PIMA COUNTY

OFFICE OF THE MEDICAL EXAMINER

Annual Report 2015

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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 2015 there were 9,134 deaths in Pima County; of these 2,437 (27%) 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 is effective from October 24, 2011 through October 24, 2016 and requires annual accreditation verification. NAME accredited offices represent the highest quality of death investigation systems. There are 69 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. Death occurring suddenly when in apparent good health.
4. Death occurring in a prison.
5. Death of a prisoner.
6. Death occurring in a suspicious, unusual or unnatural manner.
7. Death from disease or accident believed to be related to the deceased's occupation or employment.
8. Death believed to present a public health hazard.
9. Death occurring during, in association with or as a result of anesthetic or surgical procedures.
10. Unidentifiable bodies.

Investigations

Our 11 medical investigators processed 2,437 reports of deaths from Pima County and 734 reports from 10 additional Arizona counties in 2015. Jurisdiction was declined in 874 of these cases. A total of 2,007 decedents were transported to the PCOME for examination or storage in 2015.

Examinations

Pima County forensic pathologists and anthropologists performed 1,456 autopsies, 348 external examinations, 290 death certifications, 145 anthropologic examinations, and reviewed 6,323 death certificates for cremations in 2015.

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. Eight MDIs, our MDI Supervisor, and Morgue 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 pathologist reviewed 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 115 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. Two pathology residents, seven medical students and two pathology post-sophomore fellows rotated through the PCOME for month-long rotations in 2015. Our Forensic Anthropologist also holds an academic appointment at the University of Arizona and three anthropology interns trained at our facility in 2015.

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 2015, 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 2015

Heart	Lungs	Liver	Kidneys	Pancreas	Sm. Intestine	Total
10	7	21	49	3	0	90

The total lives saved through organ donation involving deaths investigated by the PCOME in 2015 were 82 with 90 organs being transplanted. The authorization for the procurement of organs was granted in 100% of cases.

Cornea Donations with PCOME Involvement 2015

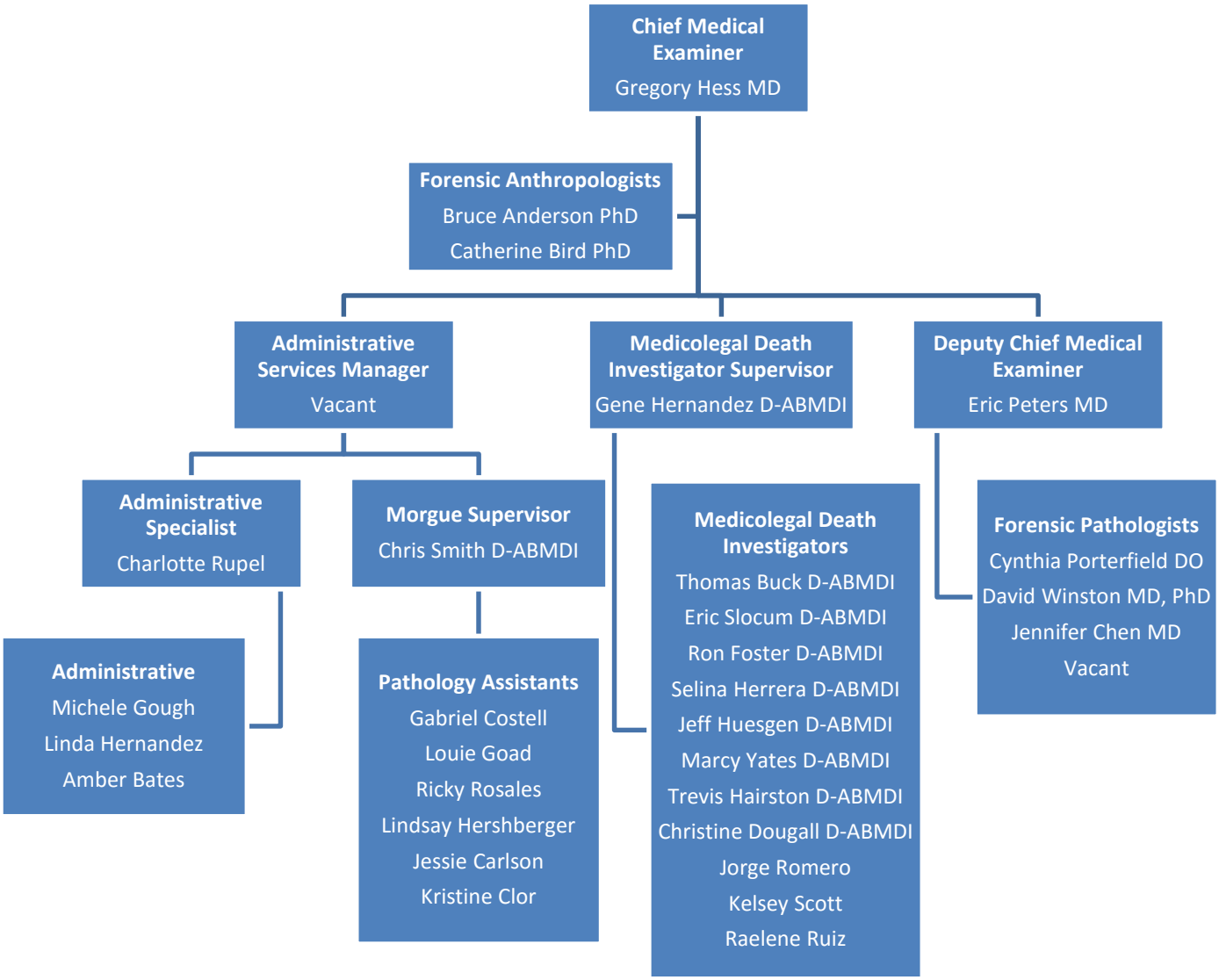
Corneas Recovered	Corneas Transplanted
200	155

There were 200 corneas recovered and 155 transplanted in 2015 with PCOME involvement. The release of corneas was granted 97% of the time.

Tissue Donation with PCOME Involvement 2015

Bone	Skin	Vascular	Heart	Aortoiliac
106	74	34	40	14

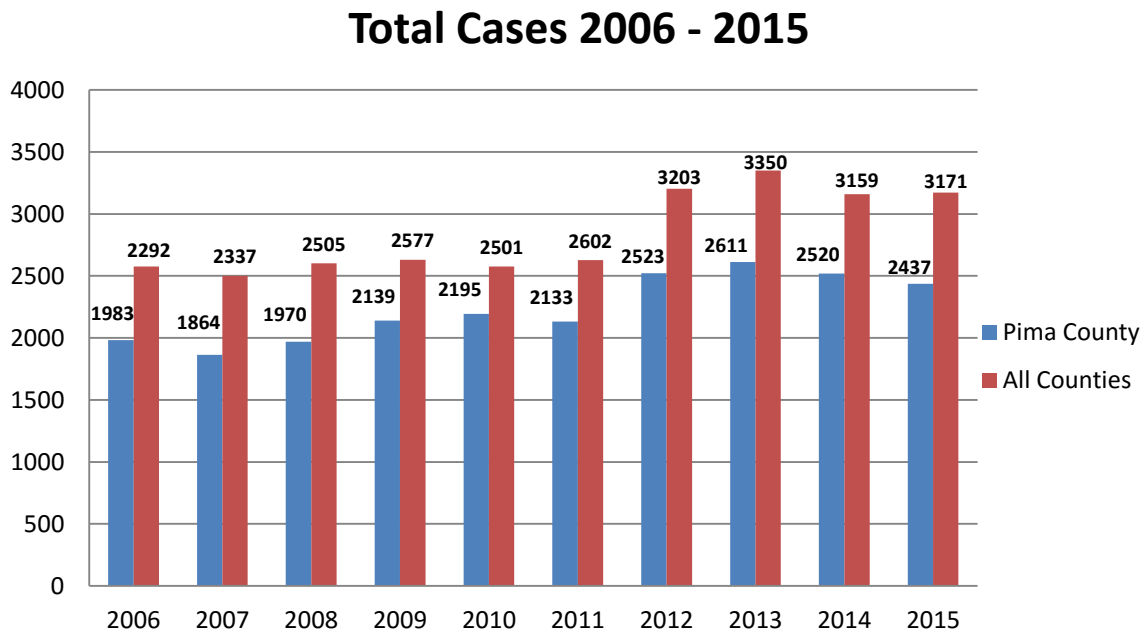
The PCOME was involved in 20% of all DNA tissue recoveries in 2015. The average release of tissue for procurement was granted 85% of the time across the state of Arizona in 2014. The release of tissues was granted 95% of the time by the PCOME, significantly above the state average.



OFFICE OF THE MEDICAL EXAMINER
ORGANIZATIONAL CHART AS OF DECEMBER 31, 2015

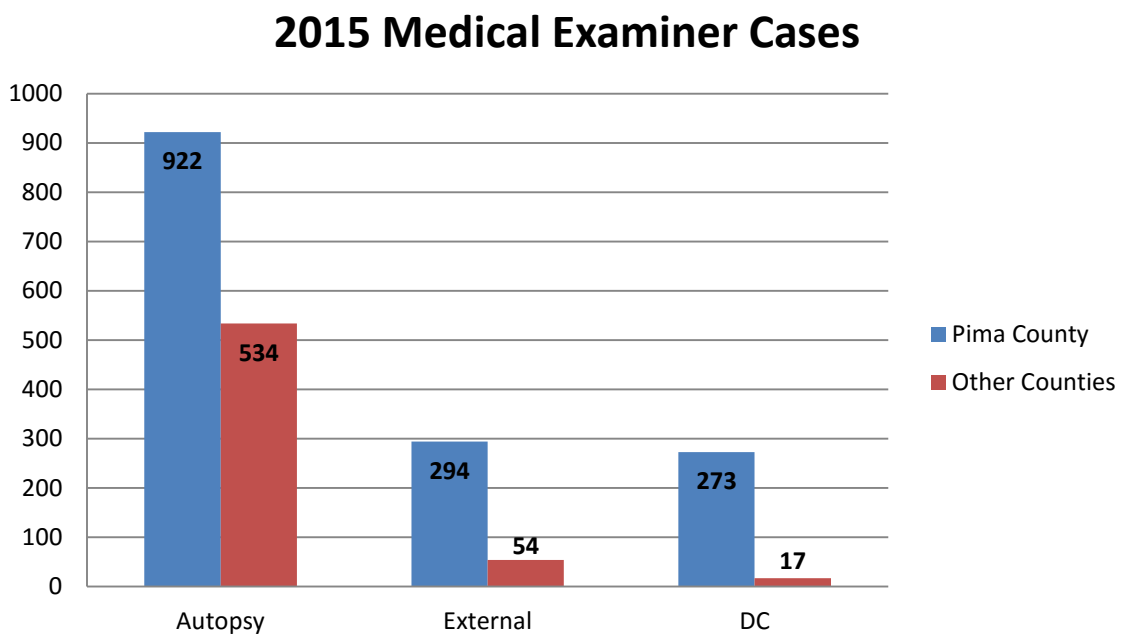
TOTAL CASES

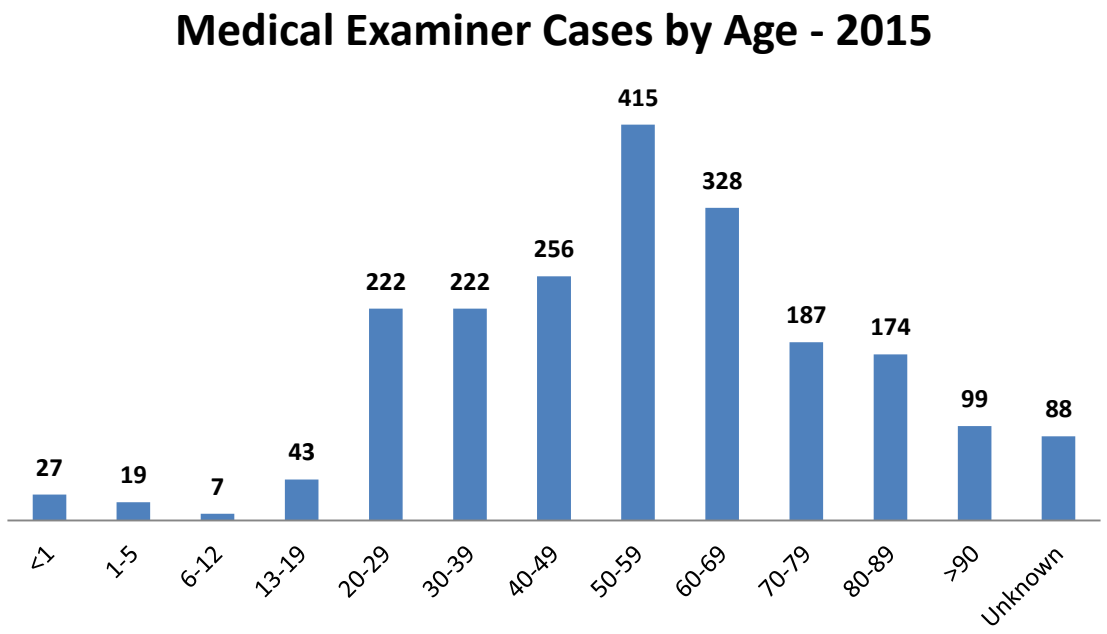
The total cases handled by the PCOME in a given year are the sum of the ME cases (autopsies, external examinations, and death certificate cases), cases in which jurisdiction was declined, and the number of cases stored at our facility during the calendar year (storage cases). 'All Counties' includes 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.



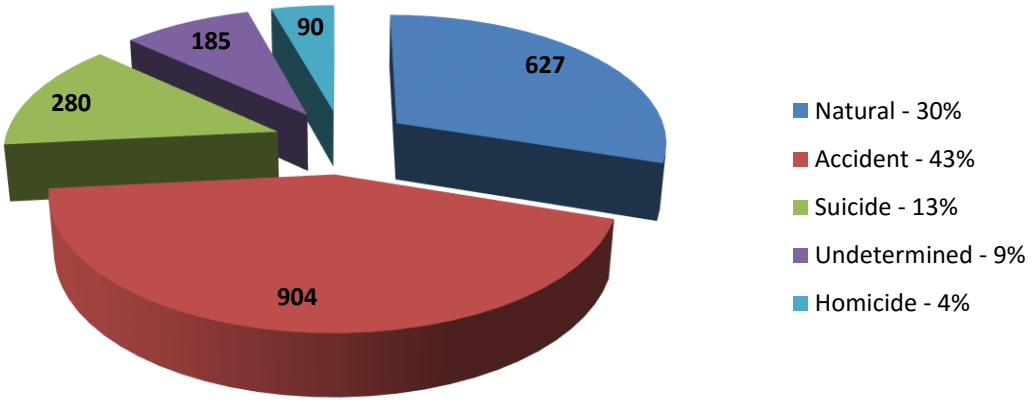
MEDICAL EXAMINER CASES

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 2015, for Pima and all other counties listed above, 1456 autopsies, 348 external examinations and 290 DC cases were performed at the PCOME. Pima County alone accounted for 922 autopsies, 294 external examinations and 273 DC cases.

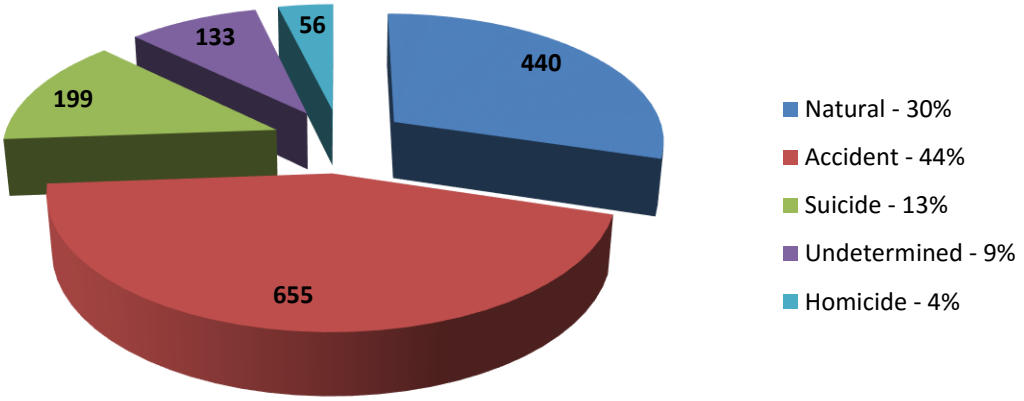

2015 Medical Examiner Cases
1000
900
800
700
600
500
400
300
200
100
0
922
534
294
54
273
17
Autopsy
External
DC
Pima County
Other Counties


Medical Examiner Cases by Age - 2015
27
19
7
43
222
222
256
415
328
187
174
99
88
<1
1-5
6-12
13-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
>90
Unknown

ME Cases (all counties) by Manner of Death - 2015

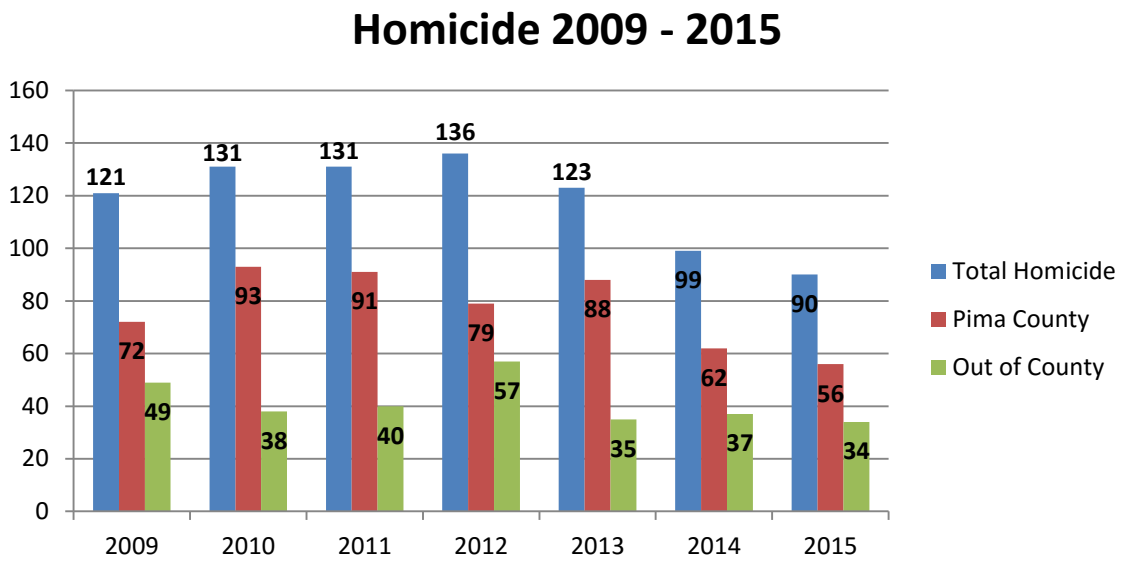


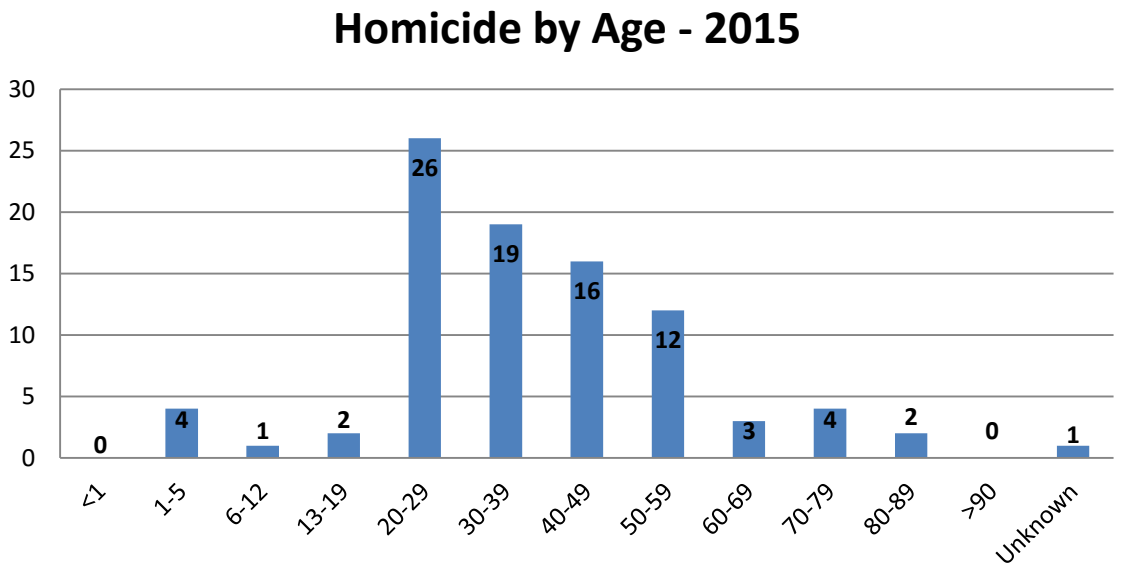
ME Cases (Pima only) by Manner of Death - 2015



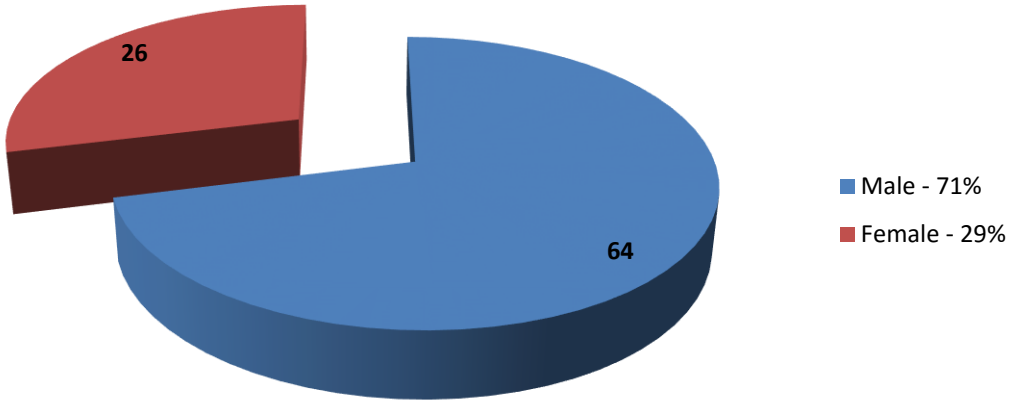
HOMICIDE DEATHS

The PCOME certified 90 deaths as homicide in 2015, 56 from Pima County and 34 from other counties. Homicide totals from 2009 – 2015 are compared below. Homicide victims were most frequently male (71%), between 20-29 years of age (29%) and died as the result of firearms (68%).

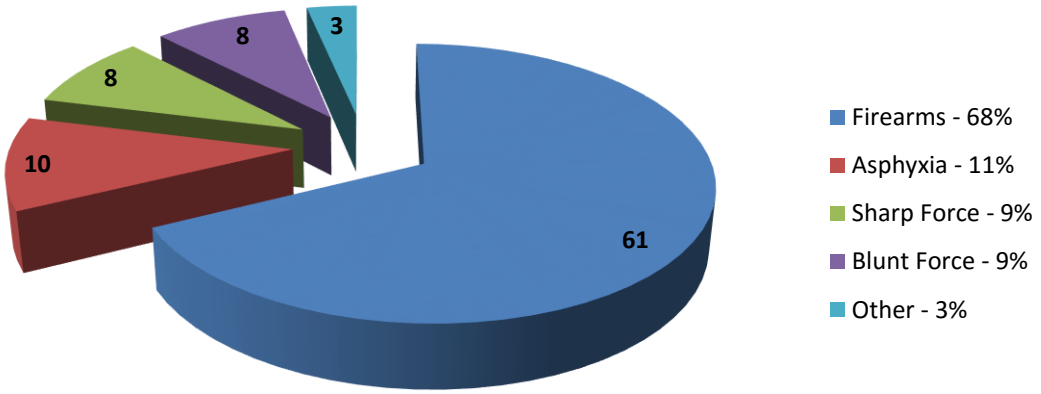




Homicide by Sex - 2015

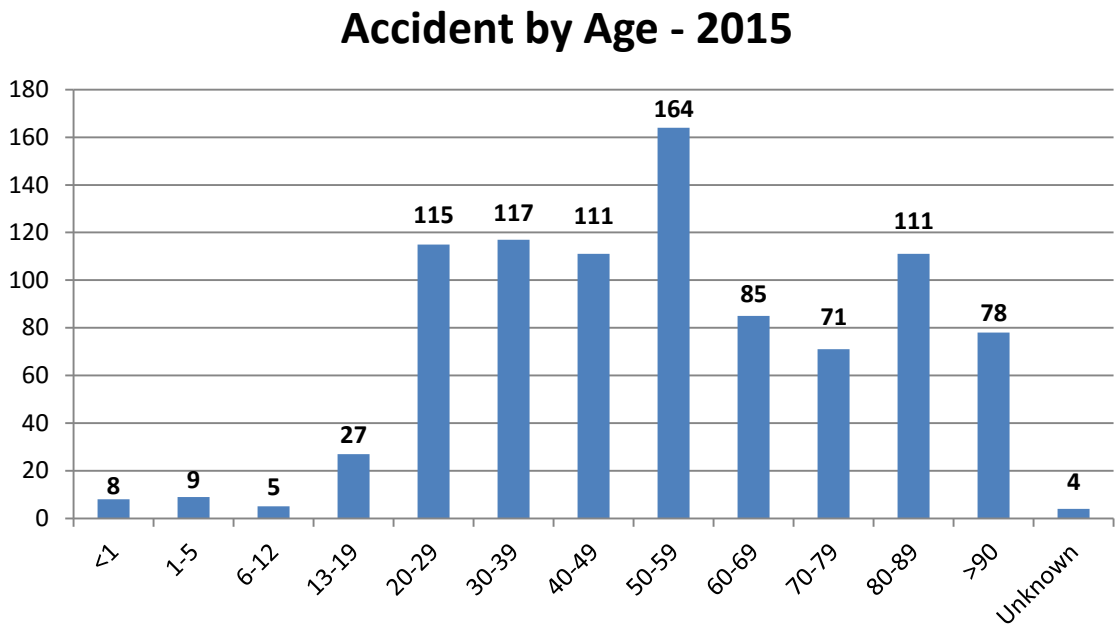


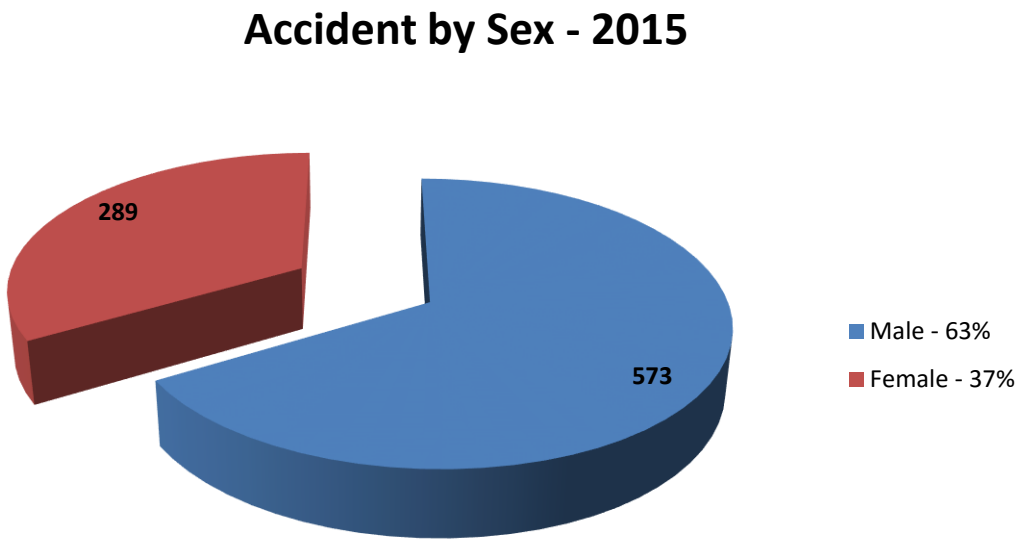
Homicide by Cause - 2015



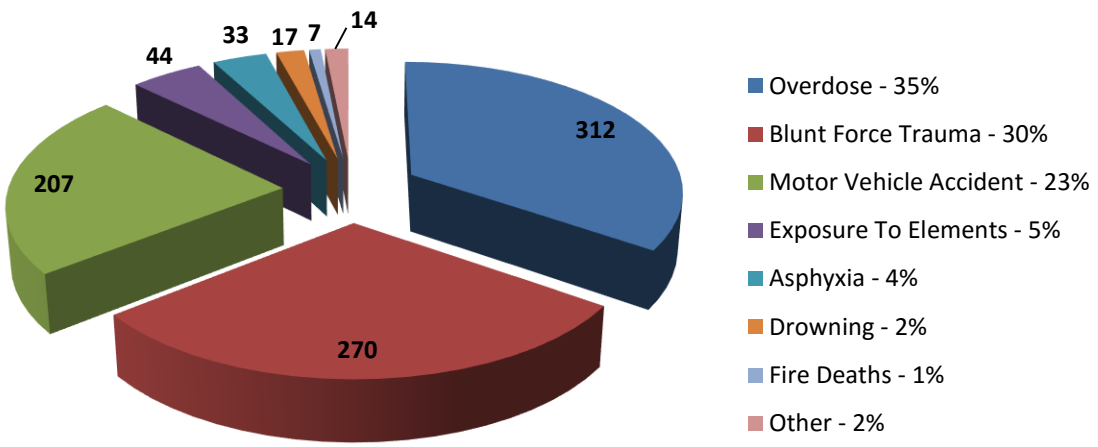
ACCIDENT DEATHS

Deaths due to accidents accounted for 43% of the ME deaths investigated by the PCOME in 2015. Accident victims were most frequently males (63%), between 50-59 years of age (18%) and died as the result of a drug or medication overdose (35%).

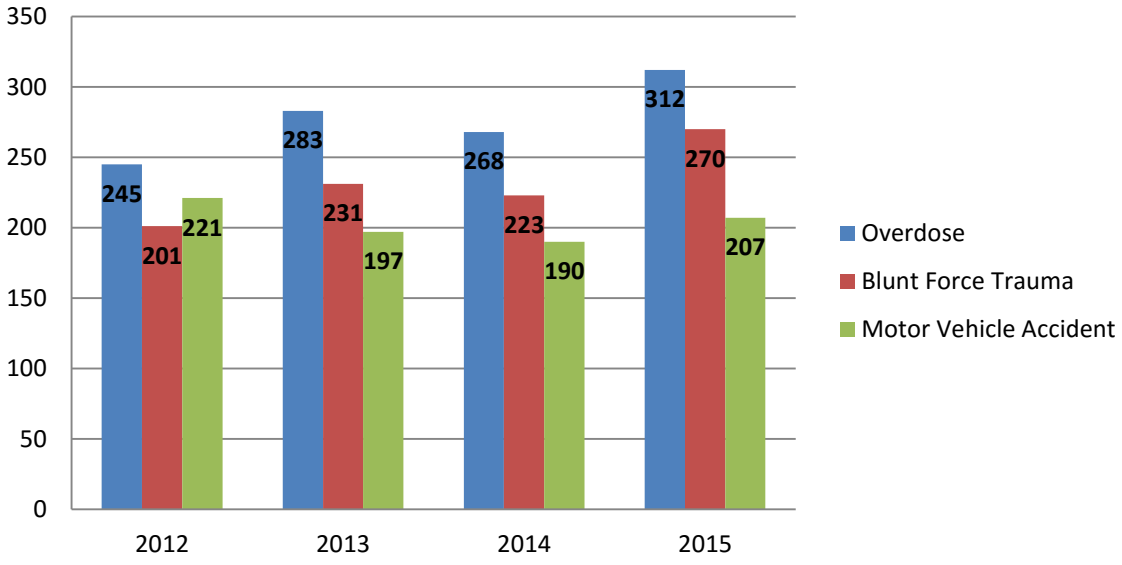




Accident by Cause - 2015

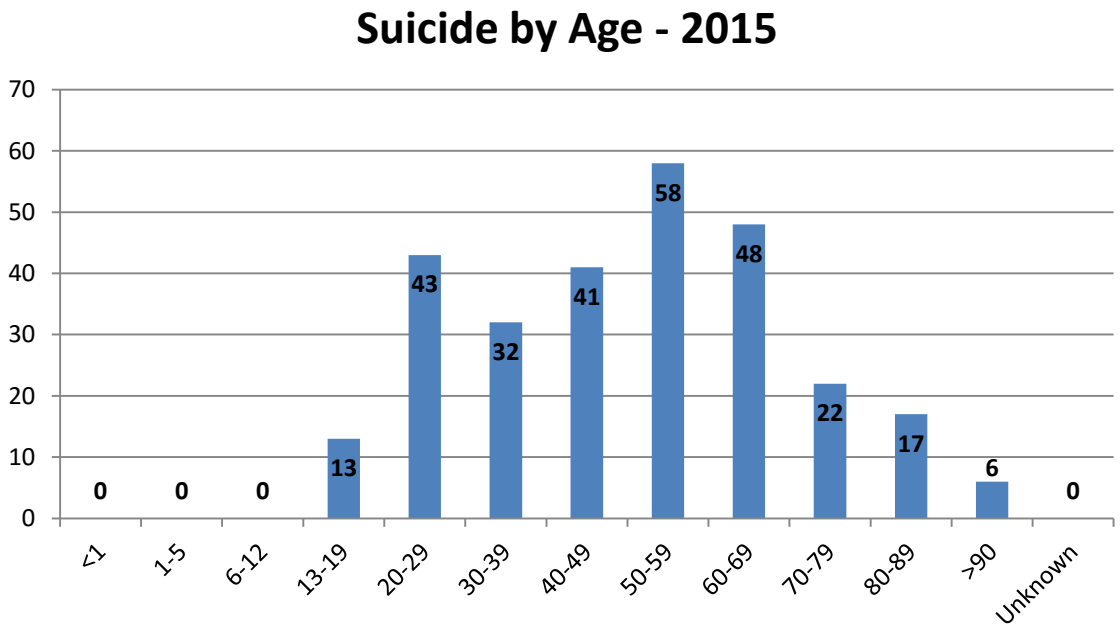


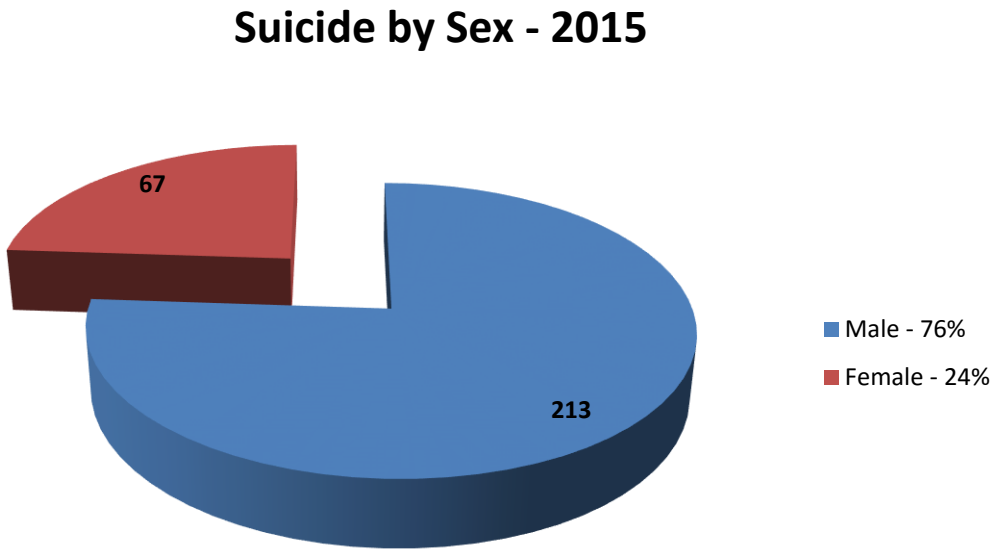
Accident by Cause (Top 3) 2012 - 2015

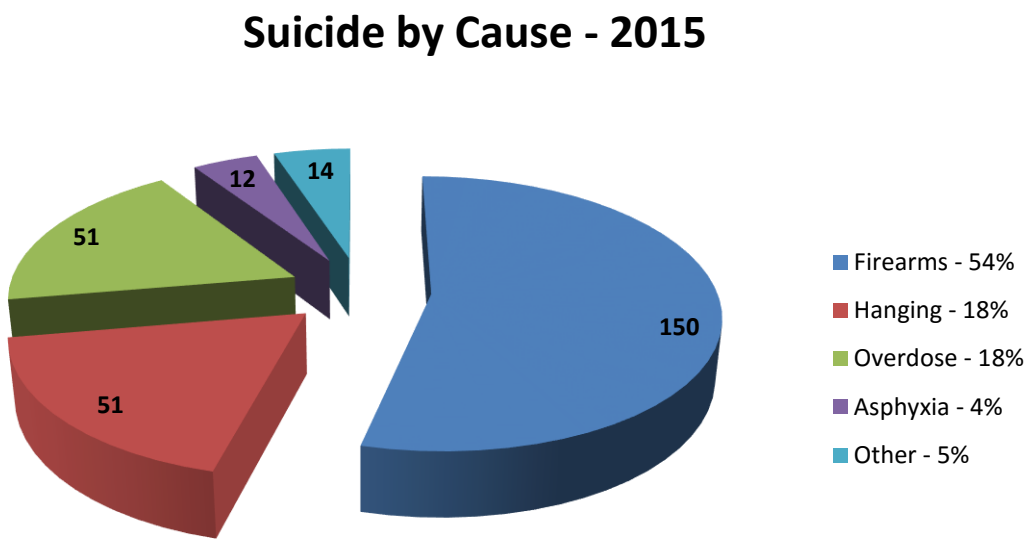


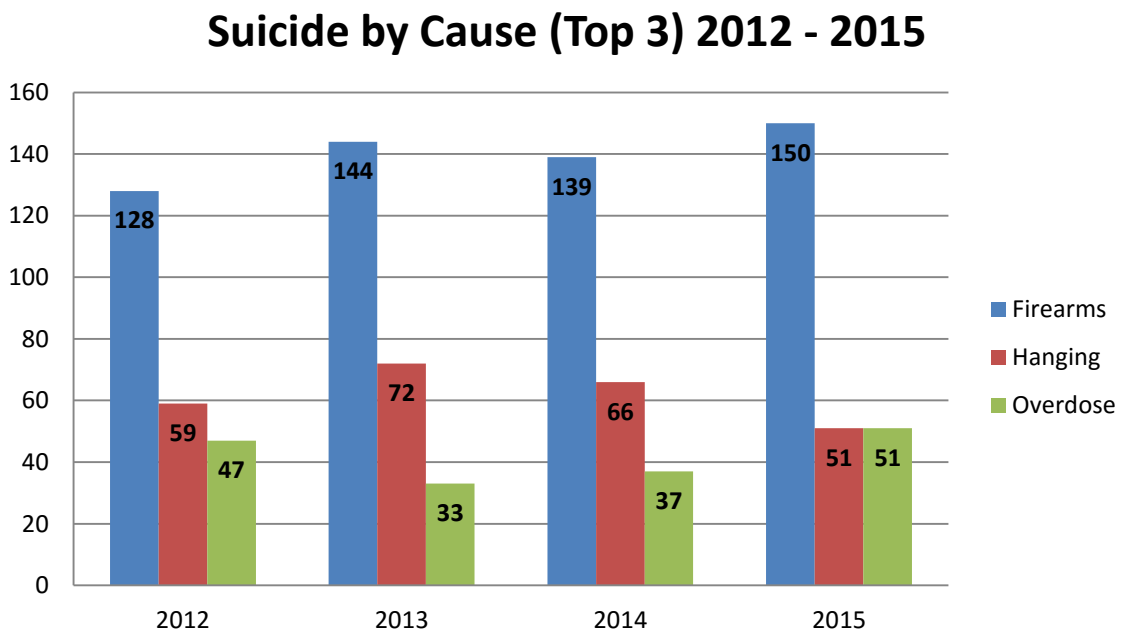
SUICIDE DEATHS

Suicide deaths accounted for 13% of the ME deaths investigated by the PCOME in 2015. Suicide victims were most frequently males (76%), between 50-59 years of age (21%) and died as the result of firearms (54%).



