# Table of Contents

**Introduction** | Page 5
---|---
**Overview** | Pages 5-7
**Organizational Chart** | Page 8
**Total Cases** | Page 9
**Medical Examiner (ME) Cases** | Page 9
  - ME Cases | Page 10
  - ME Cases by Age | Page 10
  - ME Cases by Manner | Page 11
  - Pima County ME Cases by Manner | Page 11
**Homicide Deaths** | Page 12
  - Homicide 2009-2016 | Page 12
  - Homicide by Age | Page 12
  - Homicide by Sex | Page 13
  - Homicide by Cause | Page 13
**Accident Deaths** | Page 14
  - Accident by Age | Page 14
  - Accident by Sex | Page 14
  - Accident by Cause | Page 15
  - Accident by Cause 2013-2016 | Page 15
**Suicide Deaths** | Page 16
  - Suicide by Age | Page 16
  - Suicide by Sex | Page 16
  - Suicide by Cause | Page 17
  - Suicide by Cause 2013-2016 | Page 17
**Natural Deaths** | Page 18
  - Natural by Age | Page 18
  - Natural by Sex | Page 18
  - Natural by Cause | Page 19
  - Natural by Cause 2014-2016 | Page 19
**Undetermined Manner of Death** | Page 20
  - Undetermined Manner by Age | Page 20
  - Undetermined Manner by Sex | Page 20
  - Undetermined Manner by Cause | Page 21
OVERDOSE DEATHS

OVERDOSE DEATHS 2010-2016
OVERDOSE DEATHS BY AGE
OVERDOSE DEATHS BY SEX
OVERDOSE DEATHS BY MANNER
SELECT DRUGS BY YEAR 2013-2016
FENTANYL RELATED DEATHS 2010-2016
OVERDOSE DEATHS BY DRUG

MOTOR VEHICLE RELATED FATALITIES

MOTOR VEHICLE FATALITIES 2011-2016
MOTOR VEHICLE FATALITIES BY AGE
MOTOR VEHICLE FATALITIES BY SEX
MOTOR VEHICLE FATALITIES BY TYPE

W.H. BIRKBY FORENSIC ANTHROPOLOGY LABORATORY

FA EXAMS BY NUMBER 2007-2016
FA EXAMS BY CONDITION OF REMAINS
FA EXAMS BY TYPE

UNDOCUMENTED BORDER CROSSE(R (UBC) REMAINS

RECOVERIES BY CY2001–2016
RECOVERIES BY FEDFY2002–2016
RECOVERIES BY MONTH CY2016
RECOVERIES BY MONTH CY2001-2016
RECOVERIES BY AGE CY2016
RECOVERIES BY AGE CY2001-2016
CONDITION OF REMAINS CY2016
CONDITION OF REMAINS CY2001-2016
RECOVERIES BY SEX CY2016
RECOVERIES BY SEX CY2001-2016
RECOVERIES BY CAUSE CY2016
RECOVERIES BY CAUSE CY2001-2016
RECOVERIES BY NATIONALITY CY2016
RECOVERIES BY NATIONALITY CY2001-2016
IDENTIFIED V UNIDENTIFIED UBC RECOVERIES
DNA IDENTIFICATIONS 2001-2016

DEATHS BY COUNTY

APACHE COUNTY
COCHISE COUNTY
GILA COUNTY
GRAHAM COUNTY
GREENLEE COUNTY
LA PAZ COUNTY
<table>
<thead>
<tr>
<th>County</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navajo County</td>
<td>81-85</td>
</tr>
<tr>
<td>Pima County</td>
<td>86-106</td>
</tr>
<tr>
<td>Pinal County</td>
<td>107-111</td>
</tr>
<tr>
<td>Santa Cruz County</td>
<td>112-116</td>
</tr>
<tr>
<td>Yuma County</td>
<td>117-120</td>
</tr>
</tbody>
</table>
INTRODUCTION
The Pima County Office of the Medical Examiner (PCOME) investigates any death in Pima County that is sudden, violent, unexpected, or in which the cause of death is unknown. The PCOME also serves as the Medical Examiner (ME) for Cochise and Santa Cruz Counties and performs examinations as needed for eight additional counties. In 2016 there were 9,376 deaths in Pima County; of these 2,657 (28%) were reported to the PCOME for investigation. This annual report consists of three main sections. The first is an overview of the activities and notable events of the office over the course of the report year. The second is a statistical review of the types of cases processed by the office over the same time period. The third is a by-county breakdown of certain death classifications.

OVERVIEW
The PCOME was fully accredited by the National Association of Medical Examiners (NAME) following a two day inspection in October 2011. This accreditation was effective from October 24, 2011 through October 24, 2016 and requires annual accreditation verification. The office was re-inspected in January 2017 and received continued full accreditation valid through October 25, 2021. NAME accredited offices represent the highest quality of death investigation systems. There are 75 fully accredited Medical Examiner’s Offices across the United States. The PCOME has the distinction of being the sole fully accredited office in Arizona.

Reportable Deaths
Arizona Revised Statute §11-593 delineates ten circumstances in which a death is reportable to the PCOME.
1. Death when not under the current care of a health care provider as defined pursuant to section 36-301.
2. Death resulting from violence.
3. Unexpected or unexplained death.
4. Death of a person in a custodial agency as defined in section 13-4401.
5. Unexpected or unexplained death of an infant or child.
6. Death occurring in a suspicious, unusual or non-natural manner, including death from an accident believed to be related to the deceased's occupation or employment.
7. Death occurring as a result of anesthetic or surgical procedures.
8. Death suspected to be caused by a previously unreported or undiagnosed disease that constitutes a threat to public safety.
9. Death involving unidentifiable bodies.

Investigations
Our 11 medical investigators processed 2,657 reports of deaths from Pima County and 725 reports from 10 additional Arizona counties in 2016. Jurisdiction was declined in 993 of these cases. A total of 2,064 decedents were transported to the PCOME for examination or storage in 2016.
Examinations
Pima County forensic pathologists and anthropologists performed 1,476 autopsies, 409 external examinations, 359 death certifications, 143 anthropologic examinations, and reviewed 6,280 death certificates for cremations in 2016.

Education, Training and Activities
1) Medicolegal Death Investigators
Calendar year 2012 saw a transition from the term Forensic Medical Investigator (FMI) to Medicolegal Death Investigator (MDI) for our 11 MDIs in keeping with national norms. Nine MDIs, our MDI Supervisor, and Administrative Supervisor are certified by the American Board of Medicolegal Death Investigators to provide competent medicolegal death investigations. PCOME Forensic Pathologists lecture to the MDIs on varying topics monthly. In accordance with our MDI quality assurance and performance improvement program, 10% of reports are reviewed by a pathologist monthly and 10% of reports are peer reviewed quarterly.

2) Community education, presentations and media interviews
The PCOME receives numerous requests from various groups, organizations, individuals and schools for presentations regarding a host of forensic issues annually. Not all requests can be honored due to time and personnel constraints, but examples of educational activities include but are not limited to: presentations at local primary and secondary schools; lectures at various institutions and departments at the University of Arizona; presentations and tours for humanitarian organizations; and the teaching of a 3-credit-hour death investigation class at Pima Community College. The Chief Medical Examiner recorded 150 media interviews, emails and phone calls over the calendar year. Pima County’s Forensic Anthropologist and Postdoctoral Fellow gave numerous platform and poster presentations to various organizations and at national anthropologic and forensic conferences.

3) University of Arizona College of Medicine, Department of Pathology and School of Anthropology
PCOME Forensic Pathologists hold clinical appointments with the Department of Pathology at the University of Arizona, College of Medicine, where they are involved with pathology resident and medical student teaching. Five pathology residents, four medical students and three pathology post-sophomore fellows rotated through the PCOME for month-long rotations in 2016. Funded by the Department of Pathology, the PCOME began a Forensic Pathology training program in 2016; the only such training program offered in Arizona. Our Forensic Anthropologists hold academic appointments at the University of Arizona and five anthropology interns trained at our facility in 2016.

