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All statistical, graphic, and map data contained in this Annual Report is based on queries drawn from a database populated by all staff and interns in the Office of the Medical Examiner. Every effort is made to maintain accuracy of all numbers given, but allowing for human error and the variation of criteria available for queries, a margin of error cannot be completely eliminated.
DENVER OFFICE OF THE MEDICAL EXAMINER
2015 Statistical Data

VISION STATEMENT: To be the premier death investigation office in the State of Colorado. By providing outstanding forensic services, OME supports other City and regional agencies such as Denver Police, Denver District Attorney, State Public Defenders and public health departments in improving the overall health and safety of the citizens of Denver.

MISSION STATEMENT: To serve as a guardian of the health, safety, and overall welfare of the citizens of Denver.

PREFACE

Per Colorado statute the Coroner is an elected official. In Denver, the Chief Medical Examiner is appointed as the Coroner in the City and County of Denver.

State law defines the parameters of what constitutes a Coroner’s case in Section 30-10-606, Colorado Revised Statutes.

By the state Constitution, Denver is a combined City and County. The City and County charter states that the position of Coroner is to be an appointed position, appointed by the Board of the Department of Environmental Health. The duties of Coroner are entrusted to the Chief Medical Examiner.

In 2011, the coroner statute was revised in an attempt to improve the coroner system and to address weaknesses and inconsistencies in death investigation across the state. The main provisions included a mandate that forensic autopsies be performed by forensic pathologists; a mandate that autopsies be performed in accordance to the National Association of Medical Examiners (NAME) autopsy standards; and a mandate that transfers jurisdiction back to the County where the incident causing death occurred.

The statute was revised again in 2013, this time emphasizing the partnership of the coroner’s office with law enforcement, and expanding the list of circumstances where the coroner would determine the cause and manner of death of a decedent. The revision also gives the coroner more authority in determining when a body should be removed from a scene, and clarifies the authority of the coroner to collect suicide notes, prescription medications, and any other documents or evidence they deem necessary to determine the cause and manner of death, including electronic devices such as cell phones and computers.

The new version of the statute also emphasizes the working relationships between the coroner’s office and other community agencies. The revision states that the coroner and public administrator have the right to take charge of safeguarding the property of the deceased against the estate when necessary, and that the coroner shall comply with requests for information from the Department of Public Health and Environment and the Department of Transportation.

FORENSIC PATHOLOGY FELLOWSHIP

In 2008, the Denver Office of the Medical Examiner became accredited by the Accreditation Council for Graduate Medical Education for a forensic pathology fellowship sponsored by the University Of Colorado Denver School Of Medicine. In July 2009, the program’s first forensic pathology fellow began a one-year period of training in the area of forensic pathology. This program is designed to prepare forensic pathologists for board certification and practice in the field of forensic pathology.

<table>
<thead>
<tr>
<th>OME Forensic Pathology Fellows</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2009 - 2010</strong></td>
</tr>
<tr>
<td><strong>2010 – 2011</strong></td>
</tr>
<tr>
<td><strong>2011 - 2012</strong></td>
</tr>
<tr>
<td><strong>2012 - 2013</strong></td>
</tr>
<tr>
<td><strong>2014 -2015</strong></td>
</tr>
<tr>
<td><strong>2015-2016</strong></td>
</tr>
</tbody>
</table>

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

The three forensic pathology staff has official academic appointments with the University Of Colorado School Of Medicine through the Department of Pathology. All staff pathologists participate in the education of medical students in both general pathology as well as forensic pathology. In addition, medical students have the opportunity to rotate through the Office of the Medical Examiner for credit, gaining firsthand knowledge of the area of forensic medicine.

Pathology residents at the University of Colorado have a one-month rotation generally offered in the third or fourth year. During this rotation, pathology residents gain practical experience in the performance of the forensic autopsy, and also have the opportunity to respond with medicolegal death investigators and, when applicable, staff pathologists to death scenes. Whenever possible, residents are encouraged to accompany staff pathologists to observe courtroom testimony.
INVESTIGATIVE INTERNSHIP PROGRAM

OME offers a one-year medicolegal investigative internship program with the following schools: University of Denver Graduate Program – Masters of Forensic Psychology, Metropolitan State University of Denver, and the University of Colorado, Denver Campus. Select individuals may opt, if accepted, to continue on for an additional year. Undergraduate seniors and graduate students compete to participate in a program designed to train forensic death investigators. During the internship year, interns are expected to carry their own case load that includes gathering of information for the determination of the cause and manner of death, assisting in identification of the decedent, investigating cause and manner of death, assist in locating and notifying next of kin, and proper documentation of a death scene. Upon successful completion, participants are eligible for certification as a medicolegal death investigator by the Colorado Coroner’s Association. The program also prepares participants for eventual ABMDI (American Board of Medicolegal Death Investigation) certification after hire in a coroner or medical examiner’s office.

