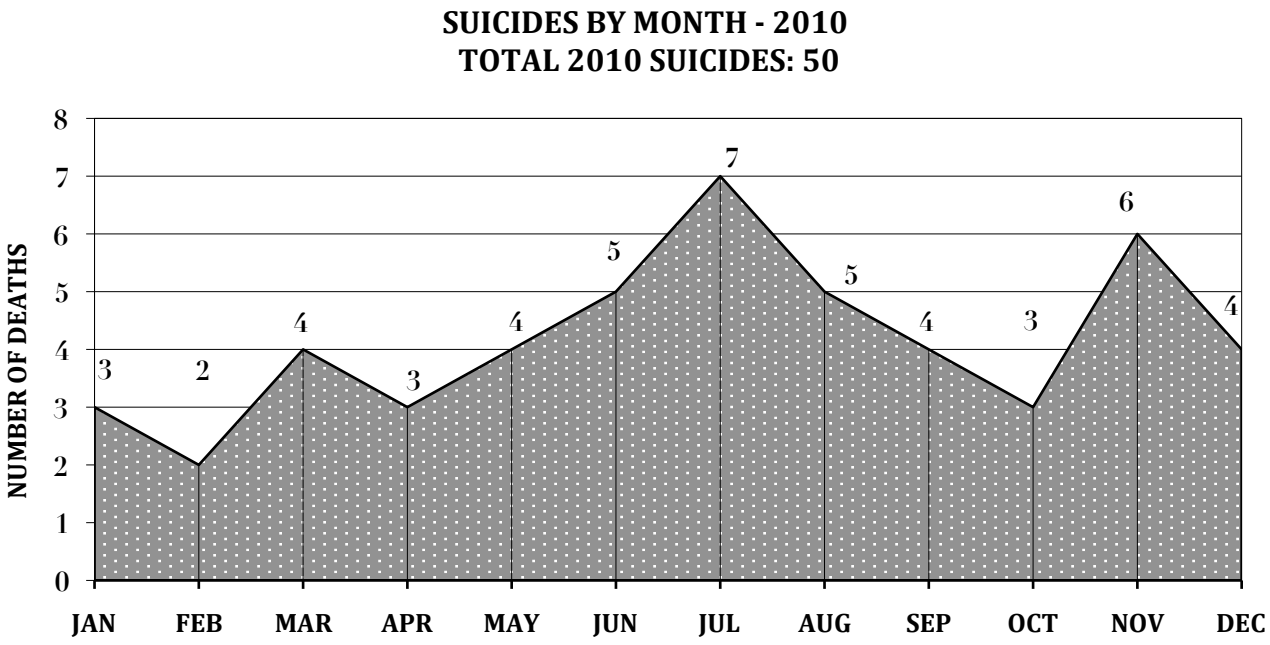
Suicide is defined as the intentional act of killing oneself. Nationally, men are three to five times more likely to commit suicide than women, but women attempt suicide more frequently than men. The most common method of committing suicide is with firearms, followed by hanging, suffocation, and ingestion of poisons.[8] In 2010 in Boulder County, the most common method used was a firearm, followed by hanging, exsanguination and then by prescription drugs.

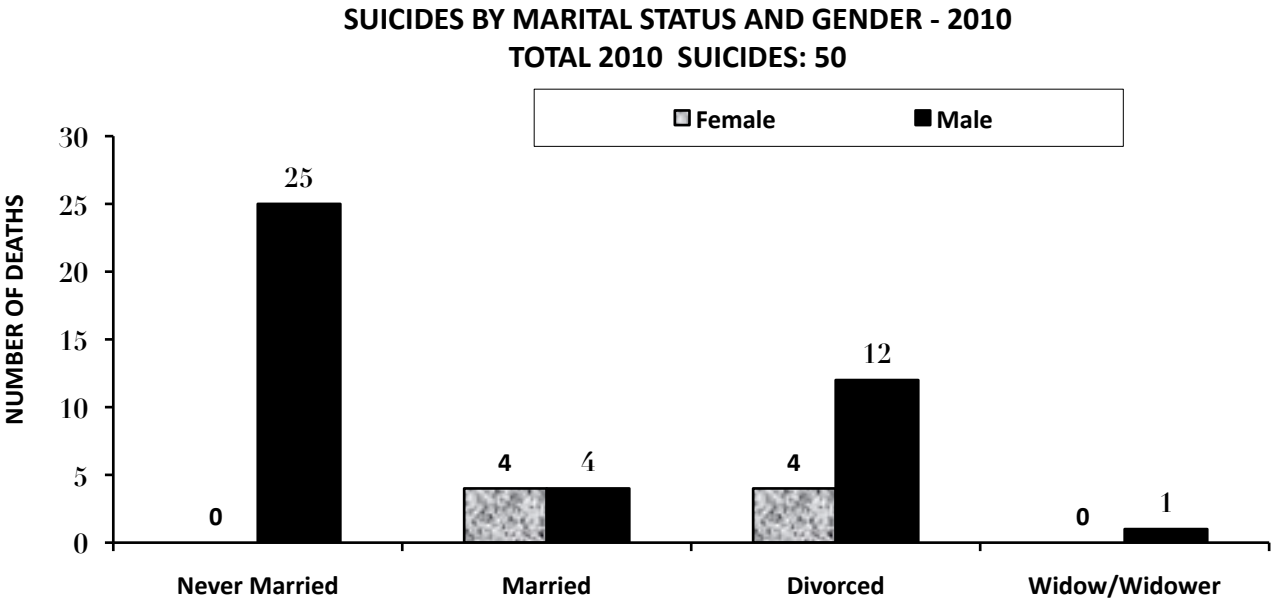
Suicides By Year



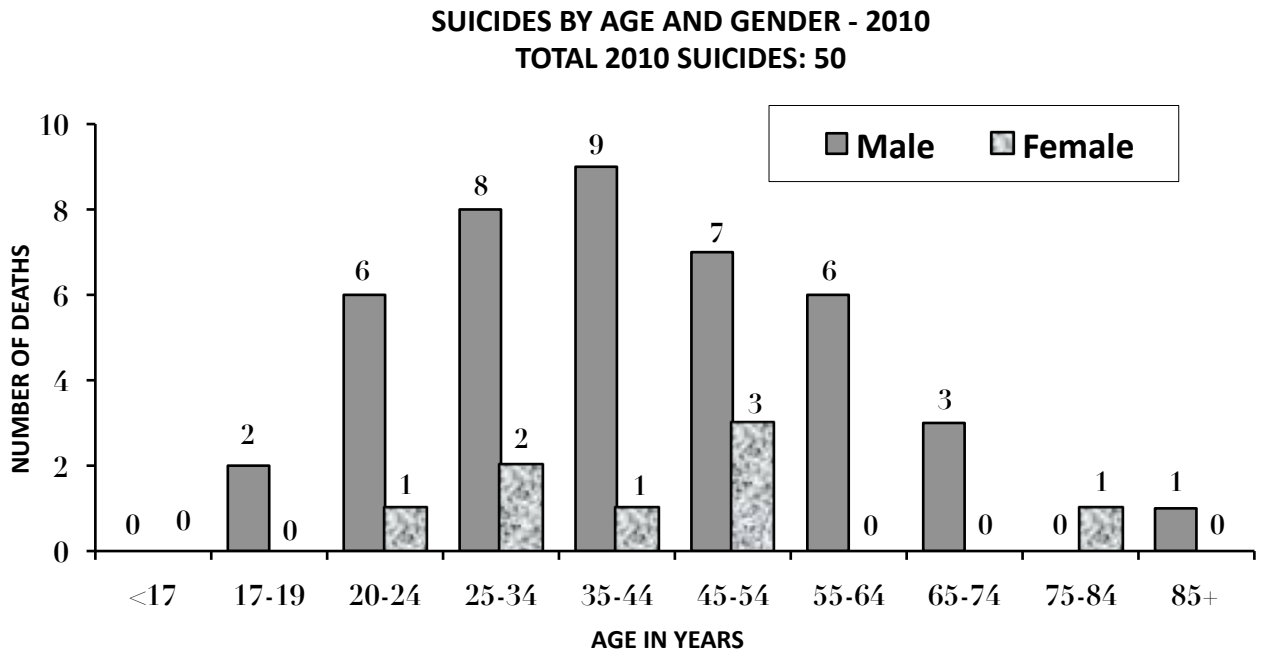
Note: There were a total of 52 suicides reported to the Boulder County Coroner's Office in 2010. The Boulder County Coroner's Office investigated 50 of those cases and transferred jurisdiction of two cases to another Coroner.