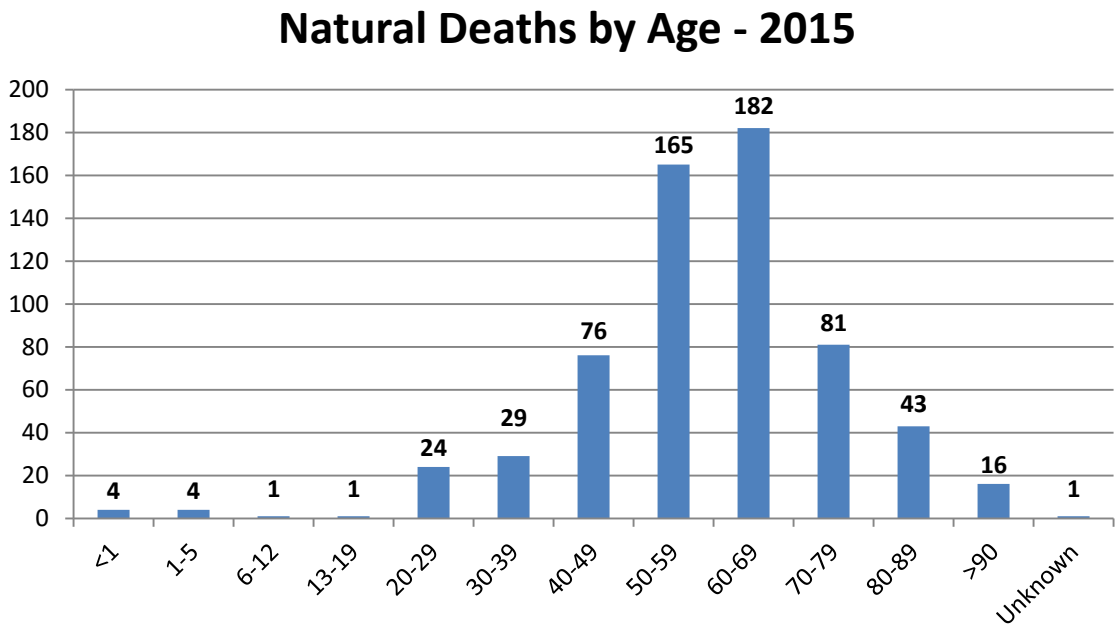


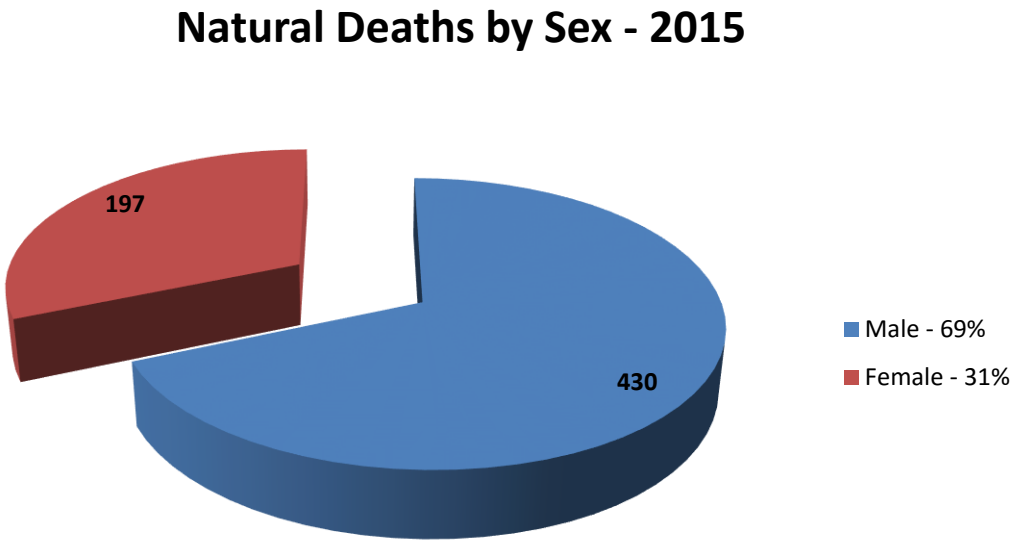

Suicide by Cause - 2015
150
51
51
12
14
Firearms - 54%
Hanging - 18%
Overdose - 18%
Asphyxia - 4%
Other - 5%

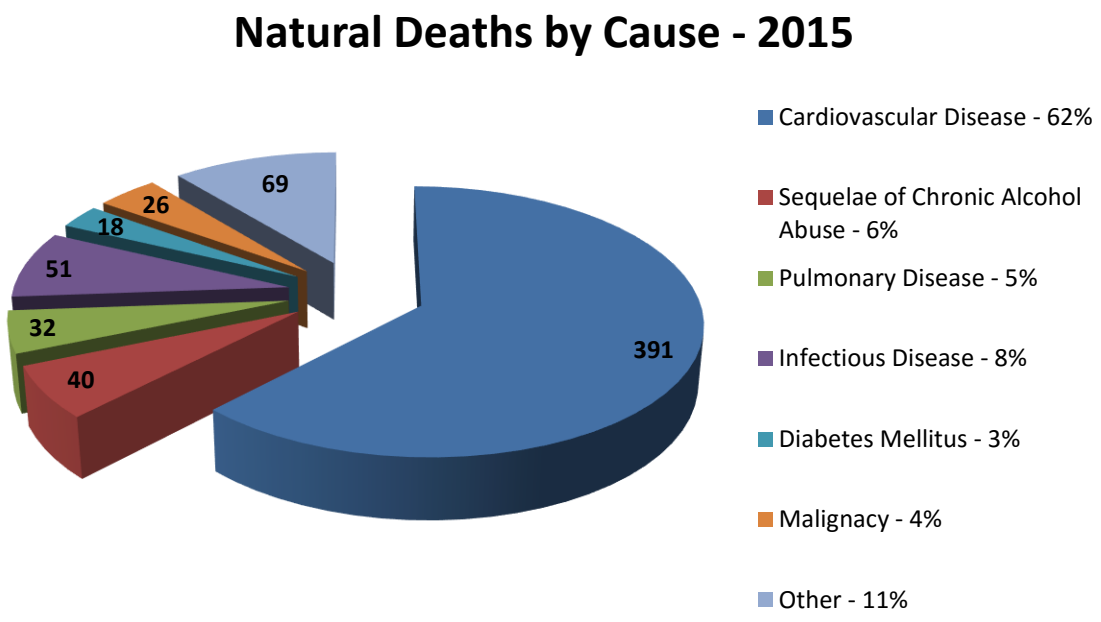

Suicide by Cause (Top 3) 2012 - 2015
160
140
120
100
80
60
40
20
0
128
59
47
144
72
33
139
66
37
150
51
51
2012
2013
2014
2015
Firearms
Hanging
Overdose

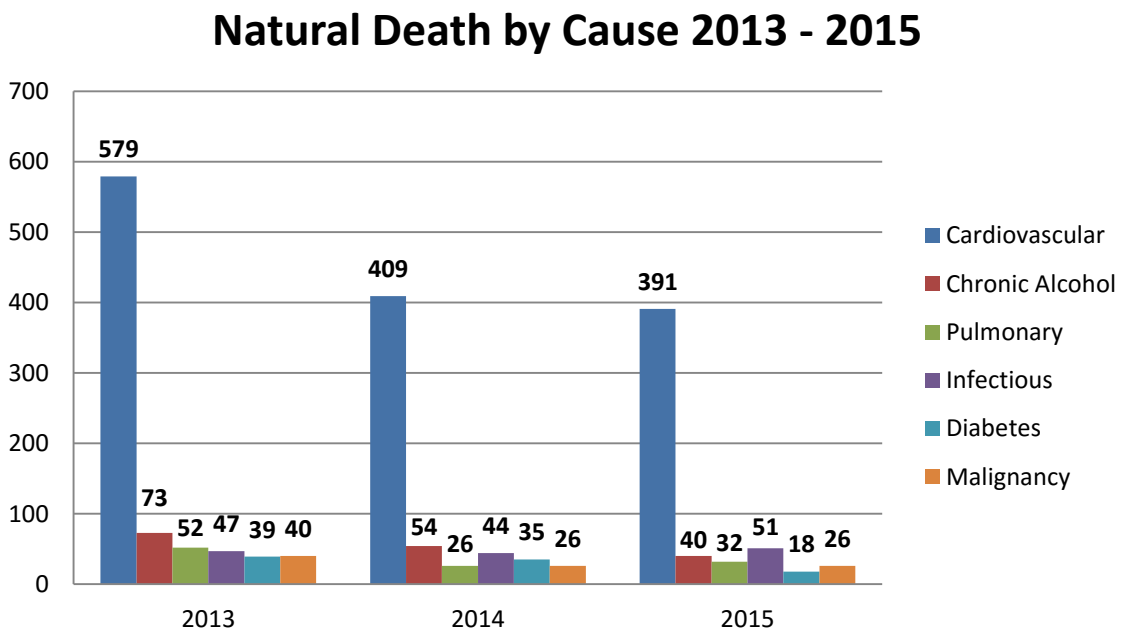
NATURAL DEATHS

Natural deaths accounted for 30% of the ME deaths investigated by the PCOME in 2015. Individuals who died from natural causes were most frequently males (69%), between 60-69 years of age (29%) and died as the result of cardiovascular disease (62%).



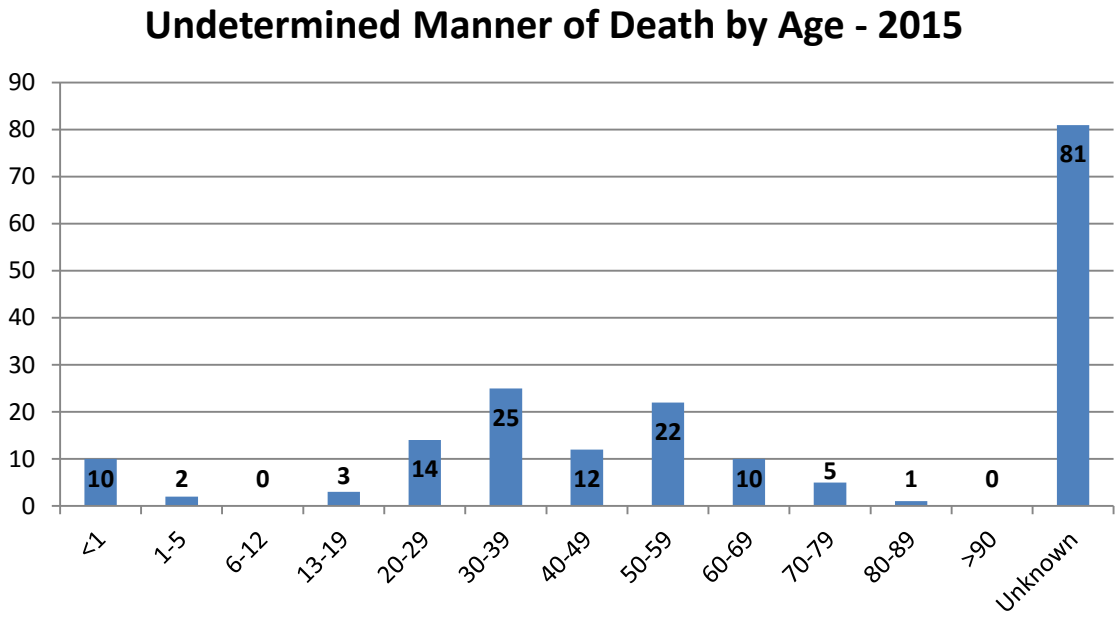


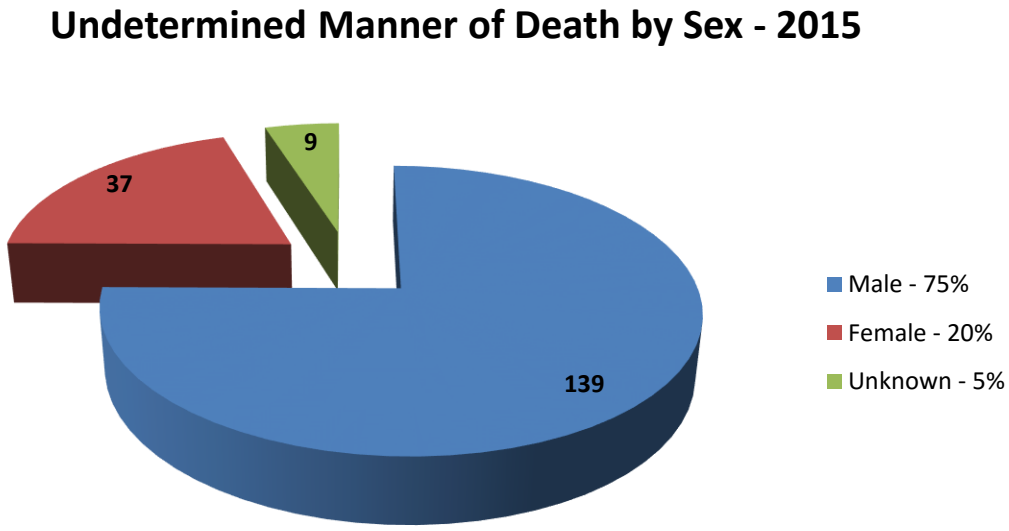

Natural Deaths by Cause - 2015
391
40
32
51
18
26
69
Cardiovascular Disease - 62%
Sequelae of Chronic Alcohol Abuse - 6%
Pulmonary Disease - 5%
Infectious Disease - 8%
Diabetes Mellitus - 3%
Malignacy - 4%
Other - 11%


Natural Death by Cause 2013 - 2015
700
600
500
400
300
200
100
0
579
73
52
47
39
40
409
54
26
44
35
26
391
40
32
51
18
26
2013
2014
2015
Cardiovascular
Chronic Alcohol
Pulmonary
Infectious
Diabetes
Malignancy

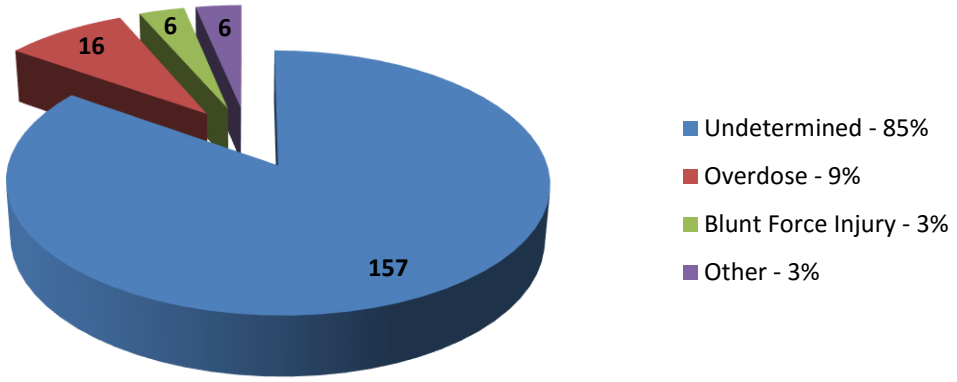
UNDETERMINED MANNER OF DEATH

Deaths in which the manner of death was undetermined accounted for 9% of the ME deaths investigated by the PCOME in 2015. Individuals who died with an undetermined manner were most frequently males (75%), of unknown age (44%) 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 Cause - 2015



OVERDOSE DEATHS

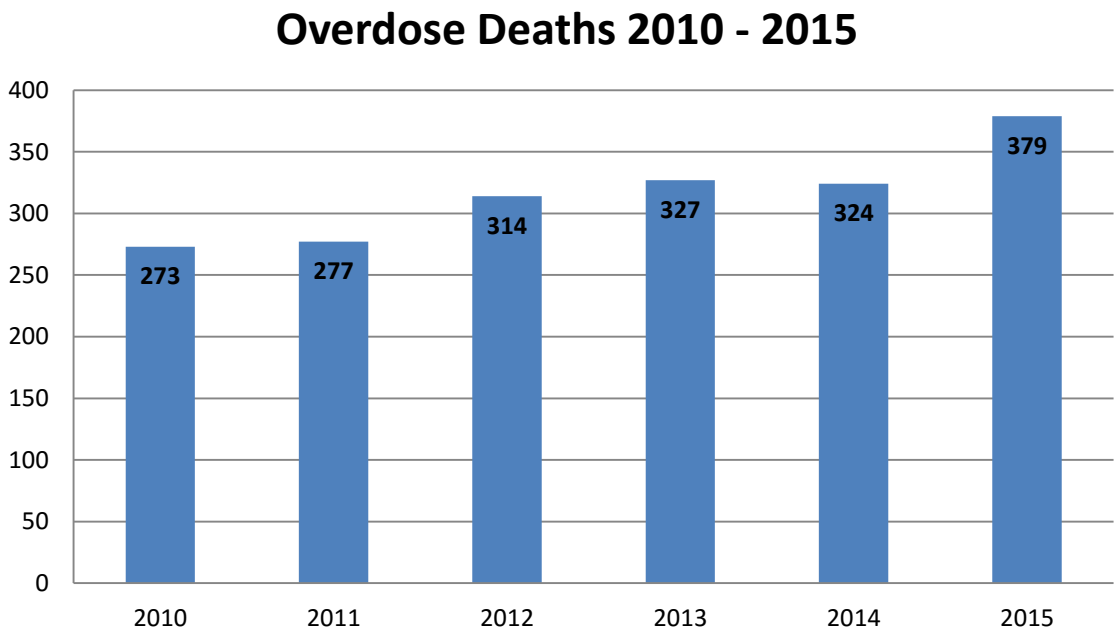
There were 379 deaths attributed to an overdose of either a single drug (211 deaths, 56%) or a combination of drugs (168 deaths, 44%) in 2015. Overdose deaths commonly involved males (56%) between the ages of 50-59 (27%). The majority of these deaths were classified as accidents (82%).

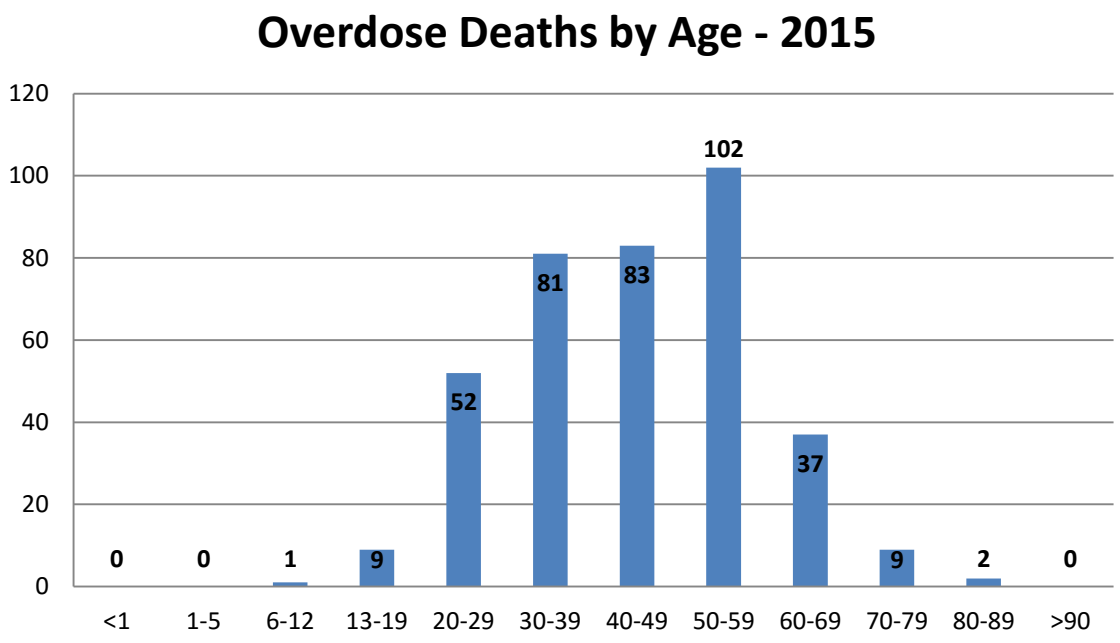
Opiate drugs (heroin, oxycodone, methadone, hydrocodone, morphine, oxymorphone, hydromorphone, tramadol, opiate unspecified) and fentanyl (a synthetic opioid narcotic) accounted for the majority of overdose deaths, either as a single drug or as a component of a poly-drug overdose. Heroin was the most commonly abused illicit drug contributing to death in 2015 followed by methamphetamine.

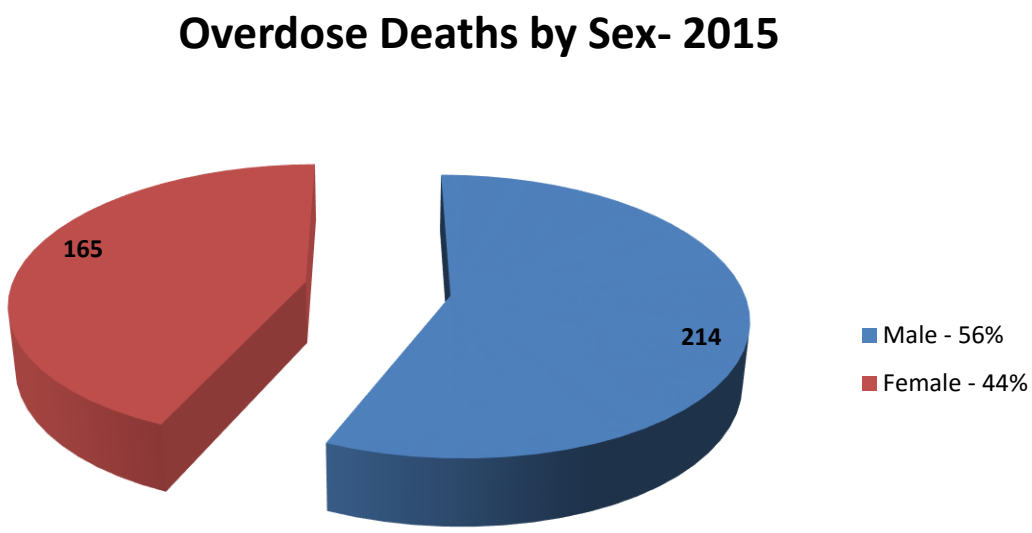
The number of heroin deaths is likely underreported as heroin is rapidly metabolized to morphine by the body and if the parent compound indicative for heroin (6-monoacetylmorphine) is not present on the toxicology report these deaths may be classified as either morphine intoxication or opiate intoxication.

Acute alcohol intoxication alone, not as component of a poly-drug overdose, accounted for 11 overdose (3%) deaths in 2015.

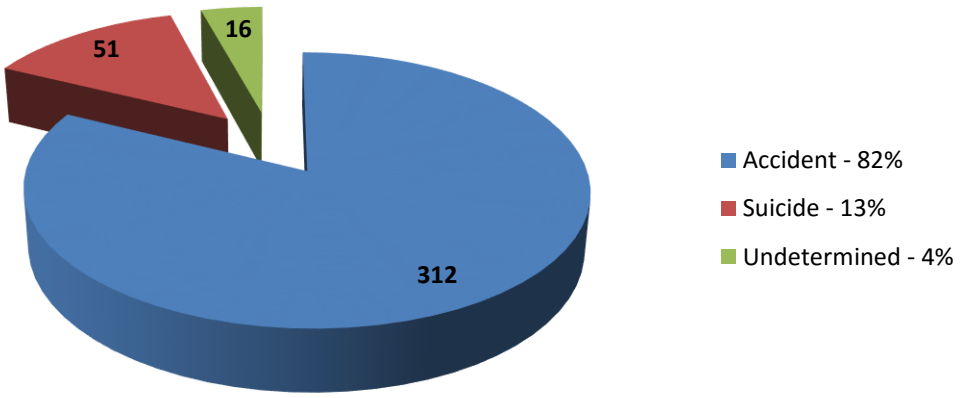
Fentanyl related deaths more than doubled from 7 deaths in 2014 to 17 deaths in 2015.



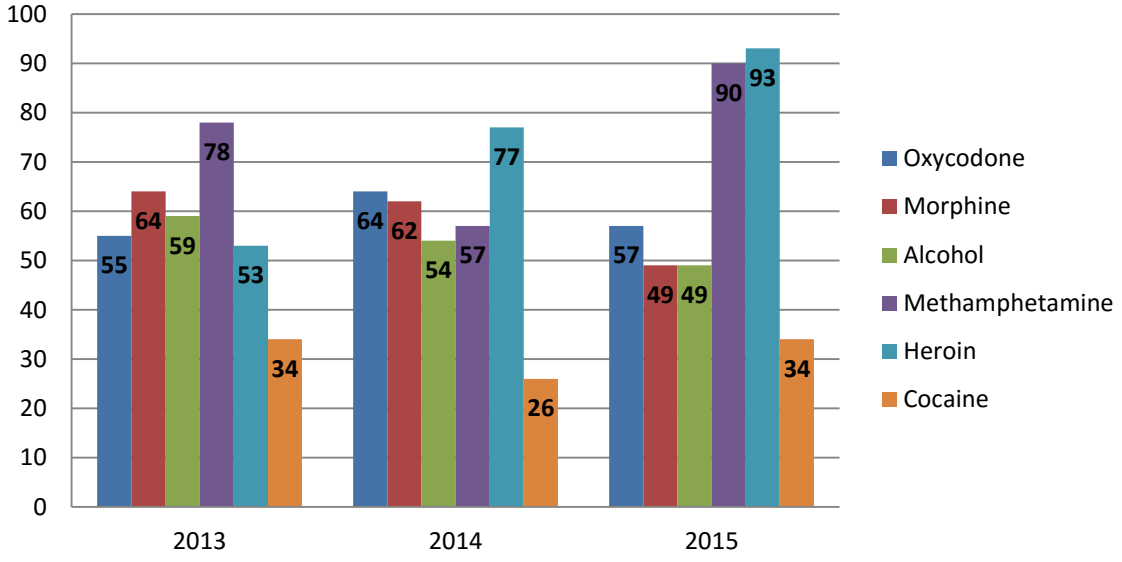

Overdose Deaths by Age - 2015
120
100
80
60
40
20
0
0
0
1
9
52
81
83
102
37
9
2
0
<1
1-5
6-12
13-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
>90

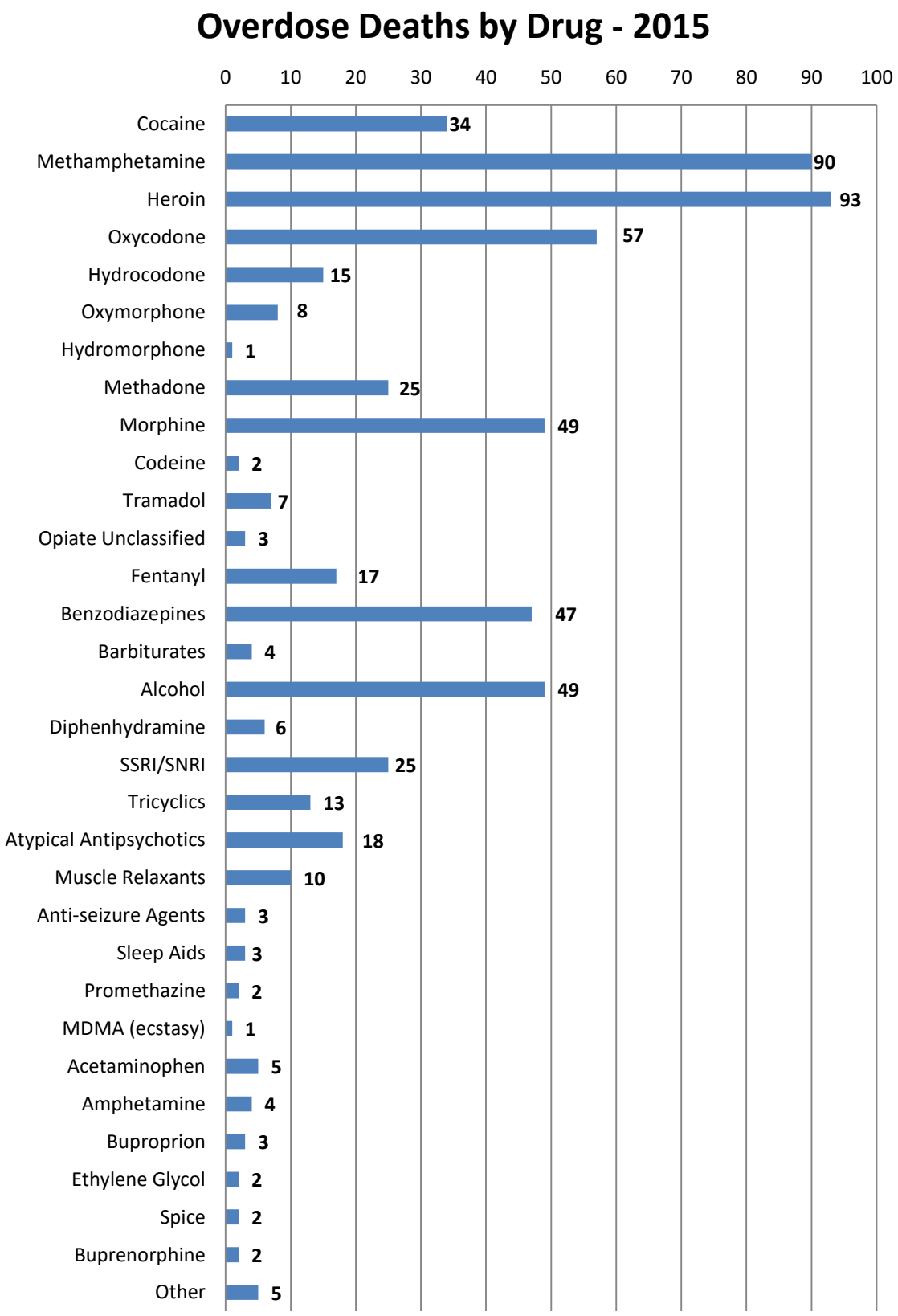

Overdose Deaths by Sex- 2015
165
214
Male - 56%
Female - 44%

Overdose Deaths by Manner - 2015



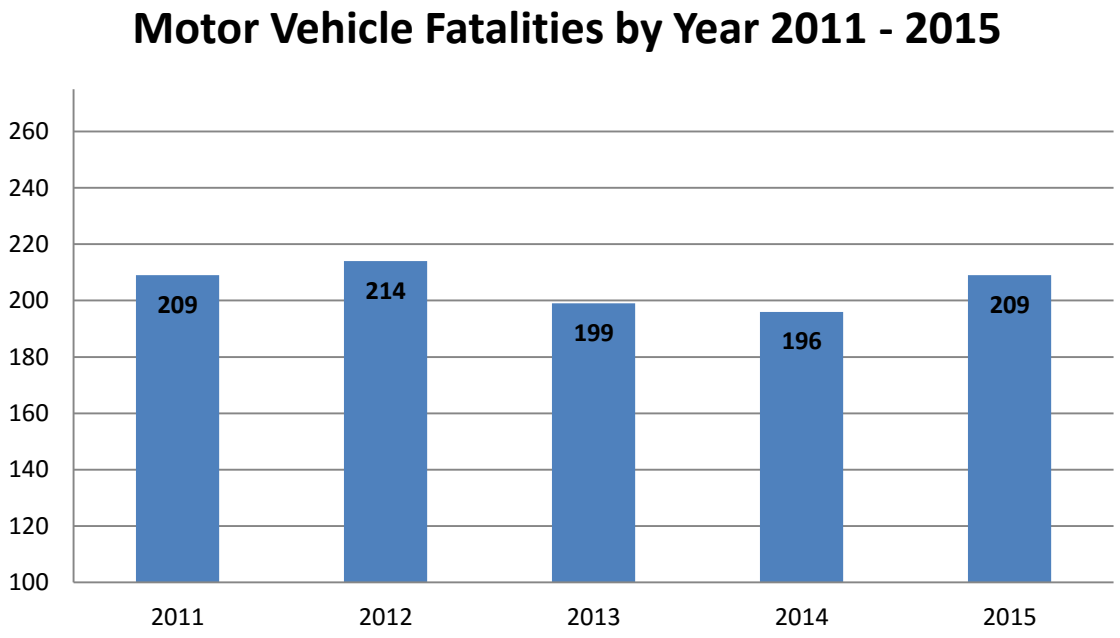
Select Drugs by Year 2013 - 2015

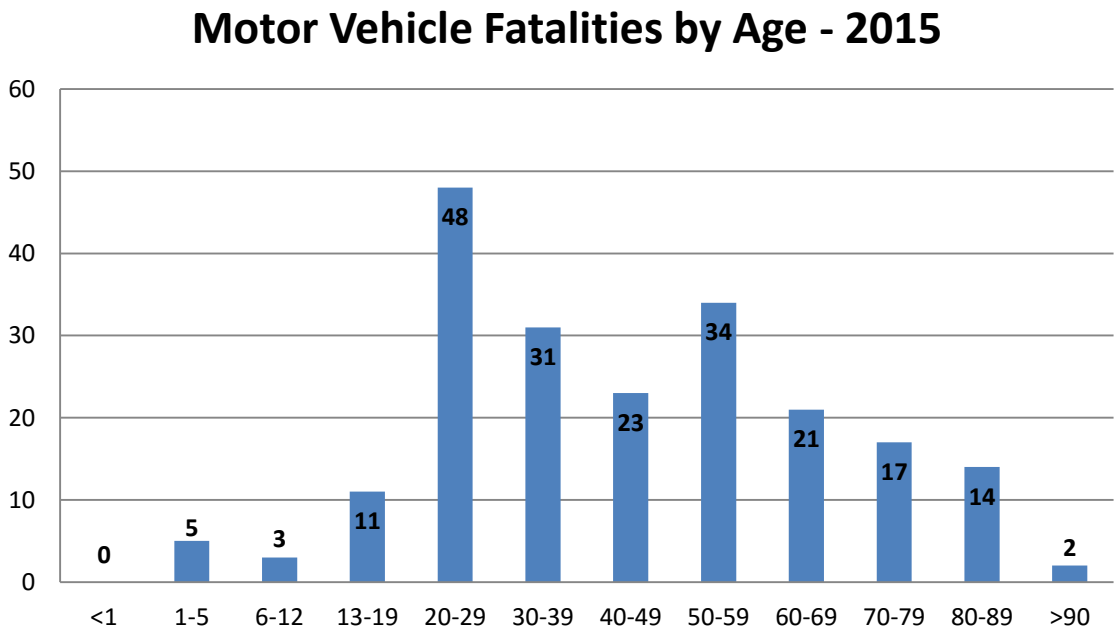



Overdose Deaths by Drug - 2015
0
10
20
30
40
50
60
70
80
90
100
Cocaine 34
Methamphetamine 90
Heroin 93
Oxycodone 57
Hydrocodone 15
Oxymorphone 8
Hydromorphone 1
Methadone 25
Morphine 49
Codeine 2
Tramadol 7
Opiate Unclassified 3
Fentanyl 17
Benzodiazepines 47
Barbiturates 4
Alcohol 49
Diphenhydramine 6
SSRI/SNRI 25
Tricyclics 13
Atypical Antipsychotics 18
Muscle Relaxants 10
Anti-seizure Agents 3
Sleep Aids 3
Promethazine 2
MDMA (ecstasy) 1
Acetaminophen 5
Amphetamine 4
Buproprion 3
Ethylene Glycol 2
Spice 2
Buprenorphine 2
Other 5

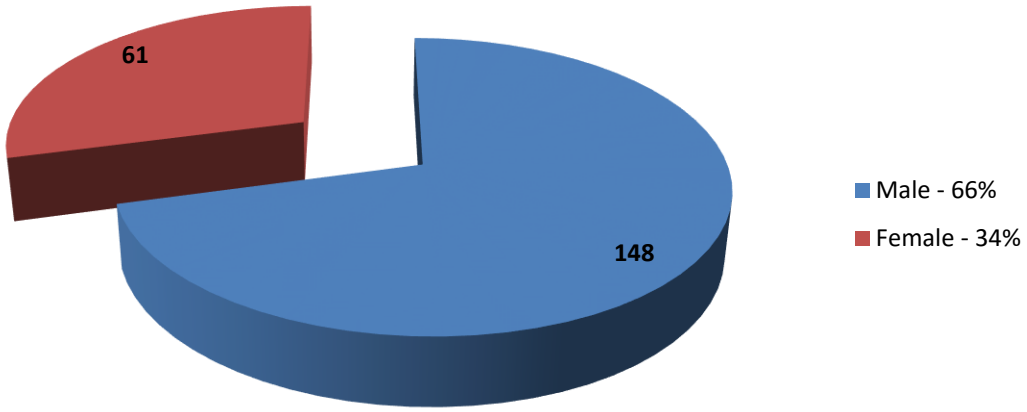
MOTOR VEHICLE RELATED FATALITIES

Motor vehicle related fatalities accounted for 209 total deaths in 2015. The majority, 138 deaths, were occupants of a motor vehicle involved in an accident (MVA). Of the remaining, 22 were motorcycle accidents (MCA), 38 were pedestrians or bicyclists struck by vehicles and 3 were operating an all-terrain vehicle (ATV). Individuals who died from motor vehicle related fatalities were most frequently males (66%) and between 20-29 years of age (23%).

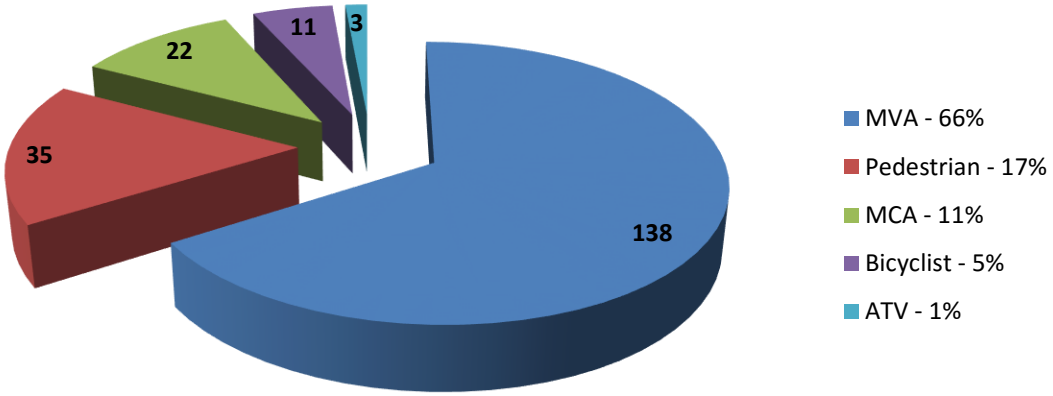




Motor Vehicle Fatalities by Sex - 2015



Motor Vehicle Fatalities by Type - 2015

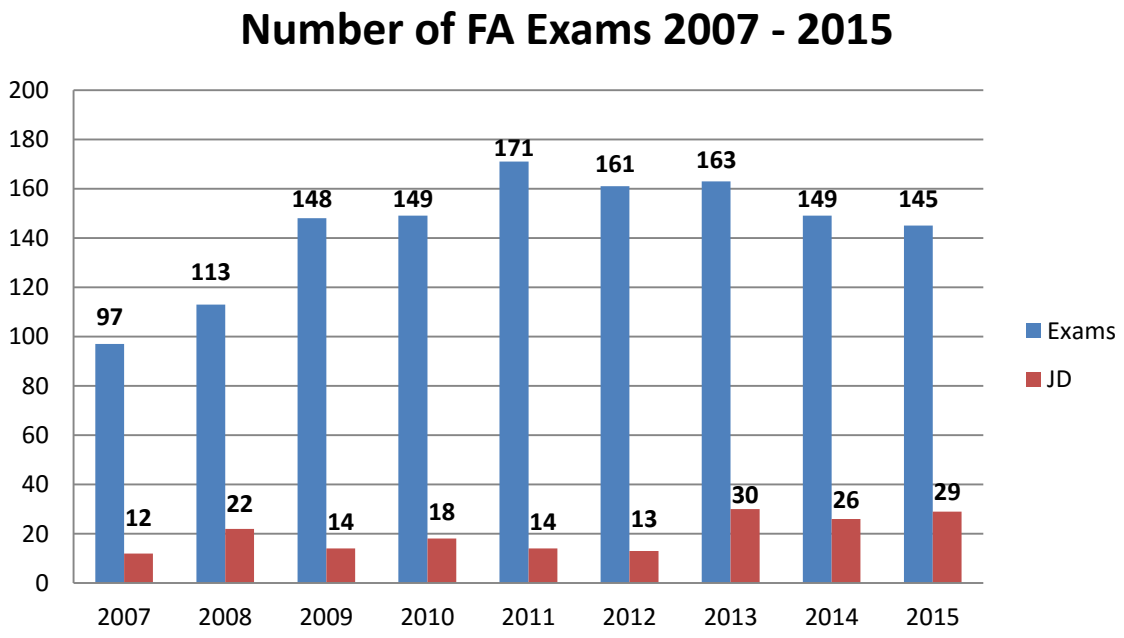


W.H. Birkby Forensic Anthropology Laboratory

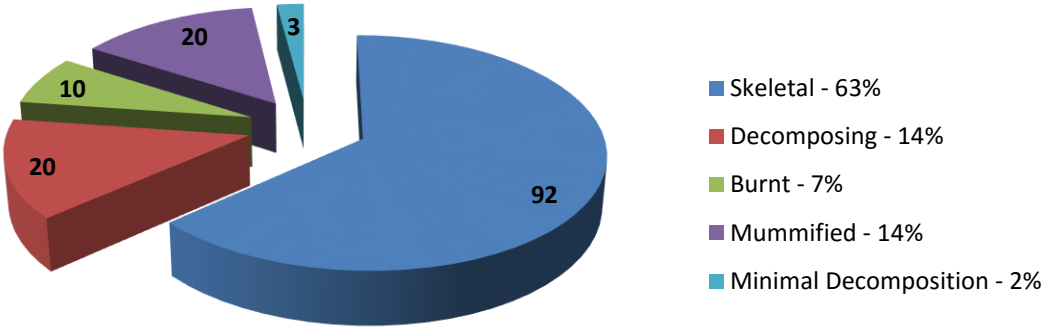
Forensic Anthropologists at the W.H. Birkby Forensic Anthropology Laboratory within the PCOME performed 145 examinations (biological profiles, trauma evaluations, dental examinations and examinations for identification) in 2015 on human remains of forensic significance. An additional 29 examinations were performed on remains ultimately deemed non-human, prehistoric or otherwise not forensically significant and jurisdiction of the remains was declined (JD) in those 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 2015, skeletal remains comprised 63% of FA examinations. Four main types of exams are performed; biologic profiles, dental, trauma and identification examinations.