FORENSIC AUTOPSY TECHNICIAN INTERNSHIP PROGRAM

OME offers a semester long Forensic Autopsy Technician Internship with many local as well as out-of-state universities. Select individuals may be granted the opportunity to prolong their internship on a semester basis based on their initial semester experience/interaction. During this internship, participants work closely with staff pathologists and forensic autopsy technicians within the autopsy setting. Participants gain experience in clinicopathologic correlation, forensic photography, item logging, fingerprinting, assist with evidence collection, and may learn evisceration techniques. Many graduates from this internship go on to medical school; others continue on in an alternative field of medicine such as physical therapy, physicians’ assistant, pathologists’ assistant and other forensic sciences.

COMMUNITY EDUCATION

The Denver Office of the Medical Examiner participates in a wide variety of community education through affiliations with area universities, as well as community outreach activities throughout the Denver Metropolitan area with high schools and middle schools, medical providers, and other interested parties.
The Investigations Section of the Denver Medical Examiner responds to the scenes of deaths throughout the City and County of Denver twenty-four hours a day, seven days a week. It is the responsibility of the Medicolegal Death Investigator to function as the eyes and ears of the Medical Examiner and insure that the State law is followed with respect to the reporting and handling of deaths in Denver City and County. In addition to scene response, investigators also investigate hospital, nursing homes, and other facility deaths that fall under the Coroner statute via phone reports. When they deem it necessary, they will respond to these scenes as well. Investigators are also responsible for coordinating and facilitating identification of the decedent; locating and notifying of the next of kin; and processing some of the evidence, medication, and effects of the decedent.

Investigators respond to any death scene where the body has not been removed if the death occurs outside of a healthcare facility. Investigators may also respond to select hospital deaths; for example many homicides and child deaths where the individual has been transported to an emergency room. Investigators may also respond to a hospital or healthcare facility if the death appears due to non-natural circumstances (neglect in a nursing facility.) There can be a great deal of month-to-month fluctuation in the number of scenes, although overall the yearly total does not vary greatly. In 2015, investigators responded to an average of about 74 scenes a month.
In 2015, Denver OME investigators responded to 882 scenes. It took them less than 30 minutes 67% of the time, between 30 minutes and 60 minutes 25% of the time, and over 60 minutes 5% of the time. In 3% of cases, times were not recorded.

![Investigator Response Time Graph]

In September of 2014, the investigative section began a new program in cooperation with local funeral homes. In cases where scene investigation did not indicate an apparent need for examination, investigators released the deceased directly to a funeral home from the scene. The case was then put on hold for review at OME, and as determined by the investigation and OME physicians, the decedent would either be brought in for examination or released from hold so the family could then make arrangements at a mortuary of their choice. In many cases this eliminated unnecessary transport of the decedent to the medical examiner, and expedited the process for families in making final arrangements.
MASS FATALITY RESPONSE

In March 2006, the Denver OME’s Manager of Investigations spearheaded the establishment of the North Central Region (NCR) Mass Fatalities Committee. The purpose of the committee is to establish resources, personnel, and protocols enabling the effective handling of any disaster with mass fatalities within the Region through the use of mutual aid partners.

The NCR is one of nine emergency preparedness and response regions within the State of Colorado. It is organized around ten counties. Agencies involved include Emergency Management, Law Enforcement, Fire Services, Special Districts, Public Health, Emergency Medical Services, Hospital Organizations, Public Works, Regional Transportation, and Financial Services.

The NCR hosts mass fatality exercises and trainings periodically throughout each year, and OME’s investigative personnel remain very active in these events.

COHEART

In September 2008, the Denver Office of the Medical Examiner established a reserve corps. This pool of volunteers was established to support operations in the event of a mass fatality incident. They work in cooperation with the NCR Emergency Response program. The group of volunteers is known as the Colorado Human Remains Extraction and Recovery Team, or “COHEART.” They receive periodic forensic training as well as experience in death scene investigations at the Denver Office of the Medical Examiner.

ORGAN/TISSUE/CORNEAL RECOVERY

OME supports organ and tissue recovery whenever possible, and works closely with local procurement agencies such as Donor Alliance and the Rocky Mountain Lions Eye Bank to facilitate recovery activities in response to the large need for both organs and tissues on a local, as well as a national level. OME follows the Colorado Organ and Tissue Donation Coroner Protocol, which is an agreement signed by the Coroners and the District Attorney for each participating county along with Donor Alliance and the Rocky Mountain Lions Eye Bank. This protocol is designed to optimize organ and tissue recovery through cooperation and communication between all signed parties. Local coroners meet with representatives from the procurement agencies on a regular basis to review the protocol and update as needed.