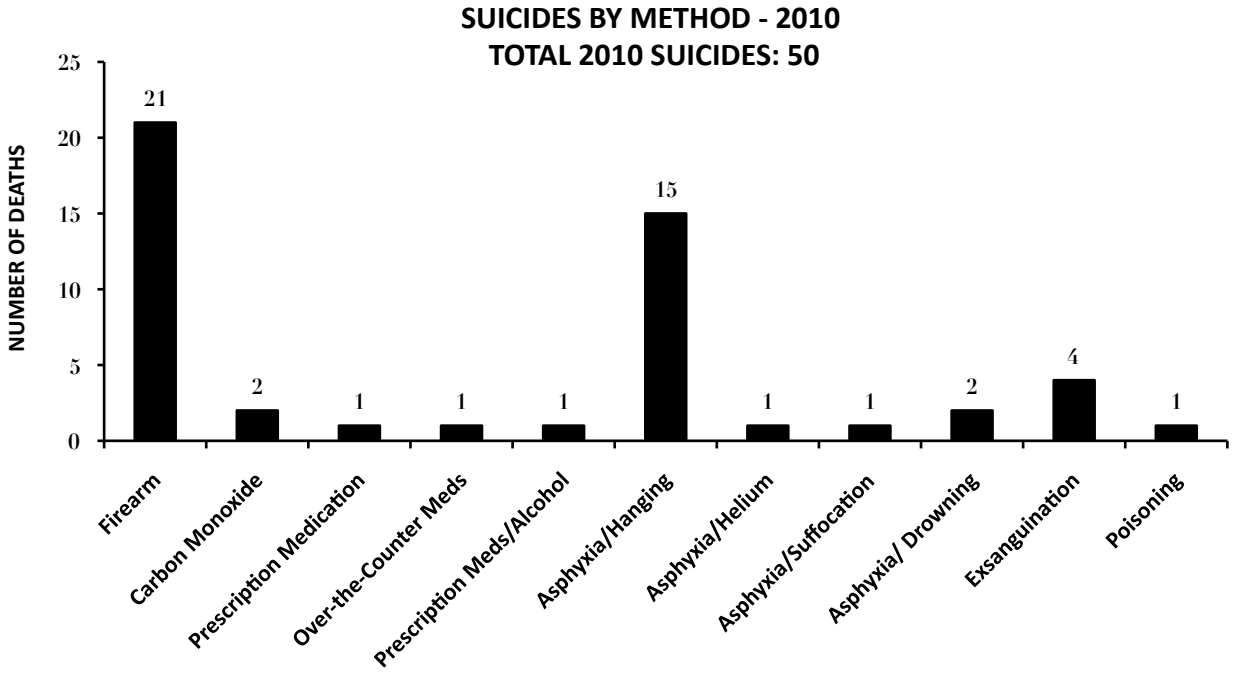
Suicides By Month

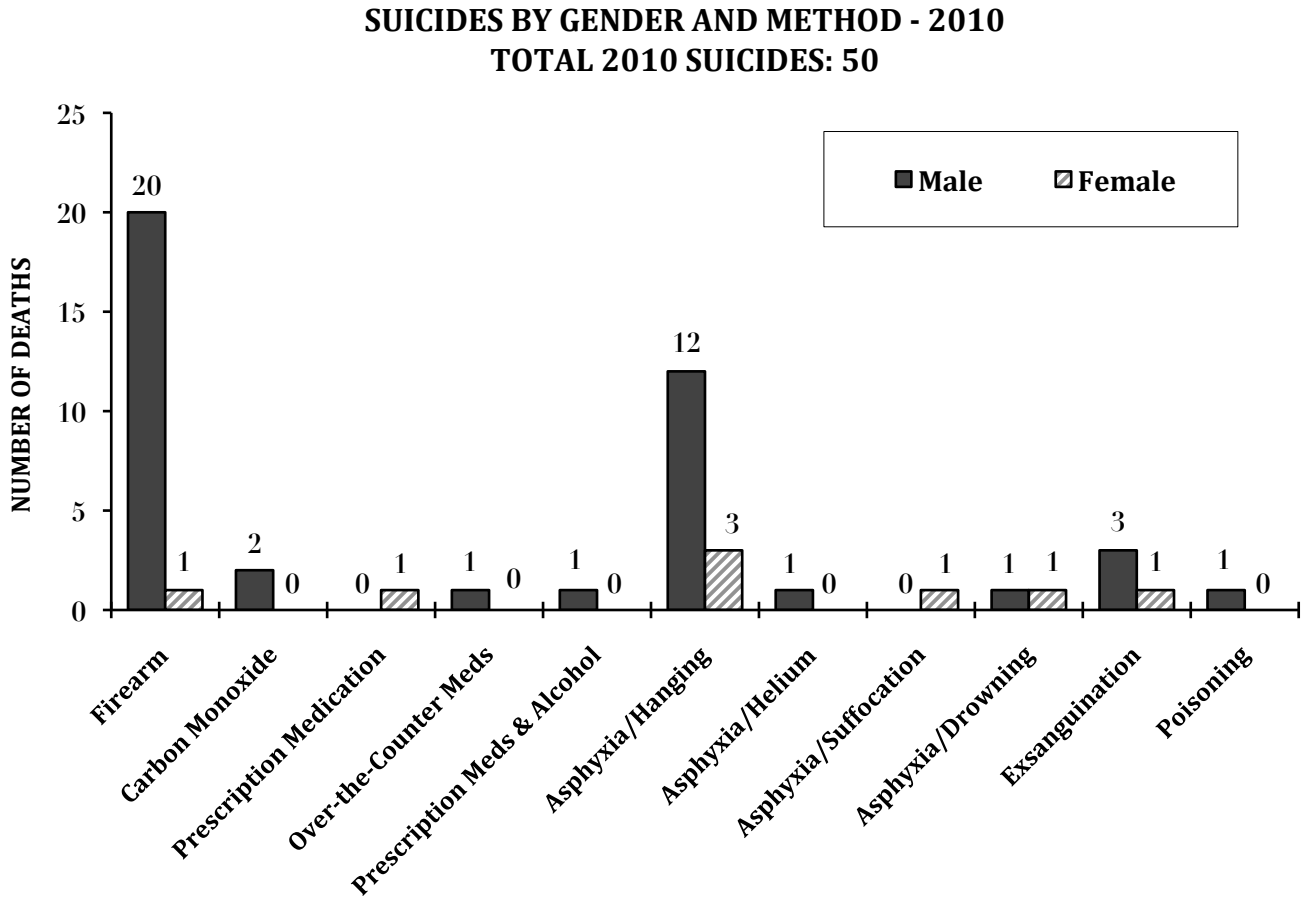




Suicides By Age, Gender, Method



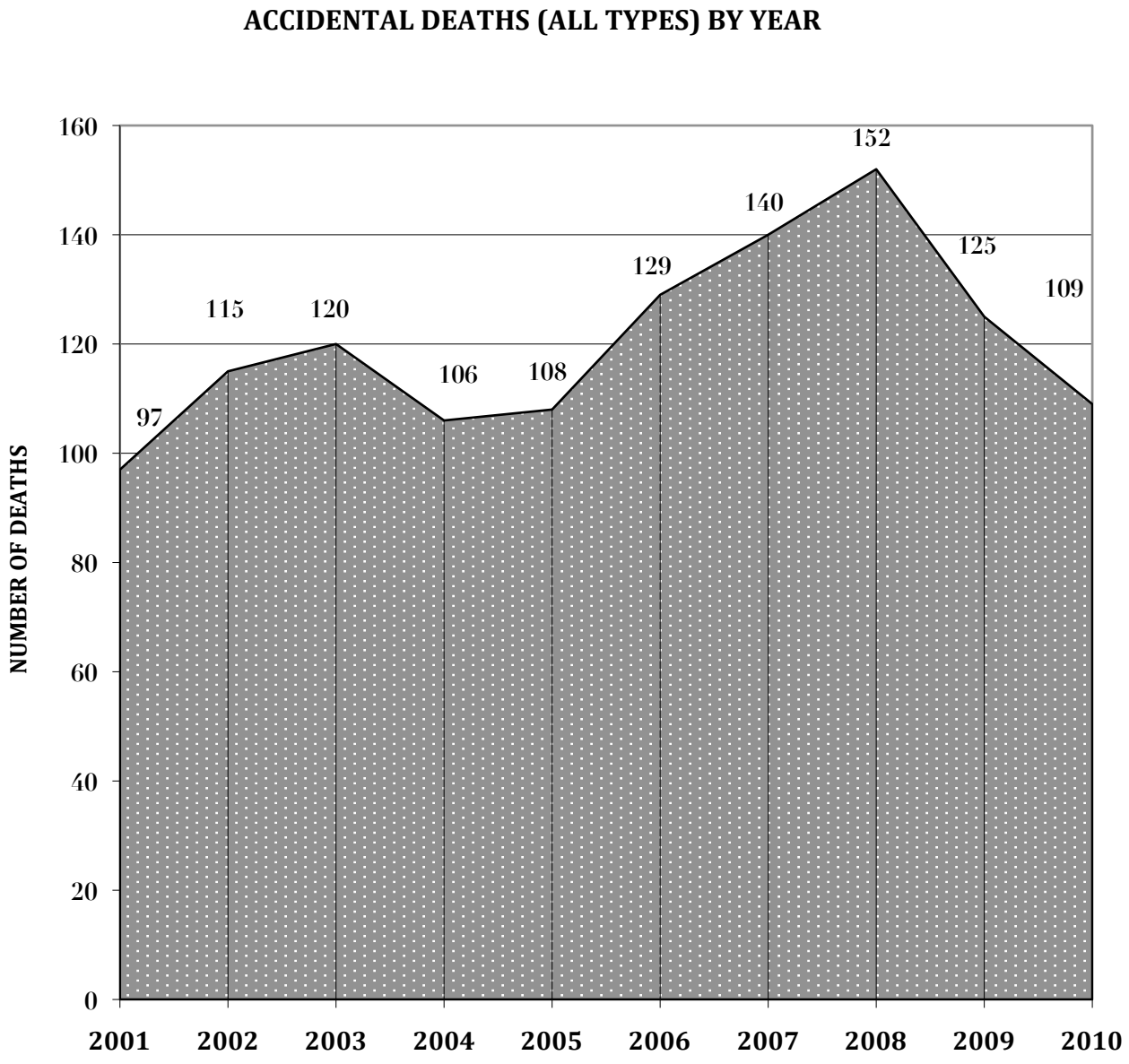




In 2010, fifty people committed suicide in Boulder County; forty-two were males, eight were females.

Accidental Deaths

Accidental Deaths By Year, All Types

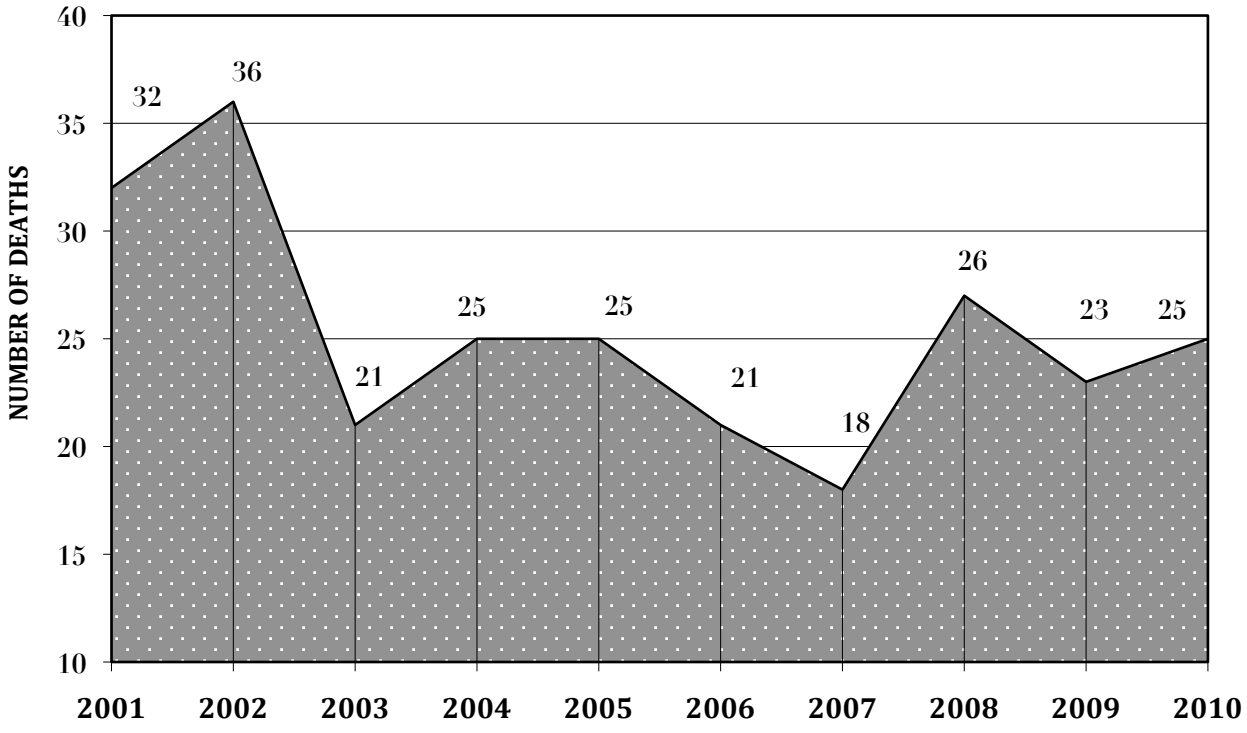


Note: In 2010, a total of 122 accidental deaths were reported to the Boulder County Coroner, but thirteen of those cases were transferred to other coroners.

Traffic Accident Deaths By Year

For the purpose of this report, deaths of occupants of a motor vehicle, motorcycle, bicycle, or all terrain vehicle, and vehicle-pedestrian accidents, are considered to be traffic accident deaths.