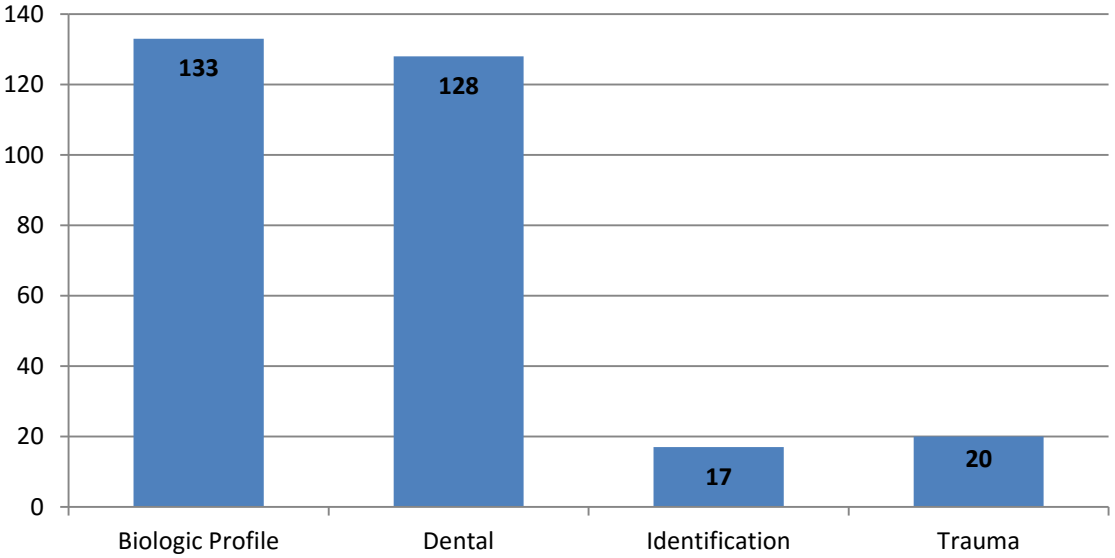
Biological profiles refer to charting, measurements, descriptions, radiographs and photographs taken to estimate sex, age, ancestry, stature and postmortem interval of a set of remains. Dental and identification examinations entail charting, descriptions, radiographs and photographs in an effort to identify 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 (92%) FA exams include a biological profile with dental examination (88%) when applicable. Less common are examinations for identification (12%) or trauma (14%) with or without biological profiles and dental examinations.



FA Exam by Condition of Remains - 2015



FA Examination by Type - 2015



UNDOCUMENTED BORDER CROSSER (UBC) REMAINS

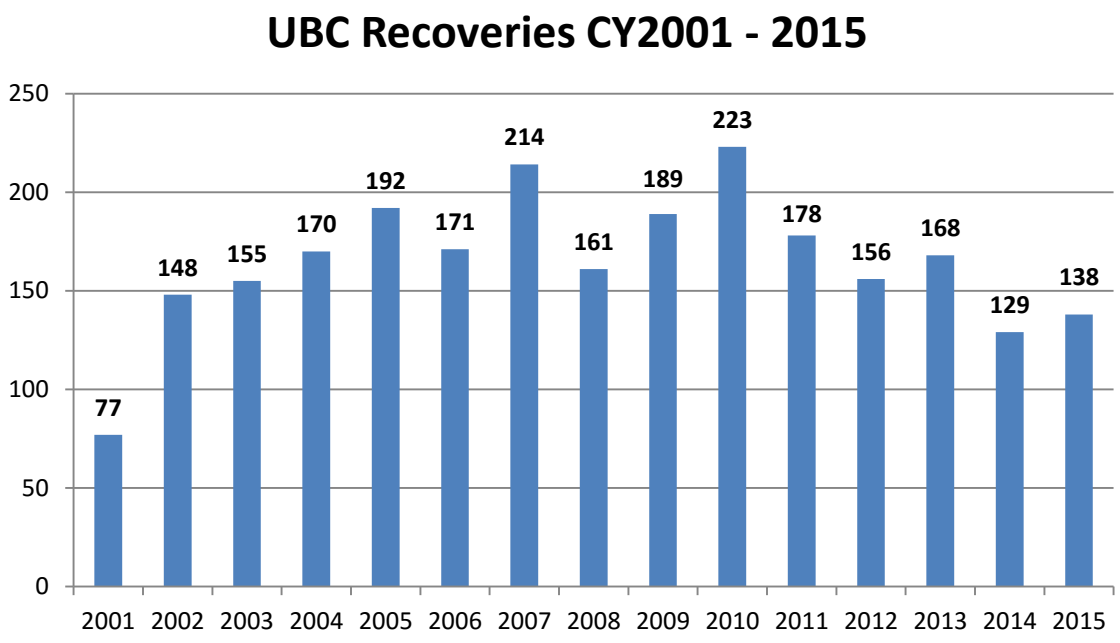
The term 'UBC' refers to foreign nationals who die attempting to cross the southern Arizona desert without permission from the United States government. Calendar year (CY) 2010 saw the highest number of UBC recoveries (223) recorded at the PCOME as compared to the annual average (171 recoveries per year on average from 2002 - 2015). The PCOME has received 2,465 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.

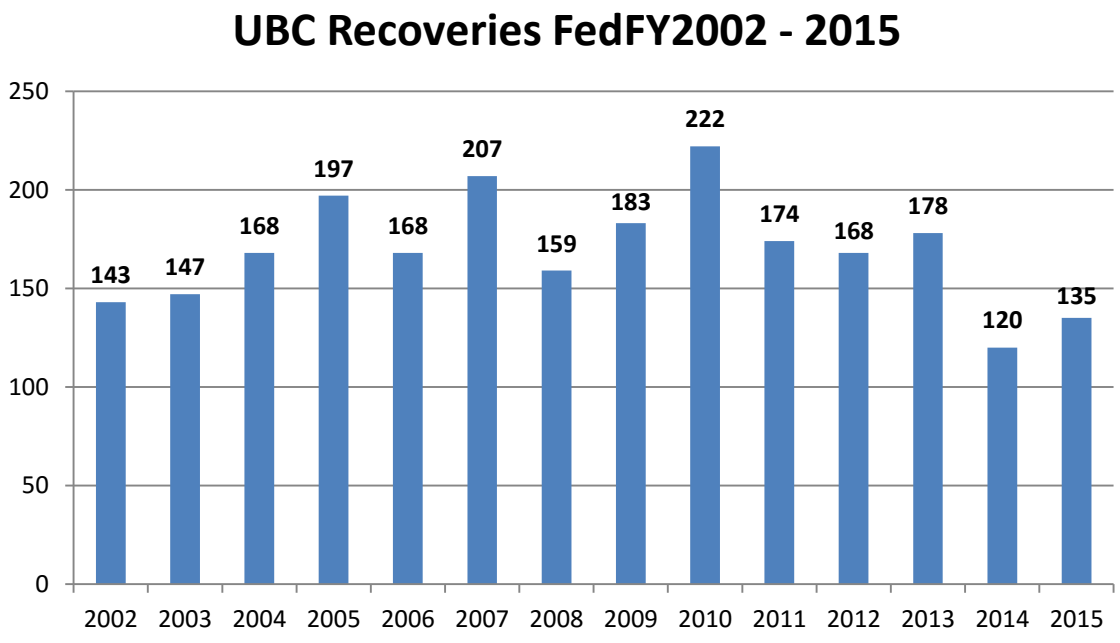
There were 138 UBC recoveries in calendar year 2015. As is the historic norm, UBC recoveries peaked during the warmer months (June – Sep) with 80 recoveries (58% of total for year) in 2015. Many remains are not identifiable due to postmortem changes and efforts by UBCs to obscure their identities. Of the decedents who were identified, 39% (22 decedents) were between 30-39 years of age. Additionally, 86% (119) of the recovered remains, identified or unidentified, were males, 8% (11) were females and 6% (8) were of unidentifiable sex.

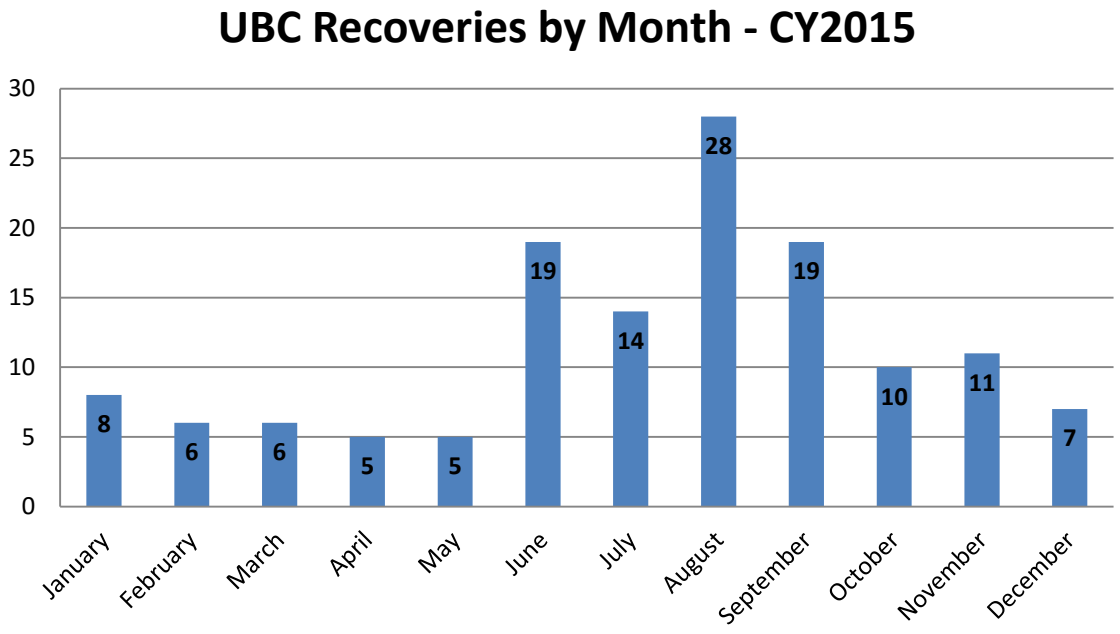
Since the exact date and time of death of found remains are often unknown, PCOME staff determine a 'postmortem interval (PMI)', which is an assessment of what period of time elapsed from death to recovery of the remains. A 1-8 body condition scale was developed in 2013 to provide a more objective measure 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 2015, 19 remains (condition 1) were found within less than a day of death (14%), 48 remains (conditions 2-4) were found with a few days up to a few weeks from death (35%), and skeletal remains (body conditions 5-7) accounted for 70 (51%) of the recovered remains.

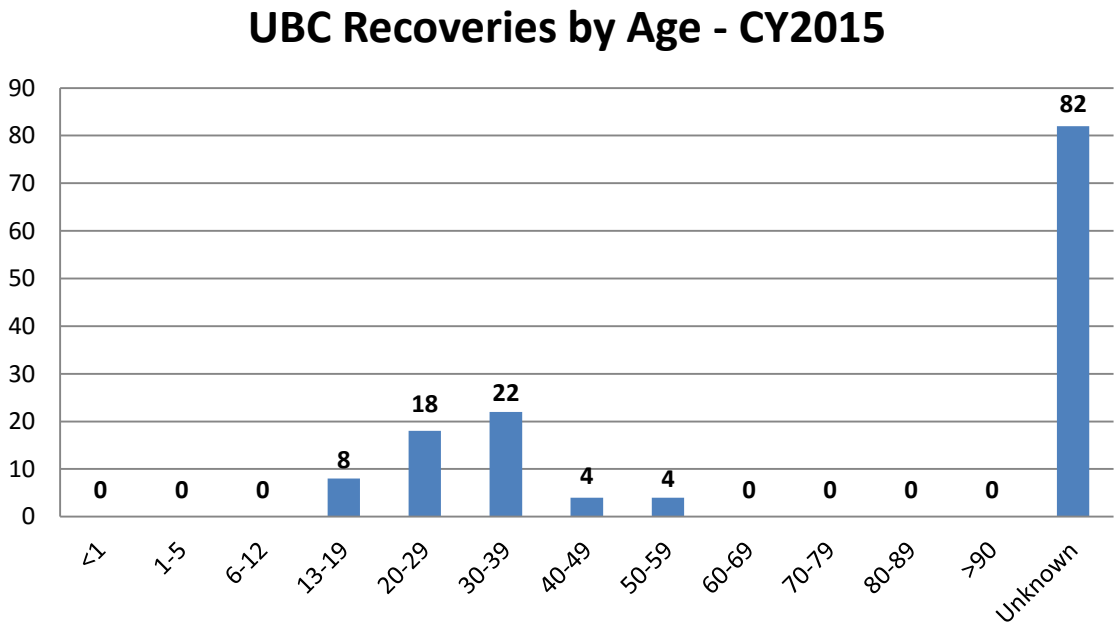
The cause of death was undetermined in 72% (100) of cases, primarily due to limitations of examination of decomposed and skeletal remains. Of the remainder, environmental exposure to extremes in heat or cold combined with dehydration comprised 20% (28) of deaths. Other, less frequent, causes of death included blunt force injuries from falls or motor vehicle accidents (4), drowning (3), gunshot wound injuries (1 case), electrocution (1), and envenomation (1).

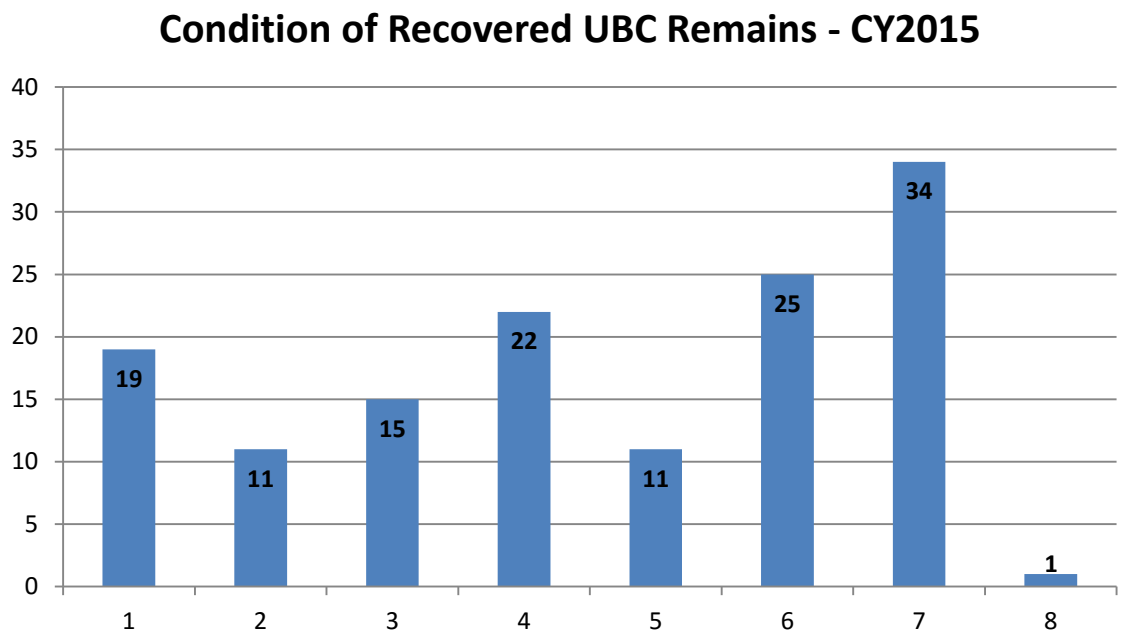
In 2015, 49 (89%) of identified UBCs were of Mexican nationality, followed by Guatemalans (2 or 4%), Hondurans (2 or 4%) and Salvadorans (2 or 4%). Since 2001, identified UBCs of Mexican nationality have been the most numerous (1,338, 85%), followed by Guatemalans (131, 8%) and Salvadorans (42, 3%). Of the 2,469 decedents since 2001, 1,578 (64%) have been identified, 309 (20%) by DNA comparison to a family or law enforcement reference sample. As of December 31, 2015, 887 decedents remain unidentified.


UBC Recoveries CY2001 - 2015
250
200
150
100
50
0
77
148
155
170
192
171
214
161
189
223
178
156
168
129
138
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

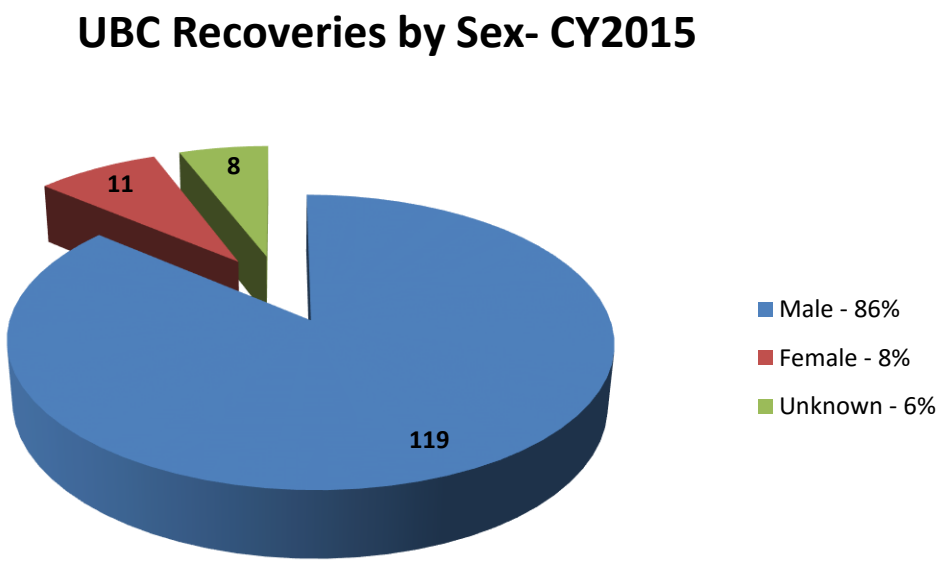

UBC Recoveries FedFY2002 - 2015
250
200
150
100
50
0
143
147
168
197
168
207
159
183
222
174
168
178
120
135
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015


UBC Recoveries by Month - CY2015
30
25
20
15
10
5
0
8
6
6
5
5
19
14
28
19
10
11
7
January
February
March
April
May
June
July
August
September
October
November
December

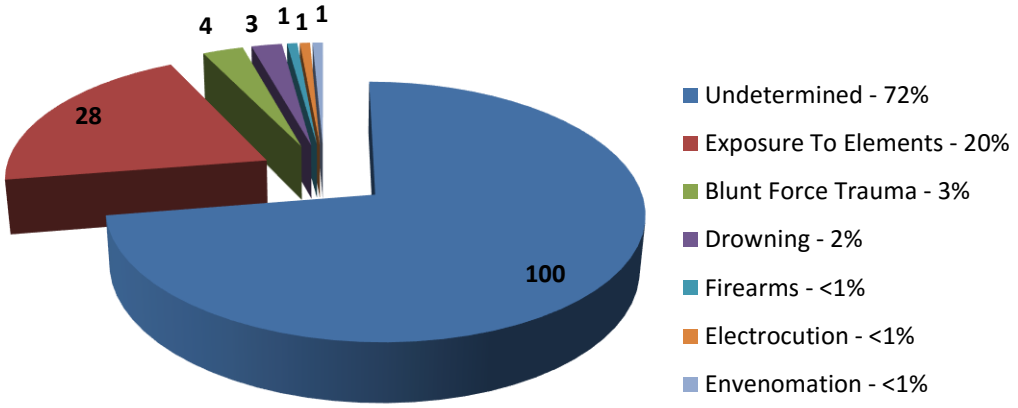

UBC Recoveries by Age - CY2015
90
80
70
60
50
40
30
20
10
0
0
0
0
8
18
22
4
4
0
0
0
0
82
<1
1-5
6-12
13-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
>90
Unknown



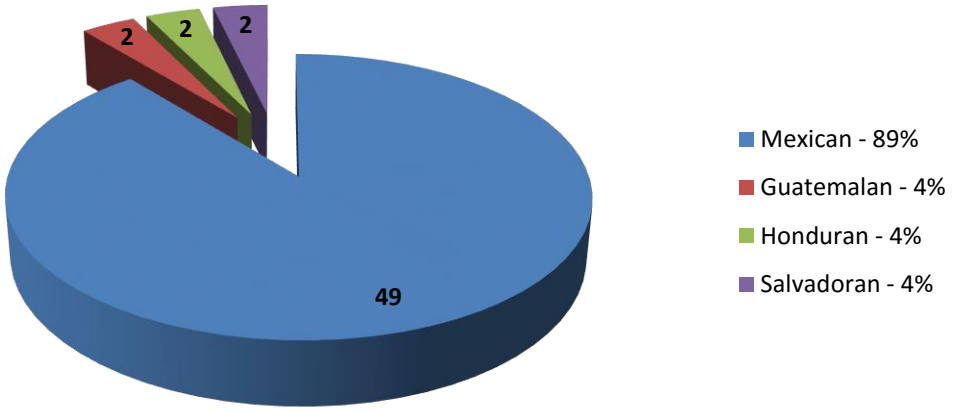
1 - Fully fleshed (PMI < 1 day)
2 - Decomposed (PMI < week)
3 - Decomposition with focal skeletonization (PMI < 3 weeks)
4 - Mummification with skeletonization (PMI < 5 weeks)
5 - Skeletonization with articulation/ligamentous attachments (PMI < 3 months)
6 - Complete skeletonization with disarticulation (PMI < 6-8 months)
7 - Complete skeletonization with bone degradation (PMI > 6-8 months)
8 - Other

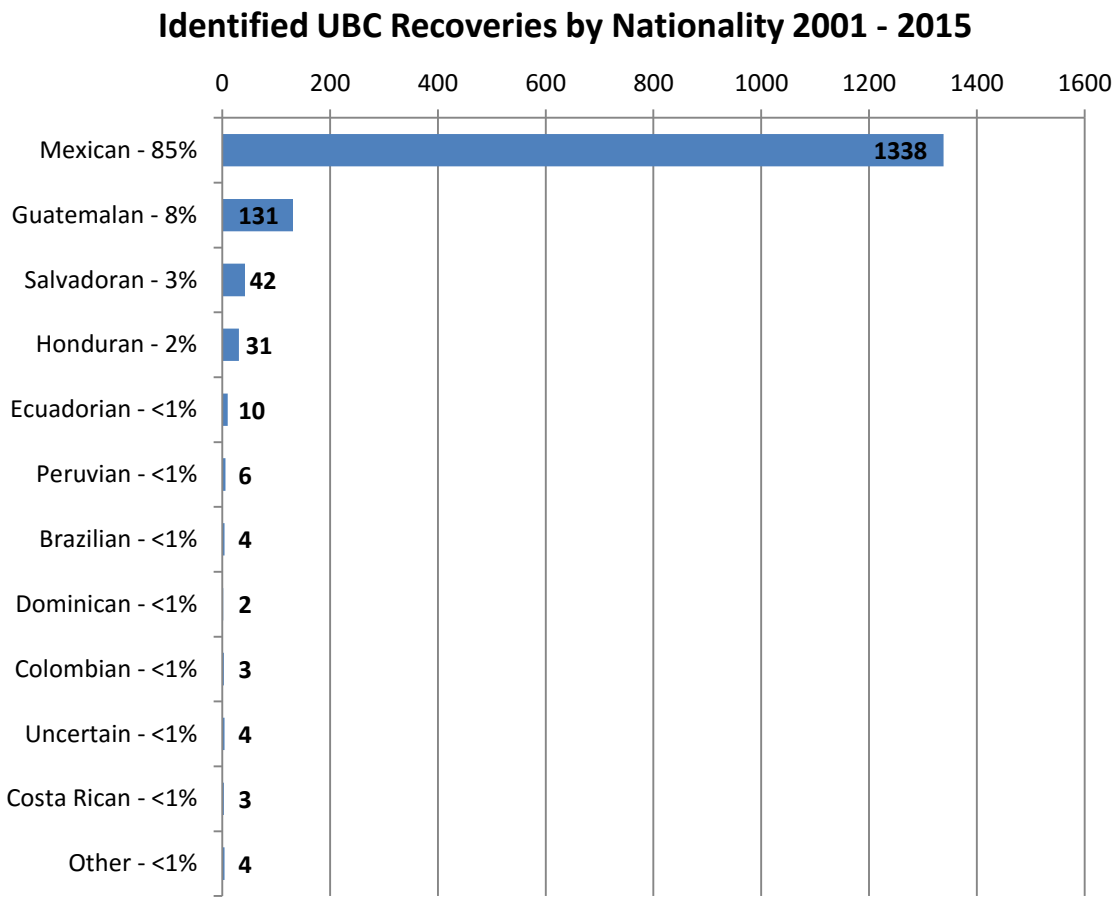


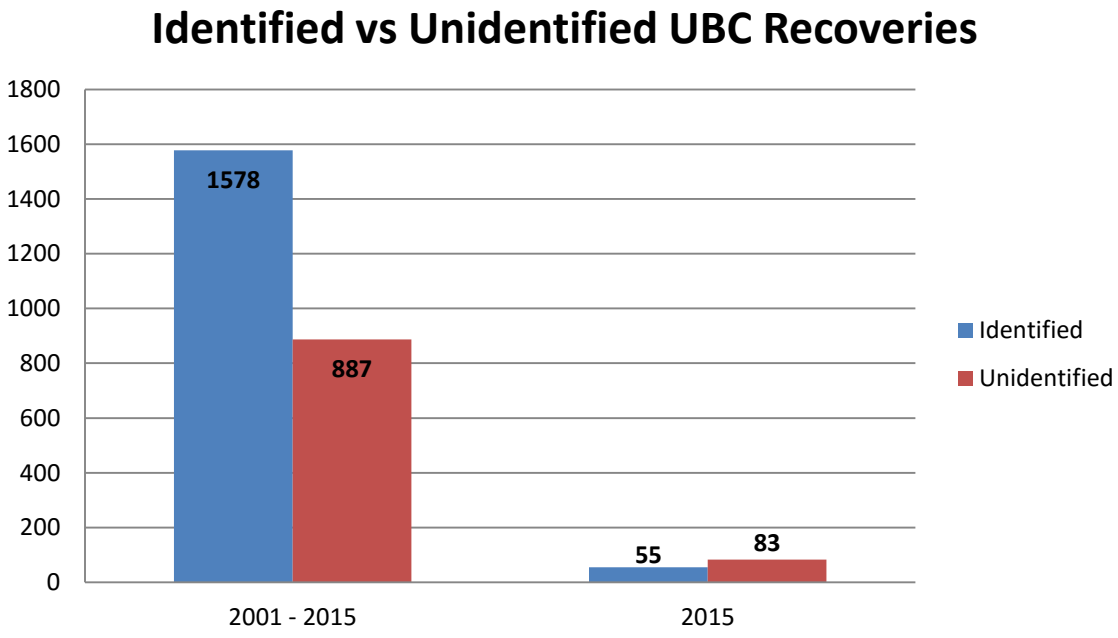
UBC Recoveries by CYCause - 2015

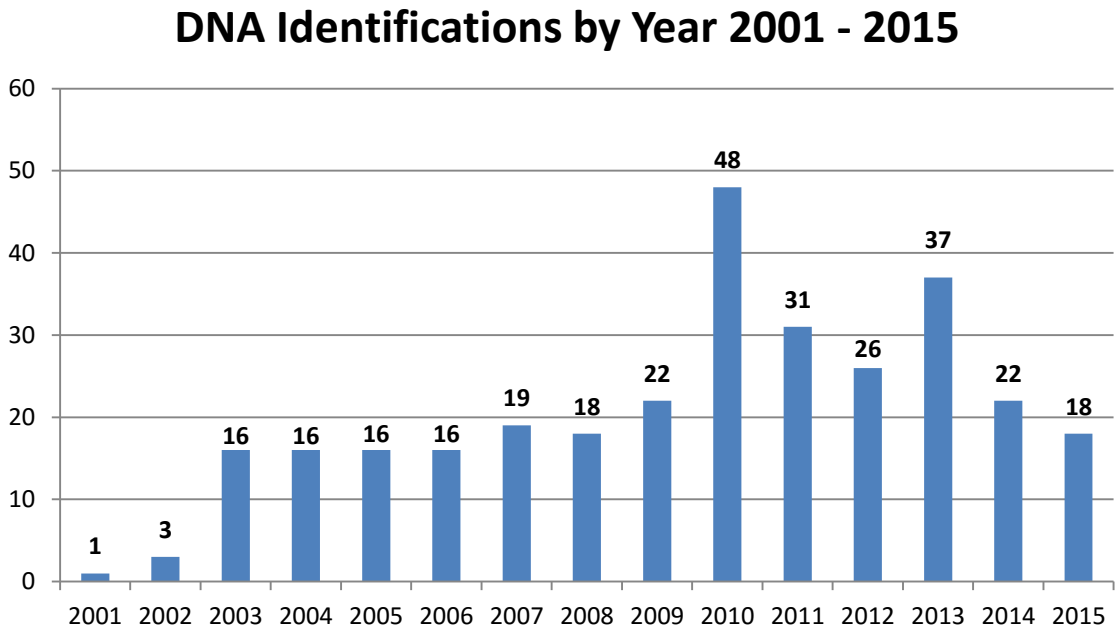


Identified UBC Recoveries by CYNationality - 2015




Identified UBC Recoveries by Nationality 2001 - 2015
0
200
400
600
800
1000
1200
1400
1600
Mexican - 85%
1338
Guatemalan - 8%
131
Salvadoran - 3%
42
Honduran - 2%
31
Ecuadorian - <1%
10
Peruvian - <1%
6
Brazilian - <1%
4
Dominican - <1%
2
Colombian - <1%
3
Uncertain - <1%
4
Costa Rican - <1%
3
Other - <1%
4

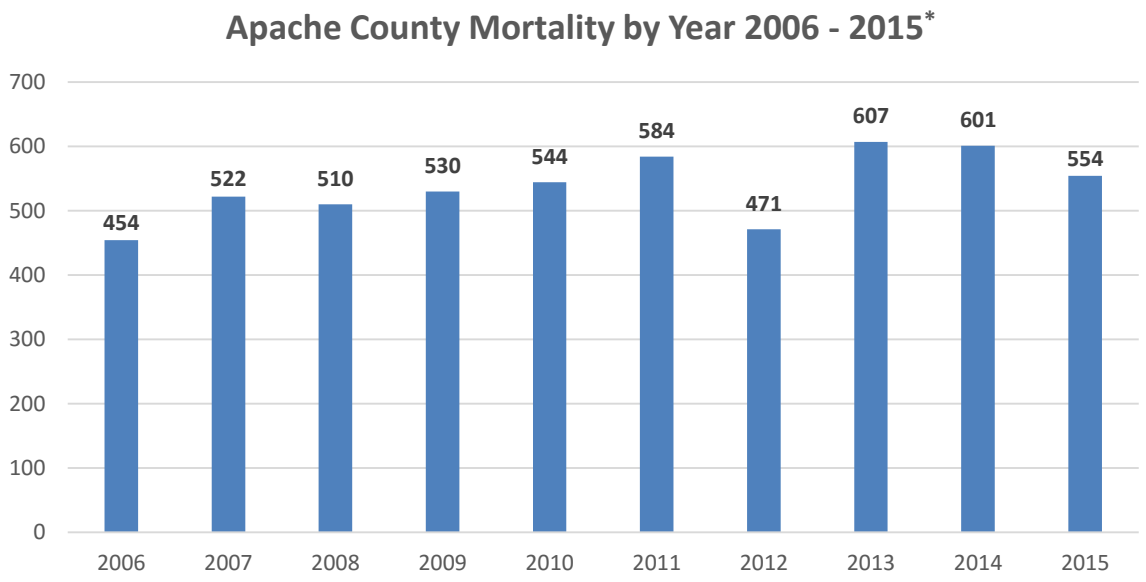

Identified vs Unidentified UBC Recoveries
1800
1600
1400
1200
1000
800
600
400
200
0
1578
887
55
83
2001 - 2015
2015
Identified
Unidentified


DNA Identifications by Year 2001 - 2015
60
50
40
30
20
10
0
1
3
16
16
16
16
19
18
22
48
31
26
37
22
18
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

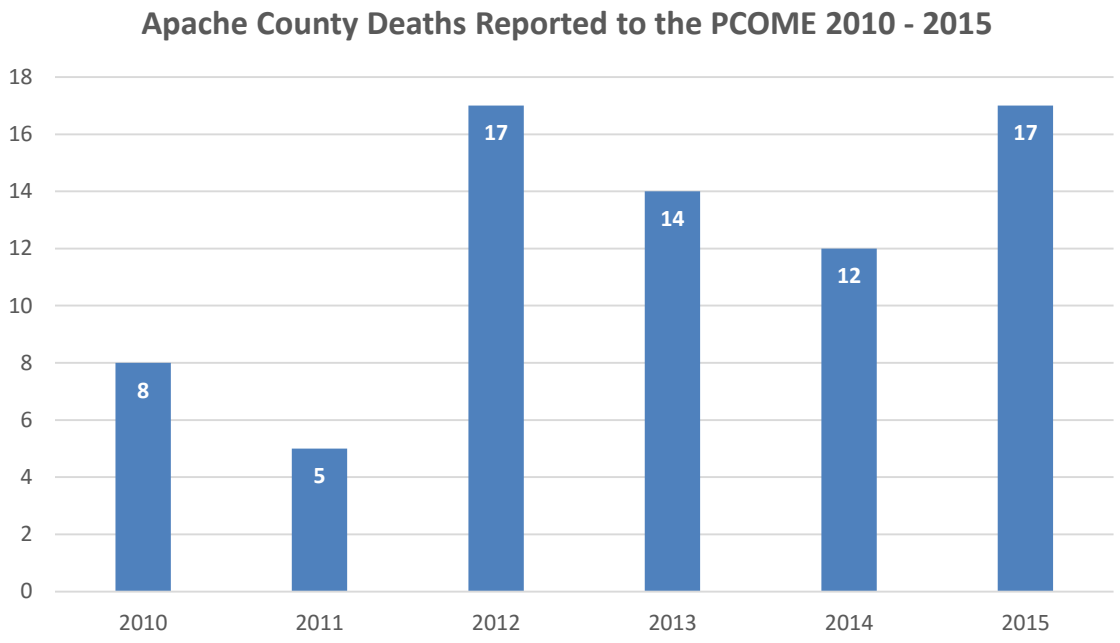
Apache County

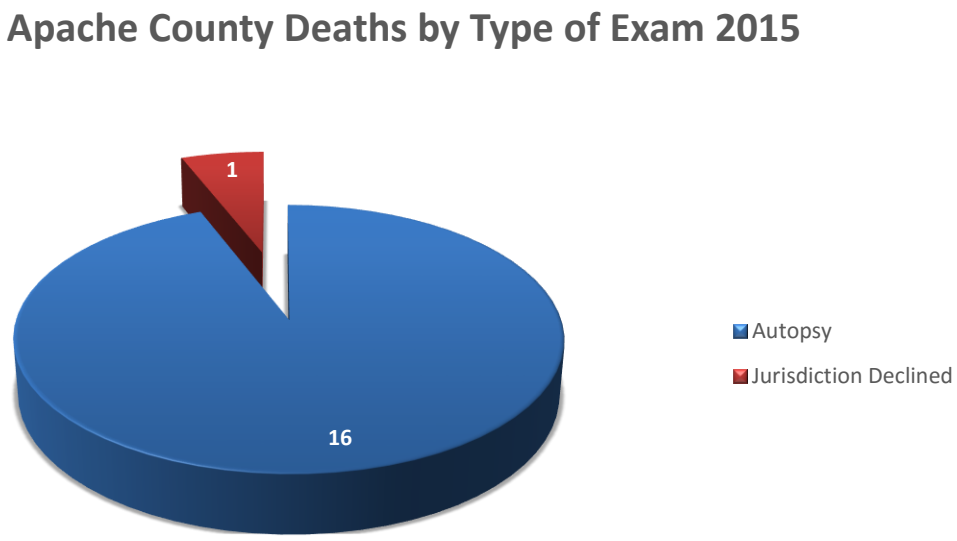
Apache County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591); who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Apache County. The Apache County AME does not perform 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).

Seventeen deaths from Apache County were reported to the PCOME in 2015, sixteen of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

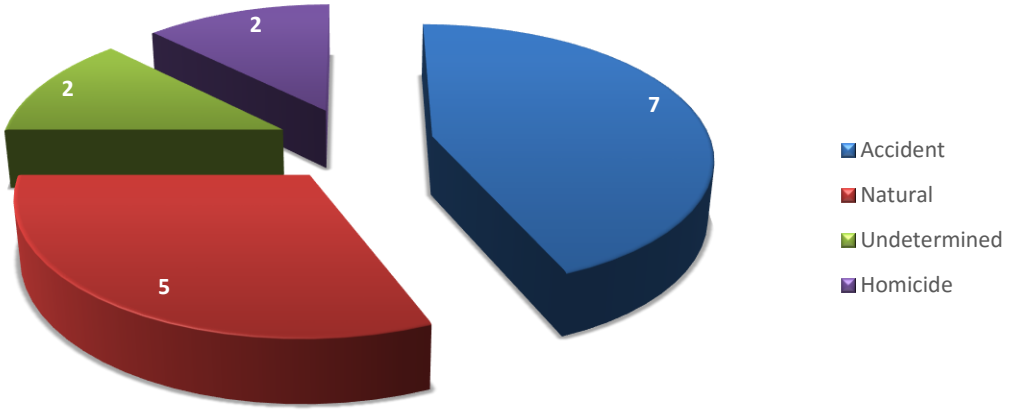


*Arizona Department of Vital Statistics as of 06/02/16

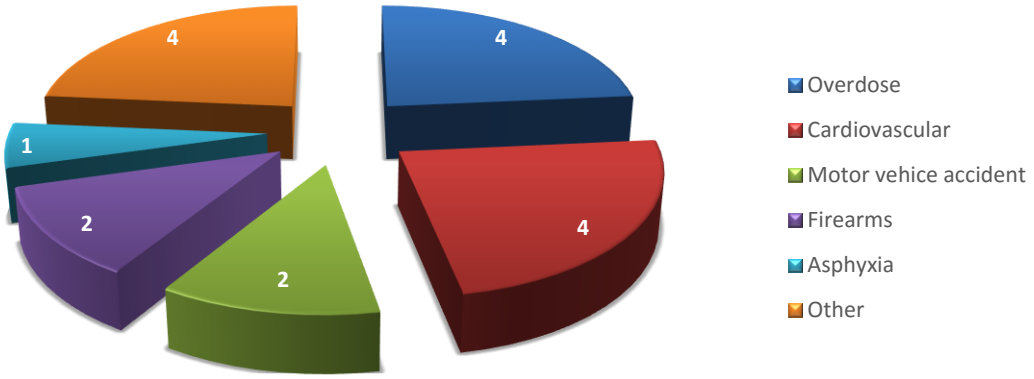

Apache County Deaths Reported to the PCOME 2010 - 2015
18
16
14
12
10
8
6
4
2
0
8
5
17
14
12
17
2010
2011
2012
2013
2014
2015

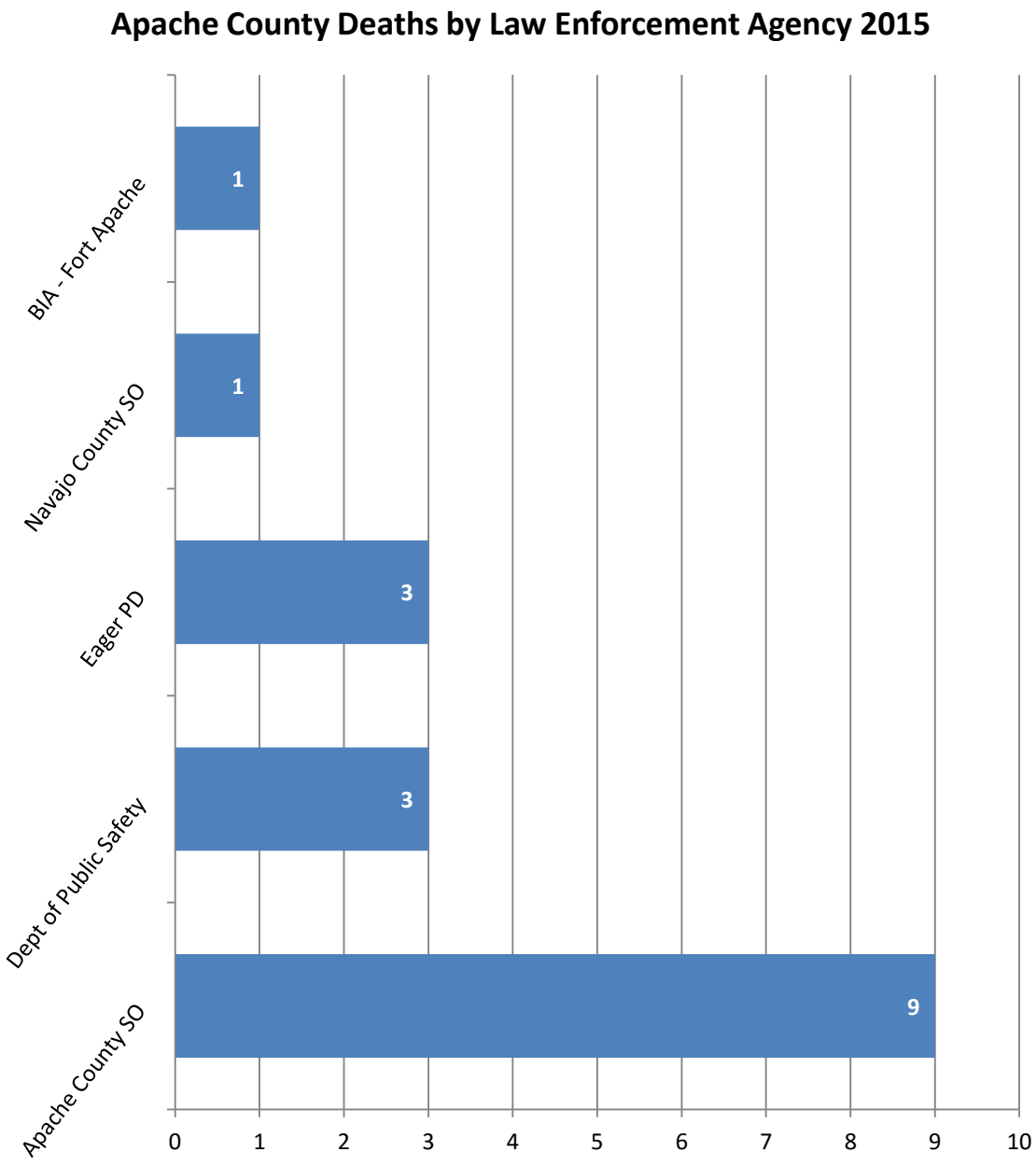

Apache County Deaths by Type of Exam 2015
1
16
Autopsy
Jurisdiction Declined

Apache County Deaths by Manner of Death 2015



Apache County Deaths by Type of Death 2015

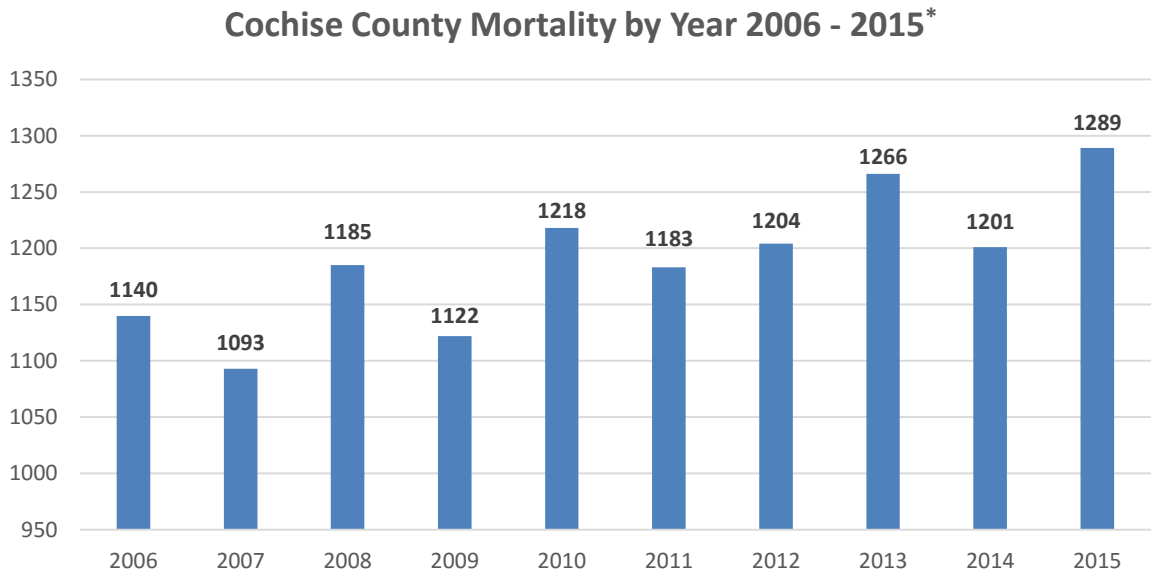



Apache County Deaths by Law Enforcement Agency 2015
BIA - Fort Apache
Navajo County SO
Eager PD
Dept of Public Safety
Apache County SO
1
1
3
3
9
0
1
2
3
4
5
6
7
8
9
10