National Violent Death Reporting System

The Denver Office of the Medical Examiner compiles data on all violent deaths in the county. This information is then used by the Centers for Disease Control and Prevention (CDC) as part of the National Violent Death Reporting System (NVDRS). This grant funded program is housed at the Colorado Department of Public Health and Environment (CDPHE). The purpose of the program is to provide a better understanding of the causes and risk factors associated with violent deaths. Forty-two states including Colorado participate in the NVDRS. In Denver, data collection began with cases from January 2004 to date. More information on the program is available at http://www.cdc.gov/violenceprevention/nvdrs/index.html
NAME ACCREDITATION

In 2000, the Denver Office of the Medical Examiner received accreditation by NAME for the facility. Every five years the office has applied for accreditation and on October 25, 2015, the office received its fourth accreditation. This accreditation recognized that the Denver Office of the Medical Examiner had achieved consistent performance and competency in medicolegal death investigation, and is in compliance with standards developed by NAME.

According to a recommendation by the National Commission on Forensic Science to the Attorney General of the United States, of the estimated 2,366 medicolegal death investigation offices in the United States, less than 100 are accredited. Accreditation demonstrates compliance with industry and professional standards and performance criteria and provides an independent measure of assurance to the tax-paying citizens of the community.

Sixty-three out of the 64 counties in Colorado have Coroner Offices. Four counties in total are NAME accredited.

( https://www.justice.gov/sites/default/files/ncfs/pages/attachments/2015/01/21/mdiaccreditationfinal.pdf )

<table>
<thead>
<tr>
<th>NAME PERFORMANCE MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2015</strong></td>
</tr>
<tr>
<td>Success</td>
</tr>
</tbody>
</table>

(Note: All report figures based on autopsy reports completed by Forensic Pathologists only and do not include turnaround times that include Fellow instruction)
## ANNUAL STATISTICAL REPORT 2015

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL DEATHS REPORTED (All jurisdictions)</strong></td>
<td>4620</td>
</tr>
<tr>
<td>Medical Examiner Cases (Jurisdiction Retained)</td>
<td>1114</td>
</tr>
<tr>
<td>Waived Cases (Jurisdiction Waived)</td>
<td>2154</td>
</tr>
<tr>
<td>(Waived Natural Deaths)</td>
<td>2013</td>
</tr>
<tr>
<td>(Waived Transferred Jurisdiction)</td>
<td>129</td>
</tr>
<tr>
<td>(Waived – Declined/Other)</td>
<td>12</td>
</tr>
<tr>
<td>Inquiries (No jurisdiction determined)</td>
<td>1351</td>
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<tr>
<td>(Declined)</td>
<td>3</td>
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<tr>
<td>(Request for Assistance)</td>
<td>20</td>
</tr>
<tr>
<td>(Natural)</td>
<td>1325</td>
</tr>
<tr>
<td>(Transferred Jurisdiction)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Manner of death (ME Cases)</strong></td>
<td></td>
</tr>
<tr>
<td>Accident</td>
<td>338</td>
</tr>
<tr>
<td>Homicide</td>
<td>60</td>
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<tr>
<td>Suicide</td>
<td>98</td>
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<tr>
<td>Traffic Fatalities</td>
<td>61</td>
</tr>
<tr>
<td>Undetermined</td>
<td>23</td>
</tr>
<tr>
<td>Request for assistance (non-human bones, skeletal remains, remnant,</td>
<td>3</td>
</tr>
<tr>
<td>reported asystolic deaths, outside agency assist requested etc.)</td>
<td></td>
</tr>
<tr>
<td>Natural</td>
<td>531</td>
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<tr>
<td><strong>Total scene visits by ME or ME Investigators</strong></td>
<td>882</td>
</tr>
<tr>
<td><strong>Bodies transported to office by order of DOME</strong></td>
<td>811</td>
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<tr>
<td><strong>External examinations</strong></td>
<td>285</td>
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<tr>
<td><strong>Complete autopsies</strong></td>
<td>645</td>
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<tr>
<td><strong>Partial autopsies</strong></td>
<td>0</td>
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<tr>
<td><strong>Outside autopsy for other jurisdiction</strong></td>
<td>1</td>
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<tr>
<td><strong>Chart Review</strong></td>
<td>181</td>
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<tr>
<td><strong>Hospital/private autopsies retained under the ME jurisdiction</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Cases where toxicology is performed</strong></td>
<td>638</td>
</tr>
<tr>
<td><strong>Bodies unidentified after examination</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Organ and tissue releases</strong></td>
<td></td>
</tr>
<tr>
<td>Organs</td>
<td>15</td>
</tr>
<tr>
<td>Tissues</td>
<td>56</td>
</tr>
<tr>
<td>Total percent</td>
<td>98%</td>
</tr>
<tr>
<td><strong>Unclaimed bodies (Coroner rotation burials)</strong></td>
<td>19</td>
</tr>
<tr>
<td><strong>Exhumations</strong></td>
<td>0</td>
</tr>
</tbody>
</table>
Death investigations are classified in four main categories at DOME:

• “ME” (Medical Examiner) cases
  o The Office of the Medical Examiner retains primary jurisdiction. There is an in-depth investigation, and an Office of the Medical Examiner physician will certify the cause and manner of death.

• “W” (Waived) cases
  o After initial investigation, some cases, which are reportable by law, may be transferred to another county (if the event resulting in death occurred outside of Denver), or may be released to a hospital or treating physician to certify the cause and manner of death.