Law Enforcement and Legal System
The availability of our pathologists to assist or advise law enforcement personnel in their investigations and the legal system in its proceedings is an important function of the PCOME. Involvement of the PCOME in the legal system generally consists of pretrial interviews, depositions and courtroom testimony. In 2016, the office’s six forensic
pathologists and two anthropologists participated in a number of pretrial interviews, depositions and jury trials both in Pima and out-of-county cases.

**Organ and Tissue Donation**
Pursuant to A.R.S §36-861, the PCOME refers death notifications to, and partners with, Donor Network of Arizona (DNA) and other associated tissue research agencies for the coordination and procurement of anatomic gifts. The importance of supporting the efforts of the organ and tissue transplant and research communities in Arizona cannot be understated. Anatomic gifts can be life saving for organ and tissue recipients and these donations are always in short supply.

**Organ Donations with PCOME Involvement 2016**

<table>
<thead>
<tr>
<th>Organ</th>
<th>Heart</th>
<th>Lungs</th>
<th>Liver</th>
<th>Kidneys</th>
<th>Pancreas</th>
<th>Sm. Intestine</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14</td>
<td>8</td>
<td>28</td>
<td>66</td>
<td>7</td>
<td>2</td>
<td>125</td>
</tr>
</tbody>
</table>

The total lives saved through organ donation involving deaths investigated by the PCOME in 2016 were 107 with 125 organs being transplanted. The authorization for the procurement of organs was granted in 100% of cases.

**Cornea Donations with PCOME Involvement 2016**

<table>
<thead>
<tr>
<th>Corneas Recovered</th>
<th>Corneas Transplanted</th>
</tr>
</thead>
<tbody>
<tr>
<td>296</td>
<td>123</td>
</tr>
</tbody>
</table>

There were 296 corneas recovered and 123 transplanted in 2016 with PCOME involvement. The release of corneas was granted 98% of the time.

**Tissue Donation with PCOME Involvement 2016**

<table>
<thead>
<tr>
<th>Bone</th>
<th>Skin</th>
<th>Vascular</th>
<th>Heart</th>
<th>Aortoiliac</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>65</td>
<td>37</td>
<td>48</td>
<td>13</td>
</tr>
</tbody>
</table>

The PCOME was involved in approximately 20% of all DNA tissue recoveries in 2016. The average release of tissue for procurement was granted 85% of the time across the state of Arizona in 2016. The release of tissues was granted 94% of the time by the PCOME, significantly above the state average.
Chief Medical Examiner
Gregory Hess MD

Forensic Anthropologists
Bruce Anderson PhD
Jennifer Vollner PhD

Administrative Services Manager
Christopher Smith D-ABMDI

Administrative Specialist
Charlotte Rupel

Administrative
Linda Hernandez
Amber Bates

Morgue Supervisor
Lindsay Hershberger

Pathology Assistants
Gabriel Costell
Louie Goad
Jeremy Cox
Kayla Hare
Vacant
Kristine Clor

Medicolegal Death Investigator Supervisor
Gene Hernandez D-ABMDI

Deputy Chief Medical Examiner
Eric Peters MD

Forensic Pathologists
Cynthia Porterfield DO
David Winston MD
PhD
Jennifer Chen MD
Kevin Lougee DO

Medicolegal Death Investigators
Thomas Buck D-ABMDI
Eric Slocum D-ABMDI
Raelene Ruiz D-ABMDI
Selina Herrera D-ABMDI
Jeff Huesgen D-ABMDI
Marcy Yates D-ABMDI
Trevis Hairston D-ABMDI
Jorge Romero D-ABMDI
Kelsey Scott D-ABMDI
Erica Guenther
Kristopher Kaae

OFFICE OF THE MEDICAL EXAMINER
ORGANIZATIONAL CHART AS OF DECEMBER 31, 2016
TOTAL CASES

The total cases handled by the PCOME in a given year are the sum of the ME cases (autopsies, external examinations, and death certificate cases), cases in which jurisdiction was declined, and the number of cases stored at our facility during the calendar year (storage cases). ‘All Counties’ includes cases examined at the PCOME from Apache, Cochise, Gila, Graham, Greenlee, La Paz, Navajo, Pinal, Santa Cruz and Yuma counties in addition to Pima County.

MEDICAL EXAMINER CASES

The PCOME considers all cases in which the cause and manner of death are determined by this office as “medical examiner cases.” Those cases include autopsies, external examinations and death certificate (DC) cases. Autopsies are examinations where a decedent is examined both externally and internally for evidence of injury or natural disease which may have caused or contributed to the individual’s death. External examinations consist of an external examination of the body without the internal examination. A DC case involves review of the medical records, law enforcement reports and any other information that may be necessary to determine the cause and manner of death without physical examination of the decedent. In 2016, for Pima and all other counties listed above, 1476 autopsies, 409 external examinations and 359 DC cases were performed at the PCOME. Pima County alone accounted for 975 autopsies, 347 external examinations and 342 DC cases.
2016 Medical Examiner Cases

Medical Examiner Cases by Age - 2016
ME Cases (all counties) by Manner of Death - 2016

- Natural: 237 (30%)
- Accident: 676 (44%)
- Suicide: 114 (11%)
- Undetermined: 65 (10%)
- Homicide: 501 (5%)

ME Cases (Pima only) by Manner of Death - 2016

- Natural: 177 (30%)
- Accident: 754 (45%)
- Suicide: 168 (11%)
- Undetermined: 65 (10%)
- Homicide: 501 (4%)
HOMICIDE DEATHS

The PCOME certified 114 deaths as homicide in 2016, 65 from Pima County and 49 from other counties. Homicide totals from 2009 – 2016 are compared below. Homicide victims were most frequently male (82%), between 20-29 years of age (30%) and died as the result of firearms (63%).

Homicide 2009 - 2016

Homicide by Age 2016
Homicide by Sex 2016

- Male: 93 (82%)
- Female: 21 (18%)

Homicide by Cause 2016

- Firearms: 72 (63%)
- Blunt Force: 16 (16%)
- Sharp Force: 5 (4%)
- Other: 3 (4%)
- Asphyxia: 3 (3%)
ACCIDENT DEATHS

Deaths due to accidents accounted for 44% of the ME deaths investigated by the PCOME in 2016. Accident victims were most frequently males (67%), between 20-29 years of age (15%) and died as the result of a drug or medication overdose (32%).

Accident by Age 2016

Accident by Sex 2016
**Accident by Cause 2016**

- Overdose - 32%
- Blunt Force Trauma - 31%
- Motor Vehicle Accident - 24%
- Exposure To Elements - 6%
- Asphyxia - 3%
- Drowning - 2%
- Fire Deaths - <1%
- Other - 2%

**Accident by Cause (Top 3) 2013 - 2016**

<table>
<thead>
<tr>
<th>Year</th>
<th>Overdose</th>
<th>Blunt Force Trauma</th>
<th>Motor Vehicle Accident</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>283</td>
<td>231</td>
<td>197</td>
</tr>
<tr>
<td>2014</td>
<td>268</td>
<td>223</td>
<td>190</td>
</tr>
<tr>
<td>2015</td>
<td>312</td>
<td>270</td>
<td>207</td>
</tr>
<tr>
<td>2016</td>
<td>318</td>
<td>305</td>
<td>234</td>
</tr>
</tbody>
</table>
SUICIDE DEATHS

Suicide deaths accounted for 11% of the ME deaths investigated by the PCOME in 2016. Suicide victims were most frequently males (73%), between 60-69 years of age (18%) and died as the result of firearms (60%).