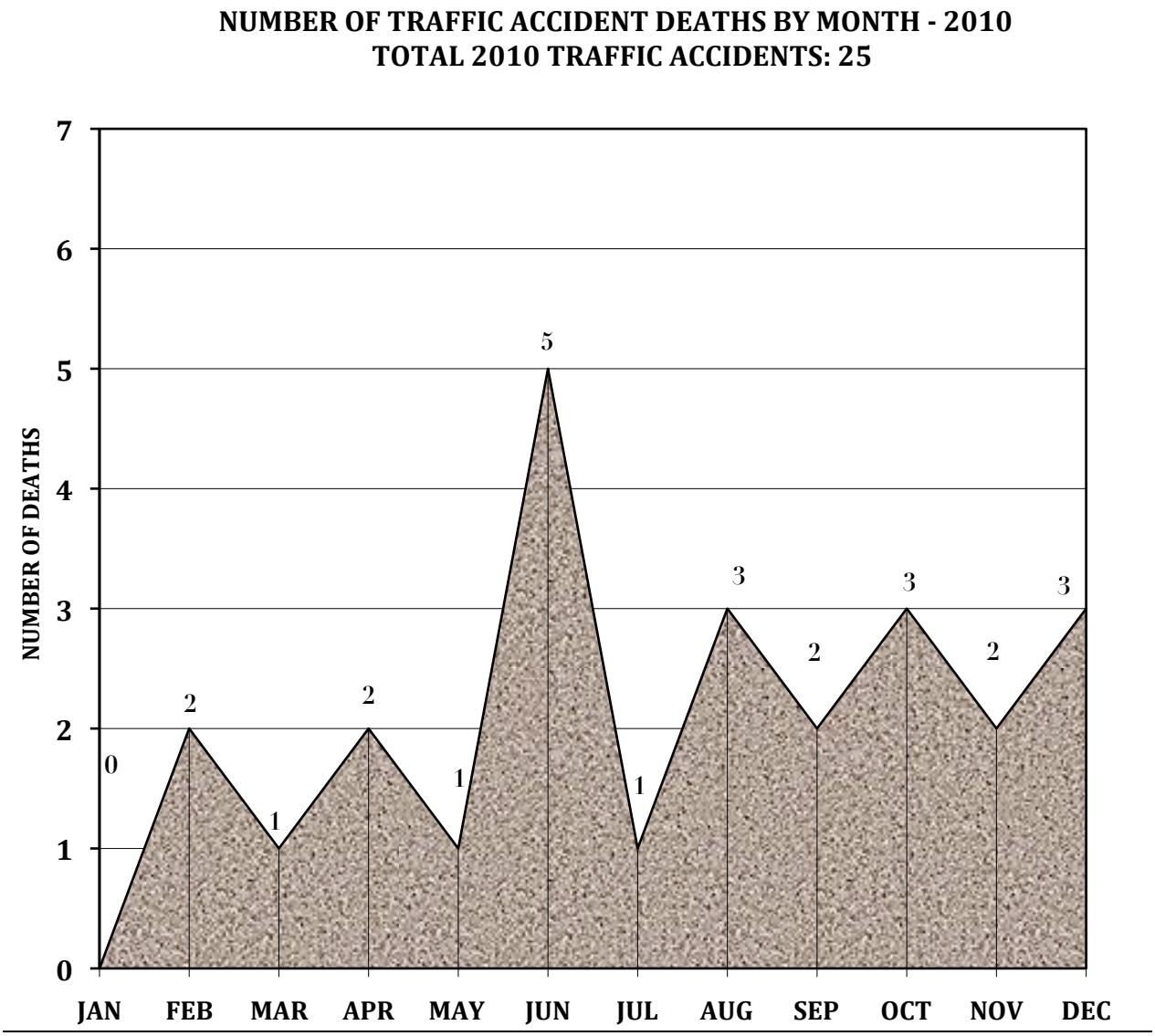
TRAFFIC ACCIDENT DEATHS BY YEAR



The Boulder County Coroner's Office investigated twenty-five deaths resulting from traffic accidents*. Twenty-three of these accidents occurred in Boulder County. Of the twenty-three deaths, fifteen of the victims were male and eight were female. Their ages ranged from eighteen to eighty-six years of age. Thirteen people died in motor vehicle accidents (including automobiles, pickup trucks, SUVs and vans), five in motorcycle accidents, two in bicycle accidents and three were pedestrians struck by an automobile. Among the thirteen vehicle fatalities that occurred in Boulder County, twelve were drivers and one was a passenger. Five drivers and one passenger were wearing seatbelts. Seven of the drivers were not wearing a seatbelt. Two vehicle occupants were ejected. Of the five motorcycle fatalities, all were wearing a helmet.

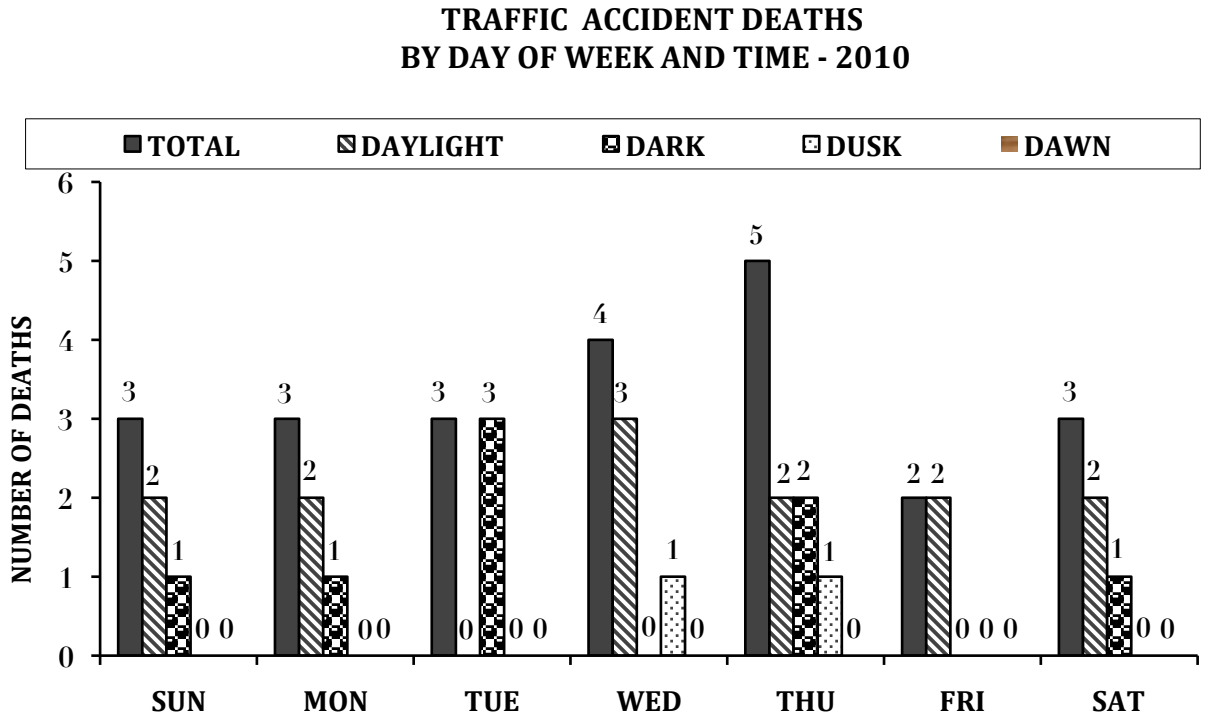
***Note:** There were a total of 25 traffic accident deaths reported to the Boulder County Coroner's Office in 2010. The Boulder County Coroner's Office investigated all of these cases; however, two of the accidents occurred out of state, but the citizens later died in Boulder County from complications of the injuries they sustained in the accidents. Both of these deaths were females. They were both drivers, and it is unknown if they were restrained.

Traffic Accident Deaths By Month



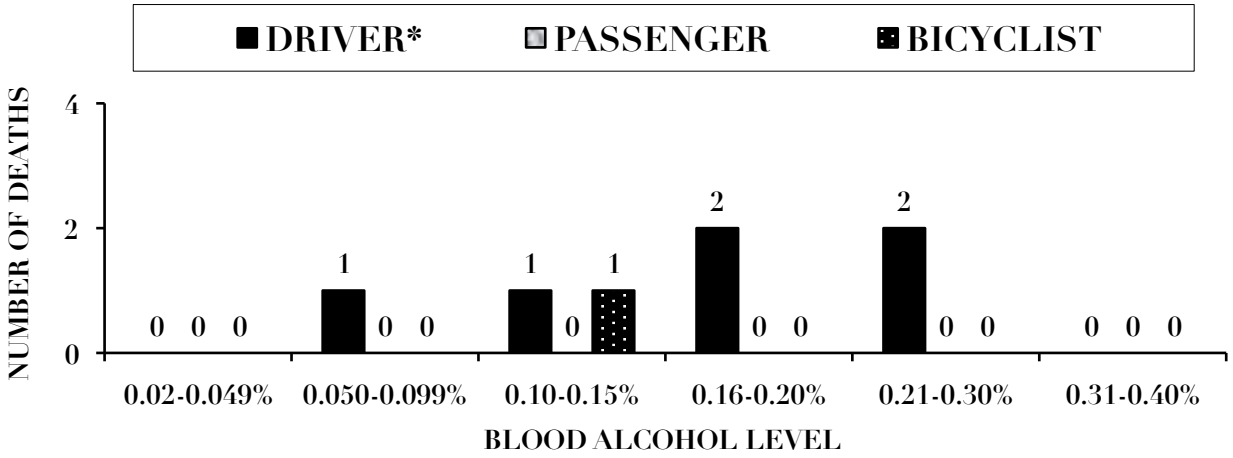
***Note:** There were a total of 25 traffic accident deaths reported to the Boulder County Coroner's Office in 2010. Two of the traffic accidents did not occur in this county, however, they were investigated because the victims died in Boulder County.

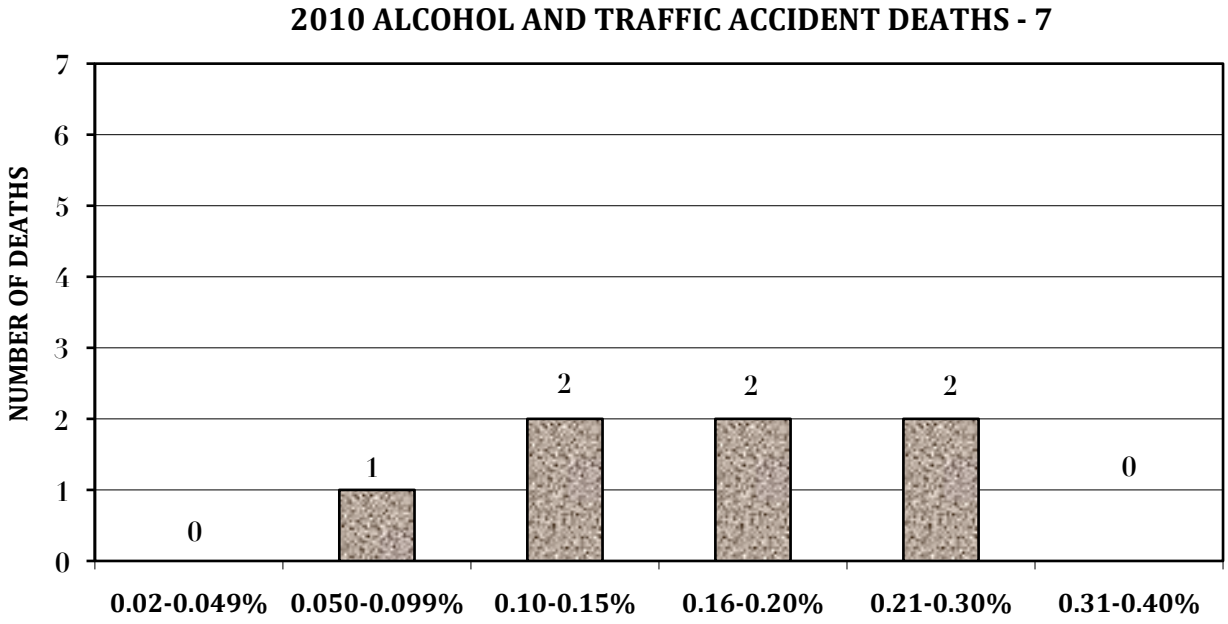
Traffic Accident Deaths By Day of Week and Time



*The Boulder County Coroner' Office investigated twenty-five traffic fatalities in 2010. Of these, two of the traffic accidents occurred out of state, however, the deaths occurred in Boulder County after the accident due to complications of the injuries sustained in those two accidents.