• “I” (Inquiry) cases
  o Care facilities often report deaths which do not fall into the area of a reportable death. These cases are totally released after being documented.

• “OC” (Outside) cases
  o Autopsies performed for other Colorado counties for a fee.

From 2010 through 2015, there was not much fluctuation in the number of medically examined cases.

The largest increase in case types has been in the number of cases that are waived, most notable in 2014 and 2015.

There was a significant jump in unnecessarily reported deaths from 2010 to 2011, a trend that continued to rise from 2012-2013, but has since began to decrease.

From 2011 to 2013, the Denver Medical Examiner performed more autopsies for other Colorado counties than at any other time.
In cases where the Office of the Medical Examiner retains jurisdiction, one of three medical examinations will occur:

- **Autopsy** – An examination of written documents including medical records, examination of the body externally, and opening the head, neck, chest, and abdomen at a minimum, removing and thoroughly examining the organs. A report is compiled, which is a public record in Colorado.

- **External examination** – An examination of written documents, including medical records and an external examination of the body only (no internal intrusion). Blood/fluid or other samples are still preserved when possible.

- **Chart review** – When a person dies of injuries that result in extensive medical treatment, which has been well documented, the body is not examined, but the cause of death is certified based upon review of the medical records.

**CAUSE OF DEATH** refers to the disease or injury that sets into motion the chain of events that result in death. Causes could be from a medical condition such as coronary artery disease, or a traumatic event such as gunshot wound.

**MANNER OF DEATH** refers to how people die in general, if a non-natural action has a contribution to the death, it will determine the manner. There are five manners of death:

- **Homicide** (death caused by the actions of another)

- **Suicide** (death caused by intentional harm to self)

- **Accident** (death caused by non-intentional injury)

- **Natural** (death due to a natural disease process)

- **Undetermined** (could not assign other manner due to unclear or unknown circumstances).

**A Request for Assistance** is an additional Manner of Death that the Denver Office of the Medical Examiner uses. It includes bones cases and other activities that do not fit neatly into the other manners.

Something new for the Denver Office of the Medical Examiner was that in May of 2015, **Electronic Death Registration** (EDR) was implemented by the Office of the State Registrar of Vital Statistics. This is a secure internet site that allows for funeral establishments, physicians, and coroner offices to complete, sign, and register death records electronically. The system is also relating information to the Social Security Administration and the Centers for Disease Control and Prevention, which allows real-time verification of the decedent’s social security number, as well as review of cause of death data. The system is paperless and is designed to expedite the death certification process.
There were 4,620 deaths reported to the Denver Office of the Medical Examiner in 2015. Out of that total reported, Denver retained jurisdiction and fully investigated 1,114 cases wherein DOME physicians certified cause and manner of death.

2015 saw a slight increase in accidental deaths and a fairly large increase in the number of homicides.

All other manners of death have remained mostly consistent in number over the last 5 years.
Cardiovascular disease has been the leading cause of natural deaths in examined cases over the last six years in Denver, followed distantly by complications of alcohol and then Respiratory/COPD related deaths. In 2015, this trend holds predominantly true across all races with the exception of white decedents, where Respiratory/COPD related deaths were slightly higher than alcohol-related deaths.

White and Hispanic males between the ages of 61 to 70 years had the highest number of natural deaths. For black males, black females, and white females the age with the highest number of deaths was 51 to 60 years.

Natural deaths were most frequently examined by external examination, but many were autopsied as well. There were many more white decedents who died of natural causes than any other race examined.

Of note, there have only been fifteen cases of SIDS (Sudden Infant Death Syndrome) in these six years.
### 2015 Natural Deaths by Category and Race

<table>
<thead>
<tr>
<th>Category</th>
<th>Other</th>
<th>American Indian</th>
<th>Asian</th>
<th>Hispanic</th>
<th>Black</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>43</td>
<td>67</td>
<td>210</td>
</tr>
<tr>
<td>Complications of ETOH</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>10</td>
<td>31</td>
</tr>
<tr>
<td>Metabolic/Diabetes</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Respiratory/COPD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>7</td>
<td>36</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>11</td>
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<tr>
<td>Neoplastic</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>SIDS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>9</td>
<td>16</td>
</tr>
</tbody>
</table>
2015 Natural Deaths by Age and Race

0 20 40 60 80 100 120

2015 Deaths by Age and Sex

Male  Female

91+ years  10  8
81-90 years  27  20
71-80 years  49  21
61-70 years  114  37
51-60 years  98  40
41-50 years  36  15
31-40 years  20  17
21-30 years  13  3
11-20 years  2
0-10 years  1
2015 Natural Deaths by Category and Sex

2015 Natural Deaths by Examination and Race

Autopsies | External Examinations | Chart Reviews
---|---|---
White: 149 | White: 164 | White: 18
Black: 56 | Black: 41 | Black: 2
Hispanic: 32 | Hispanic: 3 | Hispanic: 2
Asian: 1 | Asian: 4 | Asian: 2
Native American: 3 | Native American: 3 | Native American: 1
Other/Unidentified Race: 3 | Other/Unidentified Race: 2 | Other/Unidentified Race: 2
Undetermined manner is used to designate that a death does not fit the category of natural, suicide, homicide, or accident. This includes areas where the cause of death may have been found but the manner may not be clear. This can be due to a lack of background information, uncertainties in circumstances, or decomposition of the body related to a time delay in discovery.