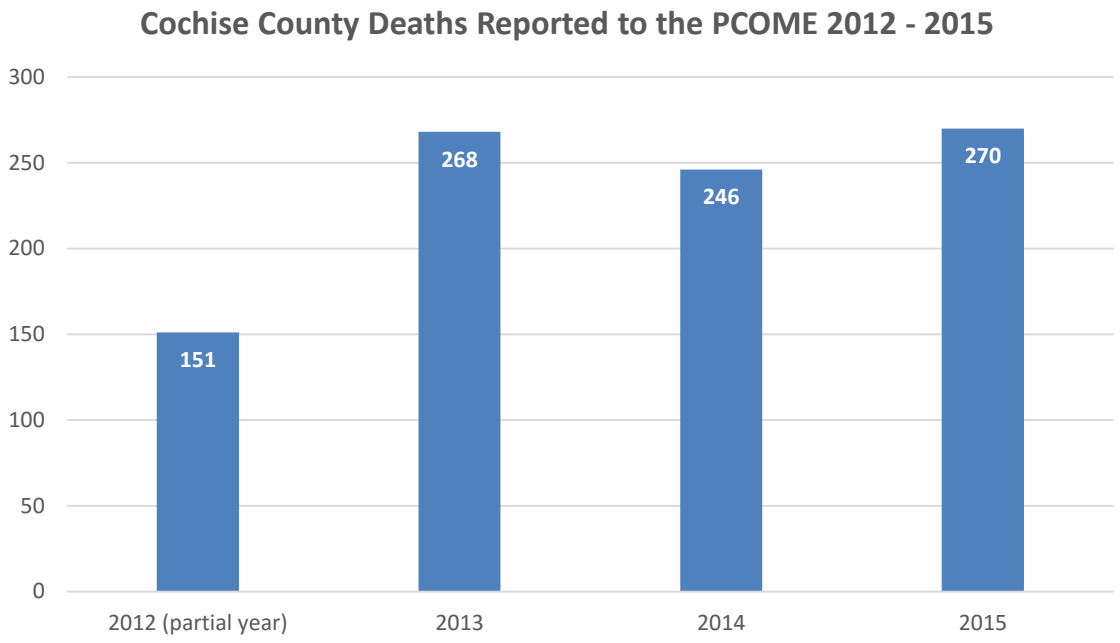
Cochise County

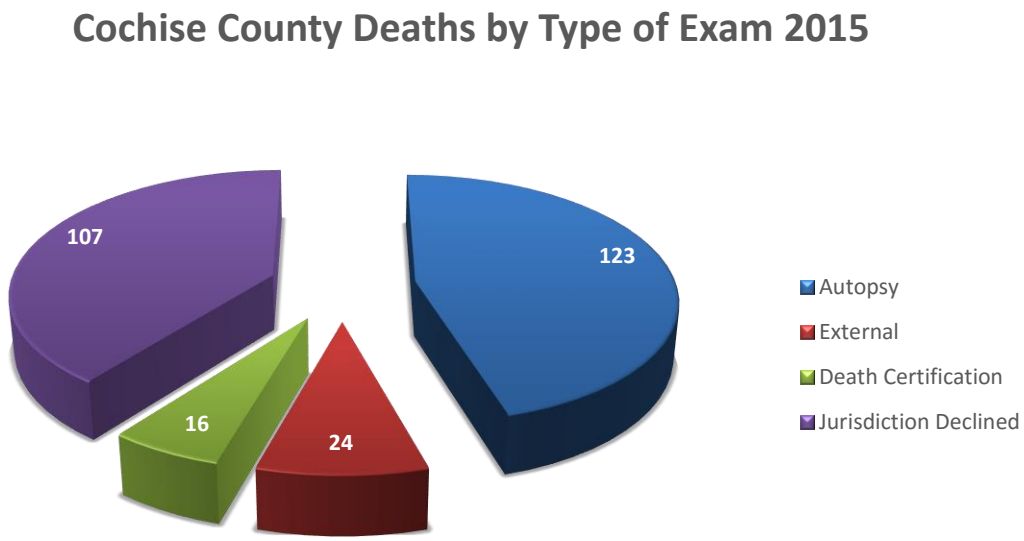
Cochise County contracts with the PCOME to certify deaths that fall under the jurisdiction of the medical examiner in Cochise County. Cochise County does not maintain an in-county Medical Examiner's office to conduct death scene investigations, transport remains, or triage deaths reportable to the medical 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.

In calendar year 2015 there were 1289 deaths in Cochise County; of these 270 (21%) were reported to the PCOME for investigation and/or examination. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

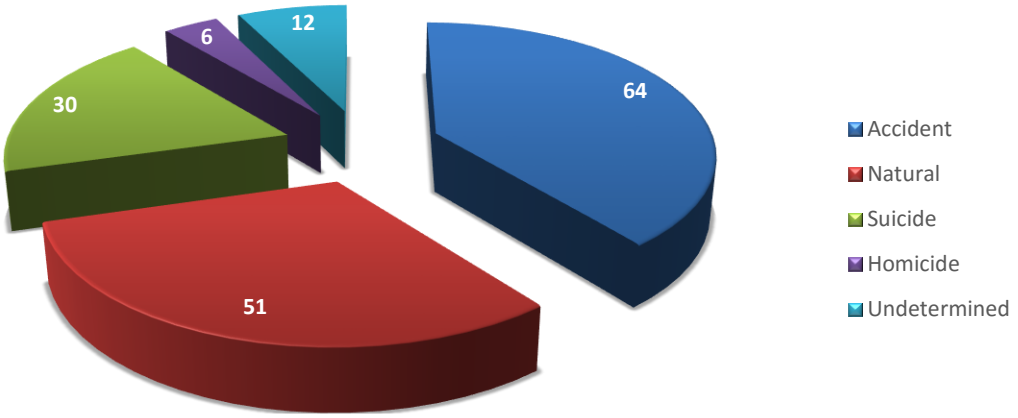


*Arizona Department of Vital Statistics as of 06/02/2016

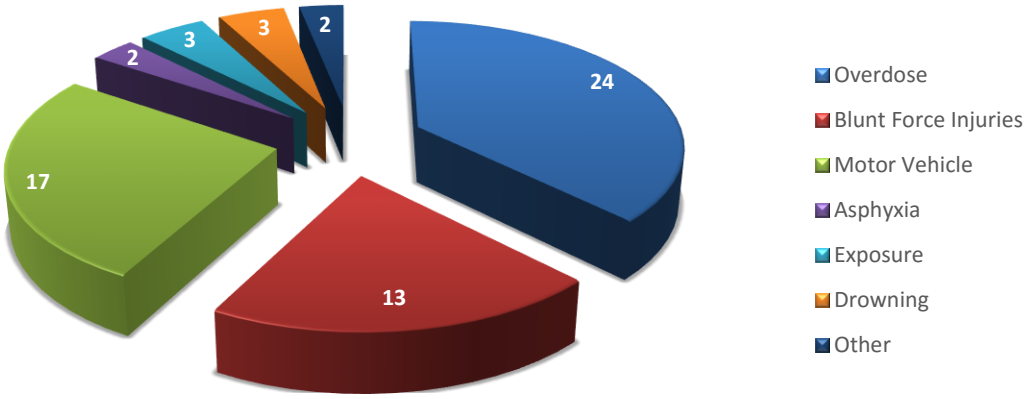

Cochise County Deaths Reported to the PCOME 2012 - 2015
300
250
200
150
100
50
0
151
268
246
270
2012 (partial year)
2013
2014
2015


Cochise County Deaths by Type of Exam 2015
107
123
16
24
Autopsy
External
Death Certification
Jurisdiction Declined

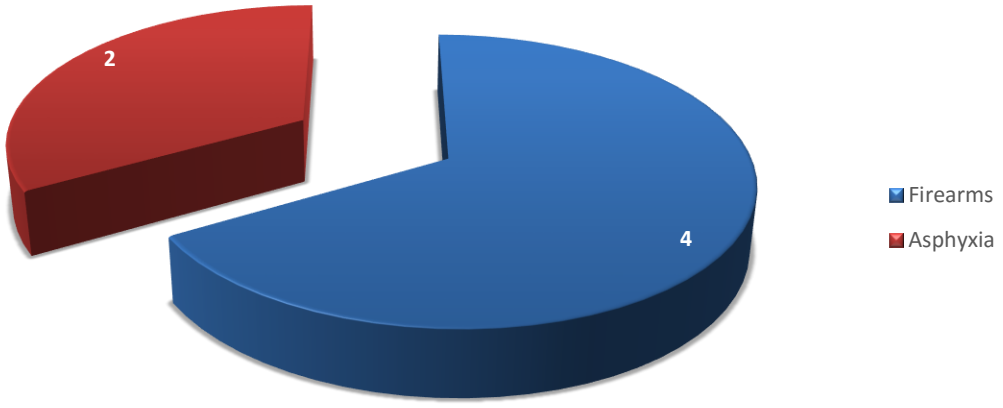
Cochise County Deaths by Manner of Death 2015



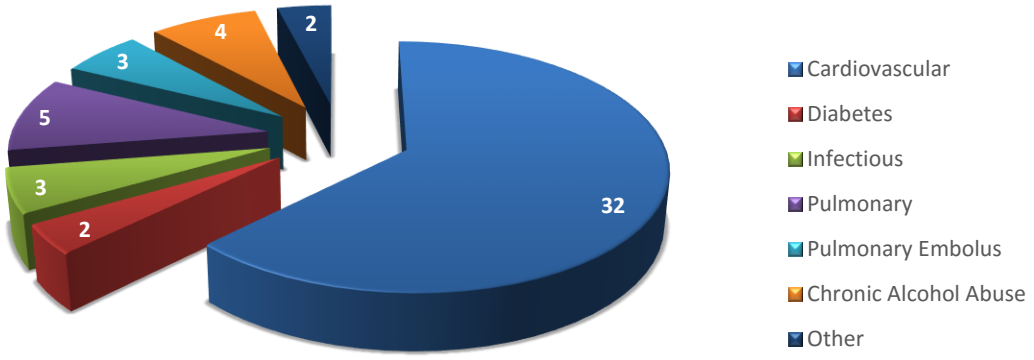
Cochise County Accidents by Type 2015



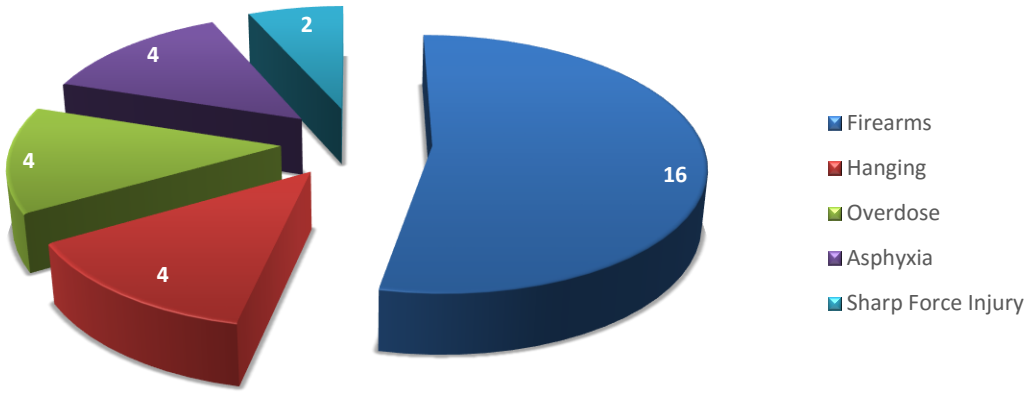
Cochise County Homicides by Type 2015



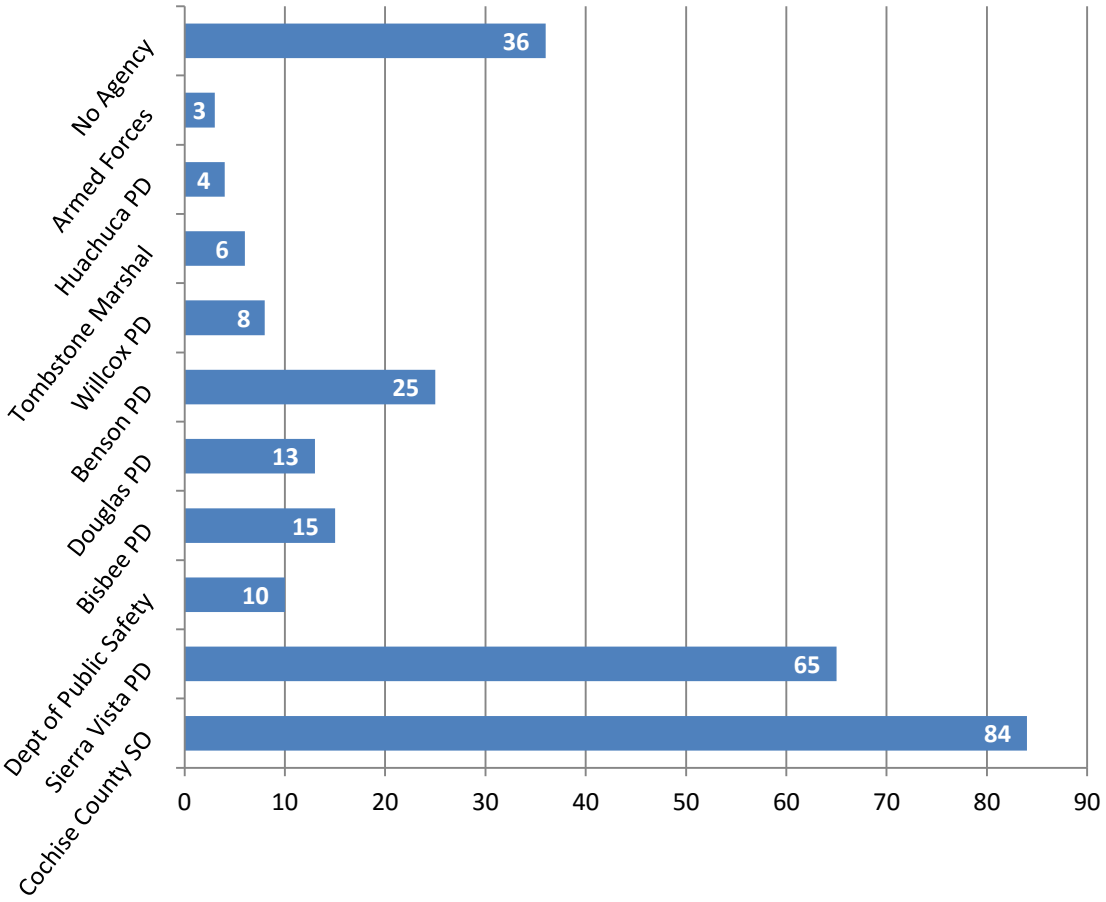
Cochise County Naturals by Type 2015



Cochise County Suicides by Type 2015



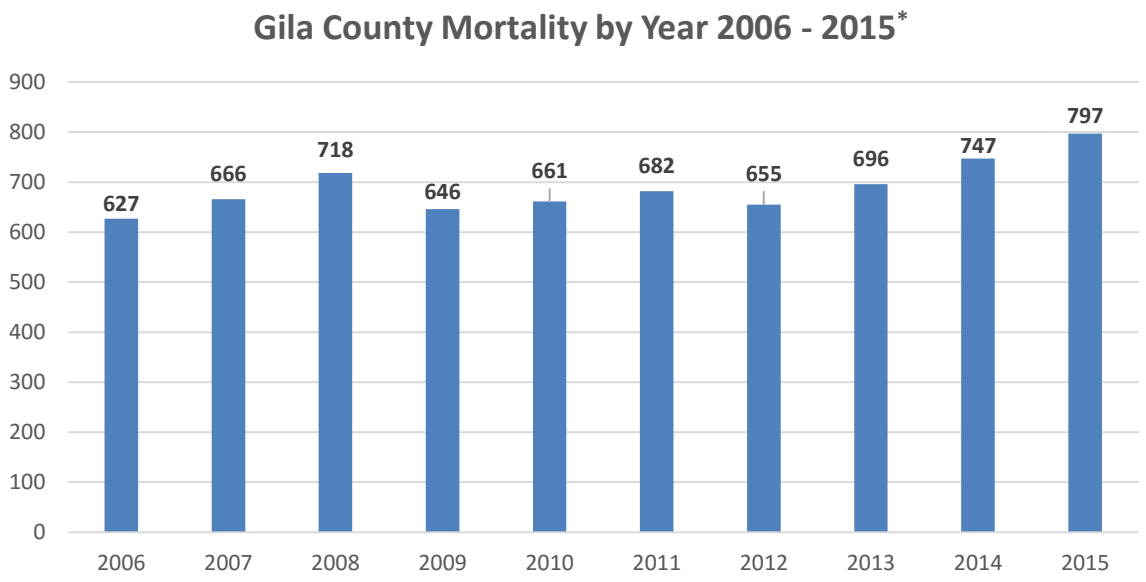
Cochise County Deaths by Law Enforcement Agency 2015



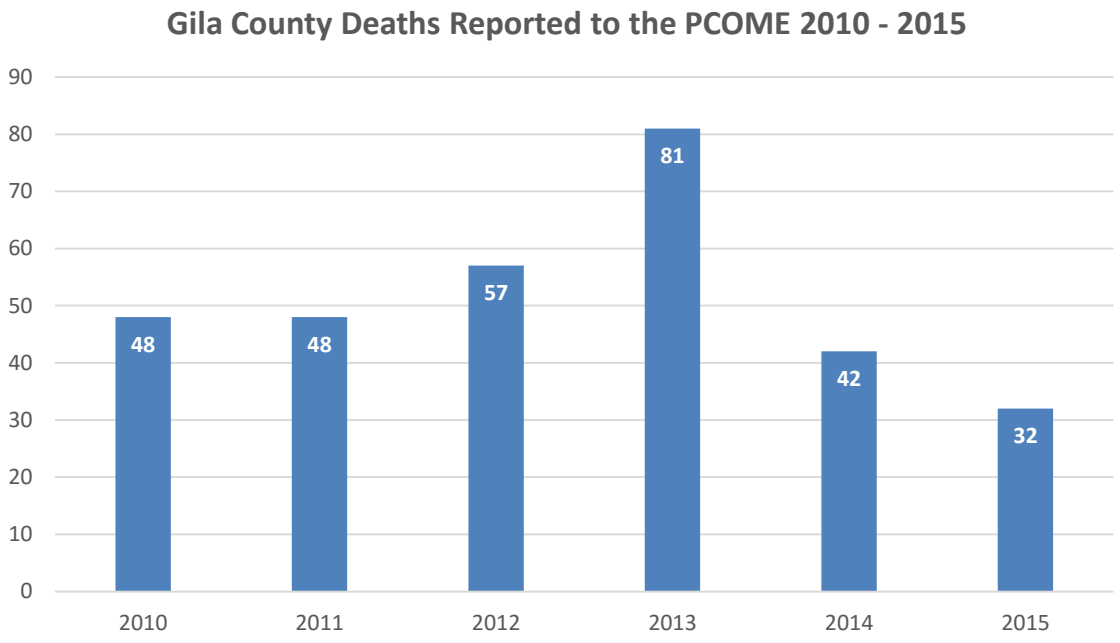
Gila County

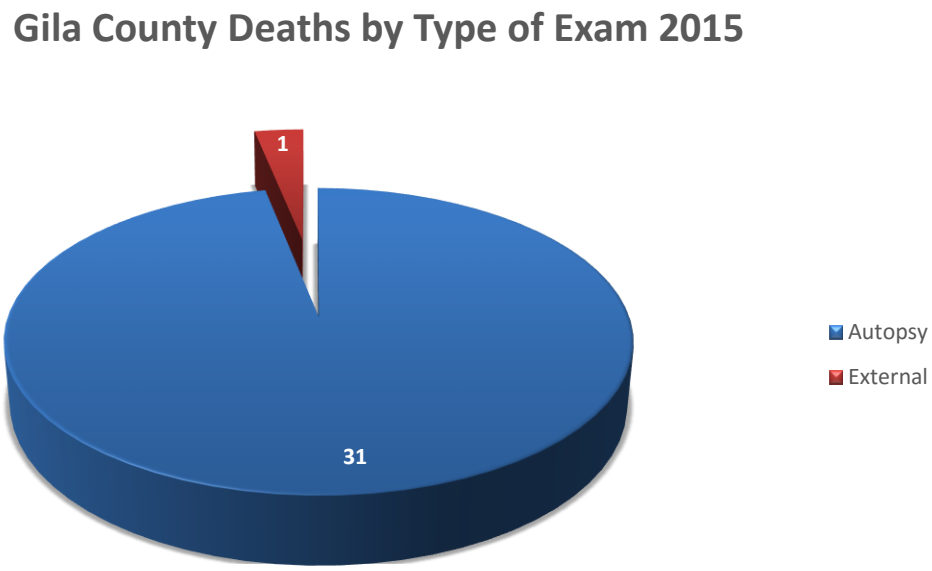
Gila County contracts with an appointed Forensic Pathologist Medical Examiner, who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner (ME) in Gila County. The Gila County ME performs some autopsy examinations in Payson if the ME deems an autopsy is necessary 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).

Thirty two deaths from Gila County were reported to the PCOME in 2015, 31 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

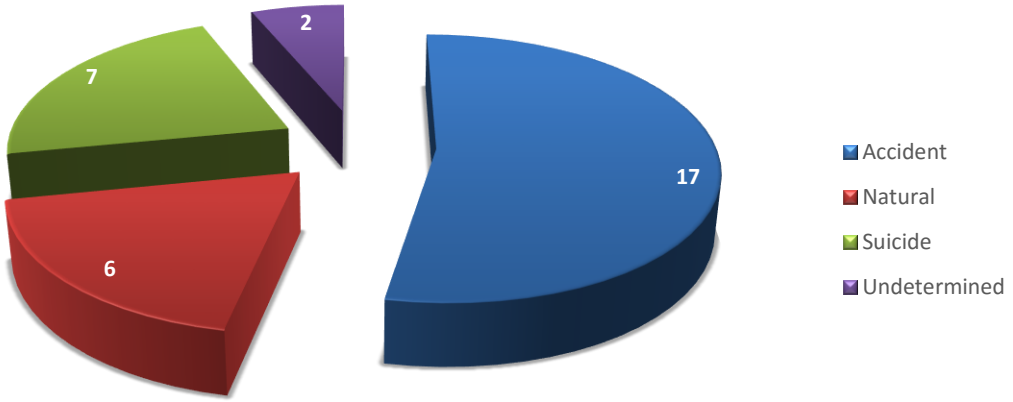


*Arizona Department of Vital Statistics as of 06/02/2016

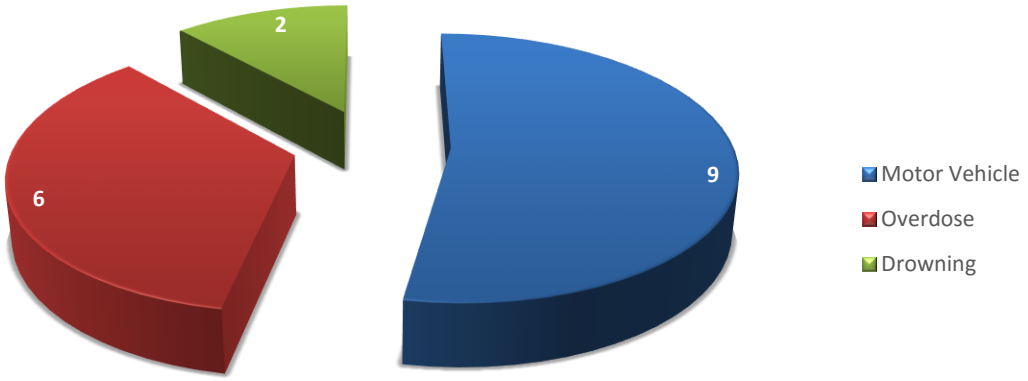

Gila County Deaths Reported to the PCOME 2010 - 2015
90
80
70
60
50
40
30
20
10
0
48
48
57
81
42
32
2010
2011
2012
2013
2014
2015


Gila County Deaths by Type of Exam 2015
1
31
Autopsy
External

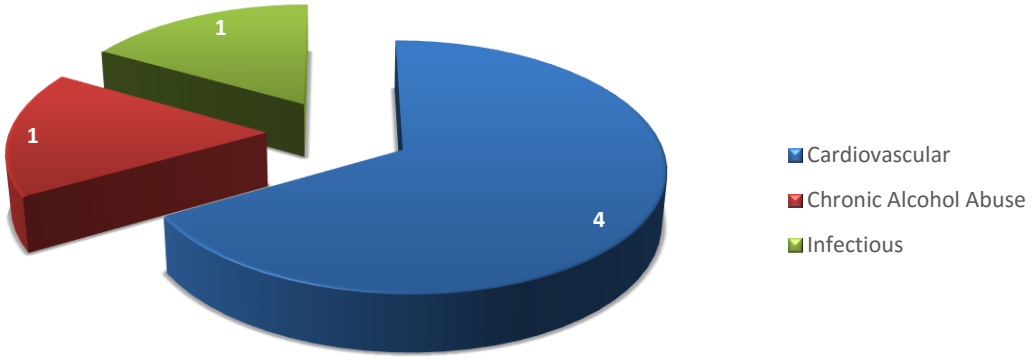
Gila County Deaths by Manner of Death 2015



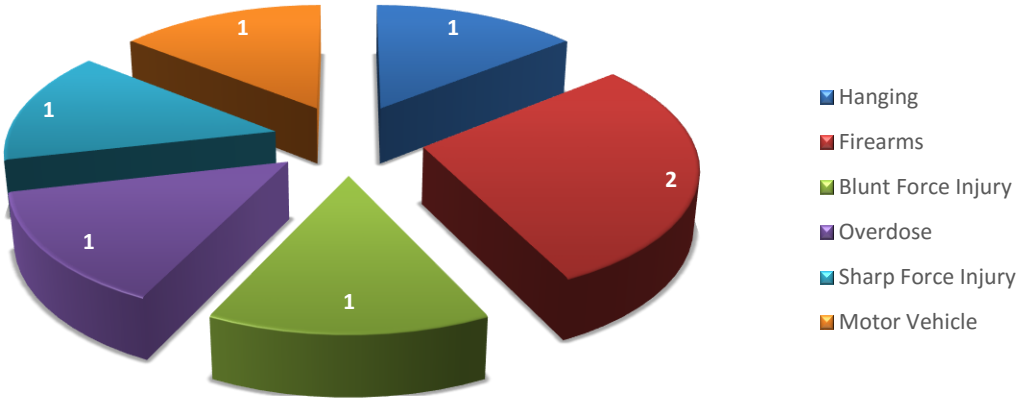
Gila County Accidents by Type 2015

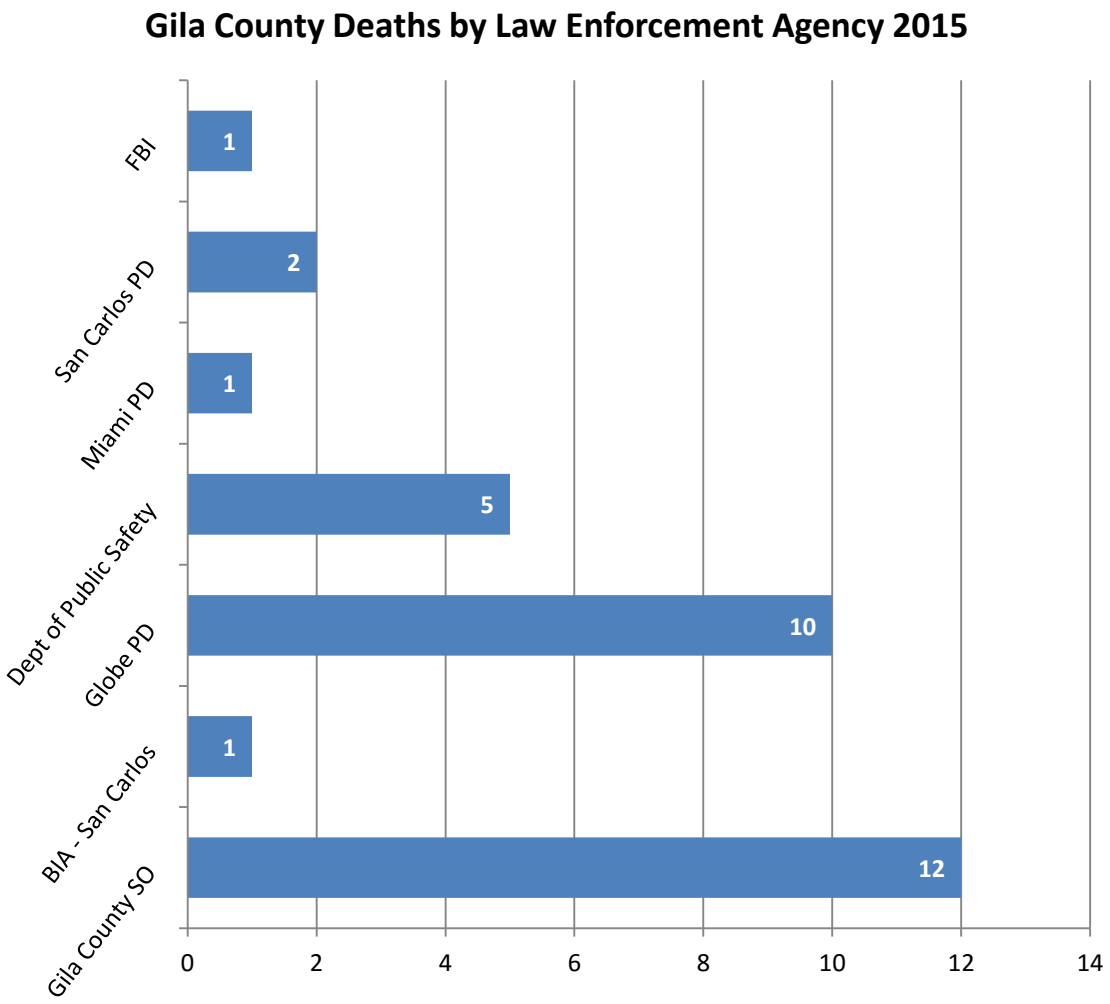


Gila County Naturals by Type 2015



Gila County Suicides by Type 2015

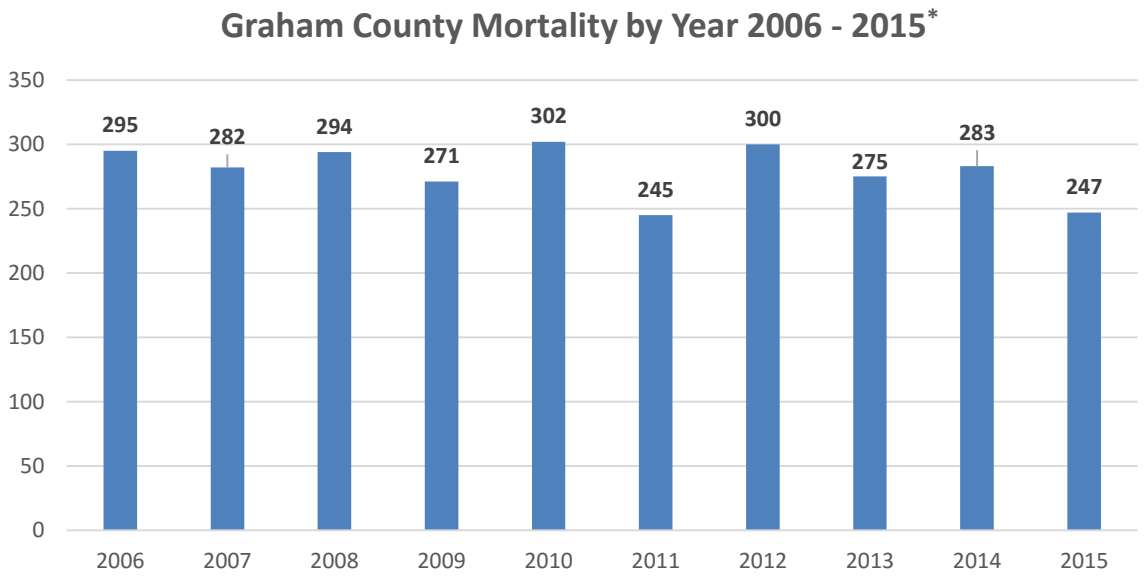



Gila County Deaths by Law Enforcement Agency 2015
FBI
San Carlos PD
Miami PD
Dept of Public Safety
Globe PD
BIA - San Carlos
Gila County SO
1
2
1
5
10
1
12
0
2
4
6
8
10
12
14

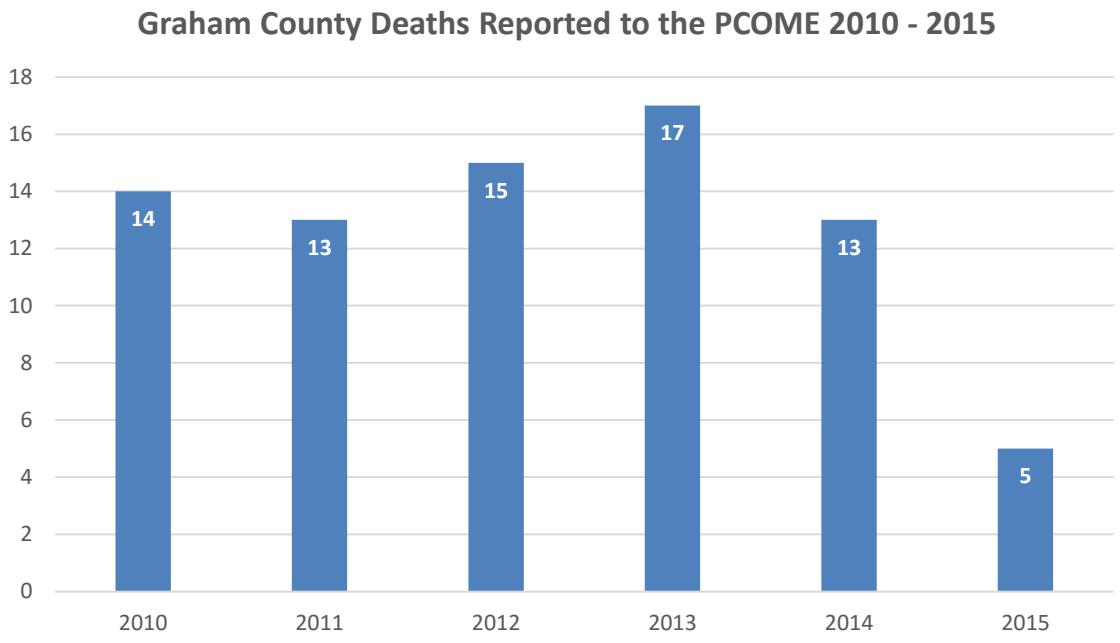
Graham County

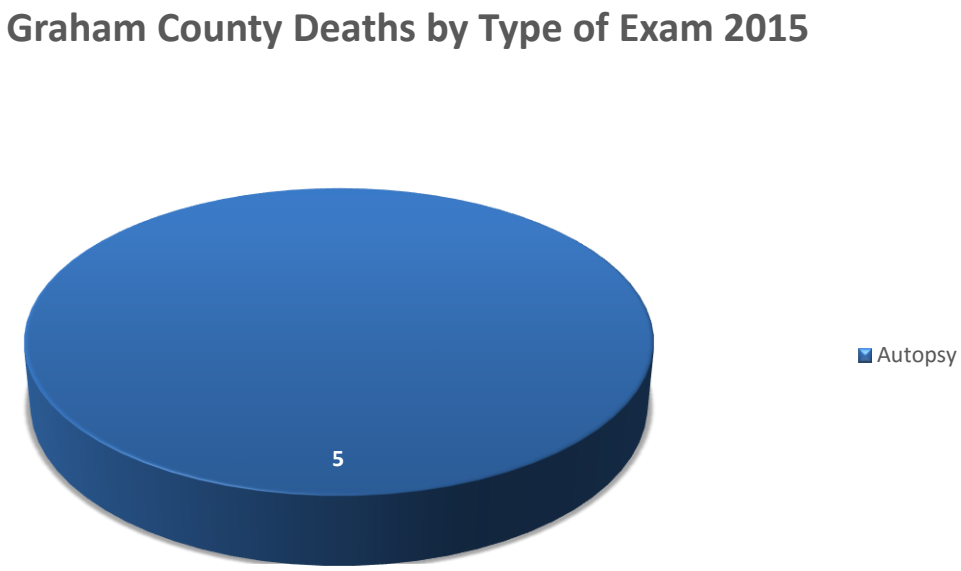
Graham County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Graham County. The Graham County AME does not perform 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).