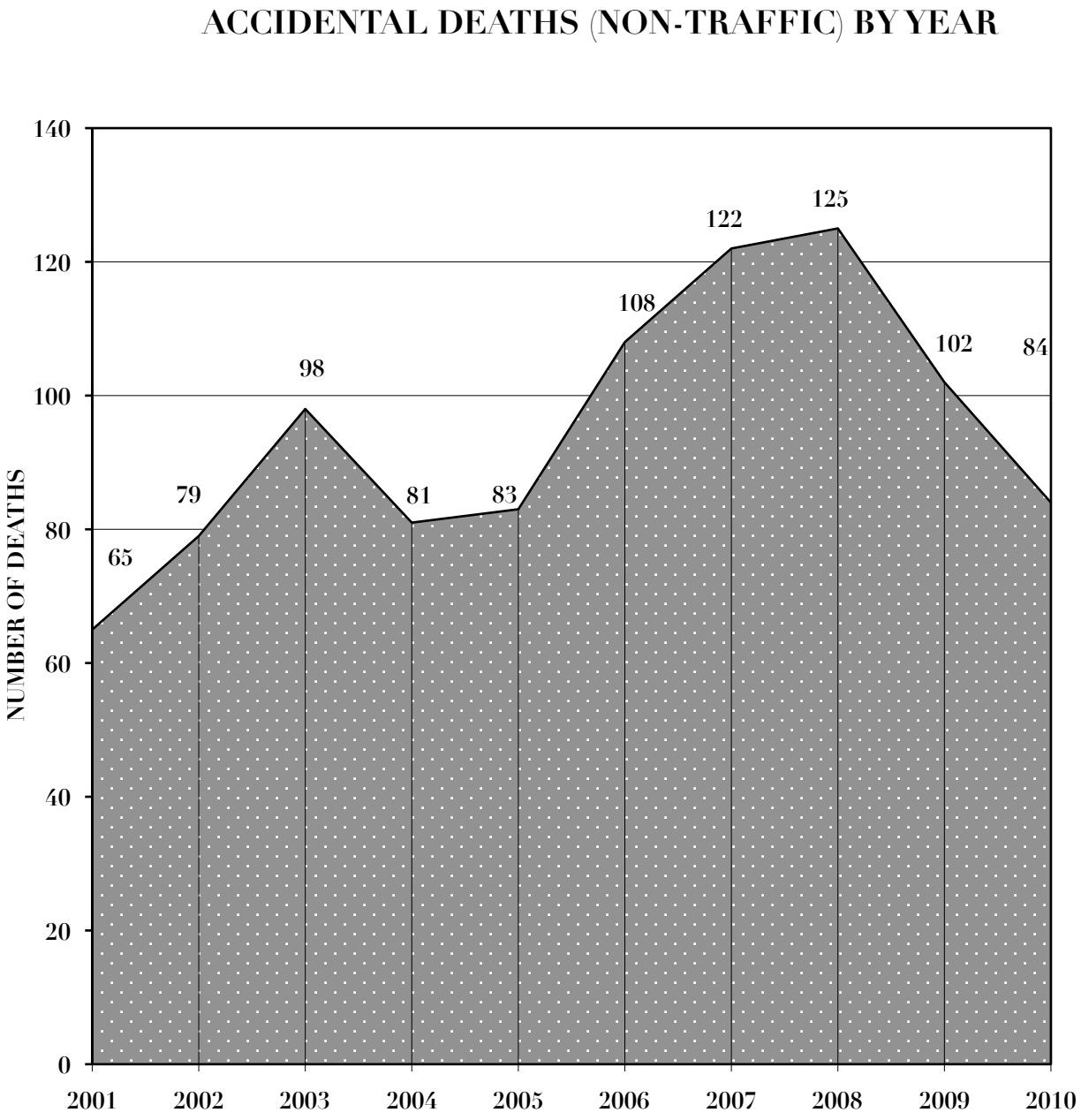
Alcohol and Traffic Accident Deaths





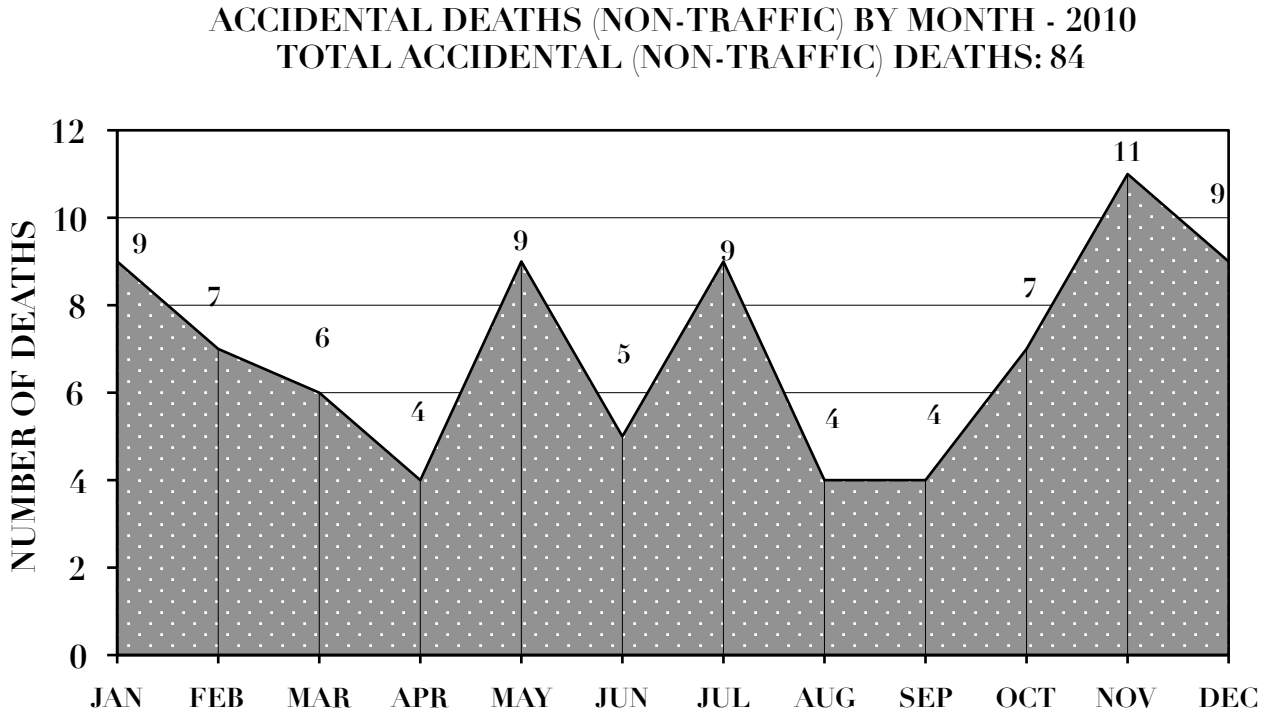
In Colorado in 2010, a driver is presumed to be Driving While Ability Impaired (DWAI) when a blood alcohol concentration (BAC) is higher than 0.05%. Prior to July 1, 2004 the blood alcohol concentration threshold was .10% to be considered Driving Under the Influence (DUI). As of July 1, 2004, a driver is presumed to be Driving Under the Influence when the BAC is 0.08% or higher. The legal drinking age is 21.

Non-Traffic Accidental Deaths

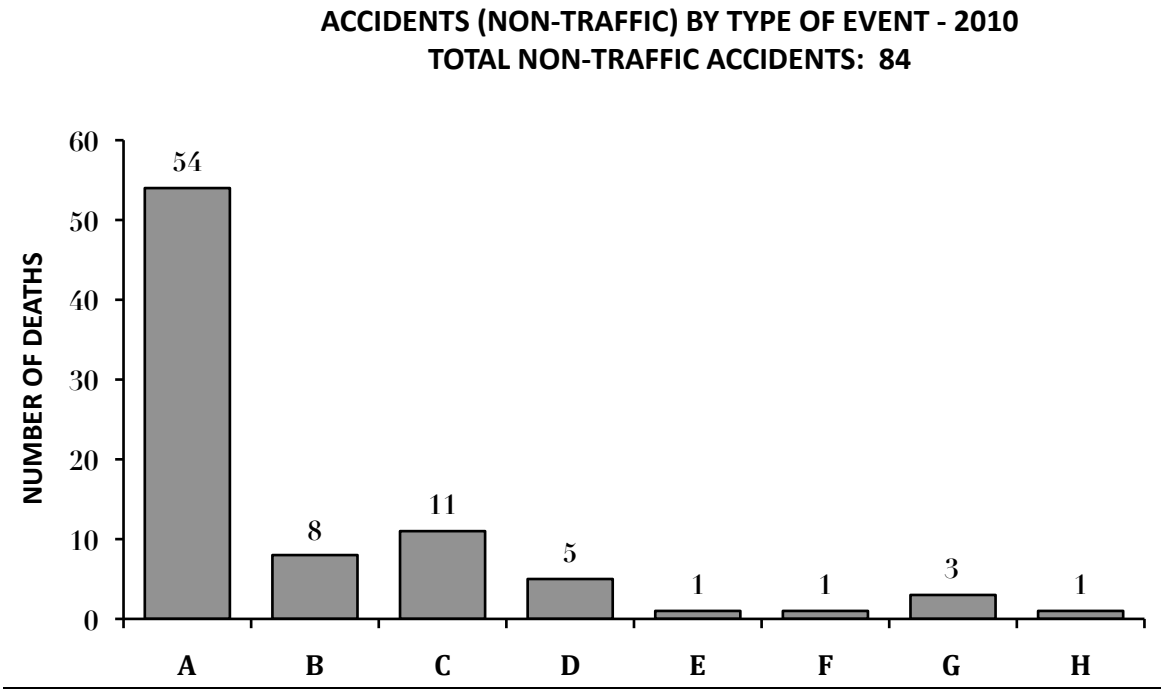


Note: There were a total of 97 non-traffic accidents reported to the Boulder County Coroner's Office in 2010. The Boulder County Coroner's Office investigated 84 of those cases and transferred jurisdiction of thirteen cases to other Coroners.

Non-Traffic Accidents by Month



Non-Traffic Accidental Deaths By Type of Event



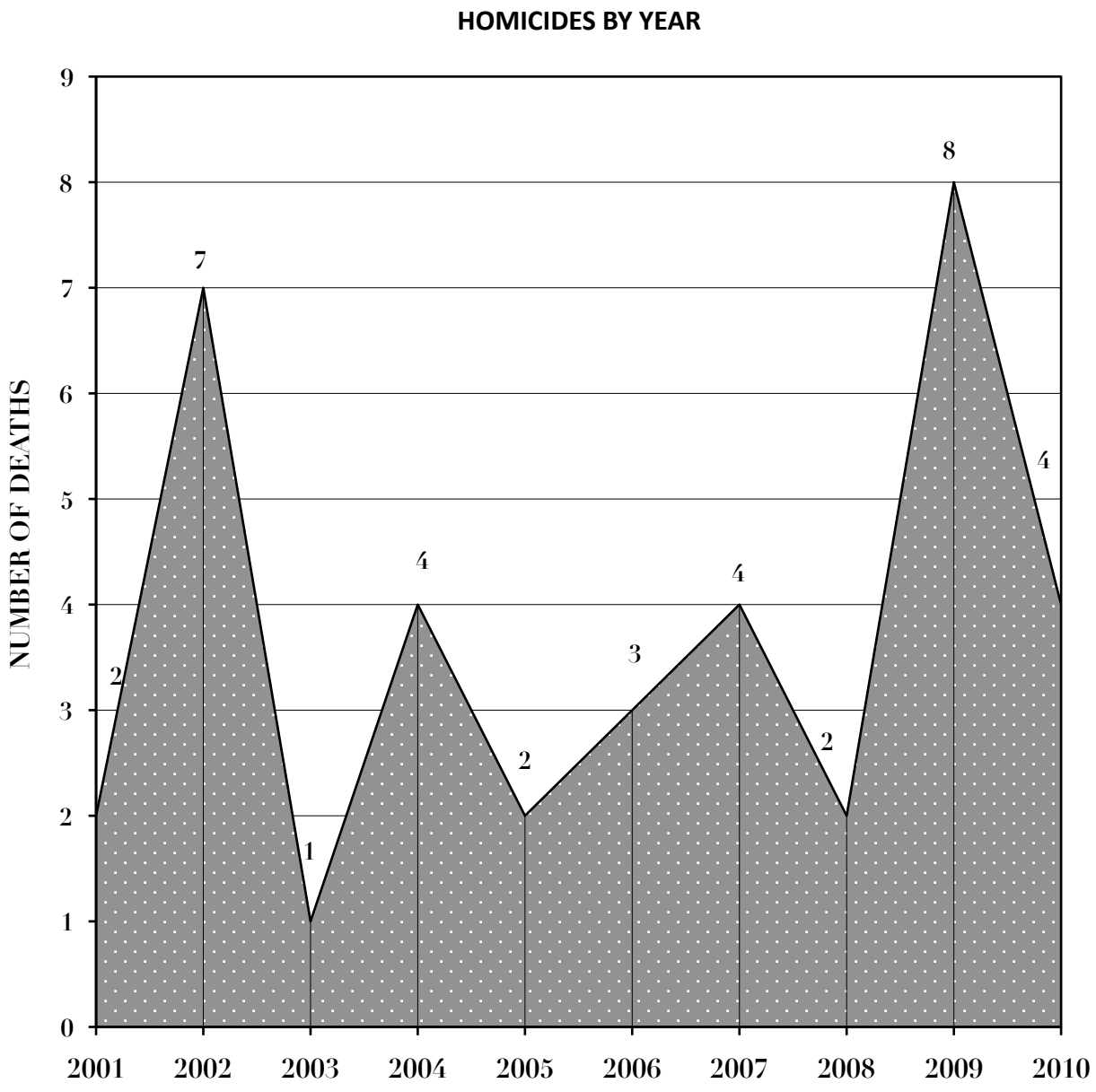
LEGEND:

A – Fall (Non-Recreational)
B – Fall (Recreational)
C – Drug Overdose (All Types)
D – Drug Overdose in combination with Alcohol
E – Huffing
F – Smoke Inhalation
G - Drowning
H – Asphyxia-Hanging

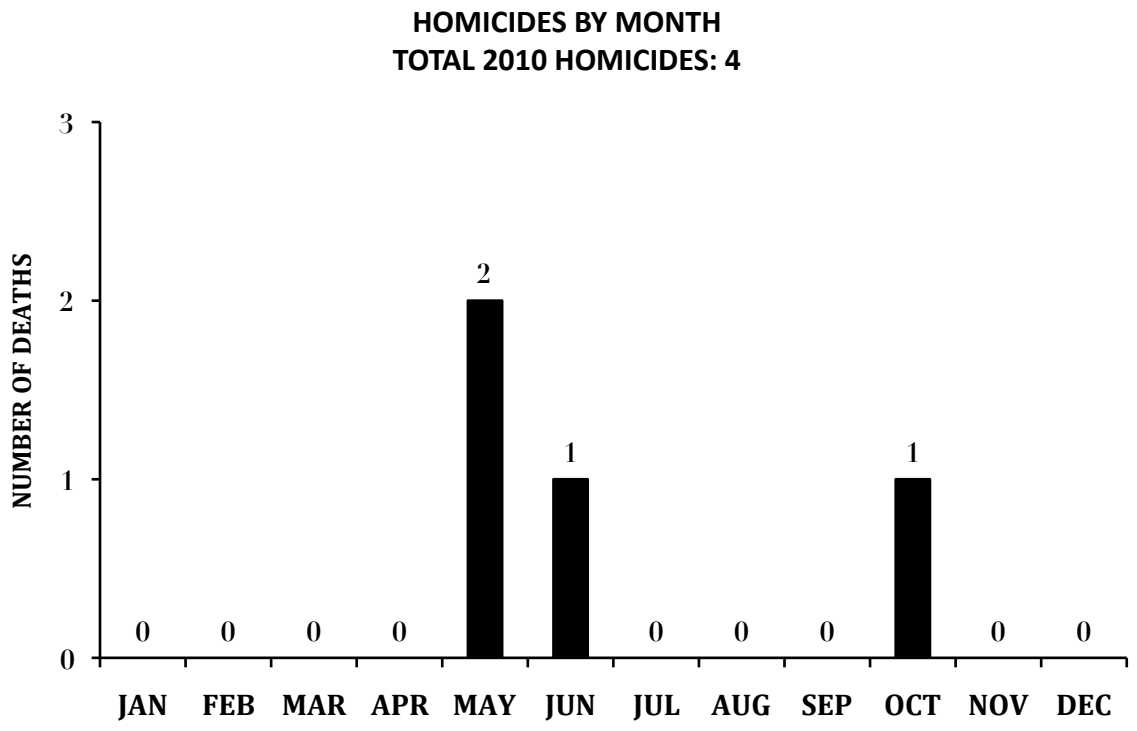
Note: There were a total of 97 non-traffic accidents reported to the Boulder County Coroner's Office in 2010. The Boulder County Coroner's Office investigated 84 of those cases and transferred jurisdiction of thirteen cases to other Coroners.

Homicides

Homicides By Year



Homicides By Month

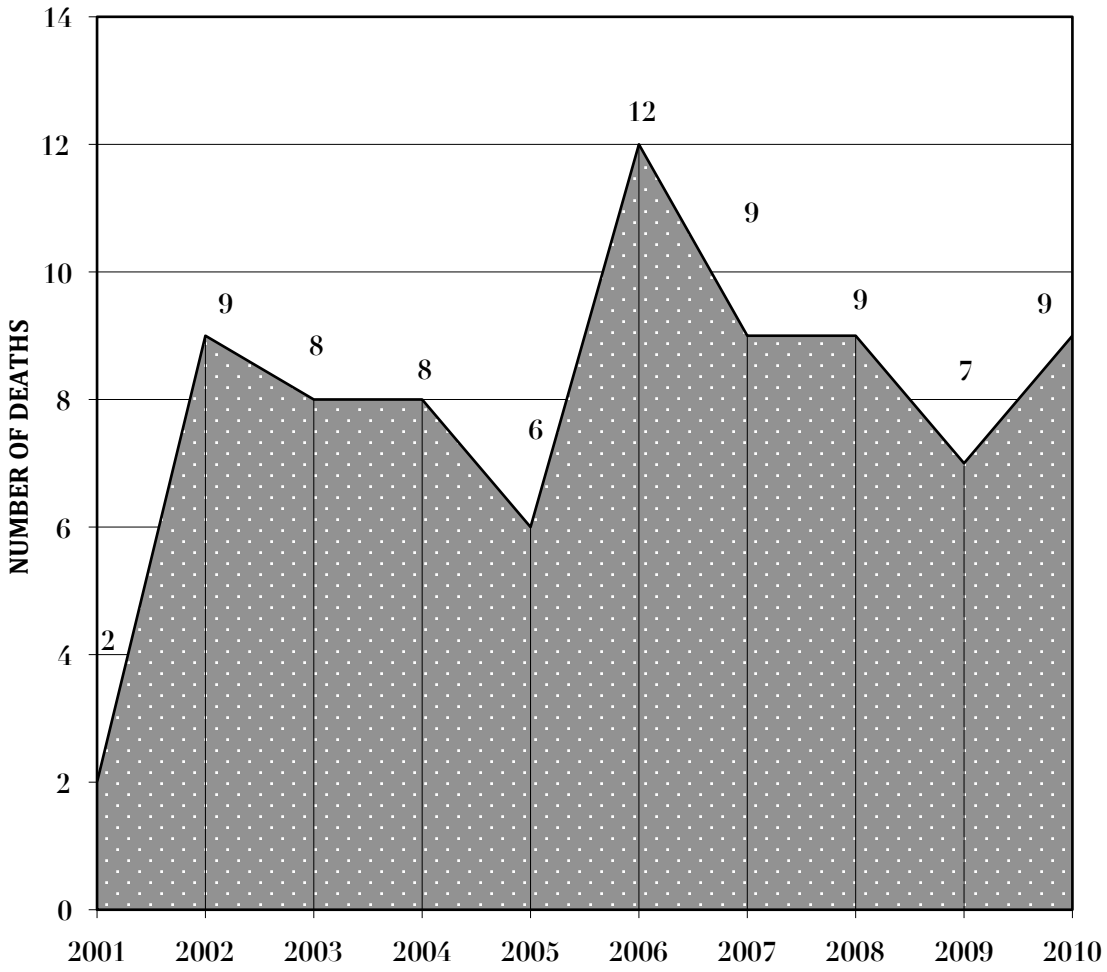


In 2010, three of the victims of homicide were male. Two homicide victims died of gunshot wounds, one died of multiple blunt force injuries and one died of asphyxia by suffocation.

Deaths of Undetermined Manner

The cause of death may be defined as the disease or injury that resulted in the death, such as heart disease or gunshot wound. The manner of death is a medico-legal term that describes the circumstances of an individual's death and may be designated as Natural, Accident, Suicide, Homicide, or Undetermined. Occasionally, Medical Examiners/Coroners encounter cases that, despite a complete autopsy, comprehensive toxicology tests, and a thorough scene investigation, no cause of death can be determined. We may also encounter cases where the cause of death is quite apparent; but the evidence supporting the manner of death is equivocal or insufficient to make a determination. The determination of manner of death is an opinion based on the "preponderance of evidence". An example might be a case in which the cause of death is a drug overdose, but, from the information available, it is not certain whether the manner of death is accident or suicide. Therefore, the manner of death may be certified as undetermined.

UNDETERMINED MANNER OF DEATH BY YEAR



Child Deaths

The Boulder County Coroner's Office participates in the Colorado Child Fatality Review Committee. This committee reviews all deaths of children under 18 years of age. The goals of the committee are:

- *To describe trends and patterns of child deaths in Colorado.*
- *To identify and investigate the prevalence of risk factors for child death.*
- *To characterize high risk groups in terms that are compatible with the development of public policy.*
- *To evaluate the service and system responses to children and families who are at high risk and to offer recommendations for improvement in those responses.*
- *To improve the quality and scope of data necessary for child death investigation and review.* [9]

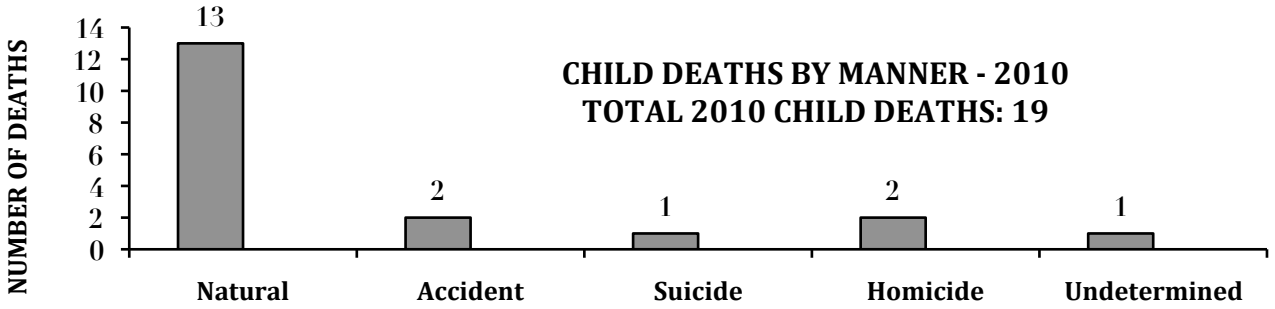
In Boulder County a total of nineteen child deaths (<18 years of age) were **reported** to the Coroner's Office in 2010.