There are also cases where the cause of death itself cannot be determined, again possibly related to advanced decomposition of the body, the inability to obtain sufficient information for a variety of reasons, or the death may have been due to causes which leave no anatomic foot print such as certain types of heart disease (long QT syndrome e.g.), some seizure deaths, and some asphyxial deaths.

In general, autopsies should be performed on cases where manner of death and cause of death are undetermined. However, in practice that is not always possible. Cases may come to the attention of OME after cremation has occurred, making autopsy impossible. In other instances, the cause of death is clear, but the determination of manner of death would not be aided by the performance of an autopsy due to insufficient investigative information in existence. This is especially true in instances where death occurs years or even decades after a traumatic injury. In these cases, an autopsy would not yield any information that would differentiate between manners of death.
Sudden Unexpected Deaths in Infancy (SUDI)

The Office of the Medical Examiner certifies sleep associated deaths in infants as undetermined in manner rather than natural, following evolving practice changes in the field of forensic medicine recognizing the uncertainties and multi-factorial issues related to these deaths. In the past, these deaths might have been called "SIDS" or Sudden Infant Death Syndrome. More recent forensic literature uses the term "Sudden Unexplained Death in Infancy" or SUDI. Recognized risk factors include external factors that could contribute to asphyxia in these children, for example bed sharing with an adult or unsafe sleep surfaces. Therefore, OME feels that most of these deaths are best certified as undetermined in manner and cause of death.

Between 2009 and 2015 there have been 24 sudden infant deaths reported to OME: Nine of those deaths occurred in 2009, and the number has steadily fallen in the six years since. Only one SUDI death was reported in 2015.
HOMICIDES

OME almost universally performs autopsies on victims of homicide. Rarely, there is a significant delay between injury and the death, and all investigative and legal activities have been exhausted by the time the death occurs. In these situations, the pathologist reviewing the case may opt to perform a more limited examination. Occasionally, a homicide is made known to OME after the remains have been cremated, sometimes several years later. In cases such as these, the pathologist may only be able to review available medical records.

In 2015, a case as mentioned above did occur wherein review of the medical records of a decedent who had died years earlier was determined to be a homicide death.

For the past eight years in the City and County of Denver reported homicide deaths had been on the decline, with the lowest point occurring in 2014. However, 2015 saw a sharp rise in the number of homicides reported in Denver comparable to the numbers of ten years ago.
Between 2007 and 2015, 83 percent of homicides in Denver were committed by gunshot. The highest number of gunshot-related deaths during that time period happened in 2015, with 47 people killed by that method.

Persons between 21 to 30 years old had the highest number of homicides over the last nine years including 2015.
Black males were the victim of homicides 47% of the time in 2015. Hispanic males follow at 23%.
Drug and alcohol testing is performed on all homicide deaths where feasible e.g. where death occurs shortly after the injury was inflicted and/or in hospitalized individuals when adequate antemortem blood samples can be obtained: These samples are not always available and so in some cases testing is not possible. In 2015, 57 out of 60 cases were tested.

While drug or alcohol use is not usually the cause of death in a homicide, it can contribute to the manner of death (homicide) if it causes an individual to act irrationally. One example could be if a person is under the influence of a substance and causes an argument or fight that ultimately leads them to being killed by another. This is why, in part, a forensic pathologist and/or other investigator will take into consideration the level of substances in a victim’s blood.

Only seven cases tested in 2015 came back negative from all substances. Marijuana (THC) and alcohol mixed with other drugs were found most often in these victims.

![% of Drugs and/or Alcohol found positive in 2015 Homicides](image)

In 2015, the majority of homicides occurred in the victim’s residence, followed closely by outside on the street. For men, Sundays, Wednesdays, and Fridays were the days of the week with the highest incidents of homicide, from 6 in the evening through the early-morning hours. So actually, many of the Sunday homicides were most likely the results of incidents taking place beginning on a Saturday night. For women, there was no real pattern to location, day of the week, or time of day for a homicide to occur, as the number of homicides involving females was comparatively much lower than for males.
### 2015 Homicide Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Sidewalk/Street/Roadway</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Parking Lot/Garage</td>
<td>6</td>
<td>0</td>
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<tr>
<td>Park/Public Use Area</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Other's Residence</td>
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<td>0</td>
</tr>
<tr>
<td>Residence</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Detention Facility</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Club/Bar/Restaurant</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Bus stop</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Alley</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

### 2015 Homicides by Days of the Week

- **Sunday**: 13 Female, 1 Male
- **Monday**: 1 Female, 3 Male
- **Tuesday**: 2 Female, 2 Male
- **Wednesday**: 12 Female, 2 Male
- **Thursday**: 2 Female, 2 Male
- **Friday**: 11 Female, 8 Male
- **Saturday**:

### Homicides by Time of Day

- **12:01 AM - 6:00 AM**: 20 Female, 7 Male
- **6:01 AM - NOON**: 1 Female, 1 Male
- **12:01 PM - 6:00 PM**: 3 Female, 7 Male
- **6:01 PM - MIDNIGHT**: 21 Female, 3 Male
SUICIDES

According to the Centers for Disease Control and Prevention, as of 2014, suicides in the United States were on the rise. (http://www.cdc.gov/nchs/products/databriefs/db241.htm). A study done by the American Association of Suicidology showed Colorado ranking fifth in the nation for suicides (http://www.suicidology.org/Portals/14/docs/Resources/FactSheets/2014/2014datapgsv1b.pdf), and Denver ranked in the top ten list of most suicidal cities in America in an article published on InsiderMonkey on October 9, 2014. (http://www.insidermonkey.com/blog/the-10-most-suicidal-cities-in-america-331367/)

There has been an average of approximately 78 suicides examined per year at the Denver Office of the Medical Examiner since 2005, with the lowest number of suicides reported in 2006, and the highest number reported in 2012. In 2015, 98 deaths were determined to be from suicide by OME physicians. This number is slightly lower than the year before. All 98 suicide deaths in 2015 were examined by autopsy.

Risk Factors

The American Foundation for Suicide Prevention (https://afsp.org/about-suicide/risk-factors-and-warning-signs/) tells us that suicide risk factors fall into three categories:

- Health Factors
  - Mental health conditions
  - Substance abuse disorders
  - Serious or chronic health condition and/or pain

- Environmental Factors
  - Stressful life events
  - Prolonged stress
  - Access to lethal means
Exposure to another person’s suicide
- Historical Factors
  - Previous suicide attempts
  - Family history of suicide attempts

In 2009, the Denver Medical Examiner began more aggressively tracking risk factors for suicide in order to identify any trends. The purpose of tracking suicide trends is to expand understanding and knowledge, hopefully pointing to prevention measures.

It is not always possible for investigators to determine risk factors in every suicide case, but below shows the factors noted in 2015 Denver suicides. Most people exhibit more than one risk factor, and suicide frequently involves a combination of these.

![Suicide Risk Factors](image)

The method used most often in suicide in 2015 was by gunshot, followed closely by hanging. This trend holds true over the last six years as well, with suicide by gunshot occurring 34% of the time.

In Denver, the age group with the greatest amount of suicides over the past six year has been middle-aged people between 41 and 60 years old. Twenty-one to 40 years is the next group with the highest incidents of suicide. Teen suicide has remained relatively low between 2010 and 2015 in Denver, with only about 5% of determined suicides consisting of youth from 11 to 20 years old.
In 2015, males committed suicide at three times the rate of females in Denver, and 43% of the people committing suicide were single. White people had the highest rate of suicide at three times that of all other races put together.
Overwhelmingly, most suicides take place in the home.
The date and time of death of a decedent reflects when the person was found and pronounced. Usually in suicide cases the victim is found and pronounced sometime after they actually committed the act.

In 2015, the day of the week when most males were found was on Fridays, for females it was Tuesdays. The time of day that most victims were found was after 12 noon and before 6 in the evening.
DRUG-POSITIVE DEATHS

In 2015, there were 261 decedents who had drug-positive toxicology results*. Alcohol was found positive most often in decedents, followed by methamphetamine and heroin. Drug deaths include not only accidental deaths related to recreational abuse of drugs, but also other accidental toxic effects, suicidal acts, and deaths with an undetermined manner.

In 2008, OME partnered with the Denver Office of Drug Strategy to gather data on drug-related fatalities in Denver. The Office of Drug Strategy is a division within the Denver Department of Human Services. The compilation of data is part of a bigger work group, which brings together representatives from law enforcement, OME, DODS, Denver Police Crime Laboratory, Rocky Mountain Poison and Drug Center, Denver Health and Hospitals, and several drug abuse treatment providers. This workgroup continues to examine drug use/abuse trends and determine effectiveness of treatment and prevention efforts.

Over the past ten years in Denver, alcohol positivity has been consistently found in the greatest number of decedents; however, the rise in methamphetamine and heroin positive deaths has occurred only over the last two years (2014 – 2015). Prior to 2014, after alcohol positivity, the drugs most often found in a decedent’s system were cocaine and morphine.

(*Drug totals do not sum to the number of decedents, because more than one drug may be found in an individual’s toxicology results.)
Out of the 261 decedents who tested positive for drugs in 2015, 151 deaths were determined to be as a result of overdose/toxicity. Males died of overdose at a ratio of 2:1 compared to females, and 74% of overdose deaths were by people between the ages of 31 to 60 years.
The manner of death on all of the 2015 overdose cases was determined to be either accidental death or suicide. Accidental overdose deaths occurred in 93% of the examined cases. White people were the demographic with the highest rate of both accidental and intentional overdose deaths.