Suicide by Age 2016

Suicide by Sex 2016

[Bar chart and pie chart showing the distribution of suicide by age and sex in 2016]
**Suicide by Cause 2016**

- **Firearms** - 60%
- **Hanging** - 19%
- **Overdose** - 11%
- **Asphyxia** - 4%
- **Other** - 5%

**Suicide by Cause (Top 3) 2013 - 2016**

- **2013**: Firearms 144, Hanging 72, Overdose 33
- **2014**: Firearms 139, Hanging 66, Overdose 37
- **2015**: Firearms 150, Hanging 51, Overdose 51
- **2016**: Firearms 143, Hanging 46, Overdose 27
NATURAL DEATHS

Natural deaths accounted for 30% of the ME deaths investigated by the PCOME in 2016. Individuals who died from natural causes were most frequently males (69%), between 50-59 years of age (25%) and died as the result of cardiovascular disease (60%).

Natural Deaths by Age 2016

Natural Deaths by Sex 2016
Natural Deaths by Cause 2016

- Cardiovascular Disease - 60%
- Chronic Alcohol Abuse - 8%
- Pulmonary Disease - 7%
- Infectious Disease - 8%
- Diabetes Mellitus - 3%
- Malignancy - 3%
- Other - 9%

Natural Death by Cause 2014 - 2016

2014: 409
2015: 391
2016: 406

Cardiovascular
Chronic Alcohol
Pulmonary
Infectious
Diabetes
Malignancy
Other
**Undetermined Manner of Death**

Deaths in which the manner of death was undetermined accounted for 10% of the ME deaths investigated by the PCOME in 2016. Individuals who died with an undetermined manner were most frequently males (77%), of unknown age (45%) and died from undetermined causes (85%). Many of these deaths represent skeletal remains of undocumented border crossers who died in the deserts of southern Arizona.

**Undetermined Manner of Death by Age 2016**

**Undetermined Manner of Death by Sex 2016**

- Male: 77%
- Female: 19%
- Unsure: 4%

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>19</td>
</tr>
<tr>
<td>10-19</td>
<td>5</td>
</tr>
<tr>
<td>20-29</td>
<td>2</td>
</tr>
<tr>
<td>30-39</td>
<td>17</td>
</tr>
<tr>
<td>40-49</td>
<td>16</td>
</tr>
<tr>
<td>50-59</td>
<td>16</td>
</tr>
<tr>
<td>60-69</td>
<td>22</td>
</tr>
<tr>
<td>70-79</td>
<td>17</td>
</tr>
<tr>
<td>80-89</td>
<td>6</td>
</tr>
<tr>
<td>&gt;90</td>
<td>3</td>
</tr>
<tr>
<td>Unknown</td>
<td>102</td>
</tr>
</tbody>
</table>

Rev: 06/01/2017
Undetermined Manner of Death by Cause 2016

- Undetermined: 192 (85%)
- Overdose: 11 (5%)
- Blunt Force Injury: 7 (3%)
- Firearms: 6 (2%)
- Other: 5 (4%)
OVERDOSE DEATHS

There were 356 deaths attributed to an overdose of either a single drug (189 deaths, 53%) or a combination of drugs (167 deaths, 47%) in 2016. Overdose deaths commonly involved males (66%) between the ages of 30-39 (24%). The majority of these deaths were classified as accidents (89%).

Opiate drugs (heroin, oxycodone, methadone, hydrocodone, morphine, oxymorphone, hydromorphone, tramadol, opiate unspecified) and fentanyl (a synthetic opioid narcotic) accounted for the majority of overdose deaths, either as a single drug or as a component of a poly-drug overdose. Methamphetamine was the most commonly abused illicit drug contributing to death in 2016 followed by heroin. Deaths due to methamphetamine were also on the rise in 2016 with a near doubling of the number of deaths from 2014 (57 to 111 deaths).

The number of heroin deaths is likely underreported as heroin is rapidly metabolized to morphine by the body and if the parent compound indicative for heroin (6-monoacetylmorphine) is not present on the toxicology report these deaths may be classified as either morphine intoxication or opiate intoxication.

Acute alcohol (ethanol) intoxication alone, not as component of a poly-drug overdose, accounted for 15 overdose (4%) deaths in 2016.

Fentanyl related deaths continued to increase from 7 deaths in 2014 to 17 deaths in 2015 to 23 deaths in 2016, including 1 death in 2016 due to furanylfentanyl.

Overdose Deaths 2010 - 2016
Overdose Deaths by Age 2016

Overdose Deaths by Sex 2016
Overdose Deaths by Manner 2016

- Accident: 89%
- Suicide: 8%
- Undetermined: 3%

Select Drugs by Year 2013 - 2016

- Oxycodone
- Morphine
- Alcohol
- Methamphetamine
- Heroin
- Cocaine
Fentanyl Related Deaths 2010 - 2016

*Including one fentanyl analog
### Overdose Deaths by Drug 2016

<table>
<thead>
<tr>
<th>Drug</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td>28</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>111</td>
</tr>
<tr>
<td>Heroin</td>
<td>85</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>54</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>11</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>8</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>5</td>
</tr>
<tr>
<td>Methadone</td>
<td>26</td>
</tr>
<tr>
<td>Morphine</td>
<td>39</td>
</tr>
<tr>
<td>Codeine</td>
<td>2</td>
</tr>
<tr>
<td>Tramadol</td>
<td>5</td>
</tr>
<tr>
<td>Opiate Unclassified</td>
<td>6</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>22</td>
</tr>
<tr>
<td>Furanylfentanyl</td>
<td>1</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>40</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>3</td>
</tr>
<tr>
<td>Alcohol</td>
<td>49</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>9</td>
</tr>
<tr>
<td>SSRI/SNRI</td>
<td>19</td>
</tr>
<tr>
<td>Tricyclics</td>
<td>4</td>
</tr>
<tr>
<td>Atypical Antipsychotics</td>
<td>8</td>
</tr>
<tr>
<td>Muscle Relaxants</td>
<td>7</td>
</tr>
<tr>
<td>Anti-seizure Agents</td>
<td>5</td>
</tr>
<tr>
<td>Sleep Aids</td>
<td>4</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>3</td>
</tr>
<tr>
<td>Amphetamine</td>
<td>4</td>
</tr>
<tr>
<td>Buproprion</td>
<td>1</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>1</td>
</tr>
<tr>
<td>5F-AMB</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
</tbody>
</table>
**Motor Vehicle Related Fatalities**

Motor vehicle related fatalities accounted for 239 total deaths in 2016. The majority, 150 deaths, were occupants of a motor vehicle involved in an accident (MVA). Of the remaining, 33 were motorcycle accidents (MCA), 51 were pedestrians or bicyclists struck by vehicles and 5 were operating an all-terrain vehicle (ATV). Individuals who died from motor vehicle related fatalities were most frequently males (72%) and between 20-29 years of age (21%).

![Motor Vehicle Fatalities by Year 2011 - 2016](image)

[Motor Vehicle Fatalities by Age 2016](image)
Motor Vehicle Fatalities by Sex 2016

- Male: 68 (72%)
- Female: 171 (28%)

Motor Vehicle Fatalities by Type 2016

- MVA: 150 (63%)
- Pedestrian: 33 (17%)
- MCA: 11 (14%)
- Bicyclist: 5 (5%)
- ATV: 40 (2%)
Forensic Anthropologists at the W.H. Birkby Forensic Anthropology Laboratory within the PCOME performed 143 examinations (biological profiles, trauma evaluations, dental examinations and examinations for identification) in 2016 on human remains of forensic significance. An additional 27 examinations were performed on remains ultimately deemed non-human, prehistoric or otherwise not forensically significant and these remains were classified as jurisdiction declined (JD) cases.

The extent of postmortem decomposition of a particular set of remains is important when performing a Forensic Anthropology (FA) examination. Remains examined by Forensic Anthropologists were categorized as minimally decomposed, decomposing, mummified, skeletal or burnt. In 2016, skeletal remains comprised 70% of FA examinations. Four main types of exams are performed; biologic profiles, dental, trauma and identification examinations.