Five deaths from Graham County were reported to the PCOME in 2015, all of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

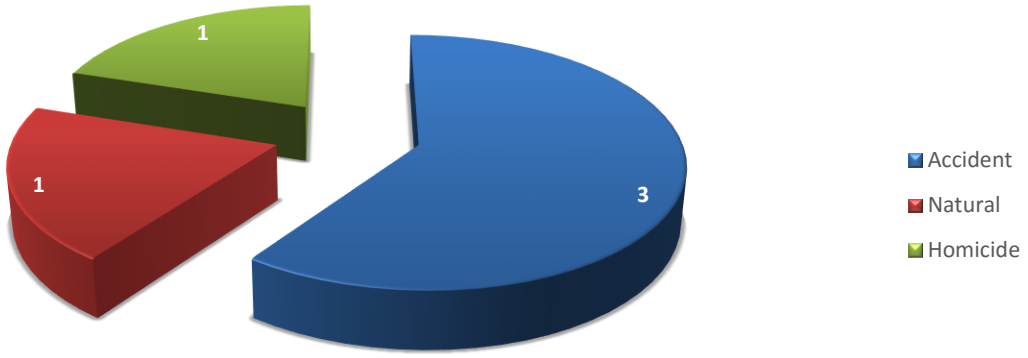


*Arizona Department of Vital Statistics as of 06/02/2016

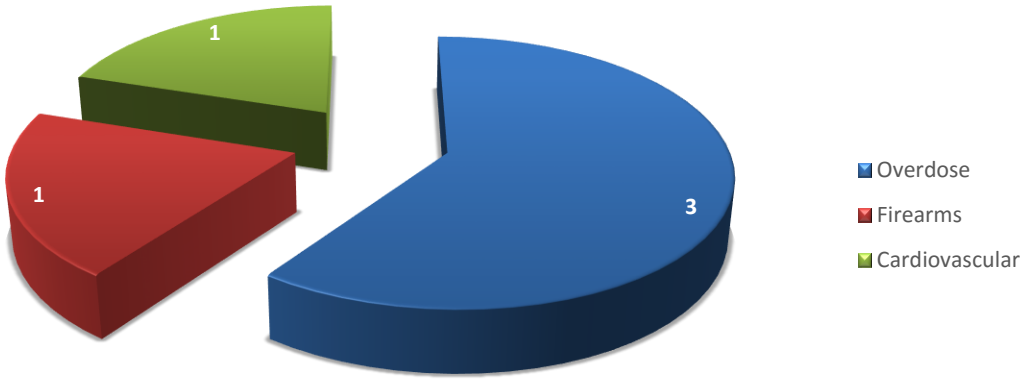

Graham County Deaths Reported to the PCOME 2010 - 2015
18
16
14
12
10
8
6
4
2
0
14
13
15
17
13
5
2010
2011
2012
2013
2014
2015

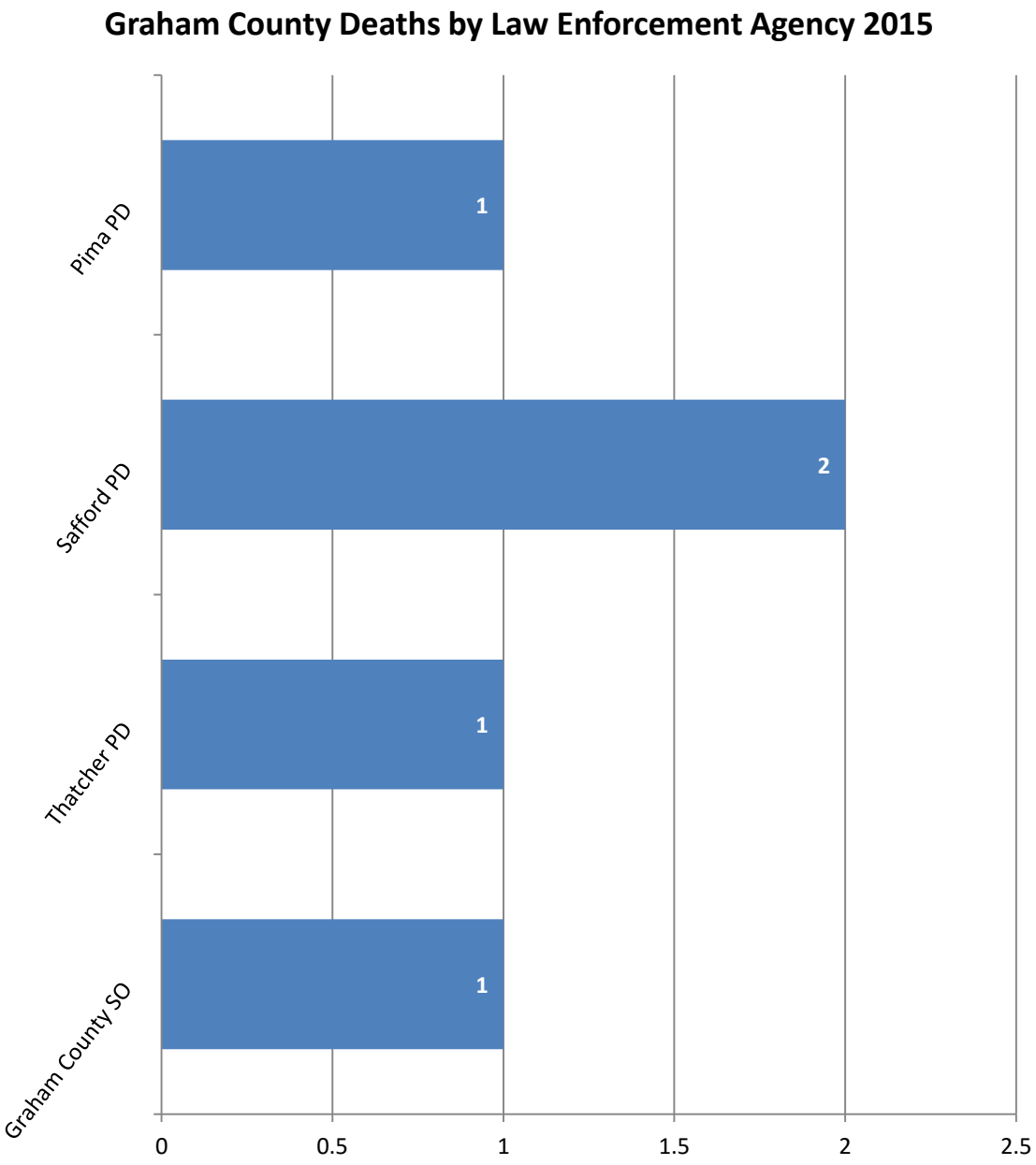

Graham County Deaths by Type of Exam 2015
5
Autopsy

Graham County Deaths by Manner of Death 2015



Graham County Deaths by Type of Death 2015

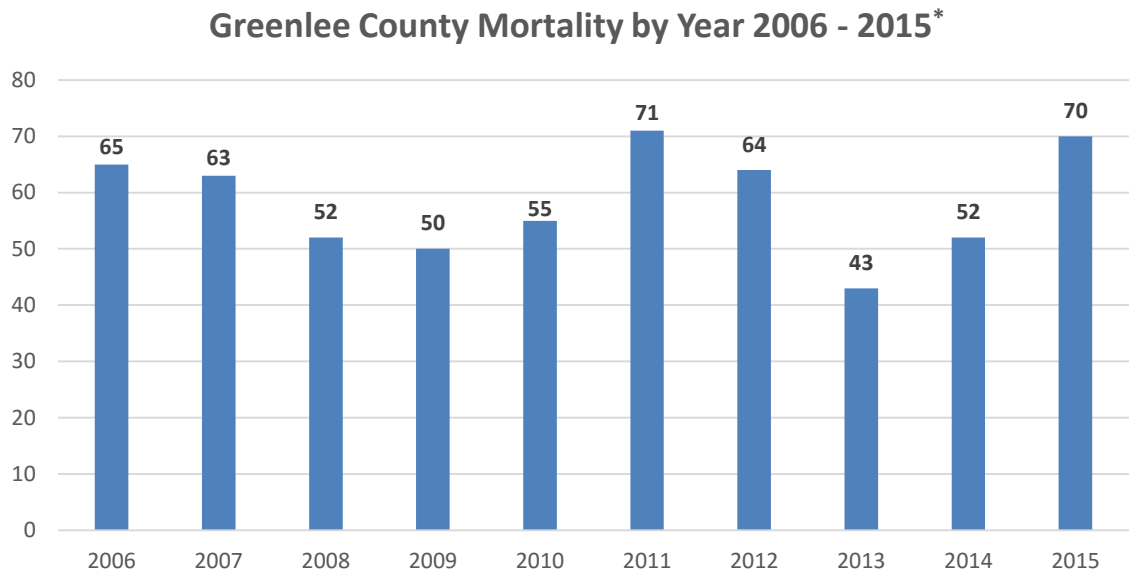



Graham County Deaths by Law Enforcement Agency 2015
Pima PD
Safford PD
Thatcher PD
Graham County SO
1
2
1
1
0
0.5
1
1.5
2
2.5

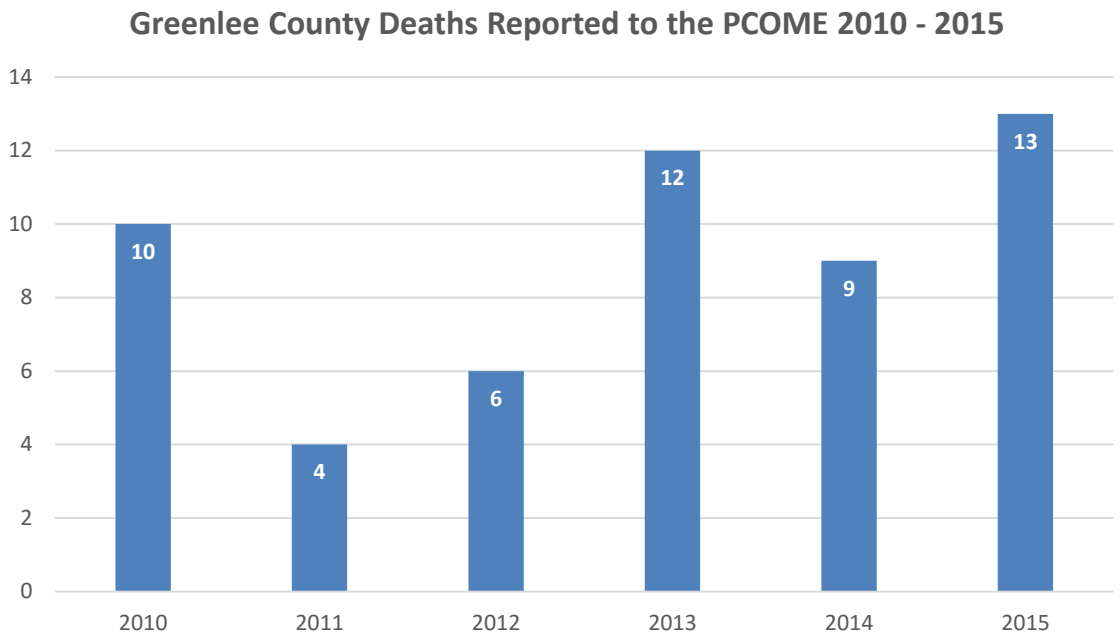
Greenlee County

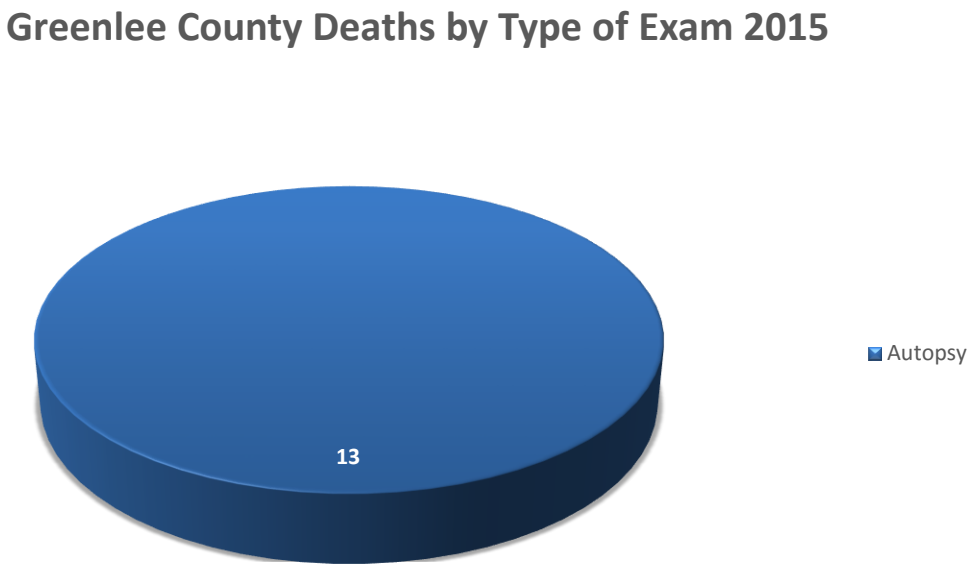
Greenlee County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Greenlee County. The Greenlee County AME does not 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).

Thirteen deaths from Greenlee County were reported to the PCOME in 2015, all of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

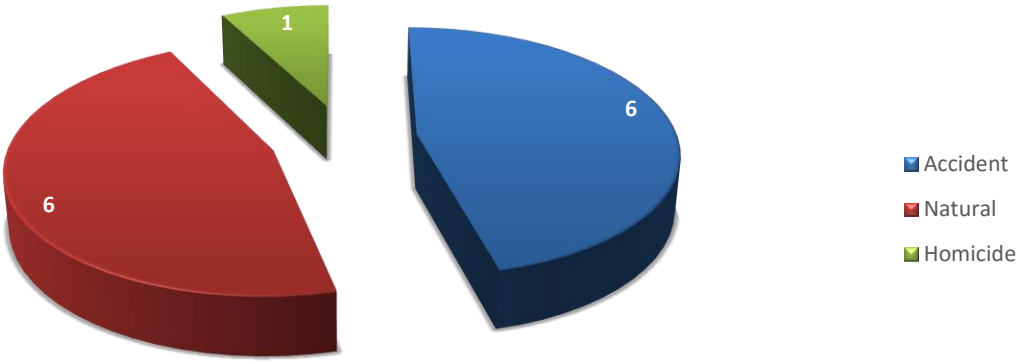


*Arizona Department of Vital Statistics as of 06/02/2016

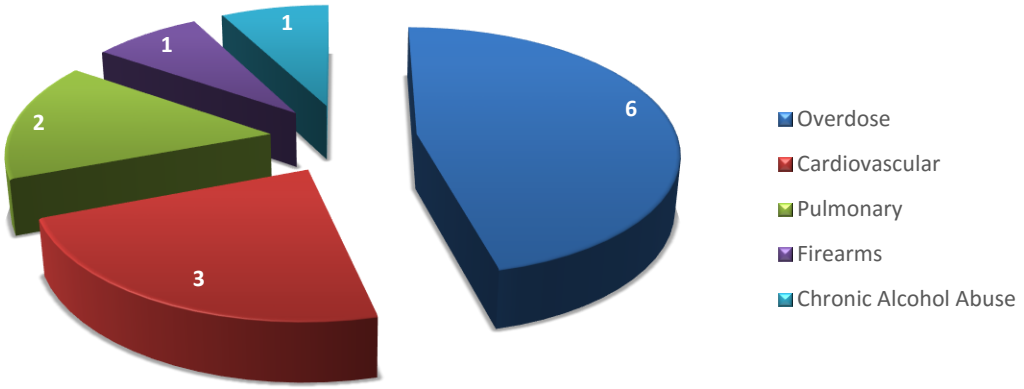

Greenlee County Deaths Reported to the PCOME 2010 - 2015
14
12
10
8
6
4
2
0
10
4
6
12
9
13
2010
2011
2012
2013
2014
2015

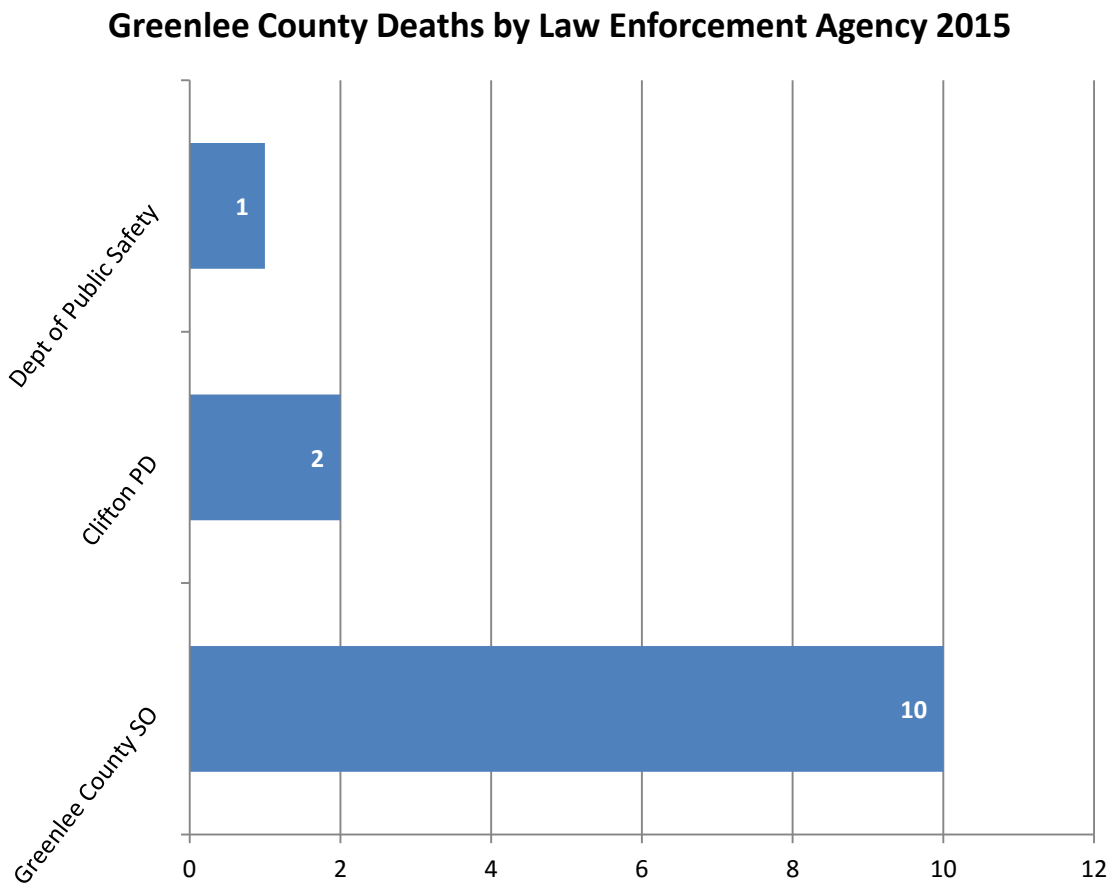

Greenlee County Deaths by Type of Exam 2015
13
Autopsy

Greenlee County Deaths by Manner of Death 2015



Greenlee County Deaths by Type of Death 2015

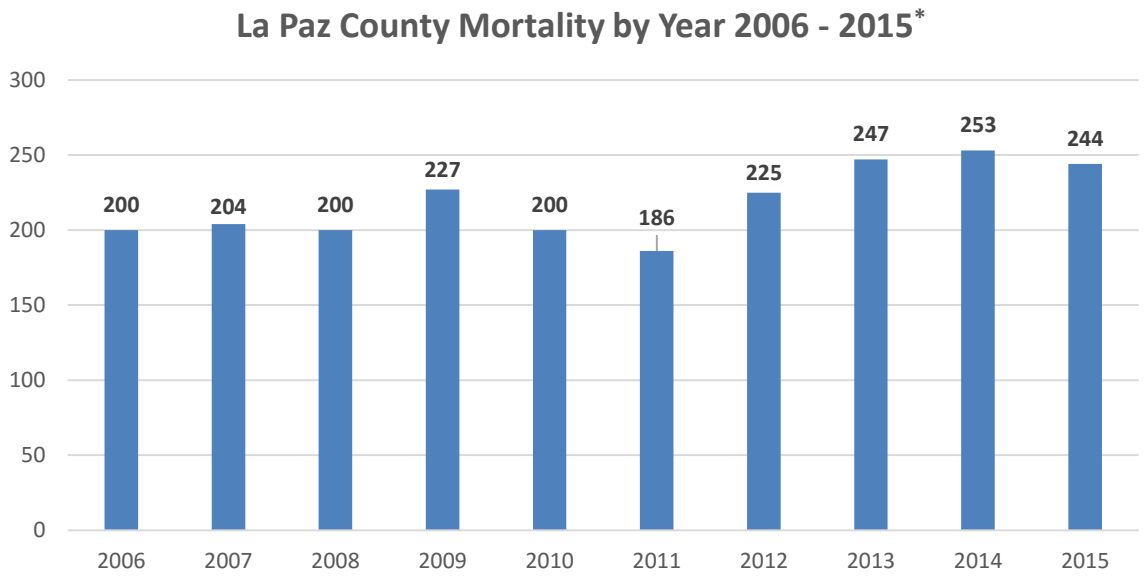



Greenlee County Deaths by Law Enforcement Agency 2015
Dept of Public Safety
Clifton PD
Greenlee County SO
1
2
10
0
2
4
6
8
10
12

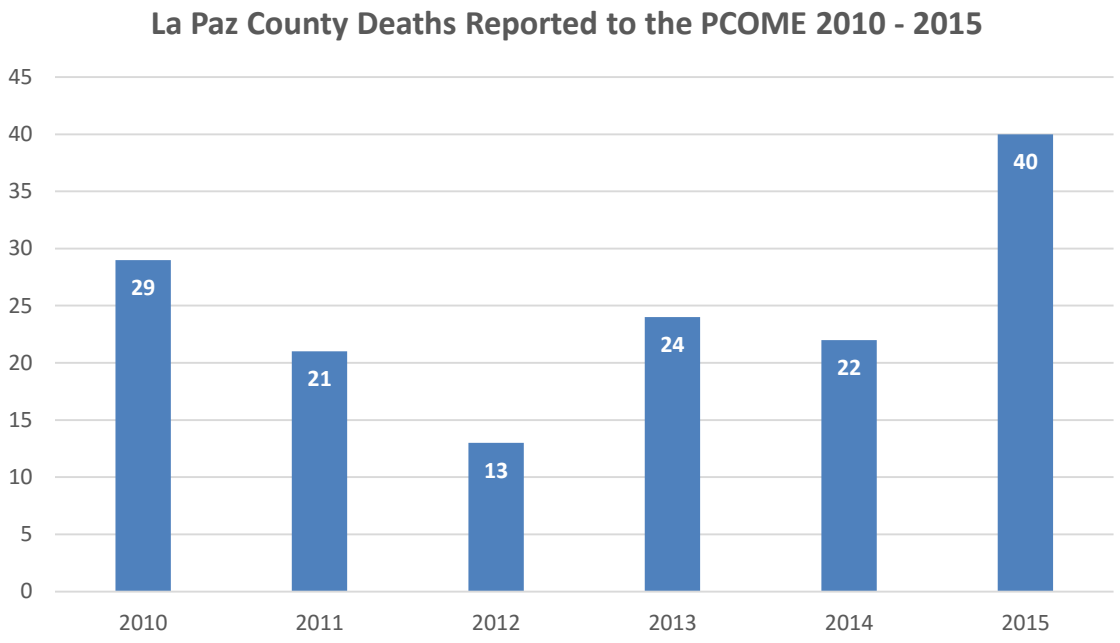
La Paz County

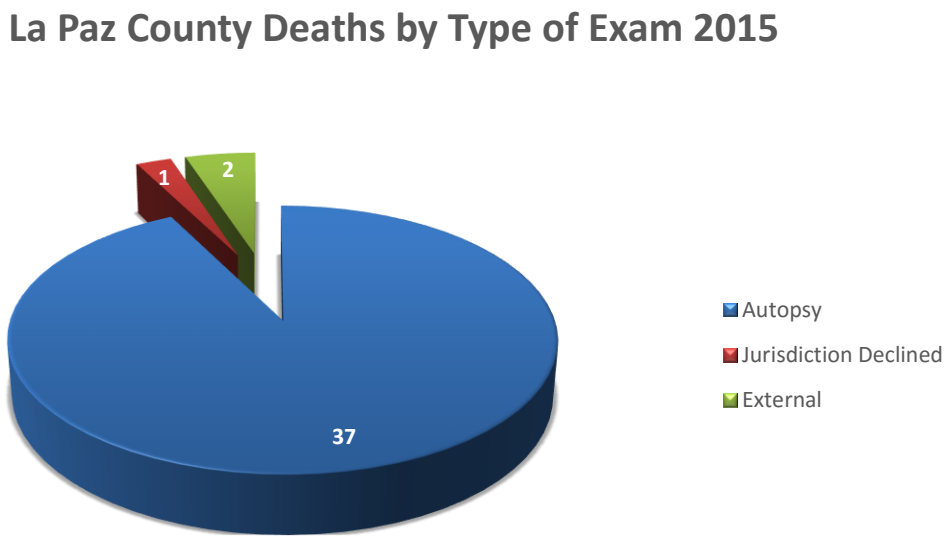
La Paz County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in La Paz County. The La Paz County AME does not perform 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).

Forty deaths from La Paz County were reported to the PCOME in 2015, 37 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

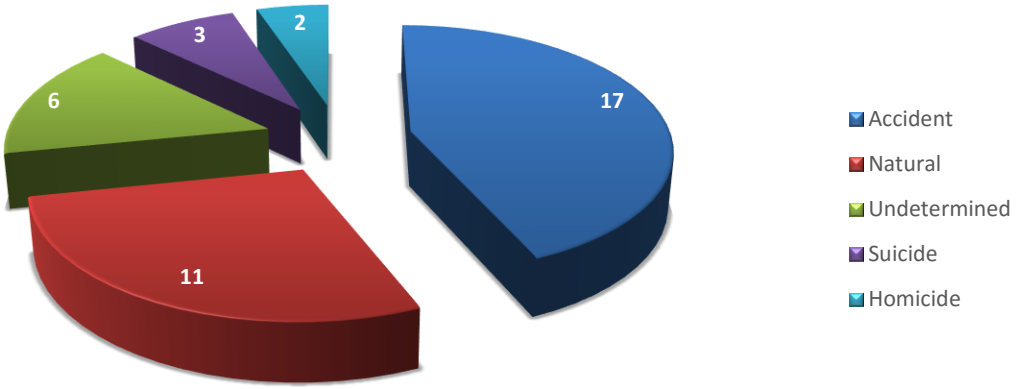


*Arizona Department of Vital Statistics as of 06/02/2016

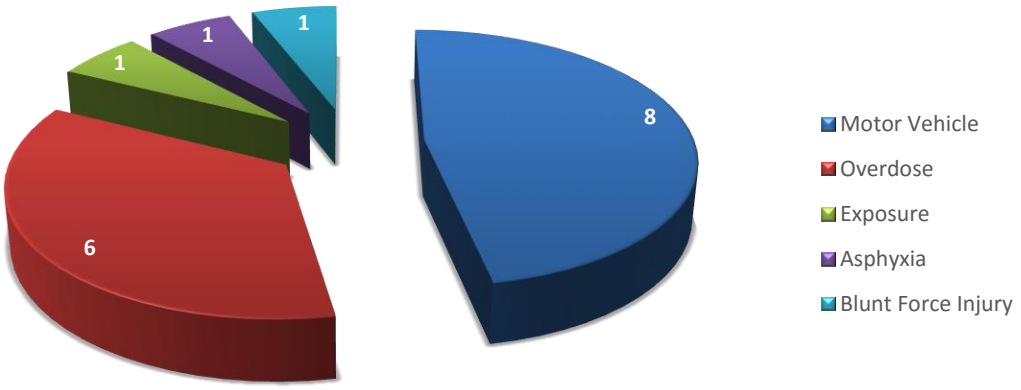

La Paz County Deaths Reported to the PCOME 2010 - 2015
45
40
35
30
25
20
15
10
5
0
29
21
13
24
22
40
2010
2011
2012
2013
2014
2015


La Paz County Deaths by Type of Exam 2015
1
2
37
Autopsy
Jurisdiction Declined
External

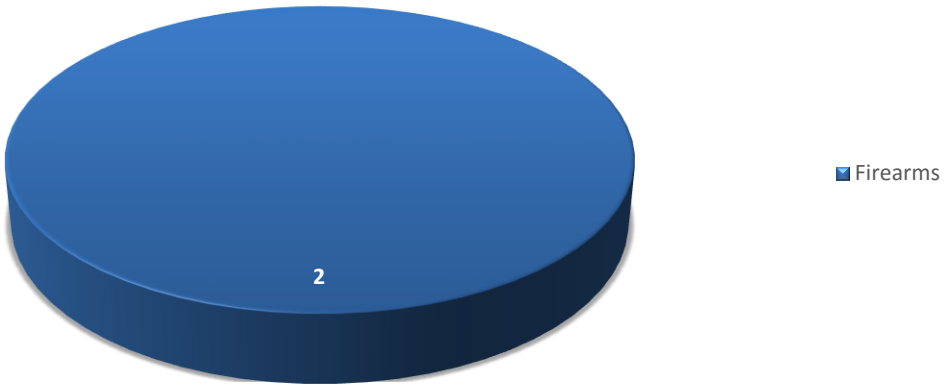
La Paz County Deaths by Manner of Death 2015



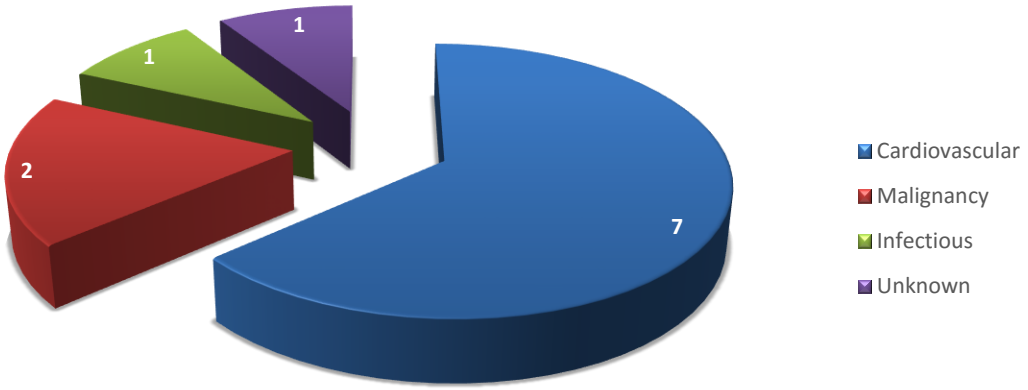
La Paz County Accidents by Type 2015



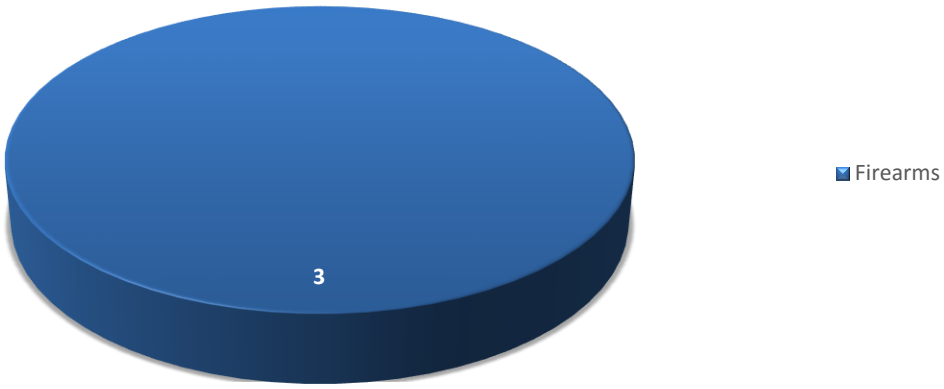
La Paz County Homicides by Type 2015



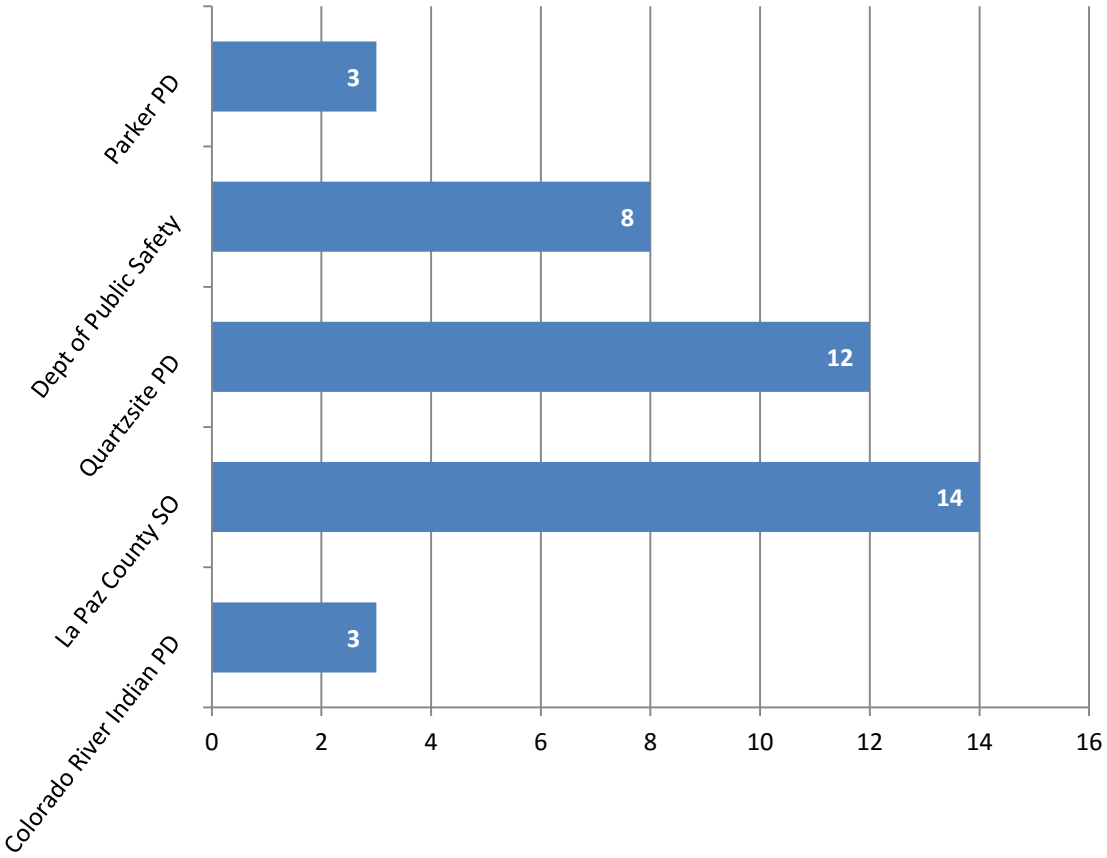
La Paz County Naturals by Type 2015



La Paz County Suicides by Type 2015



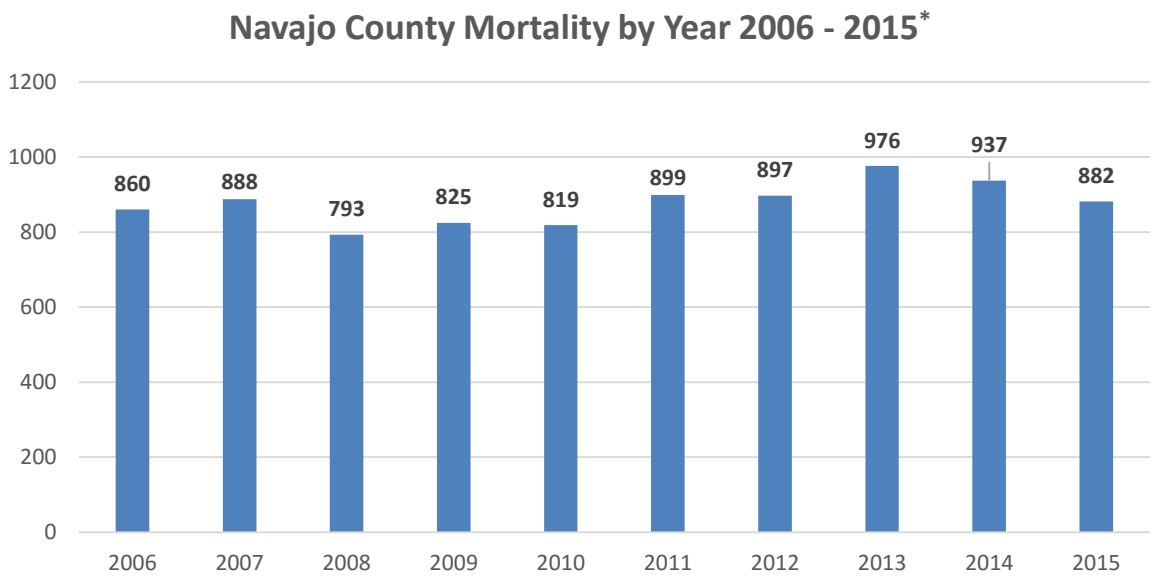
La Paz County Deaths by Law Enforcement Agency 2015



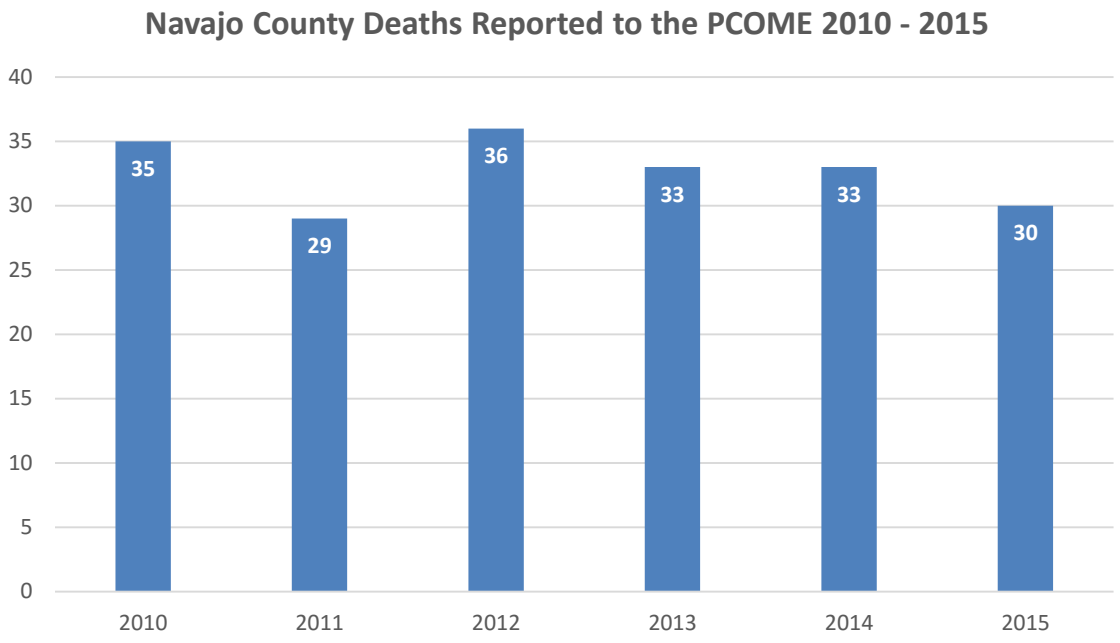
Navajo County

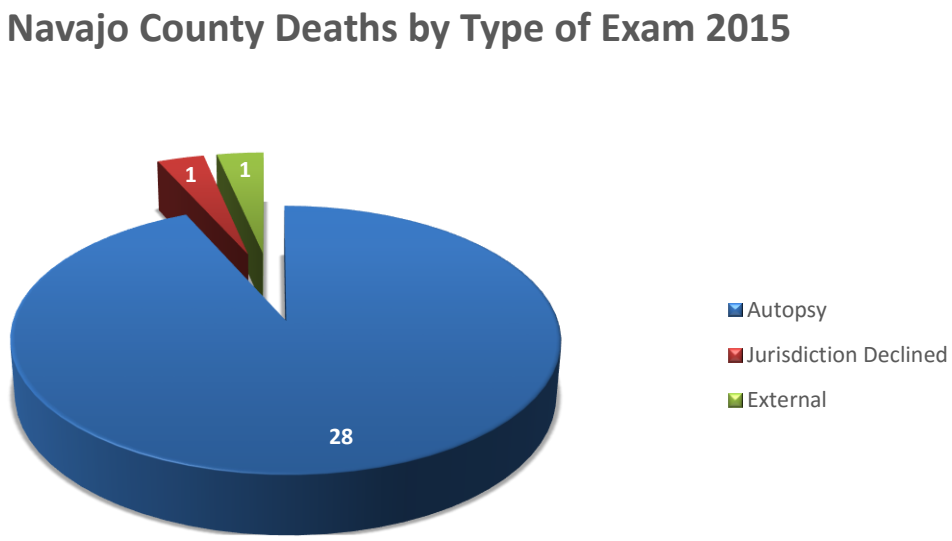
Navajo County contracts with an appointed non-Forensic Pathologist physician(s), termed an Alternate Medical Examiner(s) (AME) (A.R.S. §11-591), who triages, investigates and certifies deaths that fall under the jurisdiction of the medical examiner in Navajo County. The Navajo County AME does not perform 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).

