COUNTY OF SPOKANE
STATE OF WASHINGTON

2012 Annual Report

Spokane County Medical Examiner

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2012 ANNUAL REPORT

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Section 1: Overview

Mission Statement

"*A regional center dedicated to excellence in public service by providing professional, scientific, and compassionate forensic death investigation services.*"

Introduction

The Spokane County Medical Examiner's Office has been in existence since January 1, 1999, when the Coroner's Office was replaced. In April of 2004, the office received full accreditation from the National Association of Medical Examiners (NAME). The office was re-inspected and re-accredited in May, 2009, Roughly 60 Medical Examiner/Coroner Offices in the United States are accredited. The office employees two forensic pathologists, an office manager, three full time investigators, two administrative staff, one chief autopsy assistant, one half time autopsy assistant, as well as 11 extra help employees who work as investigators on a call-out basis. For more information about the Medical Examiner's Office, visit our web site at www.spokanecounty.org/medexaminer.

The office has been the recipient of five federal Paul Coverdell Forensic Science Improvement grants, totaling approximately $ 260,000.00. The latest grant was awarded in October 2010 and the grant cycle completed in the winter of 2011.

The Spokane County Medical Examiner's grant from the Department of Justice for 2010 totaled $ 47,000, Grant funds were used as follows:

1.	*Laptop Computers*	*$ 8,000.00*
2.	*Cameras*	*$ 10,000.00*
3.	*Digital Dictation*	*$ 7,000.00*
4.	*Copy machines and printers*	*$ 9,500.00*
5.	*Digital fingerprint scanning*	*$ 1,700.00*
6.	*X-ray scanning*	*$ 1,800.00*
7.	*Training and education*	*$ 9,000.00*

Foreword

Information presented in this annual report has been compiled from deaths that were reported to the Spokane County Medical Examiner's Office in 2012. This summarized report presents data in a variety of formats with the objective of providing useful information to diverse groups in the community.

***Referral Caseload:** Currently the Spokane County Medical Examiner's Office performs autopsies for 12 "outside" counties in Eastern Washington and the Idaho panhandle. In 2012 a total of 186 autopsies were performed for the following referral counties, Asotin, Benewah, Bonner, Boundary, Garfield, Kootenai, Lincoln, Lewis, Nez Perce, Pend Oreille, Shoshone and Stevens. The arrangement between these surrounding counties and the Spokane County Medical Examiner is mutually beneficial. The surrounding counties utilize forensic expertise and an excellent accredited forensic pathology facility, without the necessity of having larger staffs employing Forensic Pathologists, and maintaining an*

autopsy facility. Spokane County receives payment from outside counties for these services, revenues for autopsies totaled $316,200 in 2011.

OUTSIDE COUNTY AUTOPSIES

2011	*186*
2010	*132*
2009	*157*
2008	*162*
2007	*138*
2006	*146*
2005	*144*
2004	*168*

SPOKANE COUNTY AUTOPSIES

2011	*359*
2010	*410*
2009	*394*
2008	*462*
2007	*430*
2006	*423*
2005	*426*
2004	*436*

Outside County Autopsies per County

	2011	*2010*	*2009*	*2008*	*2007*	*2006*	*2005*	*2004*
Asotin	*3*	*6*	*3*	*5*	*0*	*3*	*5*	*2*
Benewah	*2*	*2*	*2*	*4*	*2*	*1*	*1*	*3*
Bonner	*15*	*8*	*19*	*20*	*11*	*11*	*20*	*13*
Boundary	*4*	*2*	*4*	*3*	*8*	*4*	*9*	*8*
FBI	*1*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Garfield	*1*	*1*	*0*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Kootenai	*84*	*69*	*54*	*62*	*48*	*38*	*52*	*65*
Lewis	*1*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*	*N/A*
Lincoln	*3*	*1*	*8*	*7*	*5*	*8*	*2*	*6*
Nez Perce	*16*	*10*	*14*	*5*	*4*	*10*	*8*	*3*
Pend Oreille	*12*	*5*	*6*	*6*	*7*	*12*	*6*	*13*
Shoshone	*9*	*6*	*9*	*6*	*14*	*11*	*6*	*11*
Stevens	*35*	*22*	*34*	*36*	*31*	*43*	*27*	*38*

The Spokane County Medical examiner's office began service to Lewis County in 2011.

This office performed 1 autopsy for the Federal Bureau of Investigation (FBI) in 2011.

Acknowledgment...

The Medical Examiner's Office wishes to express, once again, their sincere appreciation to Eileen Egeland, Systems Analyst of the Spokane County Information Systems Department, for her assistance and support in the development of this statistical report.

Criteria for Reportable Deaths

1. Persons who die suddenly when in apparent good health and without medical attendance within 36 hours preceding death.
2. Circumstances that indicate death was caused in part or entirely by unnatural or unlawful means.
3. Suspicious circumstances.
4. Unknown or obscure causes.
5. Deaths caused by any injury whatsoever, whether the primary cause or contributing cause.
6. Rapidly fatal contagious disease, with public health risk.
7. Unclaimed bodies.
8. Premature and stillborn infants where suspicious circumstances exist.
9. All deaths in children.

Function of the Medical Examiner's Office

The Medical Examiner's Office serves the living, by investigating deaths that are unnatural and / or unexpected. This task begins with careful investigation at the scene of death, supplemented when appropriate, by autopsy examination, toxicology and other testing. The Medical Examiner's Office helps the community by determining the cause and manner of death, recognizing and collecting evidence needed for adjudication, defining public health and product safety risks and providing compassionate services to families including direction of efforts to notify next of kin.

Standard Annual Reports Data as Identified by the National Association of Medical Examiners (N.A.M.E.)