Biological profiles refer to charting, measurements, descriptions, radiographs and photographs taken to estimate sex, age, ancestry, stature and postmortem interval of a set of remains. Dental and identification examinations entail charting, descriptions, radiographs and photographs in an effort to identify an unknown individual or confirm a suspected identity. Trauma examinations entail charting, measurements, descriptions, radiographs and photographs to characterize the nature of an injury, implement used to cause injury to the bone, age of injury, etc. It is common for a particular set of remains to receive more than one type of examination. Most (86%) FA exams include a biological profile with dental examination (90%) when applicable. Less common are examinations for identification (15%) or trauma (6%) with or without biological profiles and dental examinations.

Number of FA Exams 2007 - 2016
FA Exam by Condition of Remains 2016

- Skeletal: 70%
- Decomposing: 11%
- Burnt: 10%
- Mummified: 8%
- Minimal Decomposition: <1%

FA Examination by Type 2016

- Biologic Profile: 123
- Dental: 128
- Identification: 21
- Trauma: 9
UNDOCUMENTED BORDER CROSSER (UBC) REMAINS

The term ‘UBC’ refers to foreign nationals who die attempting to cross the southern Arizona desert without permission from the United States government. Calendar year (CY) 2010 saw the highest number of UBC recoveries (222) recorded at the PCOME as compared to the annual average (169 recoveries per year on average from 2002 - 2016). The PCOME has received 2,615 recovered remains of suspected UBCs since 2001. The recoveries per year are adjusted annually to account for the association of remains found months or years apart later discovered to be that of the same individual.

There were 154 UBC recoveries in calendar year 2016. As is the historic norm, UBC recoveries peaked during the warmer months (June – July) with 48 recoveries (31% of total for year) in 2016. Many remains are not identifiable due to postmortem changes and efforts by some UBCs to obscure their identities. Of the decedents who were identified, 32% (50 decedents) were between 20-39 years of age. Additionally, 90% (139) of the recovered remains, identified or unidentified, were males, 7% (11) were females and in 3% (4) the sex was unable to be determined.

Since the exact date and time of death of found remains are often unknown, PCOME staff determine a ‘postmortem interval (PMI)’, which is an assessment of what period of time elapsed from death to recovery of the remains. A 1-8 body condition scale was developed in 2013 to provide a more objective measure of the PMI. The PMI is an estimate and therefore subject to error. The PMIs for the body condition categories are listed following the Condition of Recovered UBC Remains table on page 32 of this report. In 2016, 25 remains (condition 1) were found within less than a day of death (16%), 42 remains (conditions 2-4) were found with a few days up to a few weeks from death (27%), and skeletal remains (body conditions 5-7) accounted for 87 (56%) of the recovered remains.

The cause of death was undetermined in 71% (110) of cases, primarily due to limitations of examination of decomposed and skeletal remains. Of the remainder, environmental exposure to extremes in heat or cold combined with dehydration comprised 26% (40) of deaths. Other, less frequent, causes of death included blunt force injuries from falls or motor vehicle accidents (2) and gunshot wound injuries (1 case).

In 2016, 38 (63%) of identified UBCs were of Mexican nationality, followed by Guatemalans (15 or 25%), Hondurans (4 or 7%), Salvadorans (2 or 3%), and Ecuadorian (1 or 2%). Since 2001, identified UBCs of Mexican nationality have been the most numerous (1,403, 84%), followed by Guatemalans (154, 9%) and Salvadorans (45, 3%). Of the 2,615 decedents since 2001, 1,676 (64%) have been identified, 340 (20%) by DNA comparison to a family or law enforcement reference sample. As of December 31, 2016, 939 decedents remain unidentified.
UBC Recoveries CY2001 - 2016

UBC Recoveries FedFY2002 - 2016
UBC Recoveries by Month CY2016

January: 8  
February: 1  
March: 8  
April: 6  
May: 9  
June: 24  
July: 24  
August: 16  
September: 21  
October: 14  
November: 9  
December: 14

UBC Recoveries by Month CY2001 - 2016

January: 119  
February: 134  
March: 141  
April: 169  
May: 243  
June: 399  
July: 487  
August: 290  
September: 211  
October: 140  
November: 144  
December: 138
1 - Fully fleshed (PMI < 1 day)
2 - Decomposed (PMI < week)
3 - Decomposition with focal skeletonization (PMI < 3 weeks)
4 - Mummification with skeletonization (PMI < 5 weeks)
5 - Skeletonization with articulation/ligamentous attachments (PMI < 3 months)
6 - Complete skeletonization with disarticulation (PMI < 6-8 months)
7 - Complete skeletonization with bone degradation (PMI > 6-8 months)
8 - Other
UBC Recoveries by Sex CY2016

- Male: 90%
- Female: 7%
- Undetermined: 3%

UBC Recoveries by Sex CY2001-2016

- Male: 83%
- Female: 16%
- Undetermined: 1%
UBC Recoveries by Cause CY2016

- Undetermined: 71%
- Exposure To Elements: 26%
- Blunt Force Trauma: 1%
- Firearms: <1%

UBC Recoveries by Cause CY2001 - 2016

- Undetermined: 44%
- Exposure To Elements: 41%
- Blunt Force Trauma: 7%
- Firearms: 3%
- Natural Causes: 2%
- Drowning: 1%
- Hanging: <1%
- Other: <1%
Identified UBC Recoveries by Nationality CY2016

- Mexican: 63%
- Guatemalan: 25%
- Honduran: 7%
- Salvadoran: 3%
- Ecuadorian: 2%

Identified UBC Recoveries by Nationality CY2001 - 2016

- Mexican: 84% (1403)
- Guatemalan: 9% (154)
- Salvadoran: 3% (45)
- Honduran: 2% (37)
- Ecuadorian: <1% (11)
- Peruvian: <1% (6)
- Brazilian: <1% (4)
- Dominican: <1% (2)
- Colombian: <1% (3)
- Uncertain: <1% (4)
- Costa Rican: <1% (3)
- Other: <1% (4)
Identified vs Unidentified UBC Recoveries

<table>
<thead>
<tr>
<th>Year</th>
<th>Identified</th>
<th>Unidentified</th>
</tr>
</thead>
<tbody>
<tr>
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<td>939</td>
</tr>
<tr>
<td>2016</td>
<td>60</td>
<td>94</td>
</tr>
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</table>

DNA Identifications CY2001 - 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>DNA Identifications</th>
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</thead>
<tbody>
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<td>2014</td>
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<tr>
<td>2015</td>
<td>25</td>
</tr>
<tr>
<td>2016</td>
<td>4</td>
</tr>
</tbody>
</table>
Apache County

Apache County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591); who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Apache County. The Apache County AME does not perform autopsy examinations and if the AME deems an autopsy is necessary to certify the cause and manner of death, the decedent may be referred to the PCOME for an examination and death certification. The PCOME is not aware of how many deaths occurring in Apache County are reported to the Apache County AME, nor the total number or types of deaths certified by the AME. The PCOME only has a record of deaths reported to, or referred for examination to Pima County. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (Bureau of Indian Affairs (BIA), FBI or local tribal police departments).

Nineteen deaths from Apache County were reported to the PCOME in 2016, 15 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

Apache County Mortality by Year 2007 - 2016*

*Arizona Department of Vital Statistics as of 05/22/17
Apache County Deaths Reported to the PCOME 2010 - 2016

Apache County Deaths by Type of Exam 2016
Apache County Deaths by Manner of Death 2016

- Accident: 7
- Natural: 4
- Undetermined: 2
- Homicide: 2
- Suicide: 1

Apache County Deaths by Type of Death 2016

- Overdose: 5
- Cardiovascular: 4
- Motor vehicle accident: 2
- Firearms: 2
- Pulmonary: 1
- Other: 2
Apache County Deaths by Law Enforcement Agency 2016

- BIA - Fort Apache: 1
- St John's PD: 2
- Eager PD: 5
- Apache County SO: 11
Cochise County

Cochise County contracts with the PCOME to certify deaths that fall under the jurisdiction of the medical examiner in Cochise County. Cochise County does not maintain an in-county Medical Examiner’s office to conduct death scene investigations, transport remains, or triage deaths reportable to the medical examiner. Cochise County does provide third party transportation services, local law enforcement death scene investigation and archival support for examinations that occurred prior to July 1, 2012. The PCOME works closely with Cochise County law enforcement agencies, the public fiduciary office and funeral homes to facilitate investigations, disposition of remains and transportation respectively. The PCOME is also involved as needed with mass fatality planning, child fatality review, or other medical examiner related issues in Cochise County.