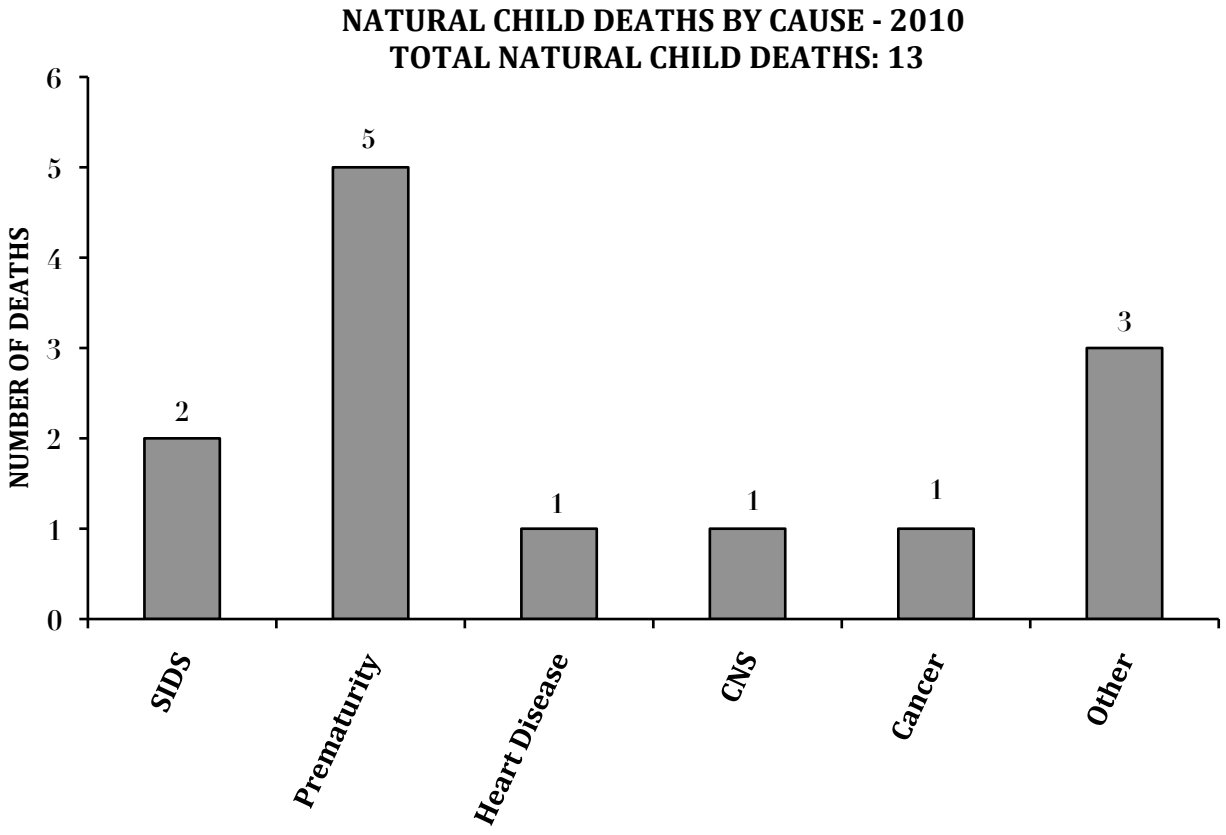
> **Note:** Statistical information may not coincide with information available from the Colorado Health Department. The State Health Department tracks death statistics by the county of residence, not by the county in which the injury or death occurred.

Of the reported deaths, thirteen children died of natural causes (including two SIDS deaths), two were accidental, two were homicides, one was suicide and one death was ruled manner undetermined. An autopsy was performed in two of the natural deaths, the two homicides, the suicide, one of the accidental deaths and the manner undetermined death.

One of the accidental deaths was due to asphyxia due to drowning and the other accidental death was due to delayed complications of asphyxia due to drowning. The manner undetermined death was due to carbon monoxide poisoning.

The following are graphs of the manner of child deaths and the causes of natural child deaths for 2010.



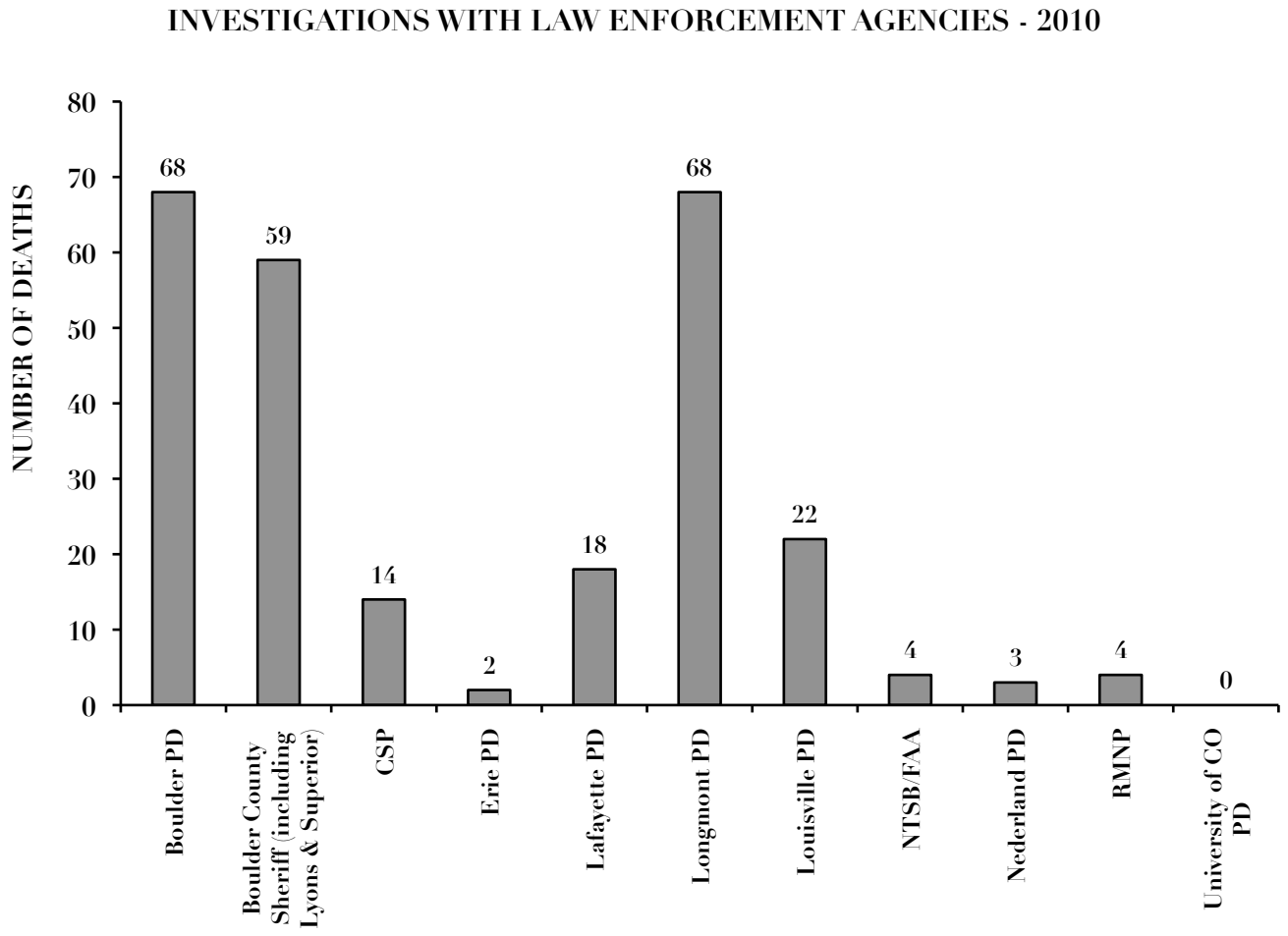


Law Enforcement Jurisdiction

The Boulder County Coroner's Office shares jurisdiction of death scenes with law enforcement agencies of Boulder County.

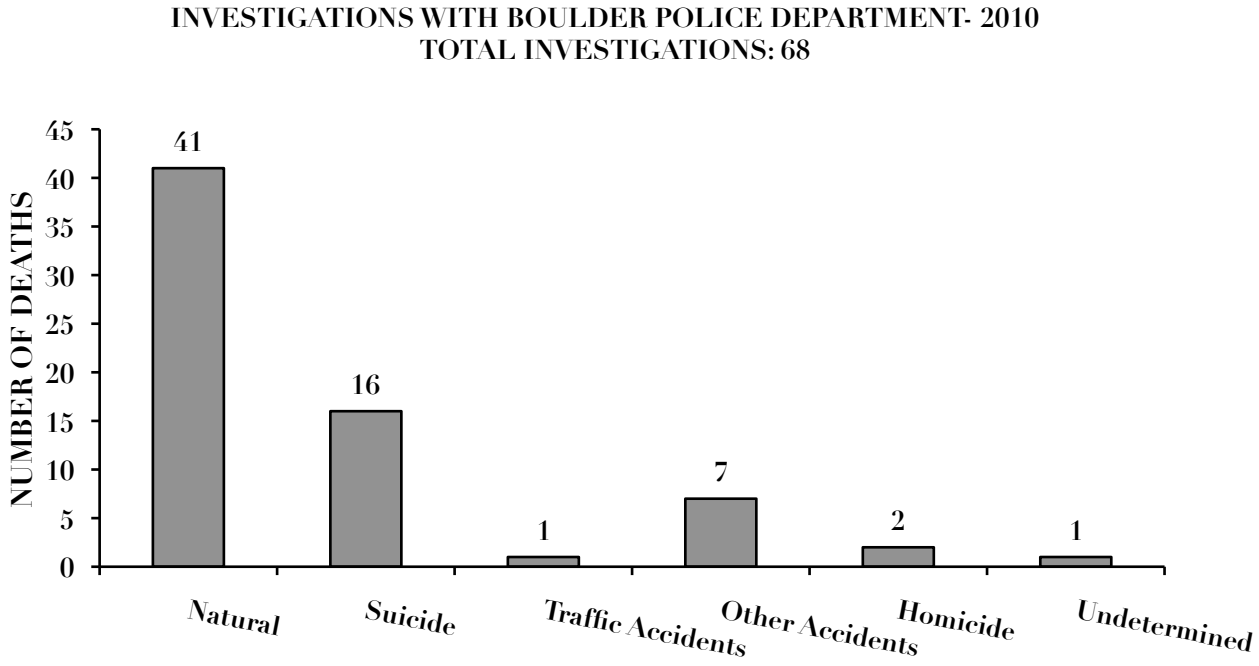
Please note that the number of investigations listed may differ from those in the "Scene Investigation" section of this report because the Coroner's Office also works with law enforcement on cases in which people die in the hospital as a result of non-natural circumstances (i.e. auto accidents).

Law Enforcement Agencies

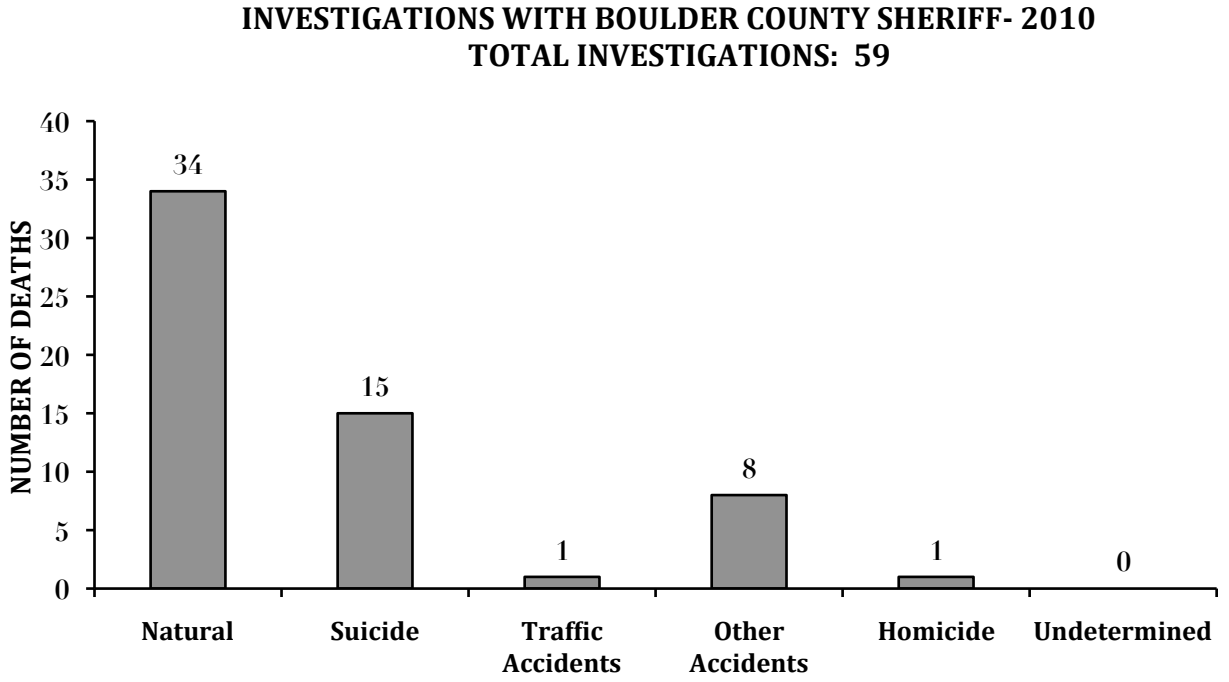


Note: The jurisdiction of the Boulder County Sheriff's Department includes unincorporated areas of Boulder County and the towns of Superior and Lyons.