Thirty deaths from Navajo County were reported to the PCOME in 2015, 28 of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

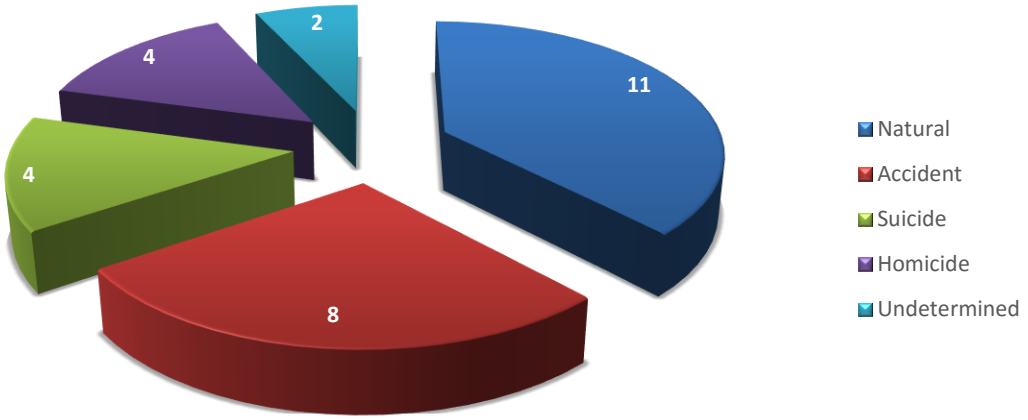


*Arizona Department of Vital Statistics as of 06/02/2016

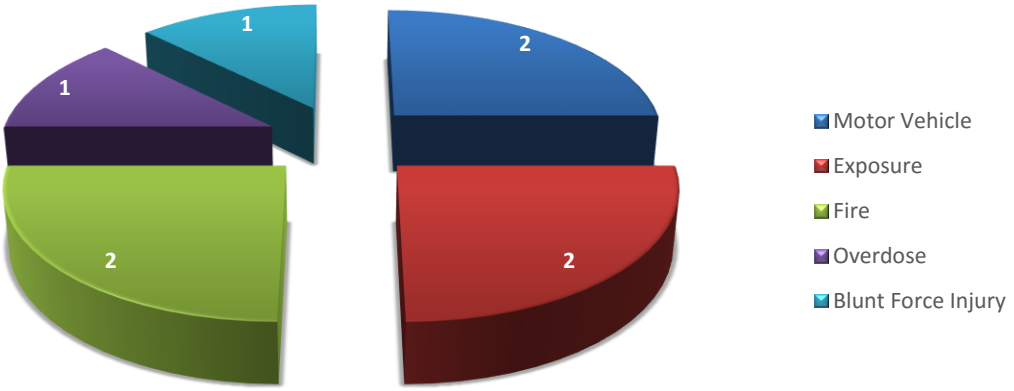

Navajo County Deaths Reported to the PCOME 2010 - 2015
40
35
30
25
20
15
10
5
0
35
29
36
33
33
30
2010
2011
2012
2013
2014
2015


Navajo County Deaths by Type of Exam 2015
1
1
28
Autopsy
Jurisdiction Declined
External

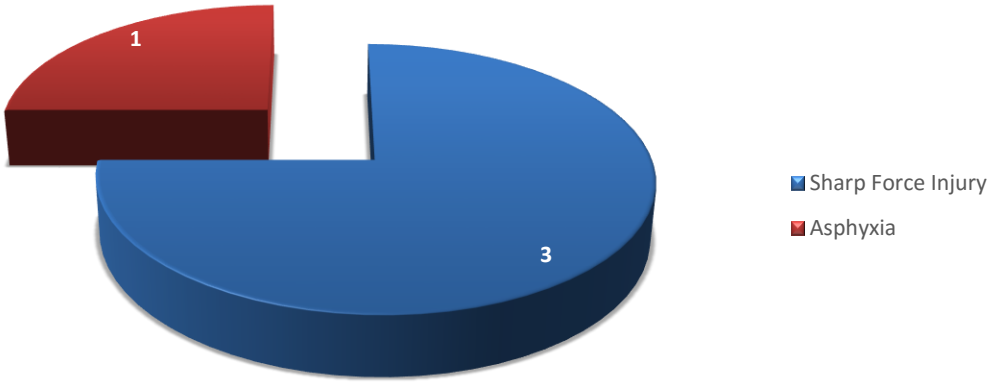
Navajo County Deaths by Manner of Death 2015



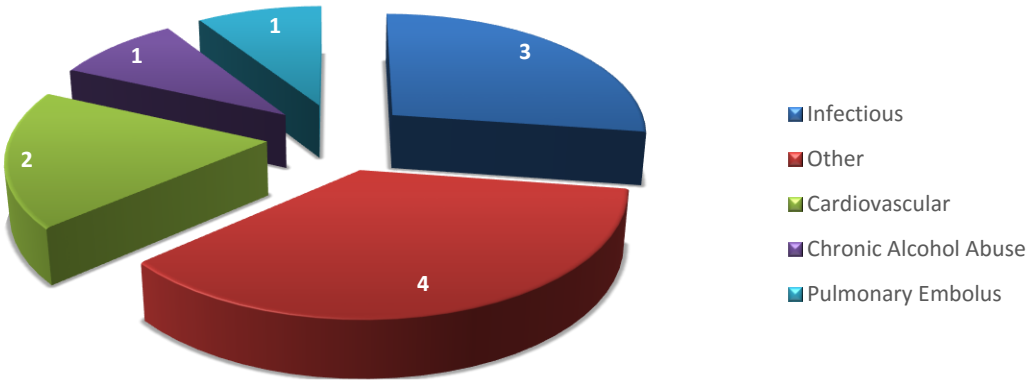
Navajo County Accidents by Type 2015



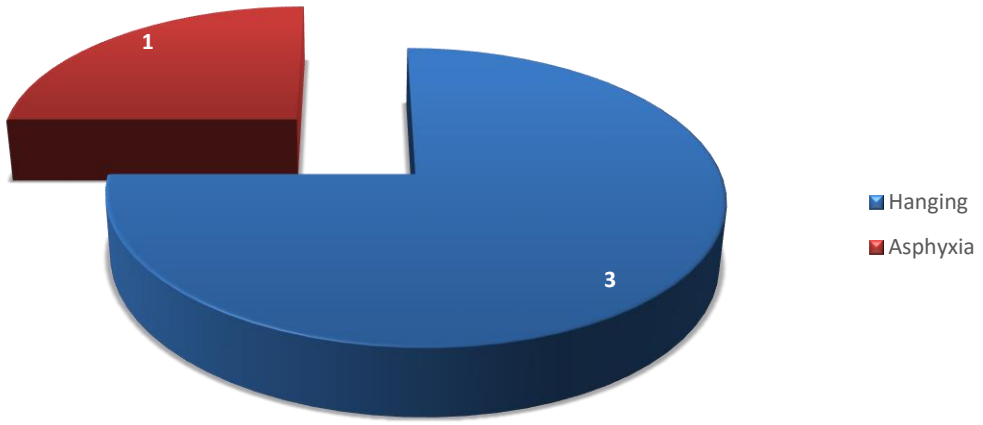
Navajo County Homicides by Type 2015



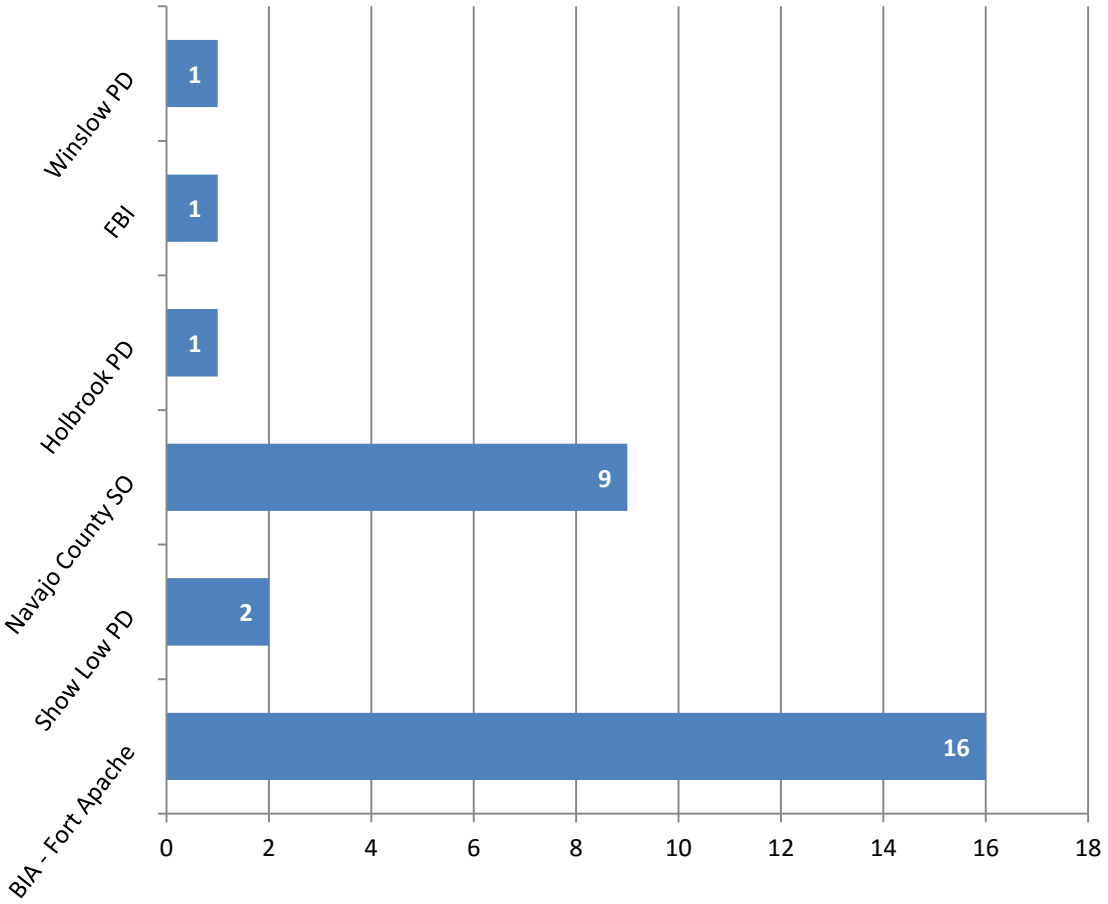
Navajo County Naturals by Type 2015



Navajo County Suicides by Type 2015



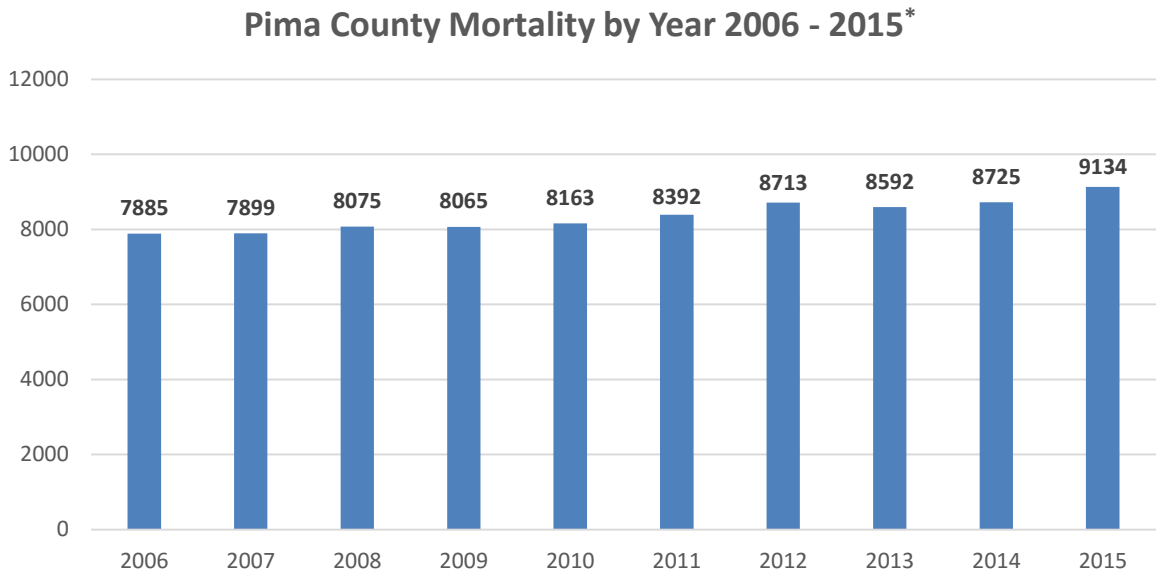
Navajo County Deaths by Law Enforcement Agency 2015



Pima County

TOTAL MORTALITY

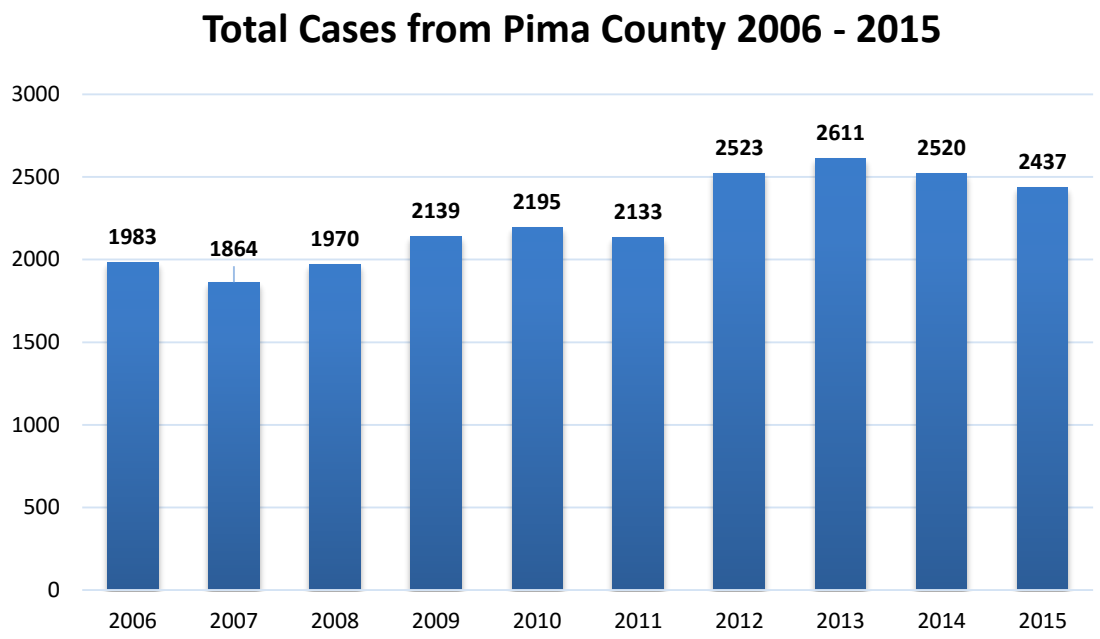
The number of deaths reported to the medical examiner's office in a given time frame is a reflection of the total population that the office serves. In 2015 there were 9,134 deaths in Pima County; of these 2,437 (27%) were reported to the PCOME for investigation.



*Arizona Department of Vital Statistics as of 06/06/16

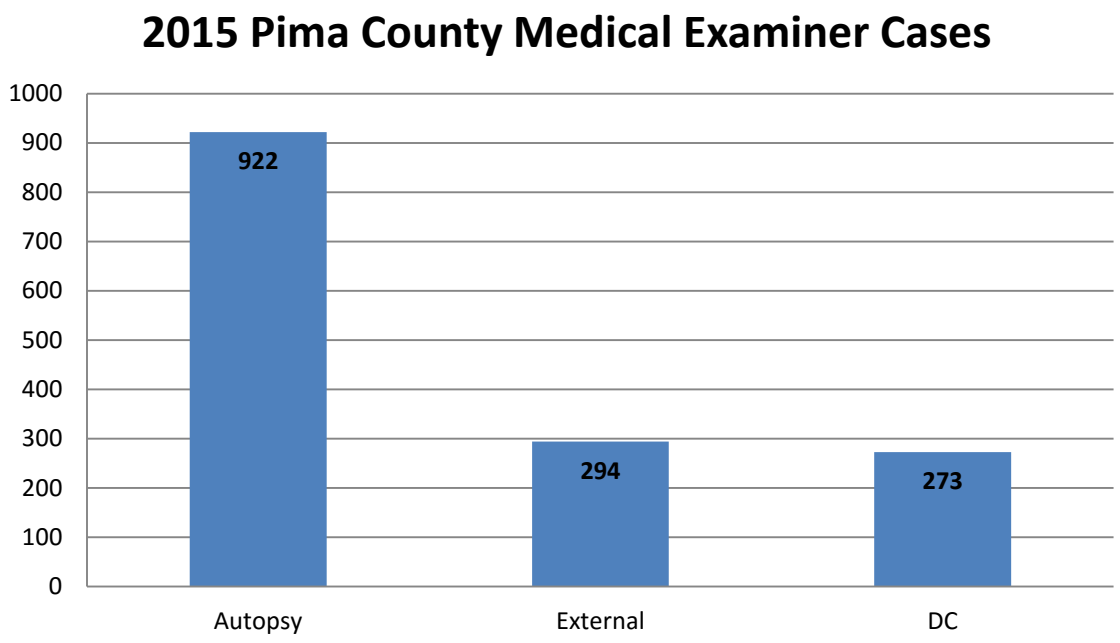
TOTAL CASES

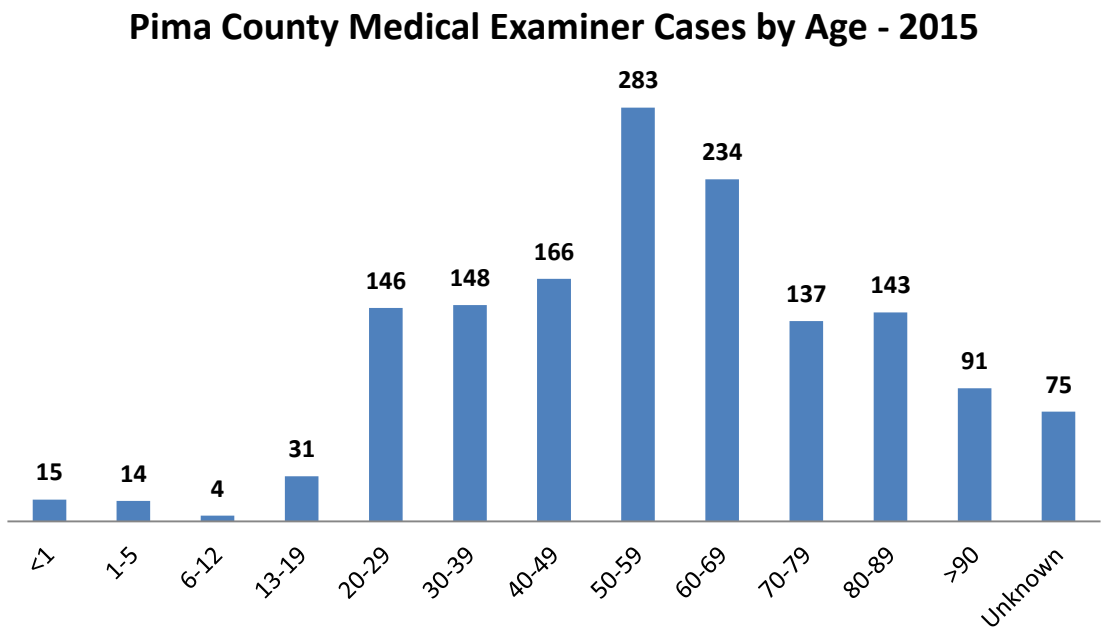
The total cases handled by the PCOME from Pima County in a given year are the sum of the ME cases (autopsies, external examinations, and death certificate cases), cases in which jurisdiction was declined, and the number of cases stored at our facility during the calendar year (storage cases).



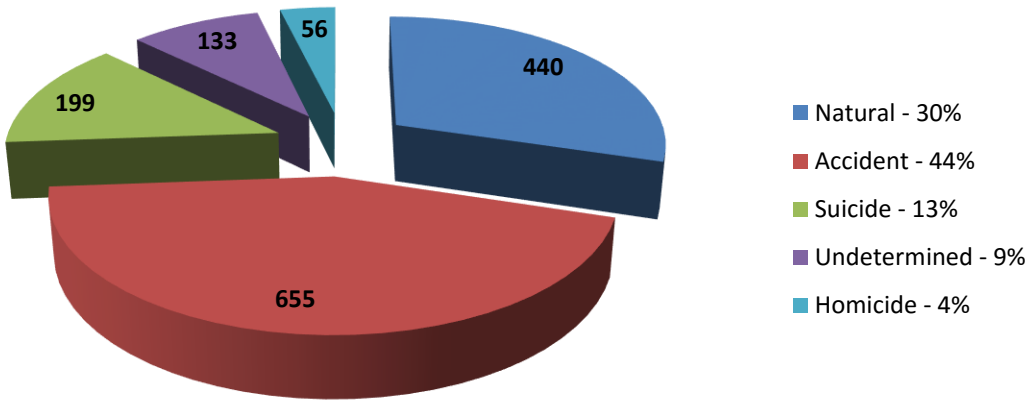
MEDICAL EXAMINER CASES

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 2015, 922 autopsies, 294 external examinations and 273 DC cases were performed on deaths from Pima County.

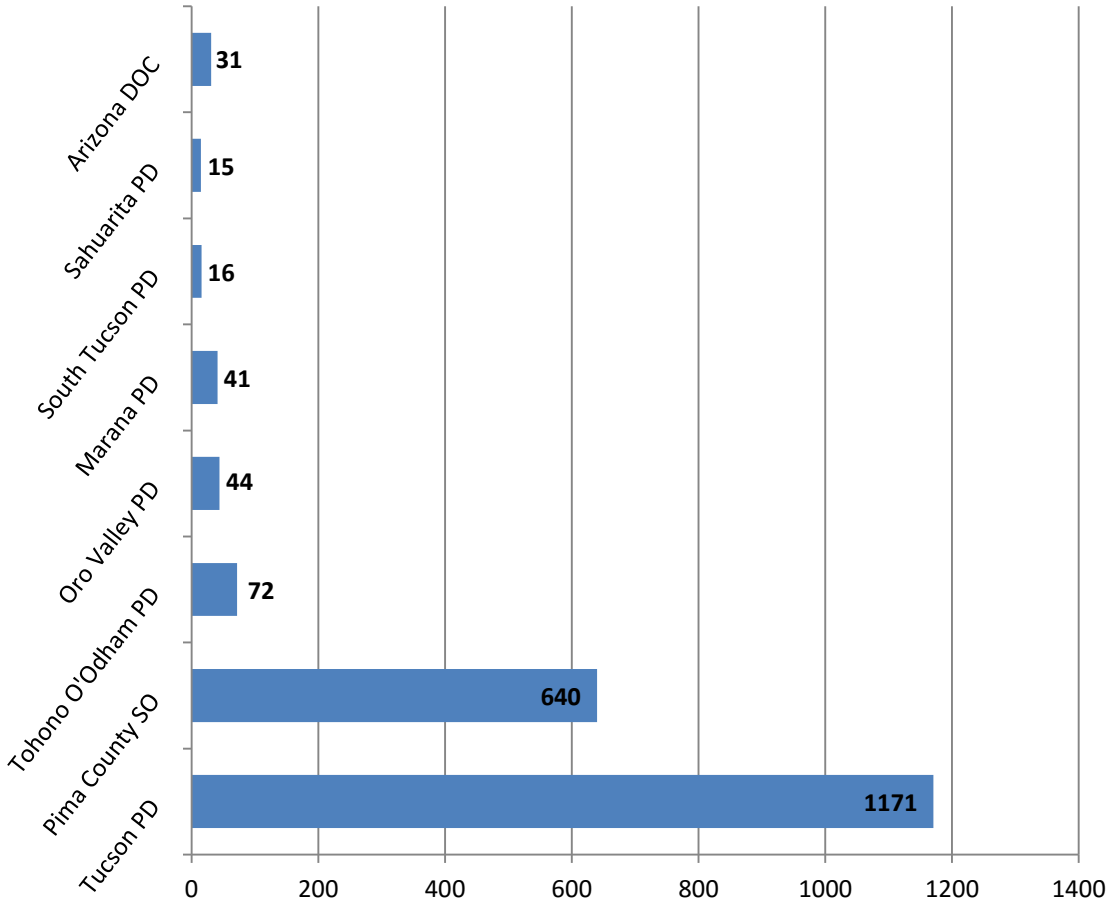

2015 Pima County Medical Examiner Cases
1000
900
800
700
600
500
400
300
200
100
0
922
294
273
Autopsy
External
DC


Pima County Medical Examiner Cases by Age - 2015
15
14
4
31
146
148
166
283
234
137
143
91
75
<1
1-5
6-12
13-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
>90
Unknown

Pima County ME Cases by Manner of Death - 2015

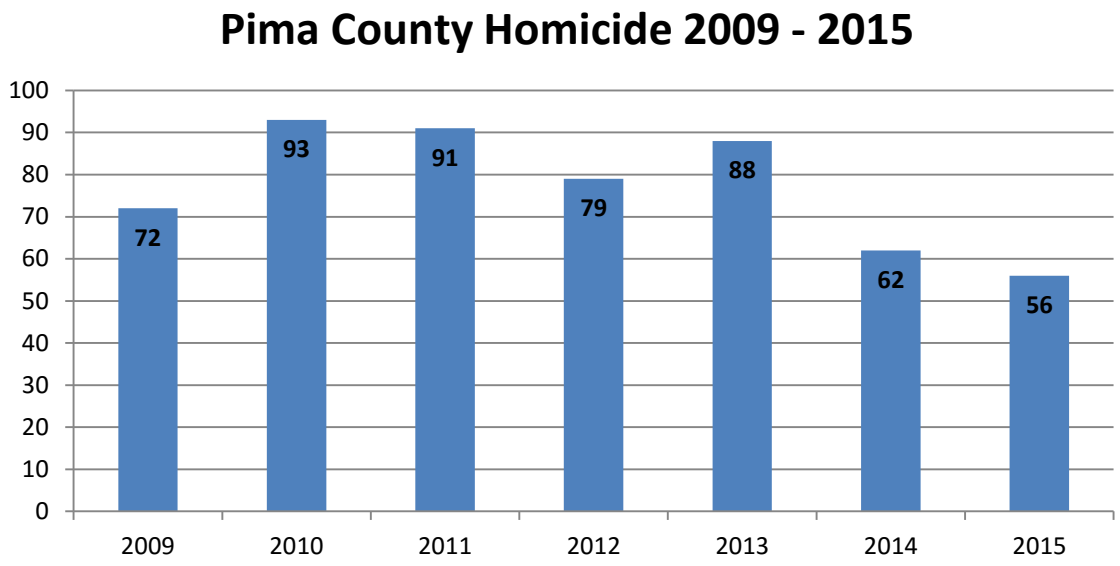


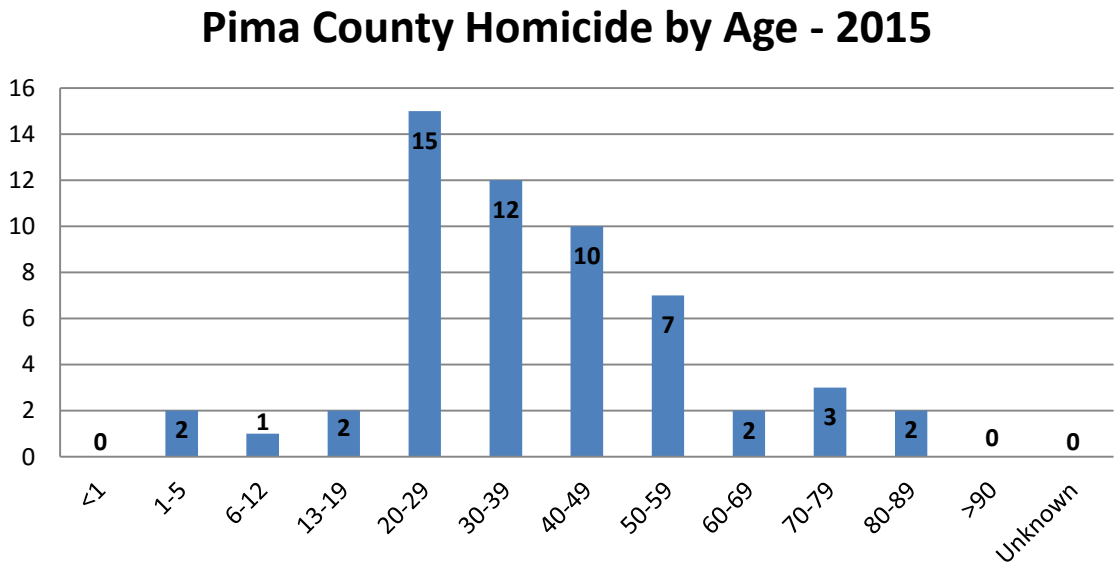
Pima County Deaths by Law Enforcement Agency 2015



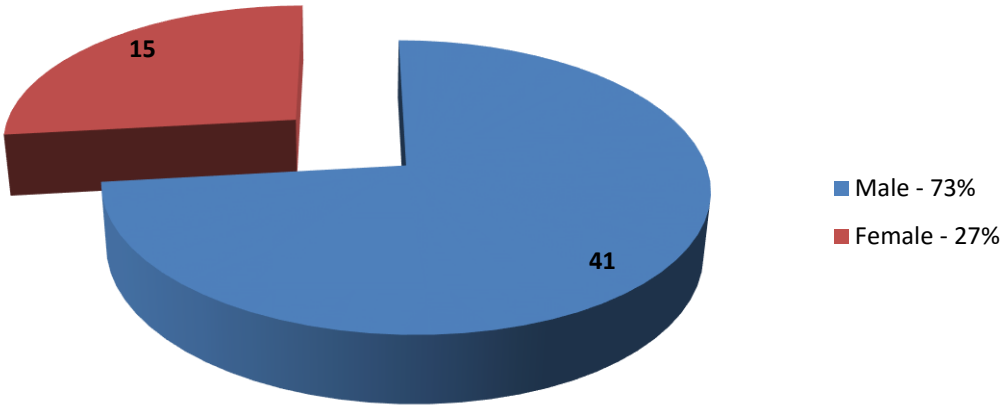
HOMICIDE DEATHS

The PCOME examined 56 homicides from Pima County in 2015; 4% of total Pima County deaths certified. Homicide totals from 2009 – 2015 are compared below. Homicide victims were most frequently male (73%), between 20-29 years of age (27%) and died as the result of firearms (70%).

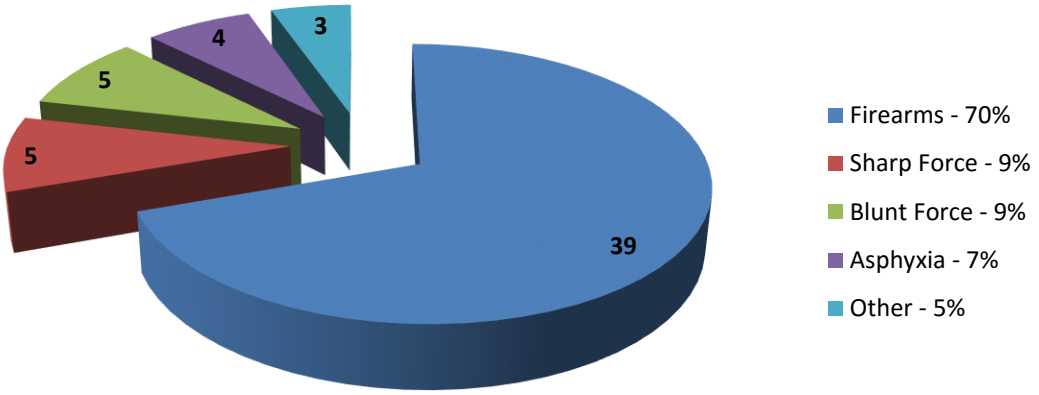




Pima County Homicide by Sex - 2015

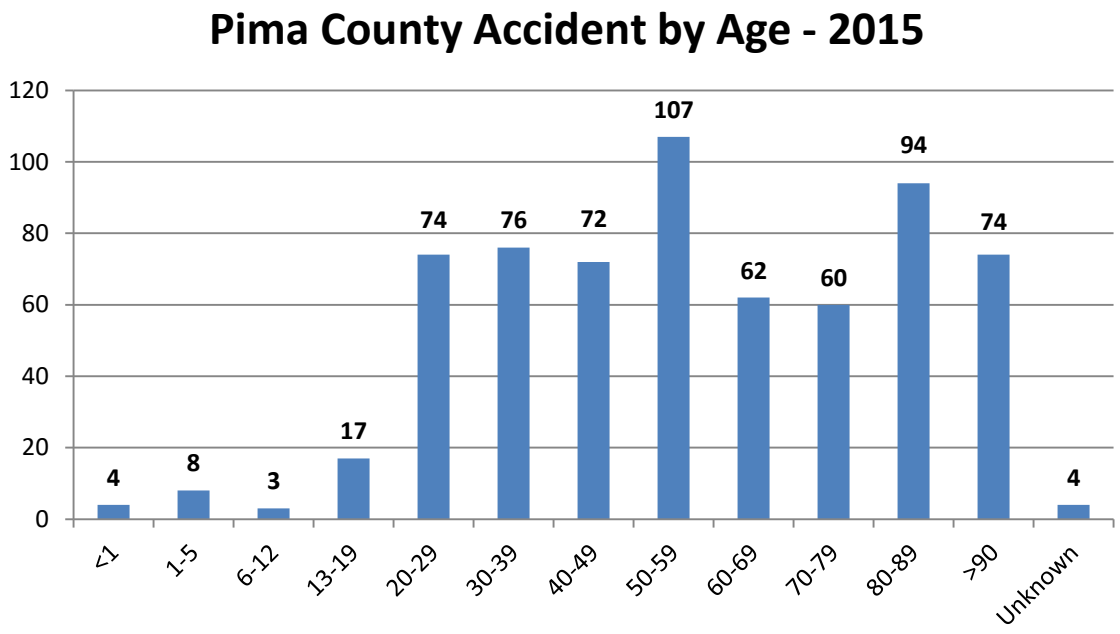


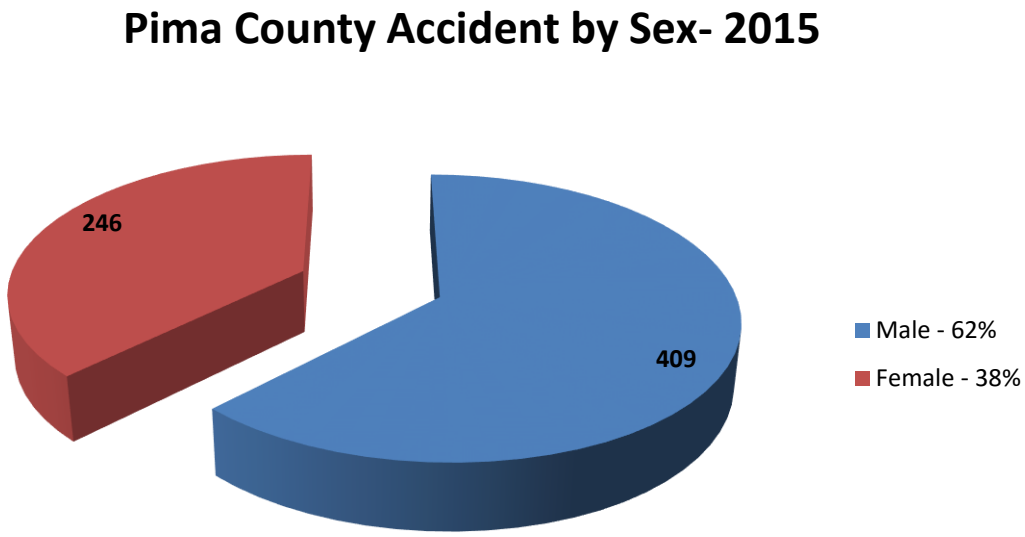
Pima County Homicide by Cause - 2015



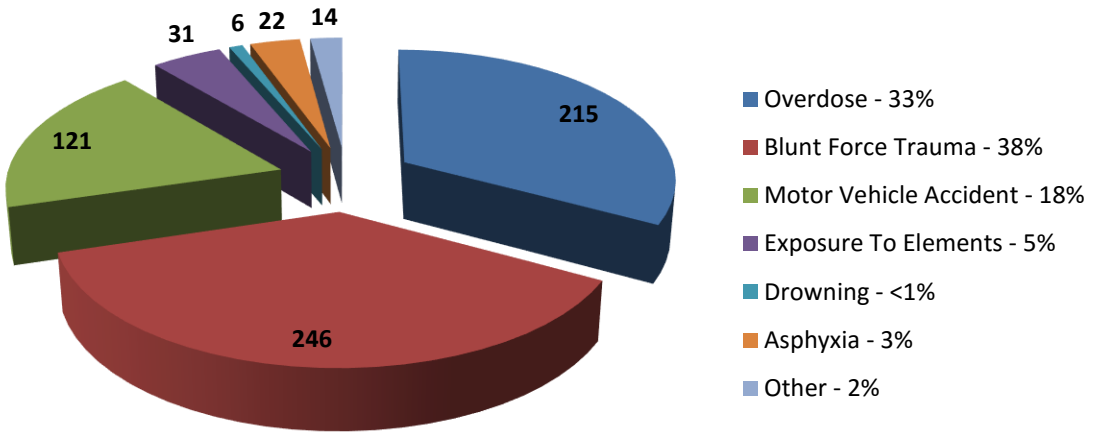
ACCIDENT DEATHS

Deaths due to accidents accounted for 44% of the deaths investigated by the PCOME in 2015. Accident victims were most frequently males (62%), between 50-59 years of age (16%) and died as the result of blunt force injuries (38%) often as the result of such conditions as complications of a hip fracture or intracranial hemorrhage from a fall.

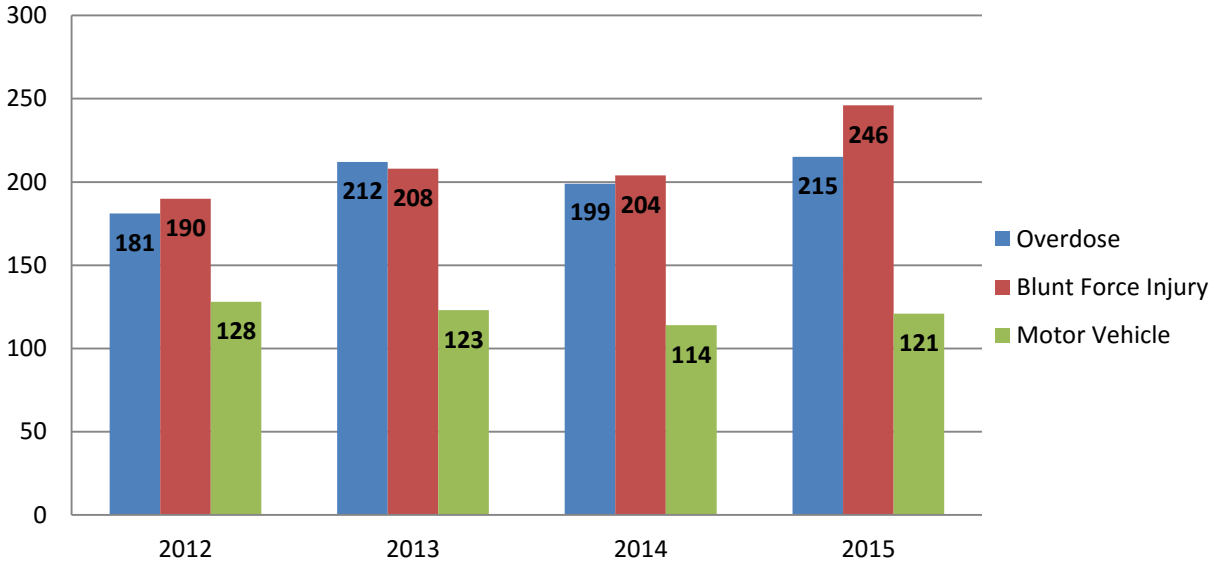




Pima County Accident by Cause - 2015

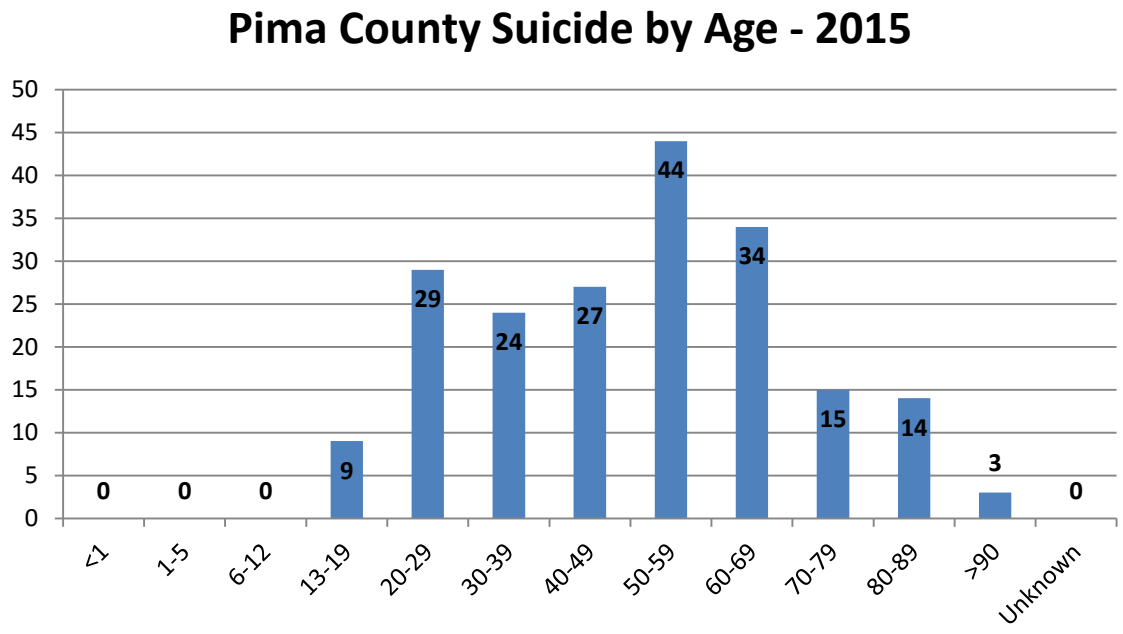


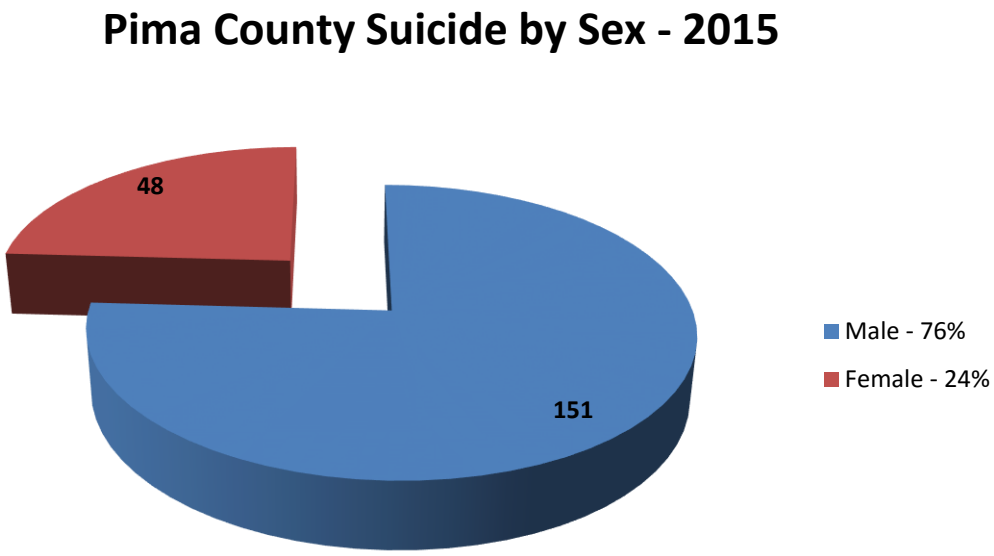
Pima County Accident by Cause (Top 3) 2012 - 2015



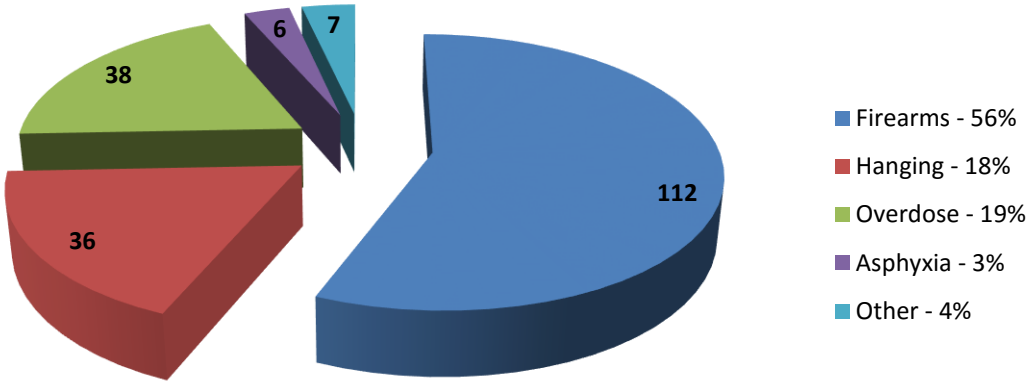
SUICIDE DEATHS

Deaths due to suicide accounted for 13% of the deaths investigated by the PCOME in 2015. Suicide victims were most frequently males (76%), between 50-59 years of age (28%) and died as the result of firearms (56%).