TOTAL MORTALITY

The number of deaths reported to the medical examiner’s office in a given time frame is a reflection of the total population that the office serves. In 2016 there were 1,332 deaths in Cochise County; of these 276 (21%) were reported to the PCOME for investigation.

*Cochise County Mortality by Year 2007 - 2016*

*Arizona Department of Vital Statistics as of 05/22/2017*
**TOTAL REPORTED DEATHS**

The total cases investigated by the PCOME from Cochise County in a given year are the sum of the ME cases (autopsies, external examinations, and death certificate cases) and cases in which jurisdiction was declined.

**Cochise County Deaths Reported to the PCOME 2012 - 2016**

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 (partial year)</td>
<td>151</td>
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<tr>
<td>2013</td>
<td>268</td>
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<tr>
<td>2014</td>
<td>246</td>
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<tr>
<td>2015</td>
<td>270</td>
</tr>
<tr>
<td>2016</td>
<td>276</td>
</tr>
</tbody>
</table>

**MEDICAL EXAMINER CASES**

The PCOME considers all cases in which the cause and manner of death are determined by this office as “medical examiner cases.” Those cases include autopsies, external examinations and death certificate (DC) cases. Autopsies are examinations where a decedent is examined both externally and internally for evidence of injury or natural disease which may have caused or contributed to the individual’s death. External examinations consist of an external examination of the body without the internal examination. A DC case involves review of the medical records, law enforcement reports and any other information that may be necessary to determine the cause and manner of death without physical examination of the decedent. In 2016, 116 autopsies, 29 external examinations and 15 DC cases were performed on deaths from Cochise County.
2016 Cochise County Medical Examiner Cases

Autopsy: 116
External: 29
DC: 15

Cochise County Medical Examiner Cases by Age 2016

- Under 1: 3
- 1-5: 3
- 6-12: 1
- 13-19: 4
- 20-29: 12
- 30-39: 18
- 40-49: 16
- 50-59: 33
- 60-69: 24
- 70-79: 26
- 80-89: 10
- 90+: 5
- Unknown: 5
Cochise County ME Cases by Manner of Death 2016

- Natural: 33%
- Accident: 39%
- Suicide: 18%
- Undetermined: 6%
- Homicide: 4%

Cochise County Deaths by Law Enforcement Agency 2016

- No Agency: 34
- Huachuca PD: 9
- Tombstone Marshal: 4
- Wilcox PD: 19
- Benson PD: 9
- Douglas PD: 24
- Bisbee PD: 12
- Dept of Public Safety: 59
- Sierra Vista PD: 97
- Cochise County SO: 4
HOMICIDE DEATHS

The PCOME examined 6 homicides from Cochise County in 2016; 4% of total Cochise County deaths certified. Homicide totals from 2012 – 2016 are compared below. Homicide victims were most frequently male (83%), between 20-39 years of age (67%) and died as the result of firearms (83%).

Cochise County Homicide by Age 2016

Cochise County Homicide 2012 - 2016
Cochise County Homicide by Sex 2016

- Male: 83%
- Female: 17%

Cochise County Homicide by Cause 2016

- Firearms: 83%
- Asphyxia: 17%
ACCIDENT DEATHS

The PCOME examined 63 accident deaths from Cochise County in 2016; 39% of total Cochise County deaths certified. Accident victims were most frequently males (60%), between 20-29 years of age (17%) and died as the result of motor vehicle trauma (38%).

**Cochise County Accident by Age 2016**

![Bar chart showing accident deaths by age group in Cochise County in 2016.](chart)

**Cochise County Accident by Sex 2016**

![Pie chart showing accident deaths by sex in Cochise County in 2016.](chart)
Cochise County Accident by Cause 2016

- Overdose: 24 cases (30%)
- Blunt Force Trauma: 19 cases (22%)
- Motor Vehicle Accident: 14 cases (38%)
- Exposure To Elements: 2 cases (3%)
- Asphyxia: 2 cases (3%)
- Other: 2 cases (3%)

Cochise County Accident by Cause (Top 3) 2014 - 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Overdose</th>
<th>Blunt Force Trauma</th>
<th>Motor Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>14</td>
<td>12</td>
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<td>2015</td>
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<td>13</td>
<td>17</td>
</tr>
<tr>
<td>2016</td>
<td>19</td>
<td>14</td>
<td>24</td>
</tr>
</tbody>
</table>
SUICIDE DEATHS

The PCOME examined 29 suicide deaths from Cochise County in 2016; 18% of total Cochise County deaths certified. Suicide victims were most frequently males (79%), between 70-79 years of age (34%) and died as the result of firearms (79%).

Cochise County Suicide by Age 2016

Cochise County Suicide by Sex 2016

Male - 79%
Female - 21%
NATURAL DEATHS

The PCOME examined 53 natural deaths from Cochise County in 2016; 33% of total Cochise County deaths certified. Individuals who died from natural causes were most frequently males (77%), between 50-59 years of age (38%) and died as the result of cardiovascular disease (62%).

Cochise County Natural Deaths by Age 2016

Cochise County Natural Deaths by Sex 2016

Male - 77%
Female - 23%
Cochise County Natural Deaths by Cause 2016

- Cardiovascular Disease - 62%
- Chronic Alcohol Abuse - 6%
- Pulmonary Disease - 8%
- Infectious Disease - 9%
- Diabetes Mellitus - 6%
- Malignancy - 4%
- Other - 6%
UNDETERMINED MANNER OF DEATH

The PCOME examined 9 undetermined deaths from Cochise County in 2016; 6% of total Cochise County deaths certified. Individuals who died with an undetermined manner were most frequently males (89%), of unknown age (55%) and died from undetermined causes (89%). Many of these deaths represent skeletal remains of UBCs who died in the deserts of southern Arizona.

Cochise County Undetermined Manner of Death by Age 2016

Cochise County Undetermined Manner of Death by Sex 2016

Male - 89%
Female - 11%
Cochise County Undetermined Manner of Death by Cause

2016

- Undetermined: 89%
- Overdose: 11%
OVERDOSE DEATHS

There were 22 deaths attributed to an overdose of either a single drug (10 deaths, 45%) or a combination of drugs (12 deaths, 55%) in 2016. Overdose deaths commonly involved males (64%) between the ages of 50-59 (32%). The majority of these deaths were classified as accidents (86%).

**Cochise County Overdose Deaths 2014 - 2016**

![Graph showing overdose deaths by year](image)

**Cochise County Overdose Deaths by Age 2016**

![Graph showing overdose deaths by age](image)
Cochise County Overdose Deaths by Sex 2016

- Male: 8 (64%)
- Female: 4 (36%)

Cochise County Overdose Deaths by Manner 2016

- Accident: 16 (86%)
- Suicide: 2 (9%)
- Undetermined: 1 (5%)
Select Cochise County Drugs by Year 2014 - 2016

Cochise County Overdose Deaths by Drug 2016
**Motor Vehicle Related Fatalities**

Motor vehicle related fatalities accounted for 24 total deaths in Cochise County in 2016. The majority, 17 deaths, were occupants of a motor vehicle involved in an accident (MVA). Of the remaining, 3 were motorcycle accidents (MCA), 2 were pedestrians struck by vehicles, and 2 involved all-terrain vehicles (ATV). Individuals who died from motor vehicle related fatalities were most frequently males (71%) and between 20-29 years of age (25%).