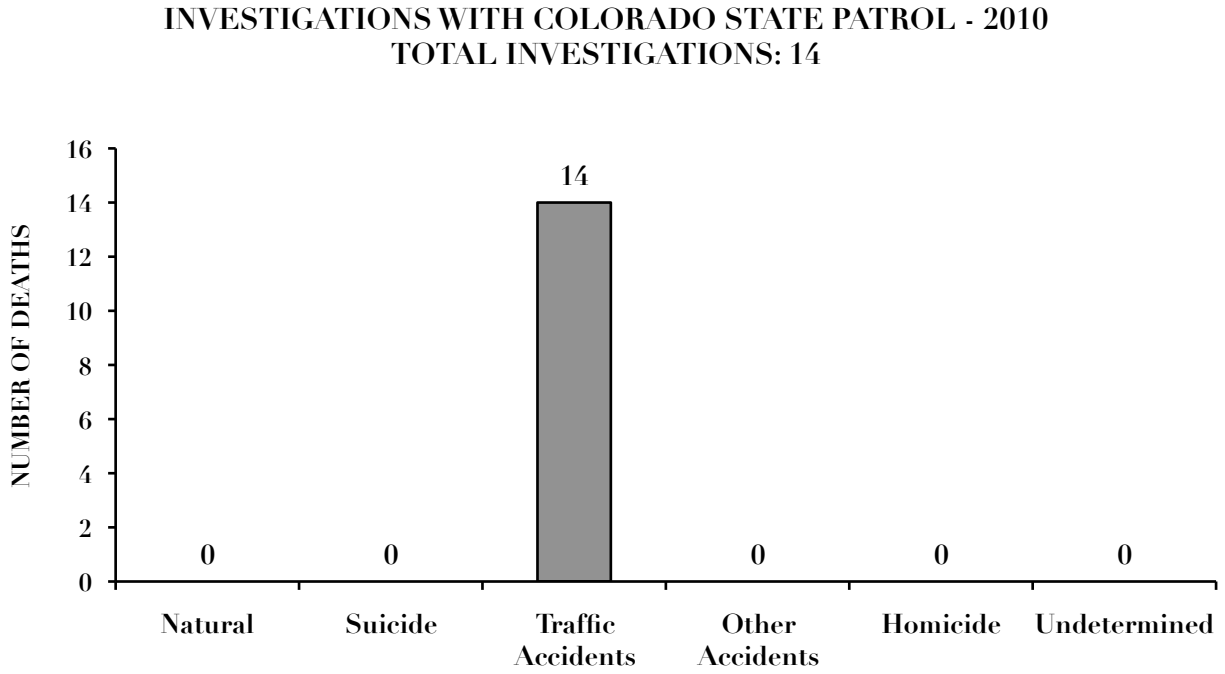
Boulder Police Department



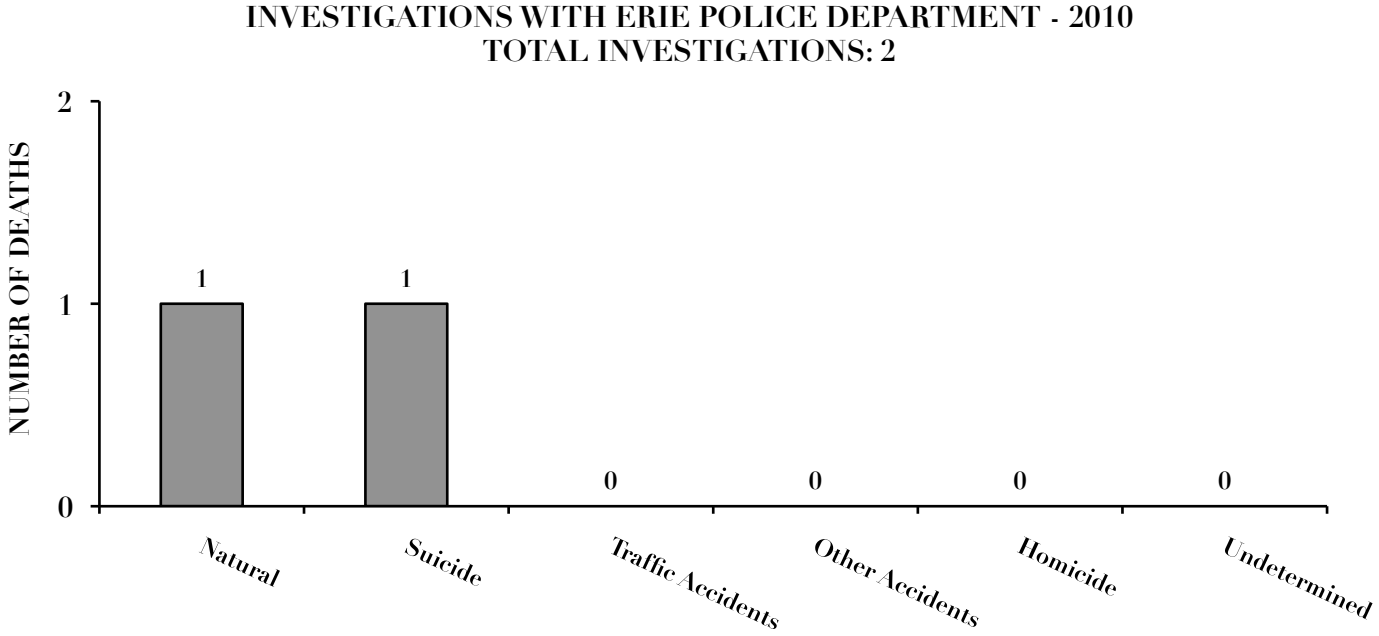
Boulder County Sheriff's Office



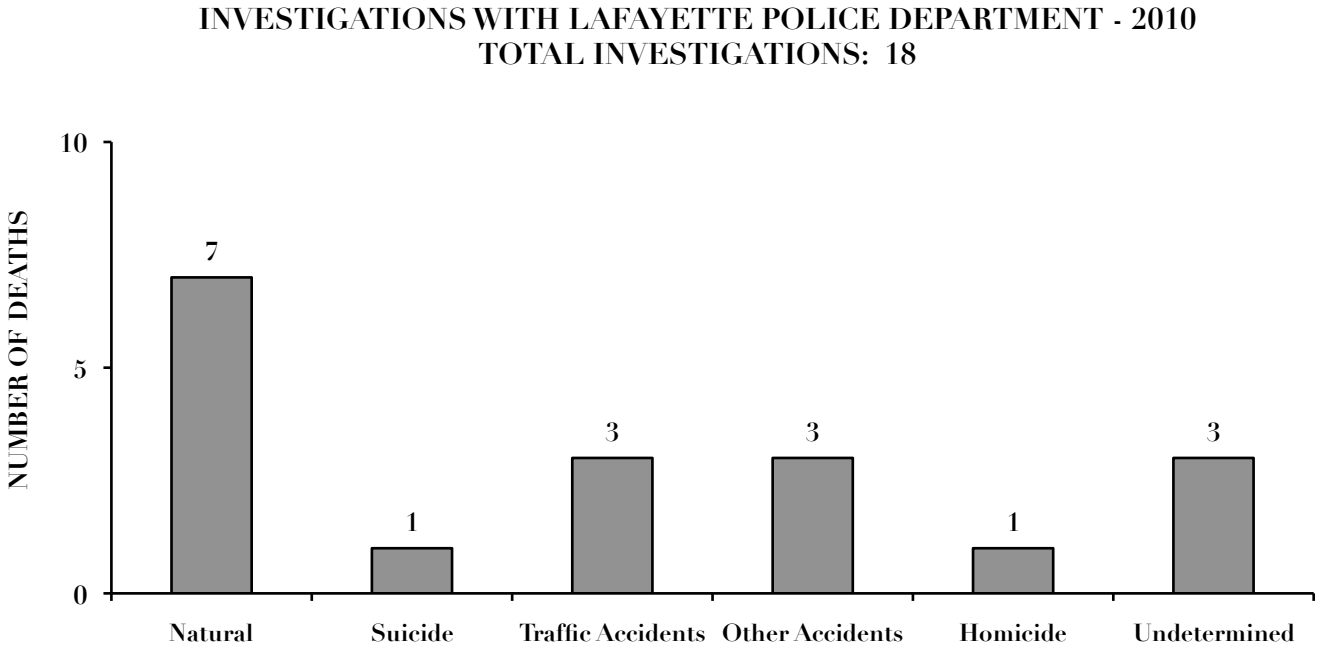
Colorado State Patrol



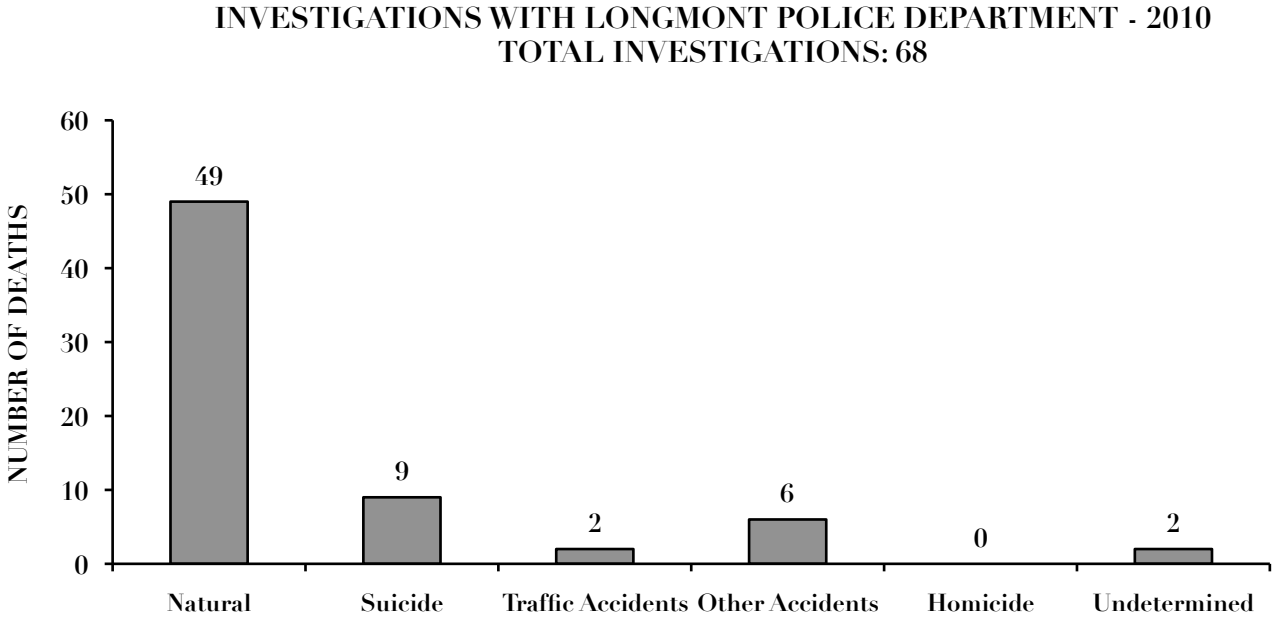
Erie Police Department



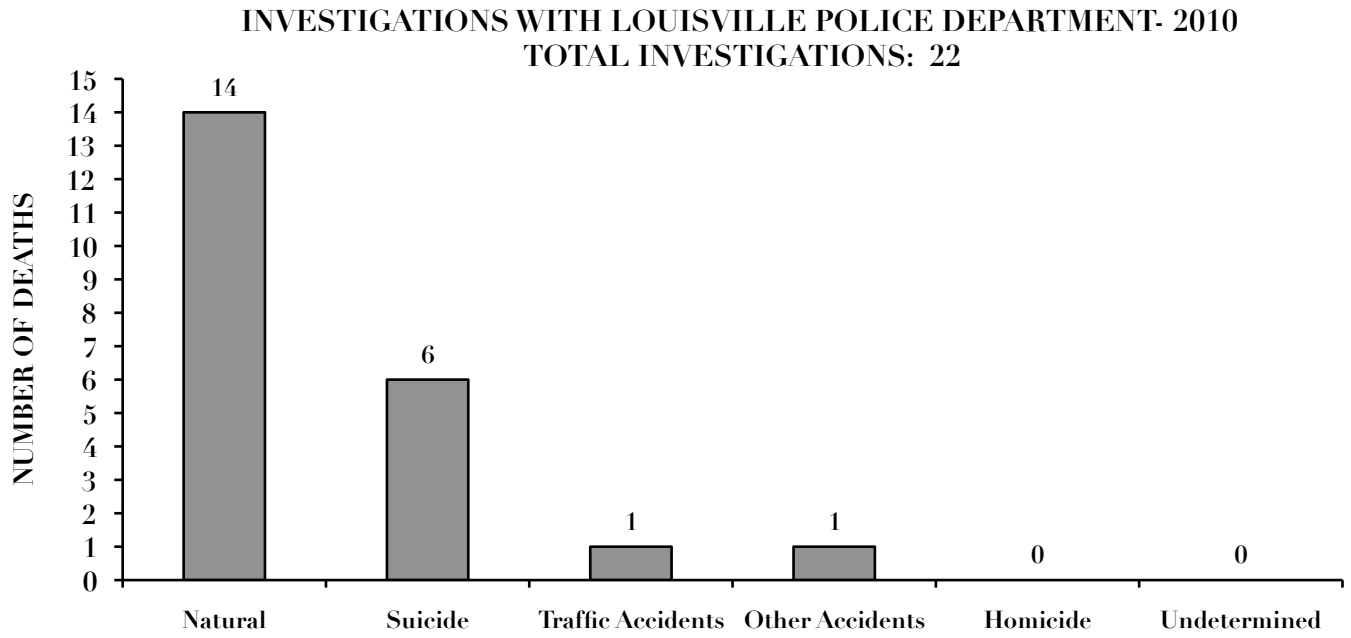
Lafayette Police Department



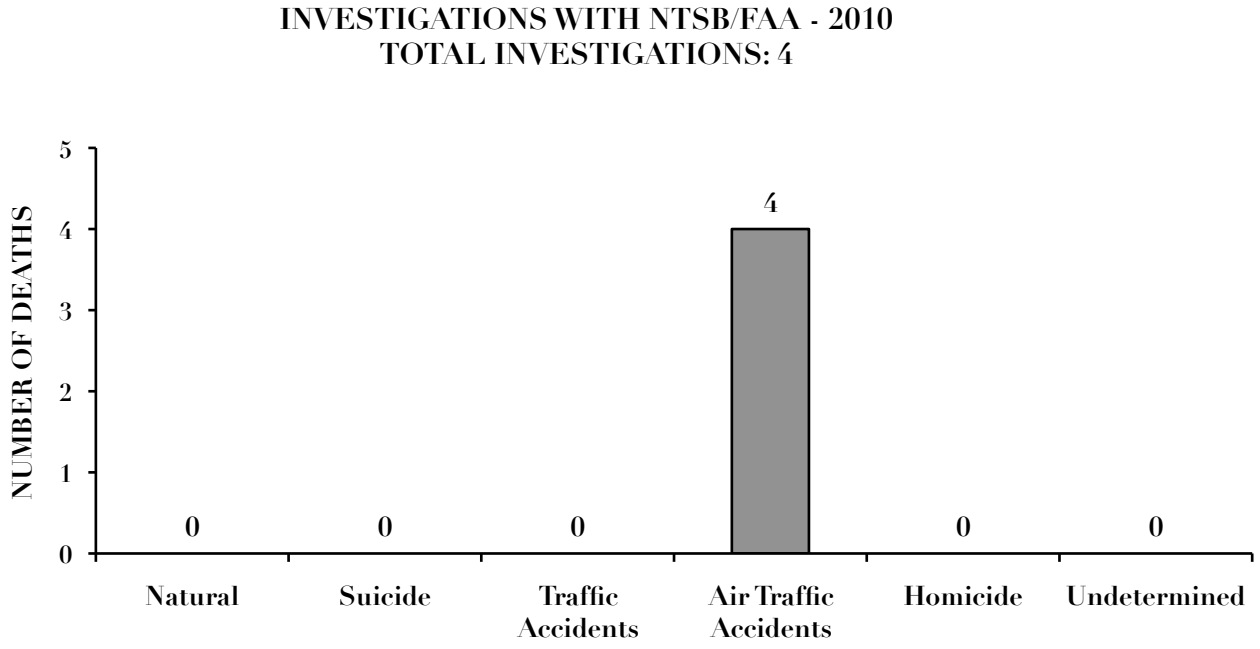
Longmont Police Department



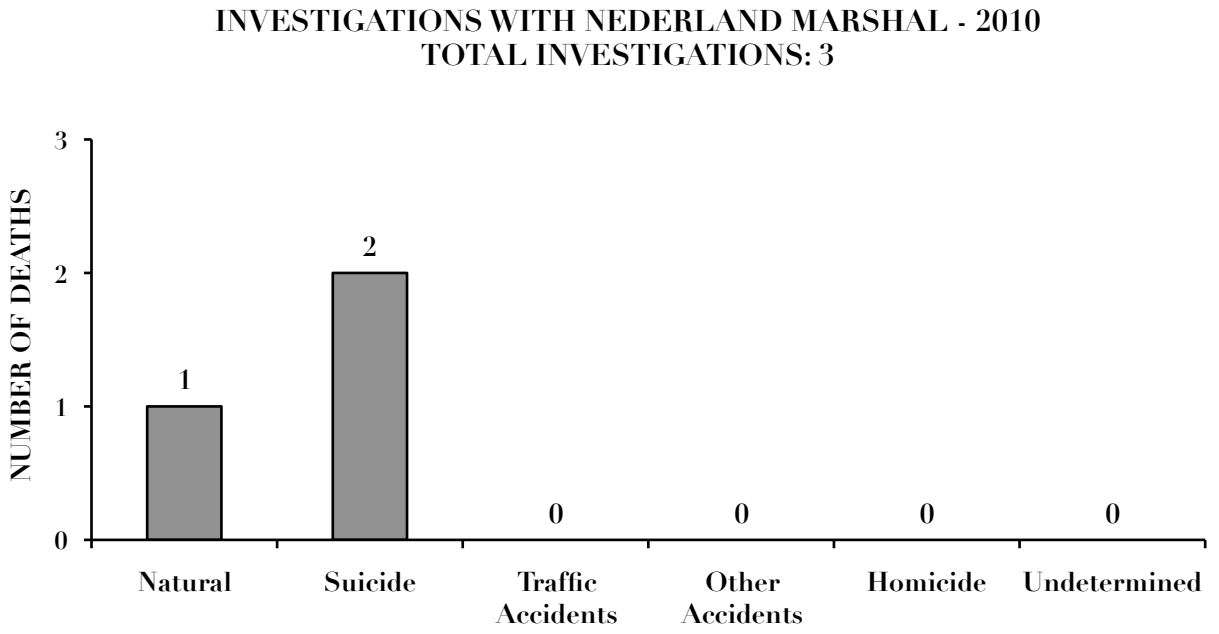
Louisville Police Department



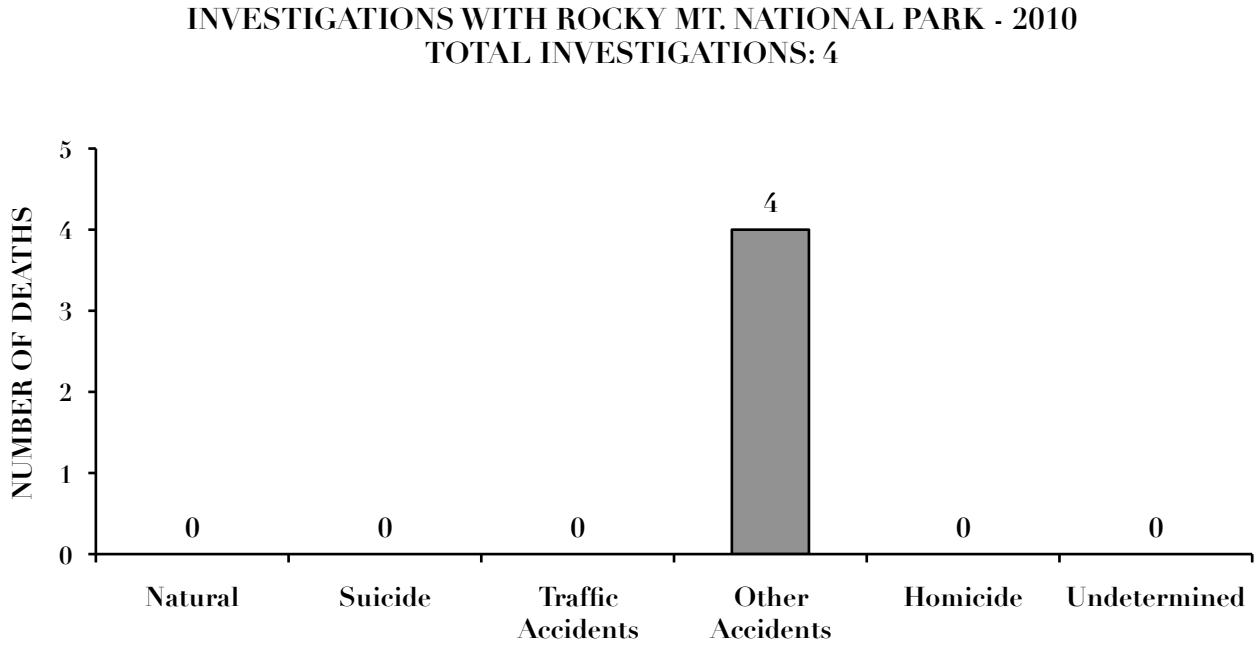
NTSB/FAA



Nederland Marshal



Rocky Mt. National Park



References

1 Colorado Vital Statistics 2004, and Preliminary 2004 Data CDC.

2 Stocker, J.T. and L.P. Dehner (Eds.), Pediatric Pathology, Lippincott, 1992, p. 677-684

3 CDC, National Center for Health Statistics, Deaths: Final Data for 2003.

4 DiMaio, Dominick and DiMaio, Vincent, Forensic Pathology, Elsevier, 1989, p. 289-290

5 Program Brochure, Colorado SIDS Program, Inc.

6 The Colorado SIDS Program, Changes, September/October, 1998

7 DiMaio, DiMaio, p. 289-296

8 Colorado Dept. of Public Health and Environment, Violence in Colorado: Trends and Resources, University of Colorado, 1994, p. 123

9 Colorado Department of Public Health & Environment, Colorado Department of Human Services Child Fatalities in Colorado, 1990-1994, June 1998, pp. 2-3