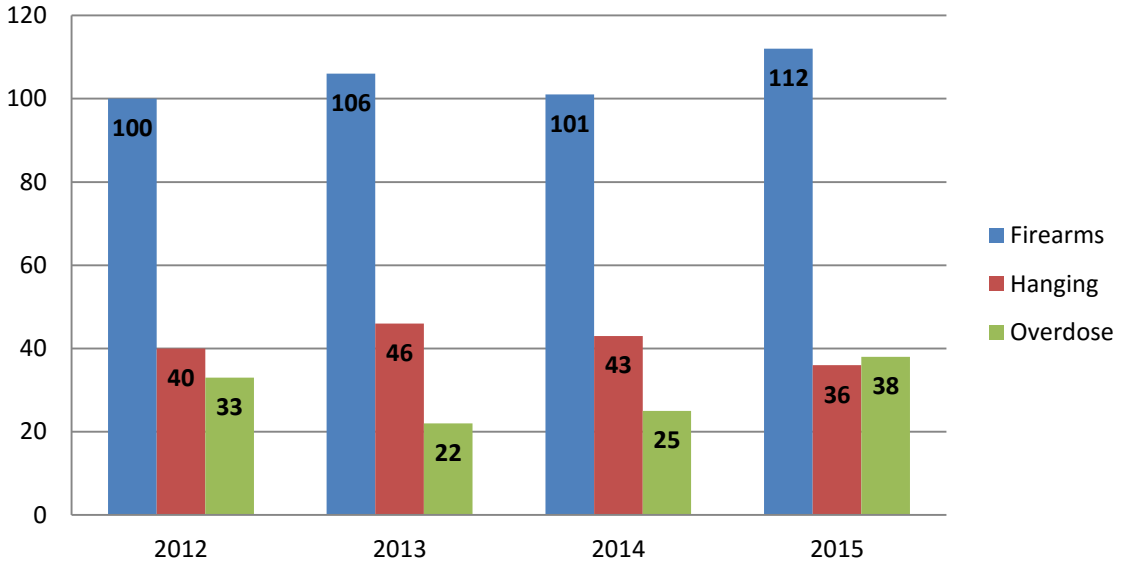




Pima County Suicide by Cause - 2015

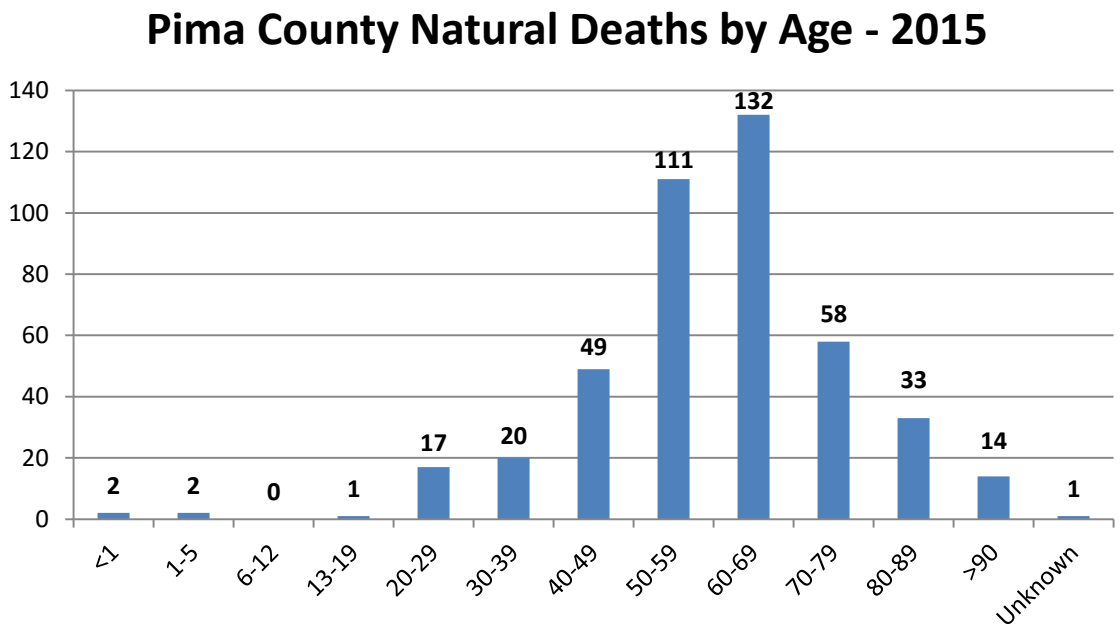


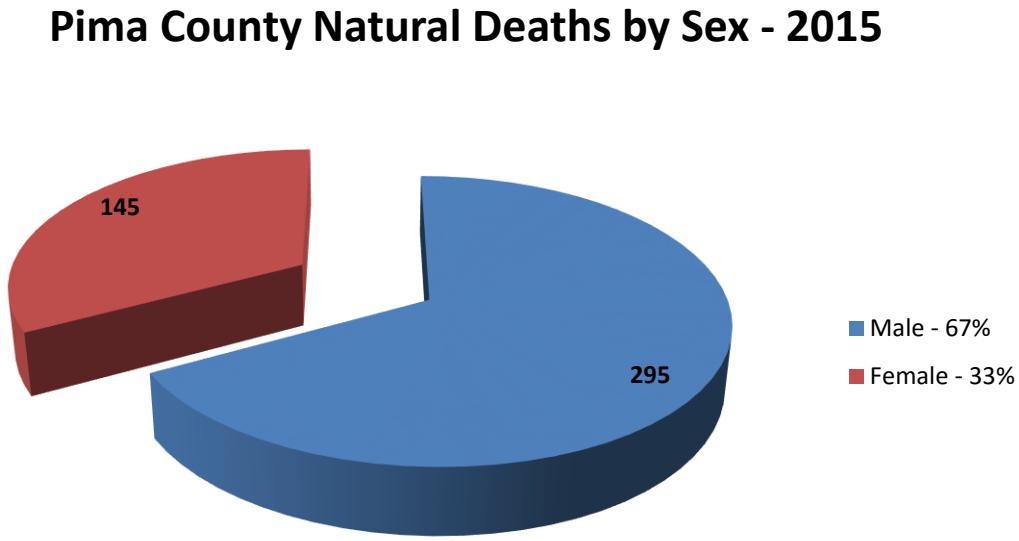
Pima County Suicide by Cause (Top 3) 2012 - 2015

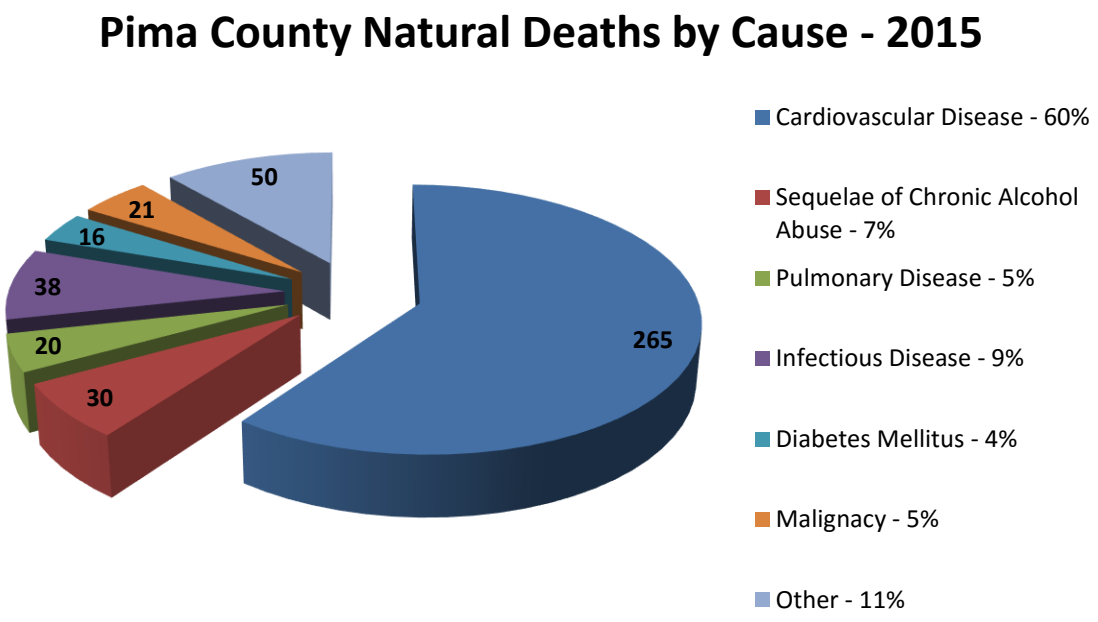


NATURAL DEATHS

Deaths due to natural causes accounted for 30% of the deaths investigated by the PCOME in 2015. Individuals who died from natural causes were most frequently males (67%), between 60-69 years of age (30%) and died as the result of cardiovascular disease (60%).

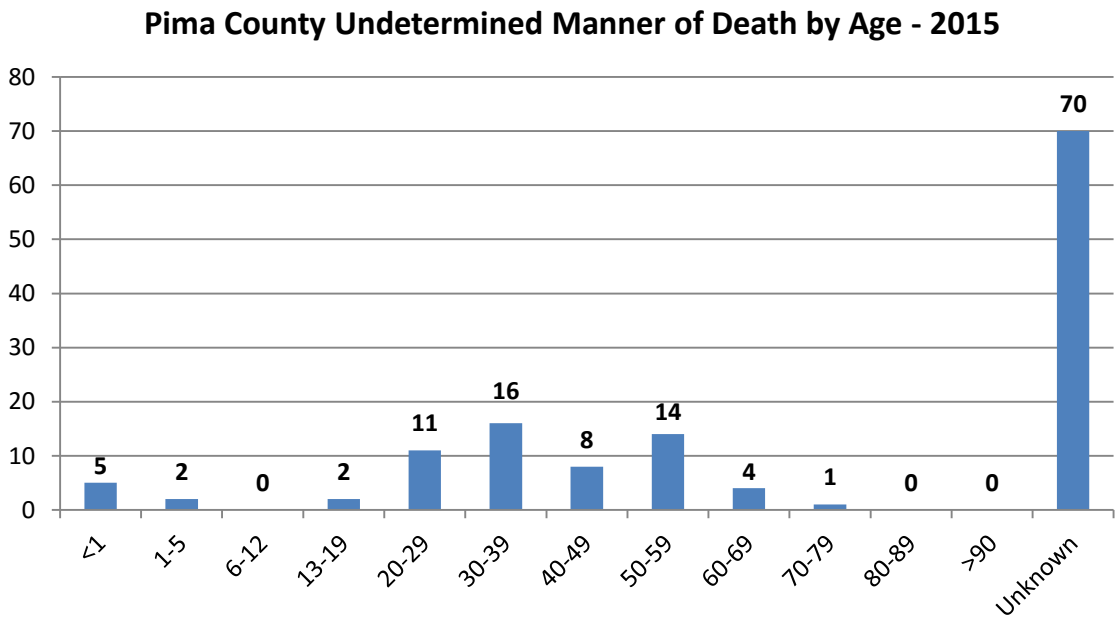


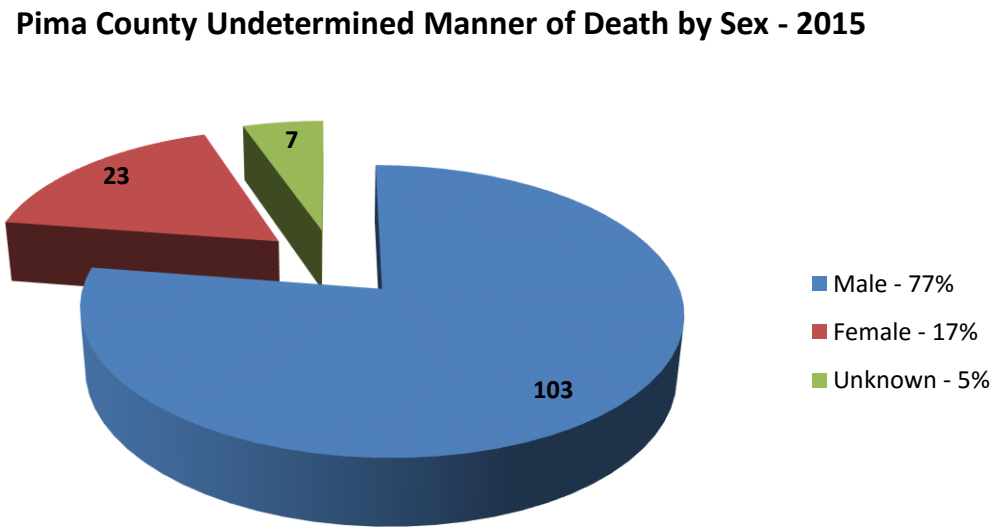



Pima County Natural Deaths by Cause - 2015
265
30
20
38
16
21
50
Cardiovascular Disease - 60%
Sequelae of Chronic Alcohol Abuse - 7%
Pulmonary Disease - 5%
Infectious Disease - 9%
Diabetes Mellitus - 4%
Malignacy - 5%
Other - 11%

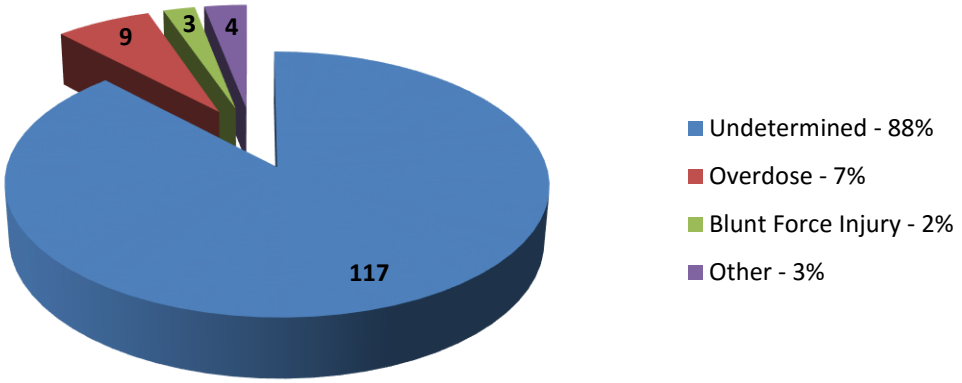
UNDETERMINED MANNER OF DEATH

Deaths of undetermined manner accounted for 9% of the deaths investigated by the PCOME in 2015. 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 Cause - 2015



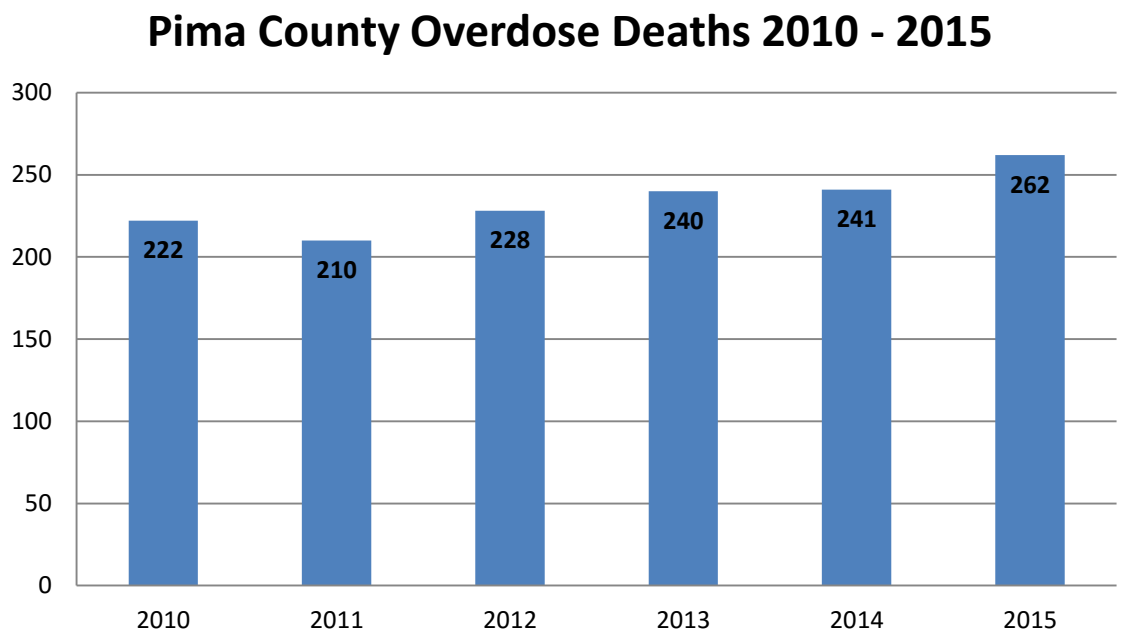
OVERDOSE DEATHS

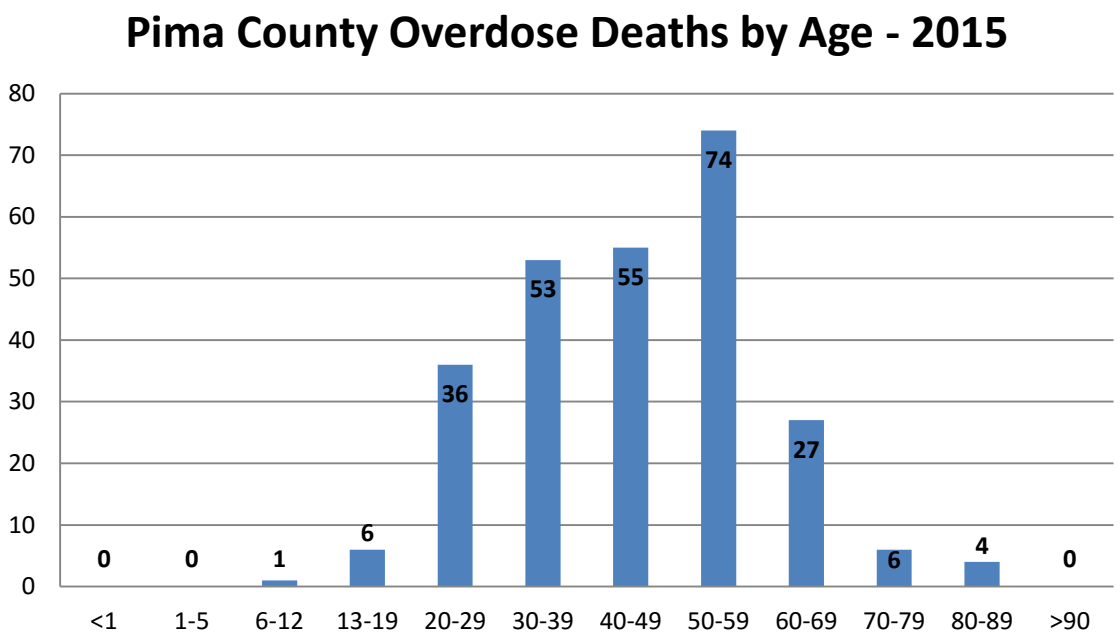
There were 262 deaths attributed to an overdose of either a single drug (138 deaths, 53%) or a combination of drugs (124 deaths, 47%) in 2015. Overdose deaths commonly involved males (56%) between the ages of 50-59 (28%). The majority of these deaths were classified as accidents (82%).

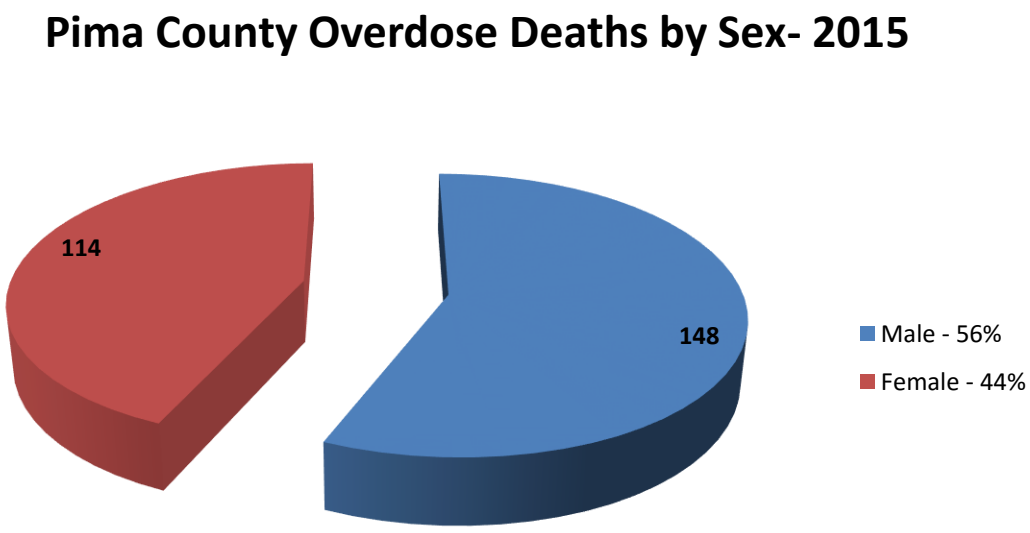
Opiate drugs (heroin, oxycodone, methadone, hydrocodone, morphine, oxymorphone, hydromorphone, tramadol, opiate unspecified) and fentanyl (a synthetic opioid narcotic) accounted for the majority of overdose deaths, either as a single drug or a component of a poly-drug overdose. Heroin was the most commonly abused illicit drug contributing to death in 2015 followed by methamphetamine.

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.

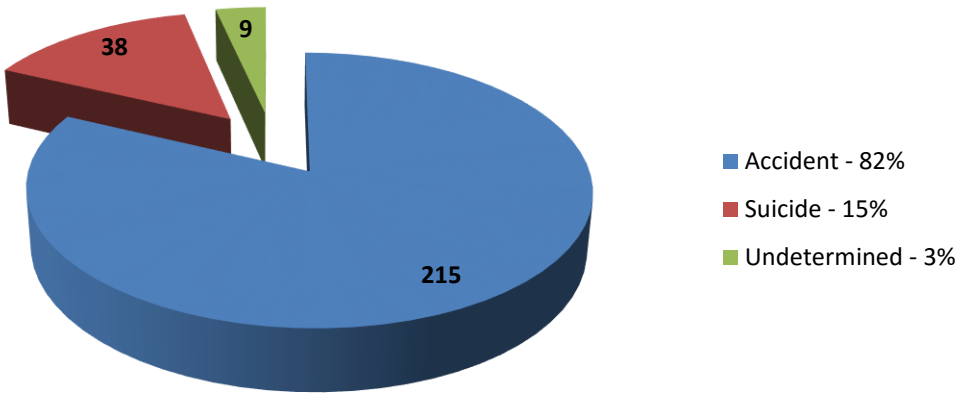
Acute alcohol intoxication alone, not as component of a poly-drug overdose, accounted for 6 overdose (2%) deaths in 2015.



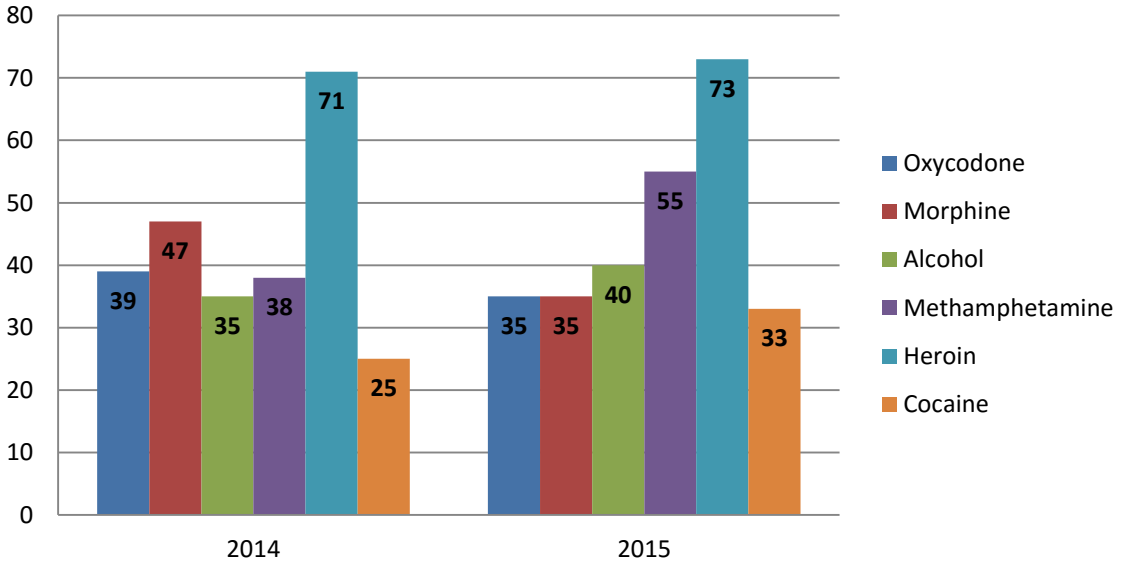

Pima County Overdose Deaths by Age - 2015
80
70
60
50
40
30
20
10
0
0
0
1
6
36
53
55
74
27
6
4
0
<1
1-5
6-12
13-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
>90

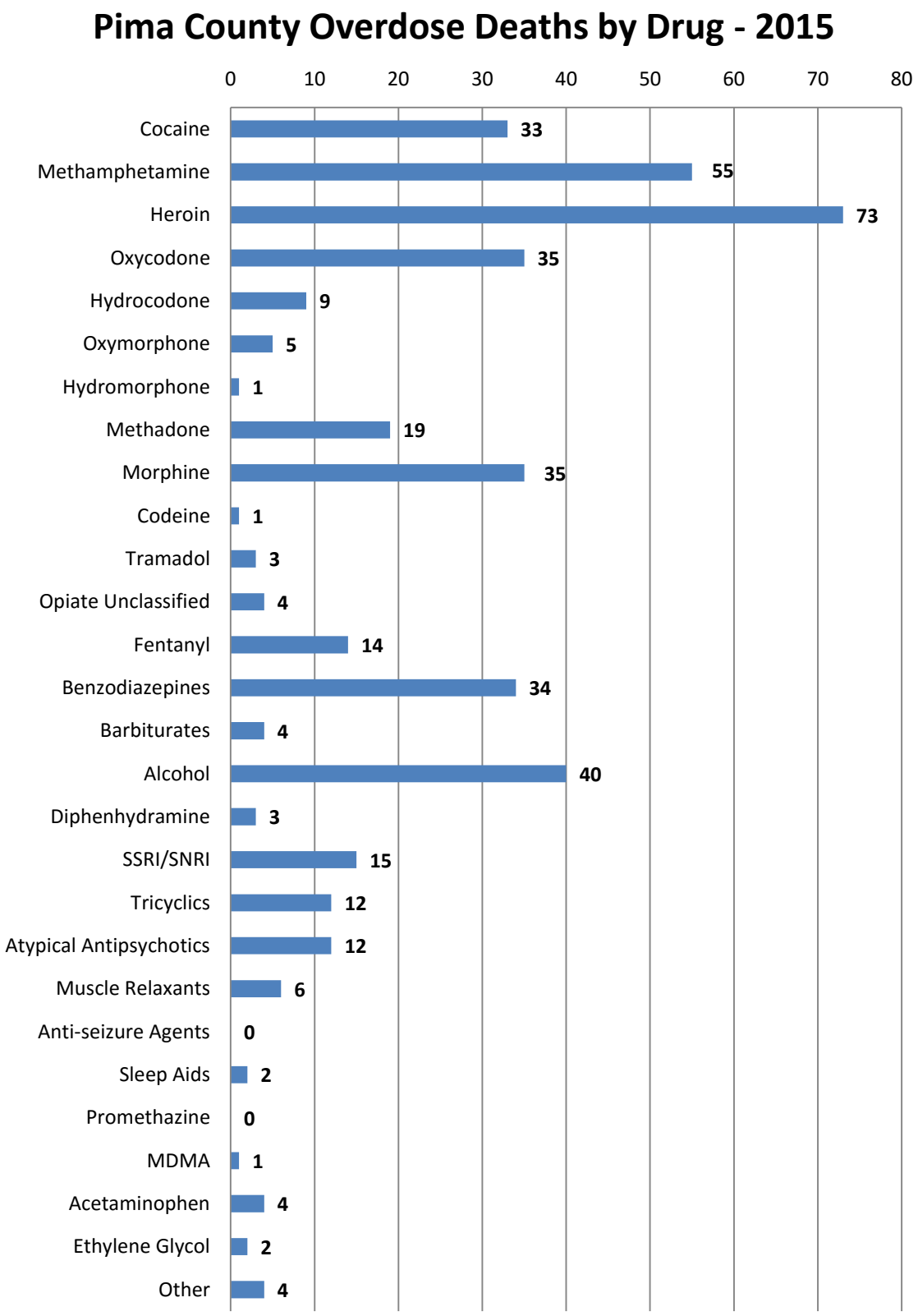

Pima County Overdose Deaths by Sex- 2015
114
148
Male - 56%
Female - 44%

Pima County Overdose Deaths by Manner - 2015



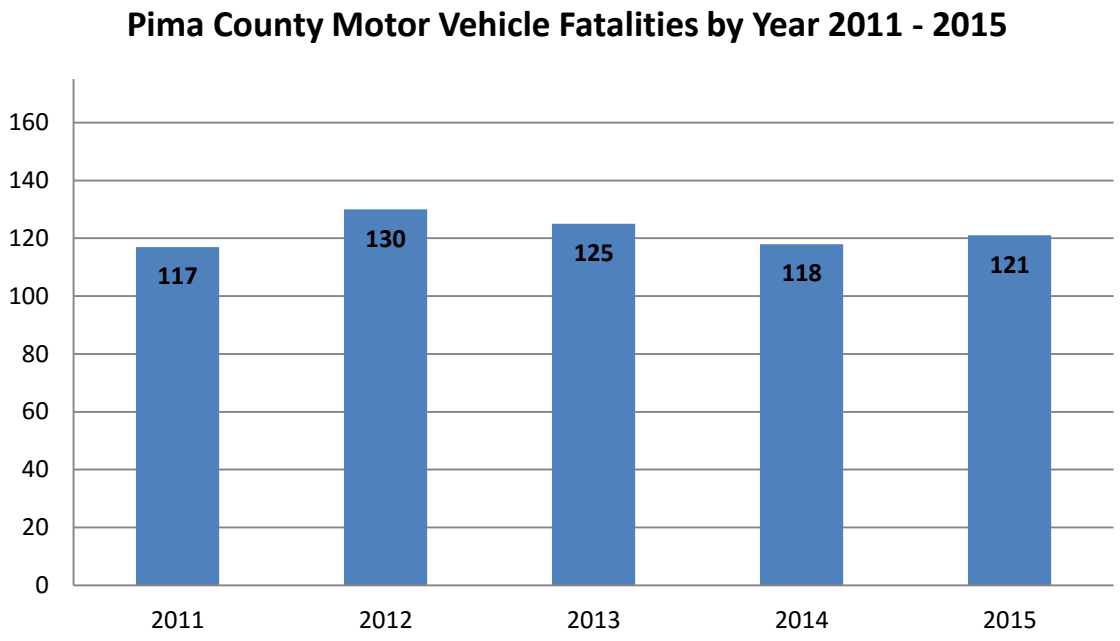
Select Pima County Drugs by Year 2014 - 2015

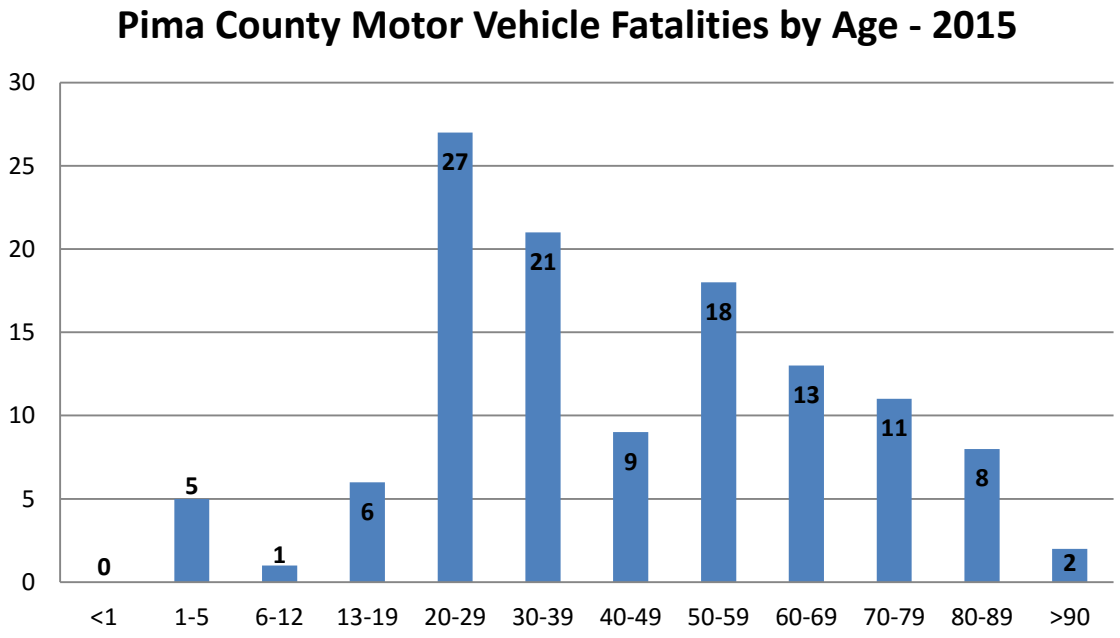



Pima County Overdose Deaths by Drug - 2015
0
10
20
30
40
50
60
70
80
Cocaine 33
Methamphetamine 55
Heroin 73
Oxycodone 35
Hydrocodone 9
Oxymorphone 5
Hydromorphone 1
Methadone 19
Morphine 35
Codeine 1
Tramadol 3
Opiate Unclassified 4
Fentanyl 14
Benzodiazepines 34
Barbiturates 4
Alcohol 40
Diphenhydramine 3
SSRI/SNRI 15
Tricyclics 12
Atypical Antipsychotics 12
Muscle Relaxants 6
Anti-seizure Agents 0
Sleep Aids 2
Promethazine 0
MDMA 1
Acetaminophen 4
Ethylene Glycol 2
Other 4

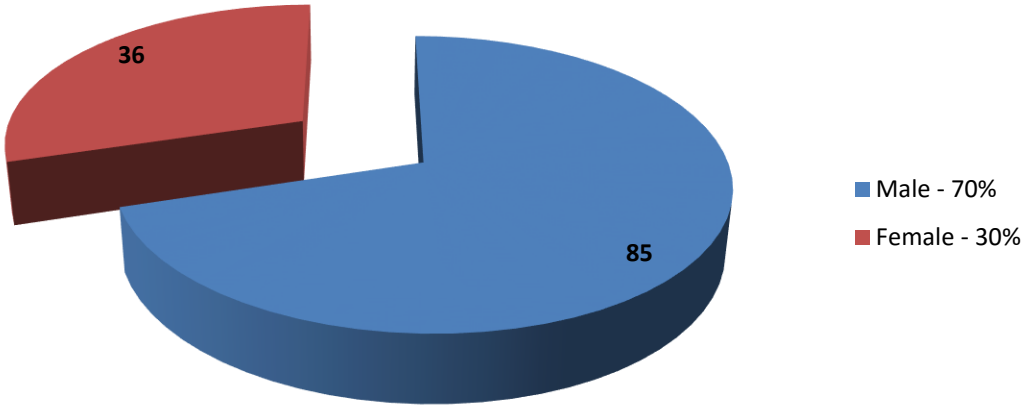
MOTOR VEHICLE RELATED FATALITIES

Motor vehicle related fatalities accounted for 121 total deaths in in Pima County in 2015. The majority, 70 deaths, were occupants of a motor vehicle involved in an accident (MVA). Of the remaining, 16 were motorcycle accidents (MCA), 33 were pedestrians or bicyclists struck by vehicles, and 2 were all-terrain vehicle (ATV) accidents. Individuals who died from motor vehicle related fatalities were most frequently males (70%) and between 20-29 years of age (22%).

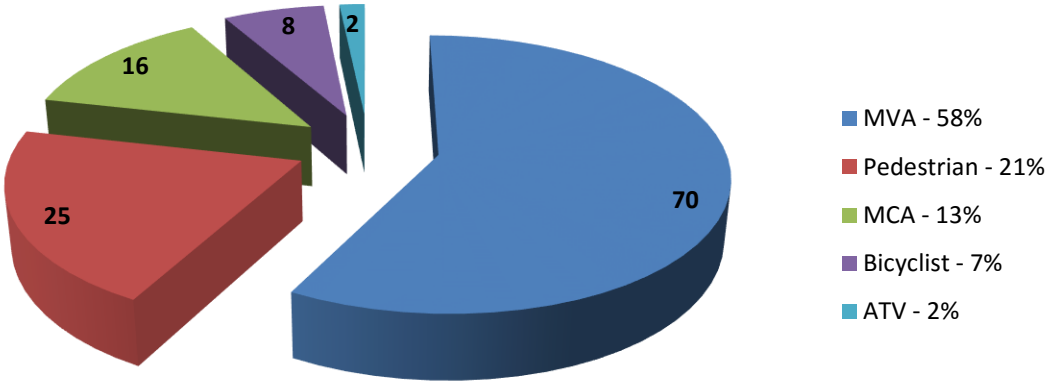




Pima County Motor Vehicle Fatalities by Sex - 2015



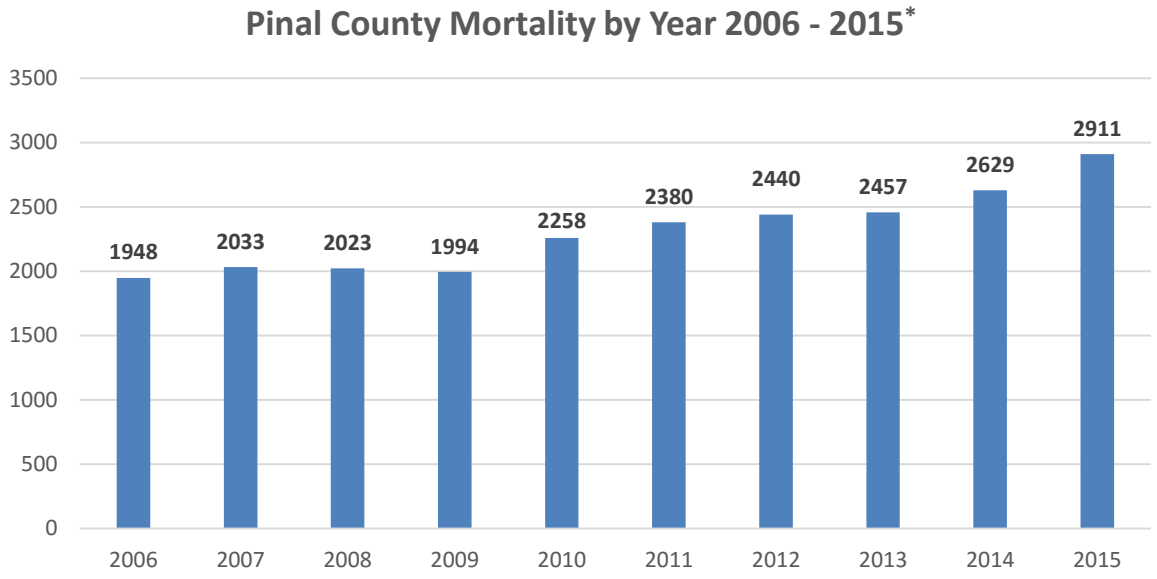
Pima County Motor Vehicle Fatalities by Type - 2015



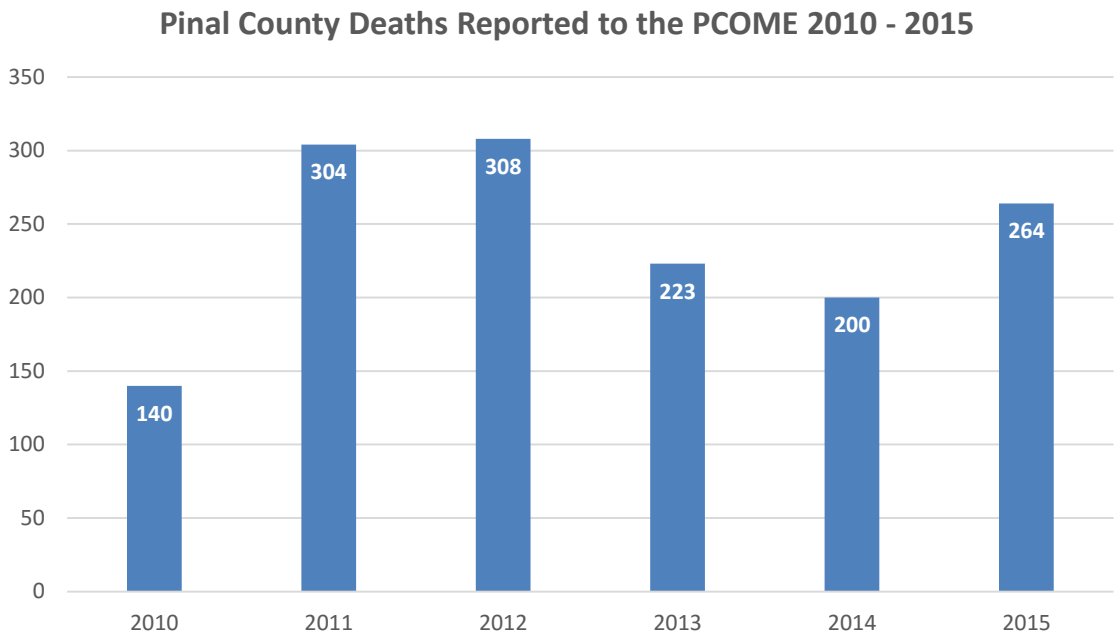
Pinal County

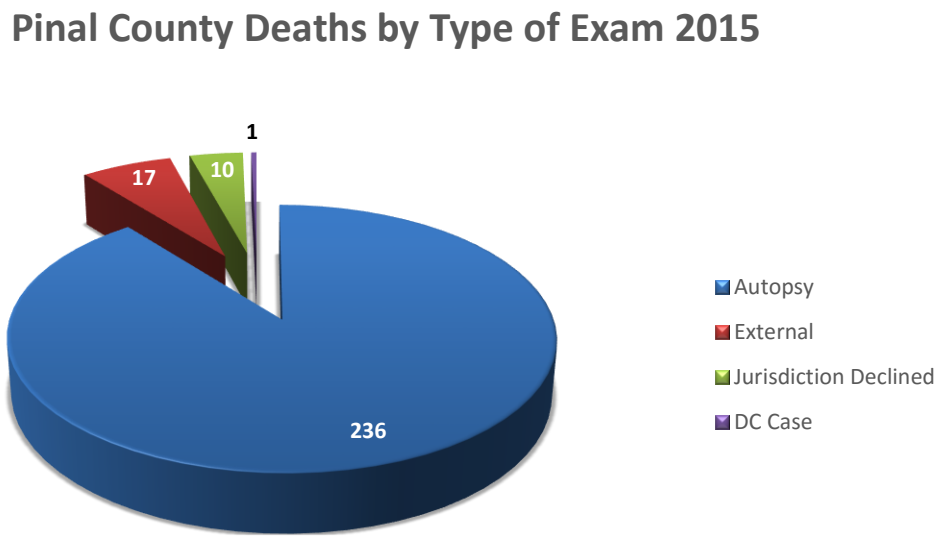
Pinal County contracts with the PCOME to provide examination or other support services beyond what Pinal County provides internally. Pinal County maintains its own Medical Examiner's office staffed to conduct death scene investigations, transport remains, assist with the performance of some external 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 are 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 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 2015 there were 2911 deaths in Pinal County; of these 264 (9%) were reported to the PCOME for examination. Some pertinent statistics regarding these deaths are detailed in the tables and graphs below.