![Cochise County Motor Vehicle Fatalities 2014 - 2016](image1)

![Cochise County Motor Vehicle Fatalities by Age 2016](image2)
Cochise County Motor Vehicle Fatalities by Sex 2016

- Male: 71%
- Female: 29%

Cochise County Motor Vehicle Fatalities by Type 2016

- MVA: 71%
- Pedestrian: 8%
- MCA: 13%
- ATV: 4%
Gila County

Gila County contracts with an appointed Forensic Pathologist Medical Examiner, who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner (ME) in Gila County. The Gila County ME performs some autopsy examinations in Payson if the ME deems an autopsy is necessary to certify the cause and manner of death. Additionally, the ME may refer some decedents from southern Gila County to the PCOME for an examination and death certification as necessary. The PCOME is not aware of how many deaths occurring in Gila County are reported to the ME, nor the total number or types of deaths certified by the ME. The PCOME only has a record of deaths reported to, or referred for examination to Pima County. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (BIA, FBI or local tribal police departments).

Twenty nine deaths from Gila County were reported to the PCOME in 2016, 28 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

*Arizona Department of Vital Statistics as of 05/22/2017*
Gila County Deaths Reported to the PCOME 2010 - 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
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<td>2013</td>
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<tr>
<td>2014</td>
<td>42</td>
</tr>
<tr>
<td>2015</td>
<td>32</td>
</tr>
<tr>
<td>2016</td>
<td>29</td>
</tr>
</tbody>
</table>

Gila County Deaths by Type of Exam 2016

- **Autopsy**: 28
- **Jurisdiction Declined**: 1

Rev: 06/01/2017

Pima County Office Of The Medical Examiner – Annual Report 2016
Gila County Deaths by Manner of Death 2016

- Accident: 12
- Natural: 4
- Homicide: 1

Gila County Accidents by Type 2016

- Motor Vehicle: 6
- Overdose: 1
- Exposure: 1
- Blunt Force Injury: 4
Gila County Naturals by Type 2016

- Cardiovascular: 4
- Chronic Alcohol Abuse: 2
- Infectious: 2
- Other: 3
- Unknown: 1

Gila County Homicides by Type 2016

- Sharp Force Injury: 1
- Other: 3
Gila County Deaths by Law Enforcement Agency 2016

- Payson PD: 1
- BIA - Fort Apache: 1
- San Carlos PD: 4
- Miami PD: 3
- Dept of Public Safety: 3
- BIA - San Carlos: 5
- Globe PD: 4
- Gila County SO: 8
Graham County

Graham County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Graham County. The Graham County AME does not perform autopsy examinations and if the AME deems an autopsy is necessary to certify the cause and manner of death, the decedent may be referred to the PCOME for an examination and death certification. The PCOME is not aware of how many deaths occurring in Graham County are reported to the Graham County AME, nor the total number or types of deaths certified by the AME. The PCOME only has a record of deaths reported to, or referred for examination to Pima County. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (BIA, FBI or local tribal police departments).

Nine deaths from Graham County were reported to the PCOME in 2016, all of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

Graham County Mortality by Year 2007 - 2016

*Arizona Department of Vital Statistics as of 05/22/2017
Graham County Deaths Reported to the PCOME 2010 - 2016

- 2010: 14
- 2011: 13
- 2012: 15
- 2013: 17
- 2014: 13
- 2015: 5
- 2016: 9

Graham County Deaths by Type of Exam 2016

- Autopsy: 9
Graham County Deaths by Manner of Death 2016

Graham County Deaths by Type of Death 2016
Graham County Deaths by Law Enforcement Agency 2016

- No Agency: 2
- Federal Bureau of Prisons: 1
- BIA - San Carlos: 2
- Graham County SO: 4
Greenlee County

Greenlee County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Greenlee County. The Greenlee County AME does not perform autopsy examinations and if the AME deems an autopsy is necessary to certify the cause and manner of death, the decedent may be referred to the PCOME for an examination and death certification. The PCOME is not aware of how many deaths occurring in Greenlee County are reported to the Greenlee County AME, nor the total number or types of deaths certified by the AME. The PCOME only has a record of deaths reported to, or referred for examination to Pima County. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (BIA, FBI or local tribal police departments).

Eight deaths from Greenlee County were reported to the PCOME in 2016, five of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

Greenlee County Mortality by Year 2007 - 2016*

*Arizona Department of Vital Statistics as of 05/22/2017
Greenlee County Deaths Reported to the PCOME 2010 - 2016

- 2010: 10
- 2011: 4
- 2012: 6
- 2013: 12
- 2014: 9
- 2015: 13
- 2016: 8

Greenlee County Deaths by Type of Exam 2016

- Autopsy: 5
- External: 1
- Death Certification: 1
- Jurisdiction Declined: 1
Greenlee County Deaths by Manner of Death 2016

- Natural: 5
- Accident: 1
- Suicide: 1

Greenlee County Deaths by Type of Death 2016

- Cardiovascular: 4
- Blunt Force Injury: 1
- Hanging: 1
- Obesity: 1
Greenlee County Deaths by Law Enforcement Agency 2016

- El Paso (NM) County SO: 1
- Clifton PD: 2
- Greenlee County SO: 5
La Paz County

La Paz County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in La Paz County. The La Paz County AME does not perform autopsy examinations and if the AME deems an autopsy is necessary to certify the cause and manner of death, the decedent may be referred to the PCOME for an examination and death certification. The PCOME is not aware of how many deaths occurring in La Paz County are reported to the La Paz County AME, nor the total number or types of deaths certified by the AME. The PCOME only has a record of deaths reported to, or referred for examination to Pima County. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (BIA, FBI or local tribal police departments).

Twenty nine deaths from La Paz County were reported to the PCOME in 2016, 28 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

La Paz County Mortality by Year 2007 - 2016*

*Arizona Department of Vital Statistics as of 05/22/2017
La Paz County Deaths Reported to the PCOME 2010 - 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
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<td>2010</td>
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</tr>
<tr>
<td>2011</td>
<td>21</td>
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<tr>
<td>2012</td>
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<td>22</td>
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<tr>
<td>2015</td>
<td>40</td>
</tr>
<tr>
<td>2016</td>
<td>29</td>
</tr>
</tbody>
</table>

La Paz County Deaths by Type of Exam 2016

- Autopsy: 28
- External: 1

Rev: 06/01/2017
La Paz County Deaths by Manner of Death 2016

- Accident: 12
- Natural: 5
- Undetermined: 3
- Suicide: 1
- Homicide: 7

La Paz County Accidents by Type 2016

- Motor Vehicle: 6
- Overdose: 1
- Blunt Force Injury: 5
La Paz County Homicides by Type 2016

- Blunt Force Injury: 2
- Sharp Force Injury: 1

La Paz County Naturals by Type 2016

- Cardiovascular: 4
- Pulmonary: 1
La Paz County Suicides by Type 2016

La Paz County Deaths by Law Enforcement Agency 2016
Navajo County

Navajo County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Navajo County. The Navajo County AME does not perform autopsy examinations and if the AME deems an autopsy is necessary to certify the cause and manner of death, the decedent may be referred to the PCOME for an examination and death certification. The PCOME is not aware of how many deaths occurring in Navajo County are reported to the Navajo County AME, nor the total number or types of deaths certified by the AME. The PCOME only has a record of deaths reported to, or referred for examination to Pima County. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (BIA, FBI or local tribal police departments).

Fifty deaths from Navajo County were reported to the PCOME in 2016, 47 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

*Arizona Department of Vital Statistics as of 05/22/2017*
Navajo County Deaths Reported to the PCOME 2010 - 2016

Navajo County Deaths by Type of Exam 2016

Autopsy
External
Jurisdiction Declined
Navajo County Deaths by Manner of Death 2016

- Accident: 16
- Natural: 12
- Suicide: 9
- Homicide: 7
- Undetermined: 5

Navajo County Accidents by Type 2016

- Overdose: 9
- Motor Vehicle: 5
- Sharp Force Injury: 1
- Drowning: 1
Navajo County Homicides by Type 2016

- Firearms: 7 cases
- Blunt Force Injury: 1 case
- Asphyxia: 1 case

Navajo County Naturals by Type 2016

- Cardiovascular: 2 cases
- Chronic Alcohol Abuse: 1 case
- Diabetes Mellitus: 1 case
- Infectious: 1 case
- Pulmonary: 1 case
- Dementia: 1 case
- Other: 3 cases
- Other: 3 cases
Navajo County Suicides by Type 2016

Navajo County Deaths by Law Enforcement Agency 2016
Pima County

**TOTAL MORTALITY**

The number of deaths reported to the medical examiner’s office in a given time frame is a reflection of the total population that the office serves. In 2016 there were 9,376 deaths in Pima County; of these 2,657 (28%) were reported to the PCOME for investigation.