2015 Overdose Deaths with Alcohol, Methamphetamine, or Heroin Positivity
Maps by Location

Denver County Deaths - Alcohol Positive

Alcohol Positive Deaths
PODcategory
- Alley
- Emergency Room
- Hospital
- Hotel/Motel
- ICU
- Other’s Residence
- Outdoors
- PICU
- Residence
- Parks

Map created December 2010
Office of the Medical Examiner
THC POSITIVITY

On November 6, 2012, Colorado Amendment 64 was passed, allowing the sale of marijuana in the state. The law allows the sale and use of the drug for adults over 21 years of age for both medical and recreational use. On January 1, 2014, the commercial sale of marijuana to the general public began. ([https://en.wikipedia.org/wiki/Colorado_Amendment_64](https://en.wikipedia.org/wiki/Colorado_Amendment_64))

Comparison of the types of drugs found positive in Denver decedents' toxicology results from 2014 to 2015 show that pain medication is actually the drug found most often; however, the instances of pain medication found have decreased by 16% while the instances of THC positivity has increased 32%. On the other hand, the largest increase in positive results seen during that same timeframe has been in heroin and cocaine, which have increased 61%.

THC, or terahydrocannabinol, is the chemical responsible for most of marijuana’s psychological effects. ([http://www.livescience.com/24553-what-is-thc.html](http://www.livescience.com/24553-what-is-thc.html))

In general, TCH positive results in decedents tested have been up and down for the last eight years, but overall there has been a definite increase. In 2007, there were 52 decedents with THC positive results. That number has nearly tripled by 2015, with a total of 145 decedents testing positive for THC, making THC the number one drug found in toxicology results overall.

The increase in THC-positive decedents has been growing across the board in all manner of death categories since 2007, but just comparing figures from 2014 to 2015, homicides with THC-positive decedents had the greatest increase, from 7 decedents in 2014 to 26 in 2015 (a 12% increase). This is closely followed by the number of natural deaths with THC positivity, which increased by 7%. 

![Positive Drugs by Type 2014 - 2015](image-url)
It is interesting to note that this increase in the number of THC-positive results found in decedents is not far off from Denver's overall population growth, which, according to the latest US Census figures, increased by over 10% between 2010 and 2014. (http://denverurbanism.com/2015/03/denver-census-update-2015.html)
HOMELESS POPULATION DEATHS

According to statistics provided in the 2015 Point-In-Time Report by the Metro Denver Homeless Initiative, as of January 2015, there were 6,130 homeless men, women, and children counted in the seven county Metro Denver area. Out of those people, it was reported that about 13%, or 805 people were unsheltered (living on the street, under a bridge, camping, etc.). [http://mdhi.org/wp-content/uploads/2015/06/FINAL-DRAFT-06.05.15.hf_.pdf](http://mdhi.org/wp-content/uploads/2015/06/FINAL-DRAFT-06.05.15.hf_.pdf)

There were 81 deaths reported to the Denver Medical Examiner that involved homeless individuals in 2015. Of those 81 cases, 69% were examined by physicians, who performed 53 autopsies and four external examinations. No cases were examined by review of medical records only.

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**2015 Reported Homeless Deaths by Case Type**

- Inquiry: 25%
- ME: 69%
- Waived: 6%

**2015 Homeless Deaths by Examination**

- Autopsy: 53
- External Exam: 4
- Chart Review: 0
Although the place of death varied out of the cases reported in Denver, the majority of homeless individuals who died did so in a medical facility of some kind such as a hospital or hospice. Approximately 30% of the homeless deaths reported occurred in a place where the decedents were sheltering at the time, such as the home of a friend or relative, a senior care facility, a hotel, or a homeless shelter. About 26% of reported deaths occurred in an unsheltered setting.
Much like the rest of the population, the number one cause of death among homeless individuals in 2015 was cardiovascular disease. However, the second-leading category for these individuals in 2015 was by overdose/drug toxicity.

The manner of death is very reflective of the death categories above, with natural deaths occurring 42% of the time, and accidental deaths occurring 37% of the time in 2015. It is of note that 7 out of 21 total accidental deaths involved environmental hypothermia. No other manner of death showed a cause or contributing factor relating to environmental conditions.

Death among the Denver homeless population in 2015 occurred over 7 times more often with males than females, and 58% of the reported deaths were for individuals between the ages of 41 to 60 years.
ACCIDENTAL DEATHS

An accidental death that is not related to a traffic accident includes asphyxia (choking), drowning, falls, fire, overdose of drugs or death by another toxic substance, death in another type of motorized vehicle (airplane, motor boat, dirt bike, etc.), and “other” causes that have no specific category (such as an errant cannon ball hitting your canoe).

In 2015 there were 338 deaths examined and determined to be by accident. OME physicians examined 179 cases by autopsy, 11 cases by external examination, and 148 cases by review of medical records only.