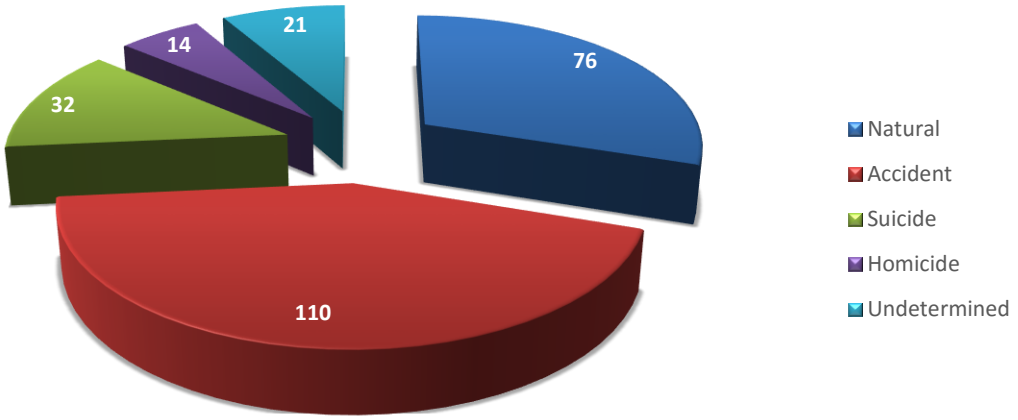


*Arizona Department of Vital Statistics as of 06/02/2016

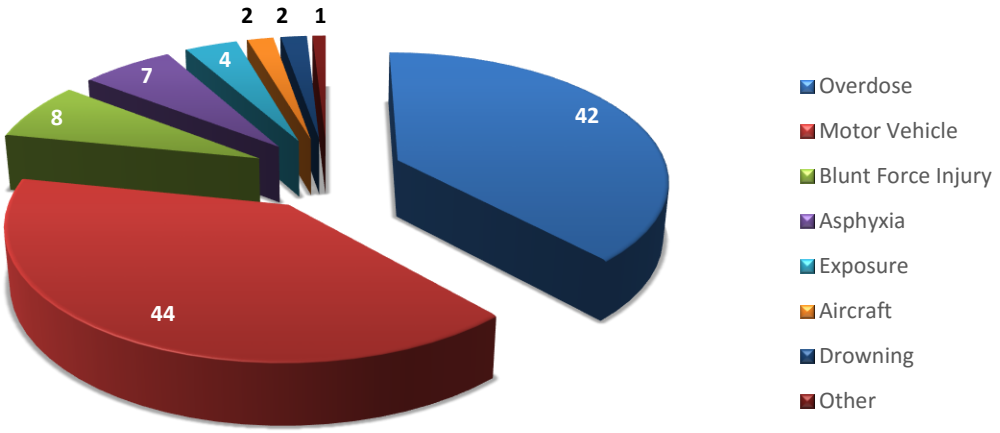

Pinal County Deaths Reported to the PCOME 2010 - 2015
350
300
250
200
150
100
50
0
140
304
308
223
200
264
2010
2011
2012
2013
2014
2015


Pinal County Deaths by Type of Exam 2015
1
17
10
236
Autopsy
External
Jurisdiction Declined
DC Case

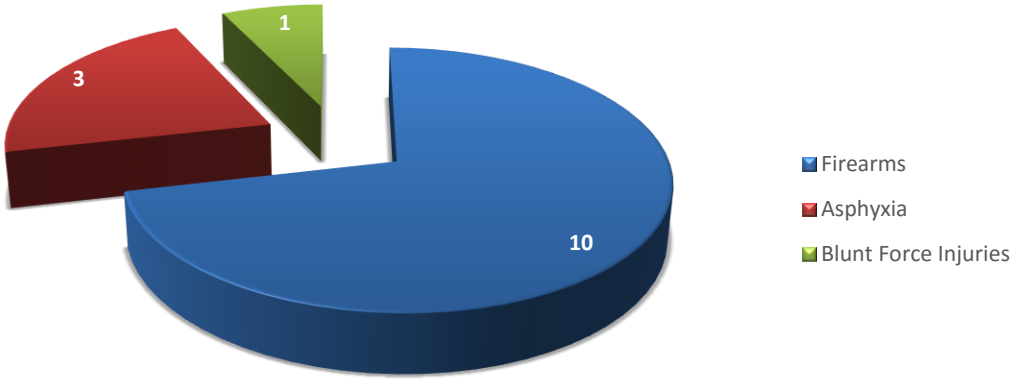
Pinal County Deaths by Manner of Death 2015



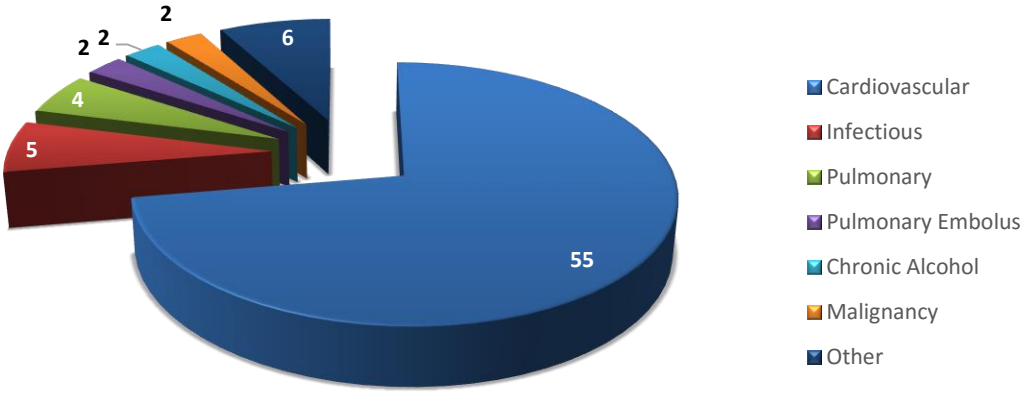
Pinal County Accidents by Type 2015



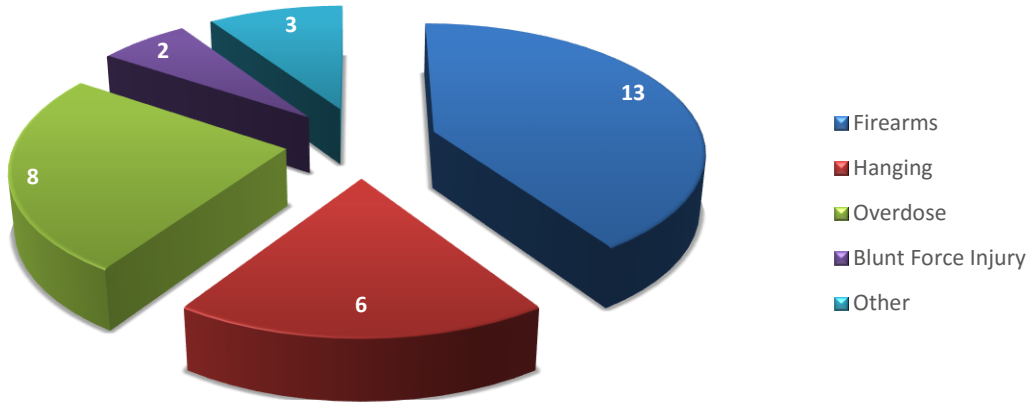
Pinal County Homicides by Type 2015



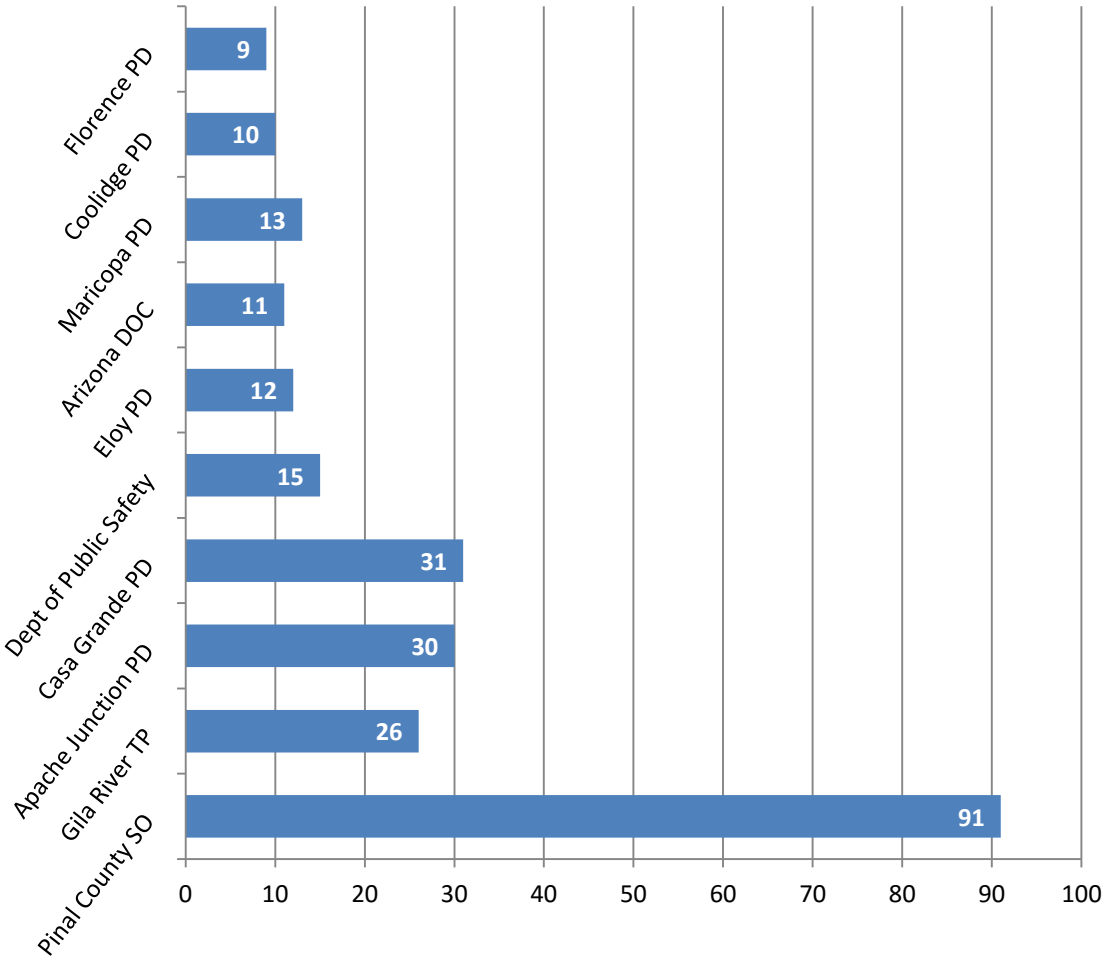
Pinal County Naturals by Type 2015



Pinal County Suicides by Type 2015



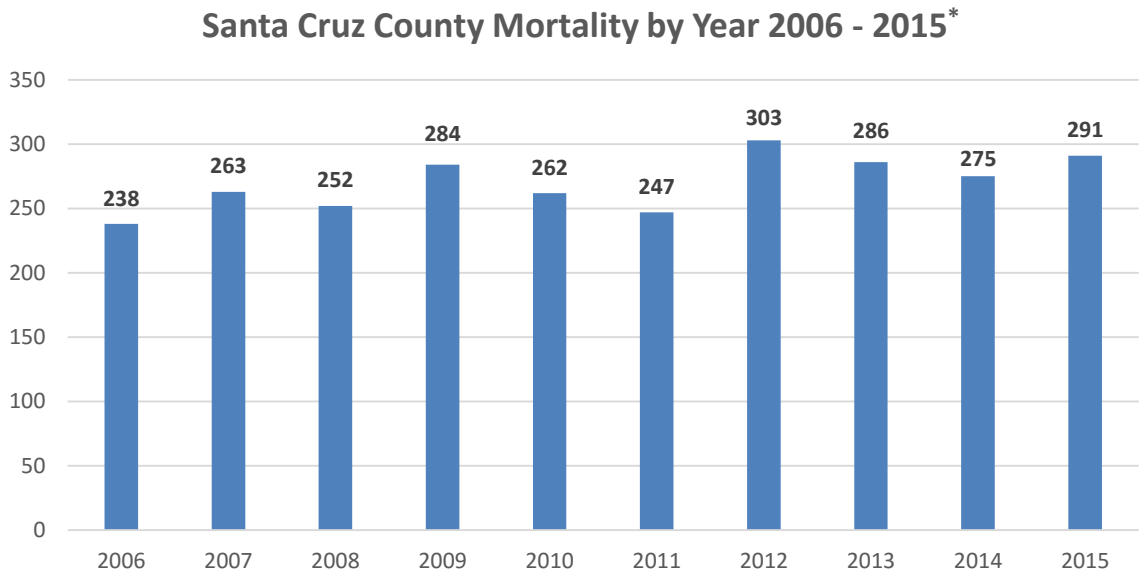
Pinal County Deaths by Law Enforcement Agency 2015



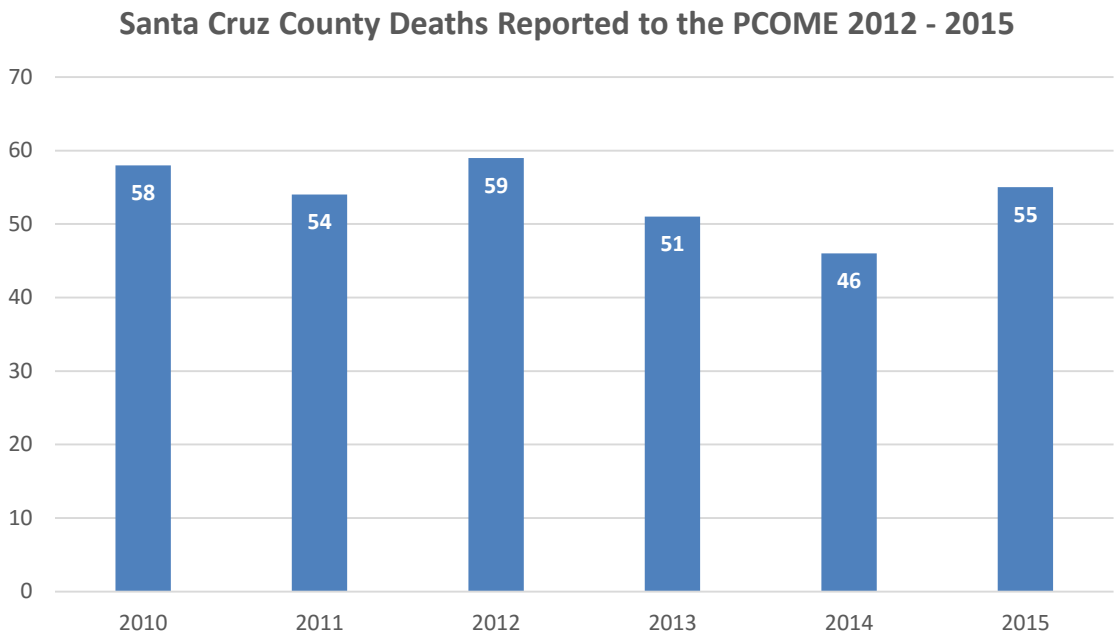
Santa Cruz County

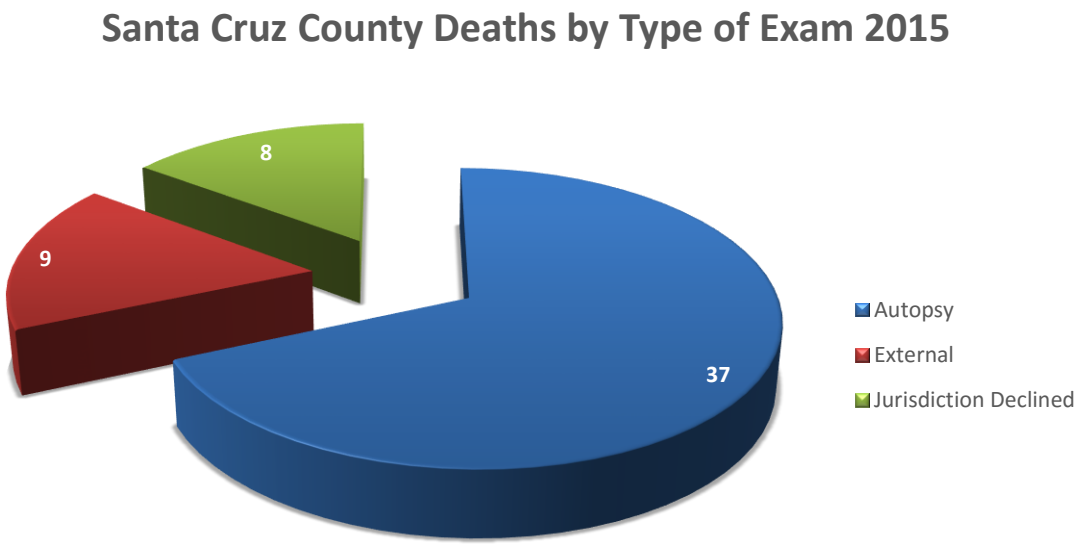
Santa Cruz County does not maintain an in-county Medical Examiner's office to conduct death scene investigations, transport or examine remains, or certify deaths reportable to the medical examiner. Nor does Santa Cruz County appoint or contract with an Alternate Medical Examiner. The PCOME acts as the 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 2015 there were 291 deaths in Santa Cruz County; of these 55 (19%) were reported to the PCOME for investigation and/or examination. Some pertinent statistics regarding these deaths are detailed in the tables below.

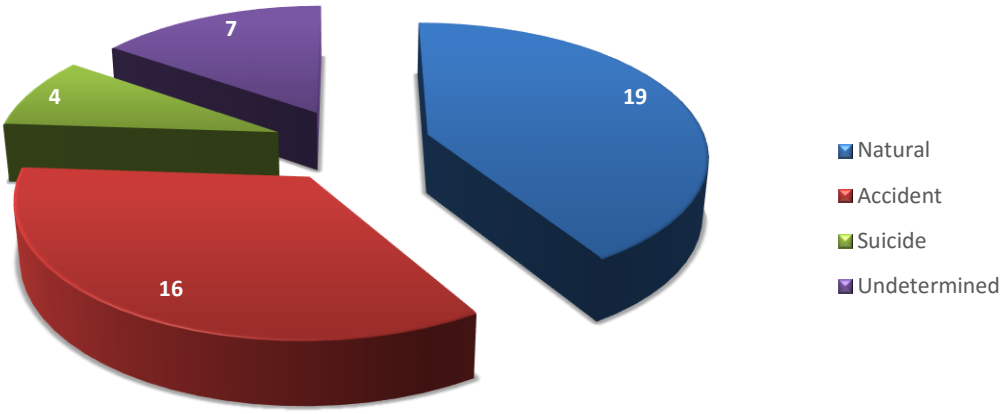


*Arizona Department of Vital Statistics as of 06/02/2016

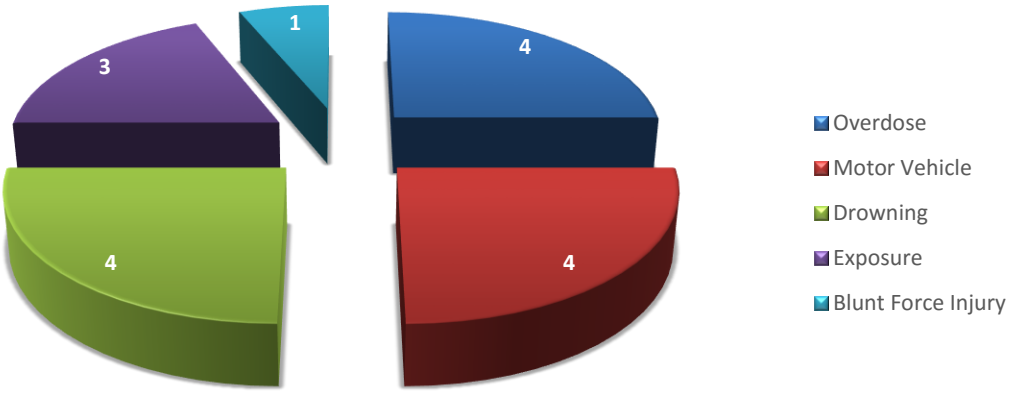

Santa Cruz County Deaths Reported to the PCOME 2012 - 2015
70
60
50
40
30
20
10
0
58
54
59
51
46
55
2010
2011
2012
2013
2014
2015


Santa Cruz County Deaths by Type of Exam 2015
8
9
37
Autopsy
External
Jurisdiction Declined

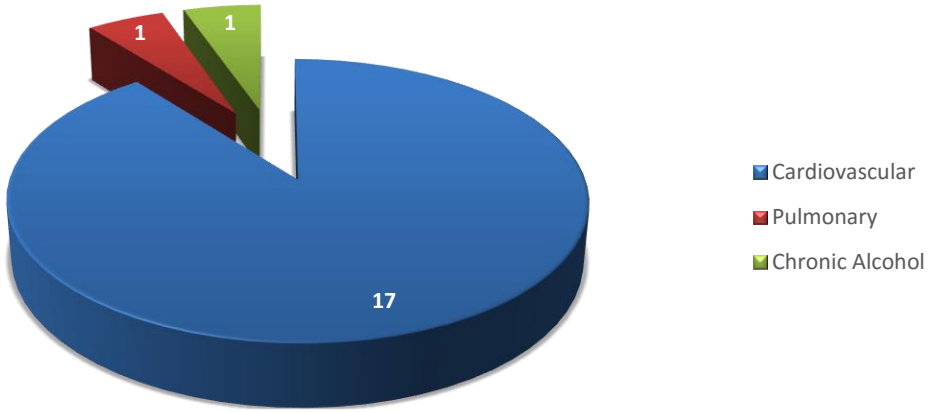
Santa Cruz County Deaths by Manner of Death 2015



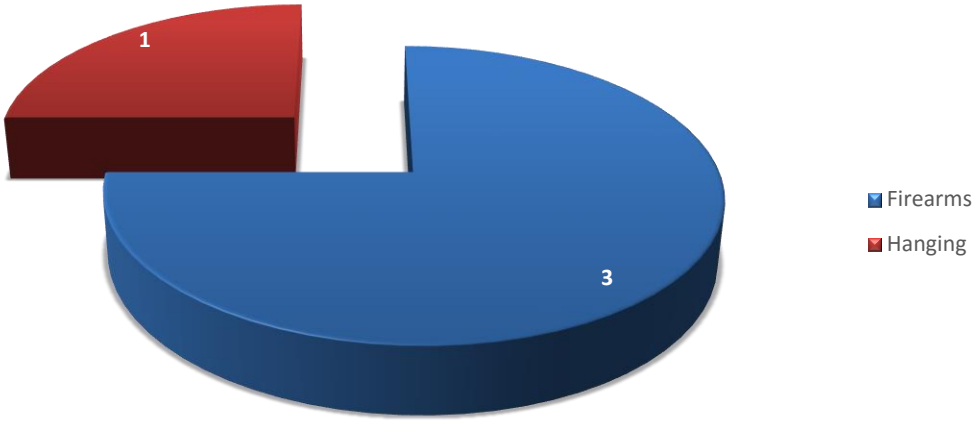
Santa Cruz County Accidents by Type 2015

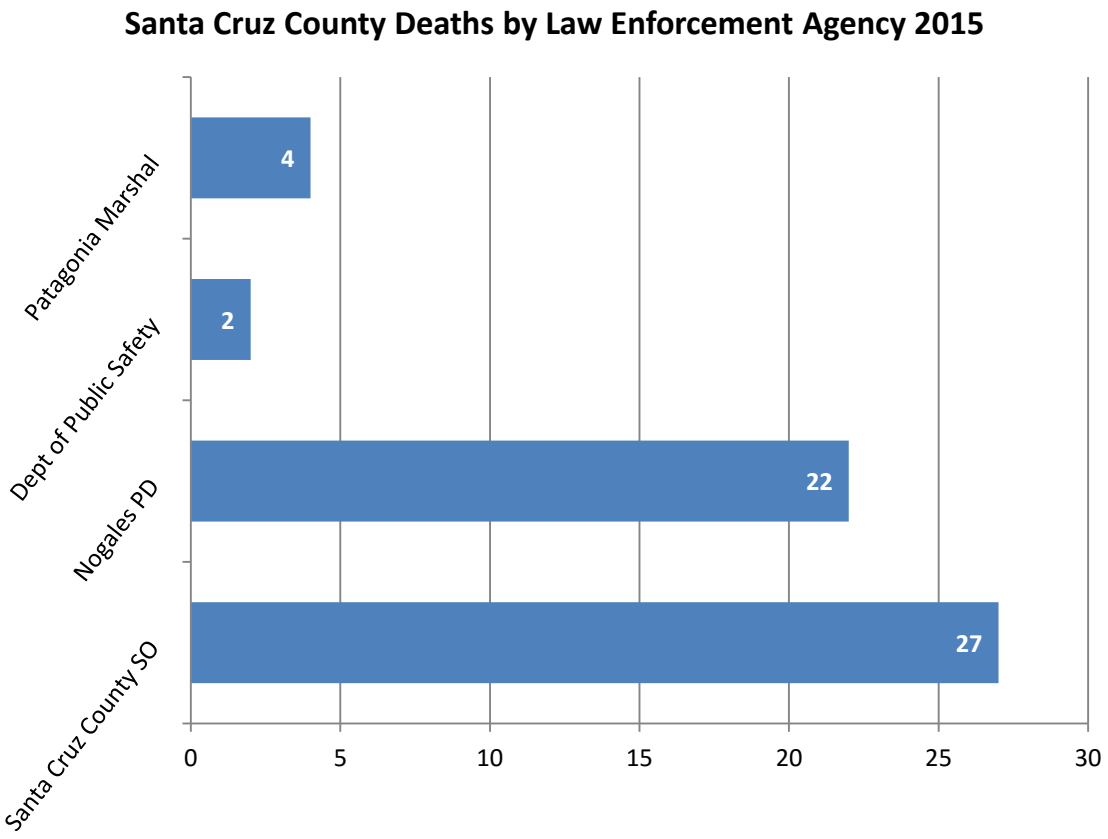


Santa Cruz County Naturals by Type 2015



Santa Cruz County Suicides by Type 2015

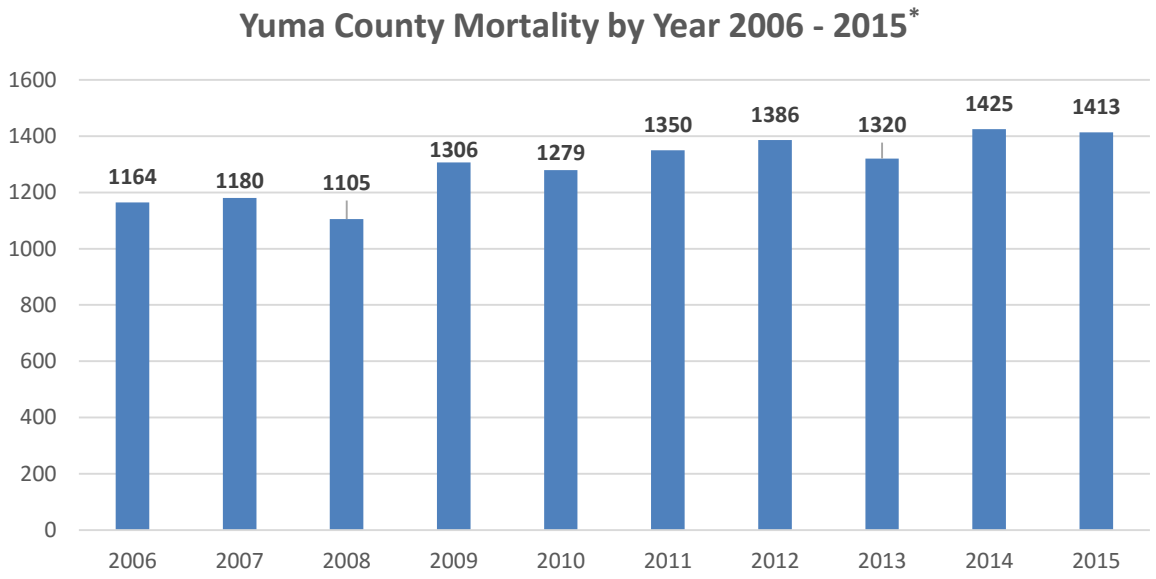



Santa Cruz County Deaths by Law Enforcement Agency 2015
Patagonia Marshal
Dept of Public Safety
Nogales PD
Santa Cruz County SO
4
2
22
27
0
5
10
15
20
25
30

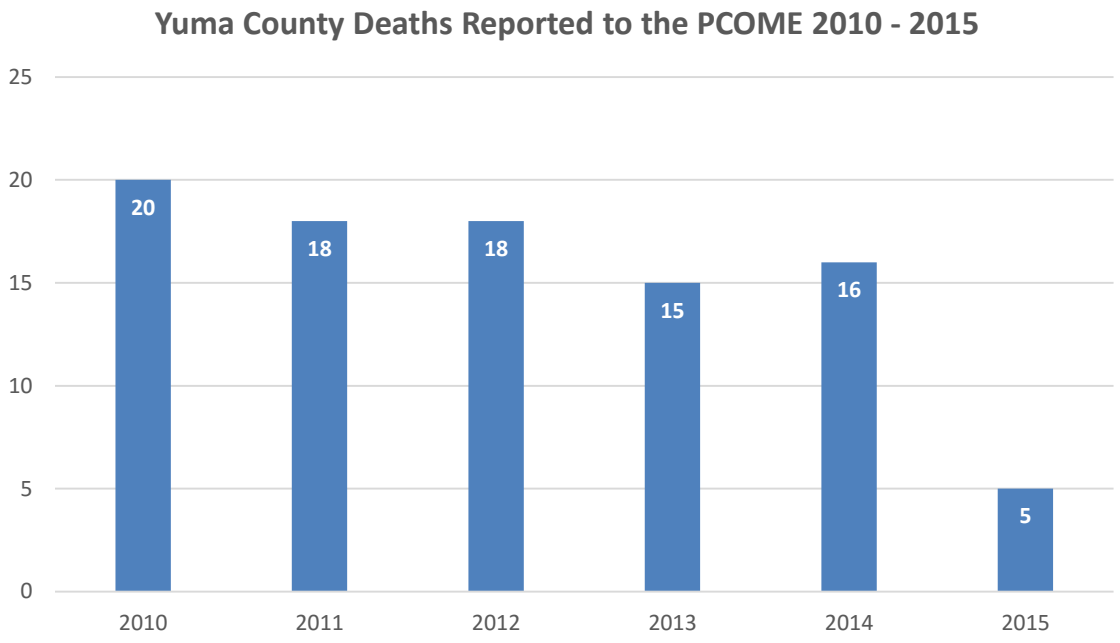
Yuma County

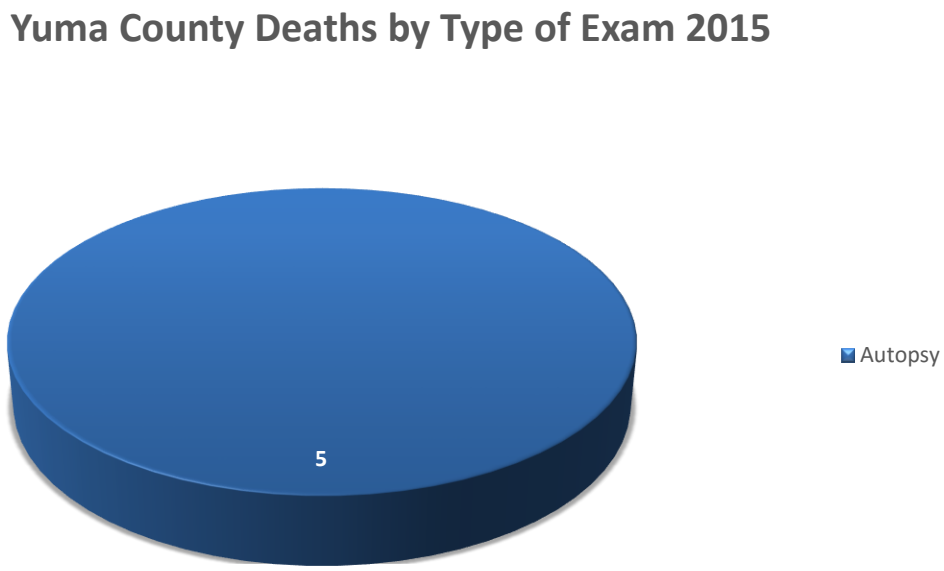
Yuma County contracts with the pathology group at Yuma Regional Medical Center to perform examinations and certify deaths that fall under the jurisdiction of the medical examiner in Yuma County. Some decedents (typically suspected homicides) are referred to the PCOME for an examination and death certification 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.

Five deaths from Yuma County were reported to the PCOME in 2015, all five of which required autopsy examinations. Some pertinent statistics regarding these deaths are detailed in the tables below.

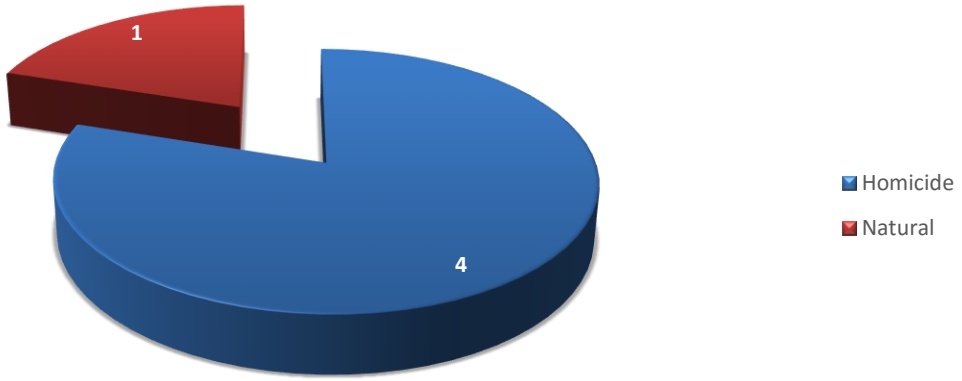


*Arizona Department of Vital Statistics as of 06/02/2016

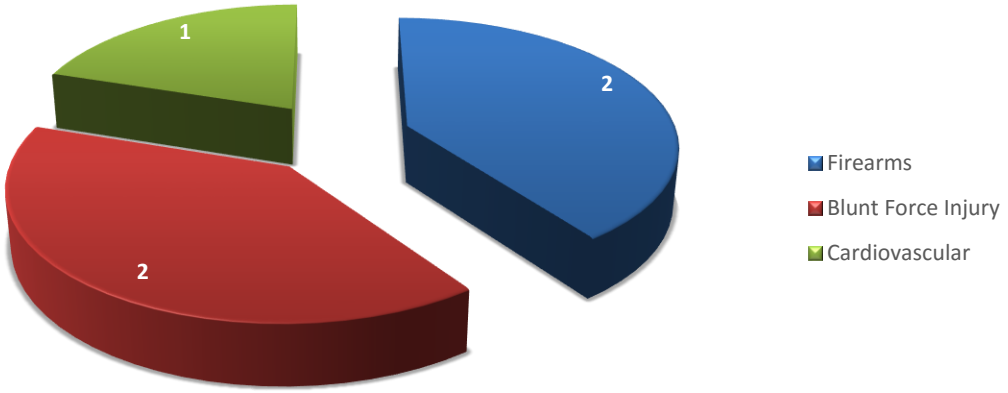

Yuma County Deaths Reported to the PCOME 2010 - 2015
25
20
15
10
5
0
20
18
18
15
16
5
2010
2011
2012
2013
2014
2015

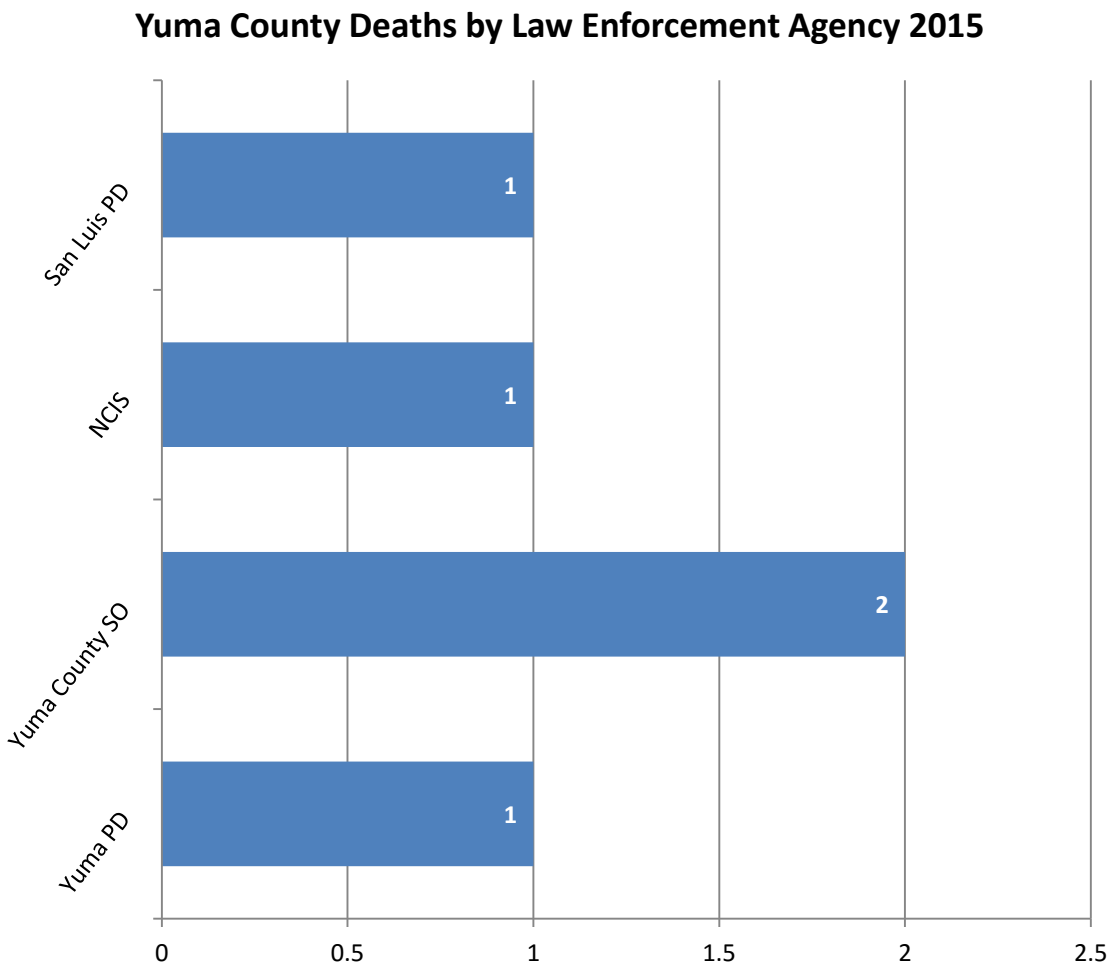

Yuma County Deaths by Type of Exam 2015
5
Autopsy

Yuma County Deaths by Manner of Death 2015



Yuma County Deaths by Type of Death 2015




Yuma County Deaths by Law Enforcement Agency 2015
San Luis PD
NCIS
Yuma County SO
Yuma PD
1
1
2
1
0
0.5
1
1.5
2
2.5