![Pima County Mortality by Year 2007 - 2016*](chart)

*Arizona Department of Vital Statistics as of 05/22/17

**TOTAL CASES**

The total cases handled by the PCOME from Pima County in a given year are the sum of the ME cases (autopsies, external examinations, and death certificate cases), cases in which jurisdiction was declined, and the number of cases stored at our facility during the calendar year (storage cases).
MEDICAL EXAMINER CASES

The PCOME considers all cases in which the cause and manner of death are determined by this office as “medical examiner cases.” Those cases include autopsies, external examinations and death certificate (DC) cases. Autopsies are examinations where a decedent is examined both externally and internally for evidence of injury or natural disease which may have caused or contributed to the individual’s death. External examinations consist of an external examination of the body without the internal examination. A DC case involves review of the medical records, law enforcement reports and any other information that may be necessary to determine the cause and manner of death without physical examination of the decedent. In 2016, 975 autopsies, 347 external examinations and 342 DC cases were performed on deaths from Pima County.
2016 Pima County Medical Examiner Cases

Pima County Medical Examiner Cases by Age 2016

Rev: 06/01/2017
Pima County ME Cases by Manner of Death 2016

- Natural: 30%
- Accident: 45%
- Suicide: 11%
- Undetermined: 10%
- Homicide: 4%

Pima County Deaths by Law Enforcement Agency 2016

- Tohono O’Odham PD: 705
- Pima County SO: 1189
- Tucson PD: 102
- Oro Valley PD: 62
- Marana PD: 44
- South Tucson PD: 22
- Sahuarita PD: 16
- Dept of Corrections: 11
- Dept of Public Safety: 30

Rev: 06/01/2017
**HOMICIDE DEATHS**

The PCOME examined 65 homicides from Pima County in 2016; 4% of total Pima County deaths certified. Homicide totals from 2009 – 2016 are compared below. Homicide victims were most frequently male (88%), between 20-39 years of age (43%) and died as the result of firearms (63%).

**Pima County Homicide 2009 - 2016**

**Pima County Homicide by Age 2016**
Pima County Homicide by Sex 2016

- Male: 88%
- Female: 12%

Pima County Homicide by Cause 2016

- Firearms: 63%
- Sharp Force: 12%
- Blunt Force: 20%
- Other: 3%
- Asphyxia: 2%
ACCIDENT DEATHS

Deaths due to accidents accounted for 45% of the deaths investigated by the PCOME in 2016. Accident victims were most frequently males (66%), between 80-89 years of age (15%) and died as the result of blunt force injuries (37%) often as the result of such conditions as complications of a hip fracture or intracranial hemorrhage from a fall.
Pima County Accident by Cause 2016

- Overdose: 31%
- Blunt Force Trauma: 37%
- Motor Vehicle Accident: 19%
- Exposure To Elements: 7%
- Drowning: 2%
- Asphyxia: 3%
- Other: 2%

Pima County Accident by Cause (Top 3) 2013 - 2016

- Overdose
- Blunt Force Injury
- Motor Vehicle
SUICIDE DEATHS

Deaths due to suicide accounted for 11% of the deaths investigated by the PCOME in 2016. Suicide victims were most frequently males (73%), between 50-59 years of age (19%) and died as the result of firearms (59%).

Pima County Suicide by Age 2016

Pima County Suicide by Sex 2016

Male - 73%
Female - 27%
Pima County Suicide by Cause 2016

Firearms - 59%
Hanging - 19%
Overdose - 12%
Asphyxia - 5%
Other - 5%

Pima County Suicide by Cause (Top 3) 2013 - 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Firearms</th>
<th>Hanging</th>
<th>Overdose</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>106</td>
<td>46</td>
<td>22</td>
</tr>
<tr>
<td>2014</td>
<td>101</td>
<td>43</td>
<td>25</td>
</tr>
<tr>
<td>2015</td>
<td>112</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>2016</td>
<td>104</td>
<td>34</td>
<td>21</td>
</tr>
</tbody>
</table>
NATURAL DEATHS

Deaths due to natural causes accounted for 30% of the deaths investigated by the PCOME in 2016. Individuals who died from natural causes were most frequently males (71%), between 60-69 years of age (25%) and died as the result of cardiovascular disease (61%).

Pima County Natural Deaths by Age 2016

Pima County Natural Deaths by Sex 2016

Male - 71%
Female - 29%
Pima County Natural Deaths by Cause 2016

Cardiovascular Disease - 61%
Chronic Alcohol Abuse - 9%
Pulmonary Disease - 8%
Infectious Disease - 9%
Diabetes Mellitus - 2%
Malignacy - 4%
Other - 7%
UNDETERMINED MANNER OF DEATH

Deaths of undetermined manner accounted for 10% of the deaths investigated by the PCOME in 2016. Individuals who died with an undetermined manner were most frequently males (77%), of unknown age (53%) and died from undetermined causes (88%). Many of these deaths represent skeletal remains of UBCs who died in the deserts of southern Arizona.

Pima County Undetermined Manner of Death by Age 2016

Pima County Undetermined Manner of Death by Sex 2016

- Male - 79%
- Female - 17%
- Unknown - 5%
Pima County Undetermined Manner of Death by Cause 2016

- Undetermined: 88%
- Overdose: 5%
- Blunt Force Injury: 6%
- Firearms: 2%
- Other: 2%

Total: 147
OVERDOSE DEATHS

There were 263 deaths attributed to an overdose of either a single drug (133 deaths, 51%) or a combination of drugs (130 deaths, 49%) in 2016. Overdose deaths commonly involved males (66%) between the ages of 20-29 (22%). The majority of these deaths were classified as accidents (89%).

Opiate drugs (heroin, oxycodone, methadone, hydrocodone, morphine, oxymorphone, hydromorphone, tramadol, opiate unspecified) and fentanyl (a synthetic opioid narcotic) accounted for the majority of overdose deaths, either as a single drug or a component of a poly-drug overdose. Methamphetamine was the most commonly abused illicit drug contributing to death in 2016 followed by heroin. Deaths due to methamphetamine were also on the rise in 2016 with a doubling of the number of deaths from 2014 (38 to 79 deaths).

The number of heroin deaths is likely underreported as heroin is rapidly metabolized to morphine by the body and if the parent compound indicative for heroin (6-monoacetylmorphine) is not present on the toxicology report these deaths may be classified as either morphine intoxication or opiate intoxication.

Acute alcohol (ethanol) intoxication alone, not as component of a poly-drug overdose, accounted for 8 overdose (3%) deaths in 2016.