The majority of 2015 accidental deaths in Denver were by falls (47%) and overdose/toxicity (43%). A good amount of these deaths occurred at the decedent’s residence (53%).
The median age for accidental deaths in 2015 was 50 years old, but people between 81 to 90 years old had the greatest number of accidental deaths caused primarily by falls.

The greatest number of deaths for males was by overdose/toxic effects, while females had a greater number of deaths by falls.
The numbers of accidental deaths examined in 2015 were overwhelming on white decedents (72%); however, the range between deaths caused by falls or overdose/toxic effects did not differ much between any of the races examined, with an average range of about 7 decedents.

The highest percentage of death by accident was 32% by single people, who died 3 times as much by overdose rather than falls.
TRAFFIC FATALITIES

There were 61 traffic fatalities reported to the Denver Office of the Medical Examiner in 2015. Physicians performed 47 autopsies, 5 external examinations, and 9 review of medical records in these cases. There is not much fluctuation in the number of traffic fatalities in Denver from year to year, with an average death rate of about 53 people per year.

Males made up the majority of reported 2015 traffic fatalities, at 69%; 21 to 30-year-olds had the greatest number of traffic fatalities, and 64% of reported traffic fatalities in Denver involved white people.
Pedestrians had the highest number of reported traffic fatalities in 2015, followed by people on motorcycles.

There has been an average of about 17 auto-pedestrian fatalities reported each year in Denver over the past 9 years.
In Colorado there are two types of impairment-related traffic violations: DUI (Driving while Under the Influence) and DWAI (Driving While Ability is Impaired). Of the 61 decedents involved in 2015 traffic fatalities, 52 individuals were tested for drugs and alcohol. Thirty-five of those decedents tested positive in cases where impairment could potentially be a contributing factor.

### Bicyclists

<table>
<thead>
<tr>
<th>Blood alcohol/drugs</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>No toxicology ordered</td>
<td>2</td>
</tr>
<tr>
<td>Negative results</td>
<td>0</td>
</tr>
<tr>
<td>% BAC &gt;/= to 0.8% (DUI)</td>
<td>0</td>
</tr>
<tr>
<td>THC positive</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Bicyclists tested</strong></td>
<td><strong>1 of 3</strong></td>
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### At-fault drivers

<table>
<thead>
<tr>
<th>Blood alcohol/drugs</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>No toxicology ordered</td>
<td>2</td>
</tr>
<tr>
<td>Negative results</td>
<td>3</td>
</tr>
<tr>
<td>% with BAC at or above 0.08%</td>
<td>22%</td>
</tr>
<tr>
<td>THC positive</td>
<td>2</td>
</tr>
<tr>
<td>Cocaine positive</td>
<td>1</td>
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<tr>
<td><strong>Total At-Fault Drivers tested</strong></td>
<td><strong>9 of 11</strong></td>
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</table>

### Motorcyclists

<table>
<thead>
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<th>Blood alcohol/drugs</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>No toxicology ordered</td>
<td>1</td>
</tr>
<tr>
<td>Negative results</td>
<td>1</td>
</tr>
<tr>
<td>% BAC at or above 0.08%</td>
<td>45%</td>
</tr>
<tr>
<td>THC positive</td>
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<tr>
<td>Methadone positive</td>
<td>1</td>
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<tr>
<td><strong>Total Motorcyclists tested</strong></td>
<td><strong>11 of 12</strong></td>
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</tbody>
</table>

### PEDESTRIANS

<table>
<thead>
<tr>
<th>Blood alcohol/drugs</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>No toxicology ordered</td>
<td>0</td>
</tr>
<tr>
<td>Negative results</td>
<td>3</td>
</tr>
<tr>
<td>Alcohol positive (BAC 0.150% to 0.414%)</td>
<td>6</td>
</tr>
<tr>
<td>THC positive</td>
<td>3</td>
</tr>
<tr>
<td>Fentanyl/ Opioid positive</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Pedestrians tested</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Blood alcohol concentration (BAC) is how much alcohol is pulsing through your blood after you drink.**

In Colorado, the legal limit for drivers over 21-years-old is 0.08% BAC, while the limit for drivers under 21 is 0.02%.

A DWAI has a BAC limit of 0.05%.

[http://www.dmv.org/search?w=DUI&tz=CO&section=Site+Search](http://www.dmv.org/search?w=DUI&tz=CO&section=Site+Search)

Colorado law also specifies that drivers with 5 ng/ml of active THC in their blood can be prosecuted for driving under the influence.

Denver has a diverse cultural composition, and continues to grow in population. The Denver Office of the Medical Examiner feels it is particularly important to be sensitive to others, and respects and appreciates all cultures and religious beliefs. If an autopsy is required, the office strives to adhere to as many cultural and religious beliefs as possible, though the office must complete its statutory duty and determine the cause and manner of death.

The Denver Medical Examiner continually makes every effort to help the friends and families understand the duties of the office and the need for our involvement in the investigation of the death of their loved one. Contact with clergymen is encouraged, when appropriate, and attempts are made to locate a professional that is bilingual when needed.