Pima County Overdose Deaths 2010 - 2016
Pima County Overdose Deaths by Age 2016

- 59 deaths for ages 20-29
- 57 deaths for ages 30-39
- 56 deaths for ages 40-49
- 51 deaths for ages 50-59
- 29 deaths for ages 60-69
- 4 deaths for ages 70-79
- 1 death for ages 80-89
- 0 deaths for ages >90

Pima County Overdose Deaths by Sex 2016

- Male: 173 deaths (66%)
- Female: 90 deaths (34%)
Pima County Overdose Deaths by Manner 2016

- Accident: 89%
- Suicide: 8%
- Undetermined: 3%

Select Pima County Drugs by Year 2014 - 2016

- Oxycodone
- Morphine
- Alcohol
- Methamphetamine
- Heroin
- Cocaine
Fentanyl Overdoses 2014 - 2016

*Including one fentanyl analog
### Pima County Overdose Deaths by Drug 2016

<table>
<thead>
<tr>
<th>Drug</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cocaine</td>
<td>26</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>79</td>
</tr>
<tr>
<td>Heroin</td>
<td>72</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>33</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>6</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>7</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>3</td>
</tr>
<tr>
<td>Methadone</td>
<td>23</td>
</tr>
<tr>
<td>Morphine</td>
<td>27</td>
</tr>
<tr>
<td>Codeine</td>
<td>1</td>
</tr>
<tr>
<td>Tramadol</td>
<td>4</td>
</tr>
<tr>
<td>Opiate Unclassified</td>
<td>6</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>15</td>
</tr>
<tr>
<td>Furanylfentanyl</td>
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</tr>
<tr>
<td>Benzodiazepines</td>
<td>30</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>3</td>
</tr>
<tr>
<td>Alcohol</td>
<td>40</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>6</td>
</tr>
<tr>
<td>SSRI/SNRI</td>
<td>15</td>
</tr>
<tr>
<td>Tricyclics</td>
<td>3</td>
</tr>
<tr>
<td>Atypical Antipsychotics</td>
<td>6</td>
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<tr>
<td>Muscle Relaxants</td>
<td>5</td>
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<tr>
<td>Anti-seizure Agents</td>
<td>2</td>
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<tr>
<td>Sleep Aids</td>
<td>4</td>
</tr>
<tr>
<td>5F-AMB</td>
<td>1</td>
</tr>
<tr>
<td>Hydroxychloroquine</td>
<td>2</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>3</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>
**Motor Vehicle Related Fatalities**

Motor vehicle related fatalities accounted for 146 total deaths in Pima County in 2016. The majority, 84 deaths, were occupants of a motor vehicle involved in an accident (MVA). Of the remaining, 24 were motorcycle accidents (MCA), 37 were pedestrians or bicyclists struck by vehicles, and 1 was an all-terrain vehicle (ATV) accident. Individuals who died from motor vehicle related fatalities were most frequently males (74%) and between 20-29 years of age (18%).
Pima County Motor Vehicle Fatalities by Sex 2016

- Male: 74%
- Female: 26%

Pima County Motor Vehicle Fatalities by Type 2016

- MVA: 58%
- Pedestrian: 19%
- MCA: 16%
- Bicyclist: 6%
- ATV: 1%
Pinal County

Pinal County contracted with the PCOME to provide examination or other support services beyond what Pinal County provides internally for the majority of 2016. Pinal County maintains its own Medical Examiner’s office staffed to conduct death scene investigations, transport remains, assist with the performance of some external examinations at the OME facility in Pinal County, and triage deaths reportable to the ME as stated in A.R.S §11-593 above. Not all deaths in Pinal County were reported to the PCOME through the Pinal County Medical Examiner’s Office. Deaths on Native American tribal lands do not have to be reported through the respective death investigation system of that County and may be reported directly to the PCOME as necessary for the needs of the appropriate agency investigating that death (BIA, FBI or local tribal police departments). The Pinal County Medical Examiner’s Office historically issues its own annual report. Please reference that report for details concerning deaths occurring in Pinal County that are not referred to the PCOME.

In calendar year 2016 there were 2934 deaths in Pinal County; of these 236 (8%) were reported to the PCOME for examination. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

Pinal County Mortality by Year 2007 - 2016*

*Arizona Department of Vital Statistics as of 05/22/2017
Pinal County Deaths Reported to the PCOME 2010 - 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>140</td>
</tr>
<tr>
<td>2011</td>
<td>304</td>
</tr>
<tr>
<td>2012</td>
<td>308</td>
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<tr>
<td>2013</td>
<td>223</td>
</tr>
<tr>
<td>2014</td>
<td>200</td>
</tr>
<tr>
<td>2015</td>
<td>264</td>
</tr>
<tr>
<td>2016</td>
<td>236</td>
</tr>
</tbody>
</table>

Pinal County Deaths by Type of Exam 2016

- Autopsy: 208
- External: 18
- Jurisdiction Declined: 9
- Storage: 1
Pinal County Deaths by Manner of Death 2016

Natural: 24
Accident: 63
Suicide: 15
Homicide: 14
Undetermined: 8

Pinal County Accidents by Type 2016

Overdose: 38
Motor Vehicle: 47
Blunt Force Injury: 5
Asphyxia: 5
Exposure: 2
Aircraft: 2
Fire: 3
Other: 8

Rev: 06/01/2017
Pinal County Homicides by Type 2016

- Firearms: 12 cases
- Sharp Force Injury: 2 cases
- Blunt Force Injury: 1 case

Pinal County Naturals by Type 2016

- Cardiovascular: 43 cases
- Infectious: 5 cases
- Diabetes Mellitus: 4 cases
- Chronic Alcohol: 4 cases
- Other: 7 cases
Pima County Office Of The Medical Examiner – Annual Report 2016

Pinal County Suicides by Type 2016

- Firearms: 7
- Overdose: 32
- Hanging: 24
- Motor Vehicle: 26
- Other: 1

Pinal County Deaths by Law Enforcement Agency 2016

- Pinal County SO: 77
- Gila River TP: 32
- Apache Junction PD: 26
- Casa Grande PD: 24
- Dept of Public Safety: 18
- Eloy PD: 6
- Arizona DOC: 7
- Maricopa PD: 12
- Coolidge PD: 14
- Florence PD: 11
- Other/No Agency: 3
Santa Cruz County

Santa Cruz County does not maintain an in-county Medical Examiner’s office to conduct death scene investigations, transport or examine remains, or certify deaths reportable to the medical examiner. Nor does Santa Cruz County appoint or contract with an Alternate Medical Examiner. The PCOME acts as the de-facto appointed ME for Santa Cruz County. When deaths occur in Santa Cruz County pursuant to A.R.S. §11-593, Santa Cruz County law enforcement agencies investigate the circumstances of the death and notify the PCOME as necessary.

In calendar year 2016 there were 298 deaths in Santa Cruz County; of these 51 (17%) were reported to the PCOME for investigation and/or examination. Some pertinent statistics regarding these deaths are detailed in the tables below.

Santa Cruz County Mortality by Year 2007 - 2016*

*Arizona Department of Vital Statistics as of 05/22/2017
Santa Cruz County Deaths Reported to the PCOME 2010 - 2016

Santa Cruz County Deaths by Type of Exam 2016
Santa Cruz County Deaths by Manner of Death 2016

Santa Cruz County Accidents by Type 2016
Santa Cruz County Naturals by Type 2016

- Cardiovascular: 10
- Pulmonary: 2
- Infectious: 1
- Diabetes Mellitus: 1
- Other: 1

Santa Cruz County Suicides by Type 2016

- Firearms: 4
- Hanging: 2
Santa Cruz County Deaths by Law Enforcement Agency 2016

- No Agency: 3
- Patagonia Marshal: 1
- Dept of Public Safety: 2
- Nogales PD: 17
- Santa Cruz County SO: 28
**Yuma County**

Yuma County contracts with, and appoints the pathology group at Yuma Regional Medical Center, as Medical Examiner for Yuma County. Some decedents (typically suspected homicides) are referred to the PCOME for an examination and death certification at the discretion of the Yuma County Medical Examiner’s Office. The Yuma County Medical Examiner’s Office issues its own Annual Report. Please reference that report for details concerning deaths occurring in Yuma County that are not referred to the PCOME.

Sixteen deaths from Yuma County were reported to the PCOME in 2016, all 16 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables below.

*Arizona Department of Vital Statistics as of 05/22/2017*
Yuma County Deaths Reported to the PCOME 2010 - 2016

Yuma County Deaths by Type of Exam 2016
Yuma County Deaths by Law Enforcement Agency 2016

- Imperial County SO: 1
- Dept of Corrections: 1
- Yuma County SO: 8
- Yuma PD: 6