The Spokane County Medical Examiner's Office achieved the distinction of Accreditation by the National Association of Medical Examiners in April, 2004. In March 2009 the Spokane County Medical Examiner's Office was inspected again and re-accredited by the National Association of Medical Examiners. The National Association of Medical Examiners (NAME) is the national professional organization of forensic pathologists, physician medical examiners, medical death investigators, death investigation system administrators, and consultants who perform the official duties of medicolegal investigation of deaths of public interest in the United States. Most members work as Medical Examiners or Coroners. Accreditation is a rigorous process, and requires a lengthy inspection by an independent Medical Examiner appointed by the organization. The accreditation requirements are 30 pages long, and include more than 300 items covering diverse points of quality, such as how specimens are labeled, and the qualifications of staff members. The Spokane County Medical Examiner's Office is accredited for a 5 year period, until May 2014. Please refer to the following chart for some of the data required by the National Association of Medical Examiners.

2011 Data

Deaths in Spokane County	**4470**
Deaths Reported to the Medical Examiner's Office	**3576**
Deaths Investigated by the Medical Examiner's Office	**559**
Scenes Investigated by the Medical Examiner Office	**279**
Bodies transported by order of the office via Contract Body Transport	**377**
****Total bodies transported to the Forensic Institute**	**608**
Total External Autopsies	**19**
Total Partial Autopsies	**1**
~~Total Complete Autopsies	**525**
Hospital Autopsies Retained Under Medical Examiner Jurisdiction	**0**
Microscopic Studies Performed	**525**
Neuropathologic Studies Performed	**5**
Cardiac Pathologic Studies Performed	**8**
Autopsies Performed for Outside Jurisdictions	**186**
Bodies Unidentified after Examination	**0**
Organ Donations	**10**
Corneal Donations	**36**
Bone Donations	**16**
Connective Tissue Donations	**6**
Heart Valve Donations	**12**
Skin Donation	**14**
Unclaimed bodies	**12**
Exhumations	**0**

****** Some decedents are not transported via contract transport; these include deaths that occur at Holy Family Hospital, where the Forensic Institute is housed; as well as deaths that occur in a referral county.

~~ Total complete autopsies includes both Spokane County cases and Referral County Cases.

The statistical information which follows includes information regarding Spokane County Deaths only. Please see the link to the National Association of Medical Examiners accreditation report. NAME Inspection Report

The National Academy of Sciences and Frontline reports on Forensic Sciences and Medical Examiner's Offices

The National Academy of Sciences released its report on Forensic Sciences in 2009. The report overall was not complimentary to forensic sciences. However, the report noted that Medical Examiner Offices accredited by the National Association of Medical Examiners (NAME) were the gold standard in death investigation. The Spokane County Medical Examiner's Office (SCMEO) has been fully accredited by NAME since 2004, one of about sixty offices in the United States that are accredited.

Frontline reported specifically on death investigation systems in January 2011. The program and web site pointed to deficiencies in Coroner and Medical Examiner systems. The SCMEO compares very favorably to others, and have no deficiencies based on Frontline reporting and statistical analysis. As above the office is fully NAME accredited. Both forensic pathologists working at the SCMEO are board-certified. All full time investigators employed by the SCMEO are certified by the American Board of Medicolegal Death Investigators (ABMDI). The office maintains an active quality improvement program including peer review for forensic pathologists and investigators. For example, all homicide death reports are reviewed prior to release. The office meets or exceeds all professional standards of practice. Finally, the number of autopsies performed in Spokane County deaths is approximately 400 per year. This compares favorably with statistical expectations for larger offices on the Frontline-Propublica web sites.

Spokane County Medical Examiner Cases in 2012

In 2012, there were 4,636 deaths in Spokane County. Based on the latest United States Census Bureau data the approximate population of Spokane County is 475,735. The 4,470 death thus represent approximately 1% of the population. Of these deaths, 3,863 83%were reported to the Medical Examiner by medical and law enforcement personnel. Based on analysis of the scene and circumstances of death, and the decedent's medical history, the Medical Examiner assumed jurisdiction in 618 (16%) of these reported deaths, or in 14% of all deaths in the county. These reporting figures and autopsy percentages are similar to other Medical Examiner jurisdictions nationally.

There were deaths reported to the Medical Examiner in which jurisdiction was released after investigation. The number of deaths reported to the Medical Examiner's Office is significantly greater each year than reported during the years as a coroner's system (before January 1, 1999). The number has also steadily increased during the Medical Examiners years (1999 to present), reflecting efforts by the Medical Examiner's Office to educate reporting agencies and encourage appropriate reporting of deaths to the Medical Examiner. All nursing home and adult care facilities deaths are reported to the Medical Examiner's Office allowing for appropriate agency analysis. This progressive Spokane County Medical Examiner Policy has been adopted recently by other Medical Examiner and coroner systems around the state.

Forensic Unit

The Forensic Unit works in the Sheriff's department and provides crime scene documentation, fingerprint comparison and photo documentation at the direction of the Medical Examiners and the Law Enforcement Agency with jurisdiction. The Medical Examiner's office often partners with this group in the collection and preservation of evidence.

Chaplaincy Services

While there are no Washington State laws which require the Medical Examiner to identify and locate next-of-kin, by convention and practice in Spokane County, the Medical Examiner has been depended upon for identifying next-of-kin and for facilitating the locating and notifying of next-of-kin. The Medical Examiner's Office is fortunate to have the assistance of the Chaplains from the Spokane County Sheriff's Office and the Spokane Police Department in notifying family members. The staff of the Medical Examiner's Office recognizes that the Chaplains have considerable experience and professional training to help in this difficult and emotional endeavor.

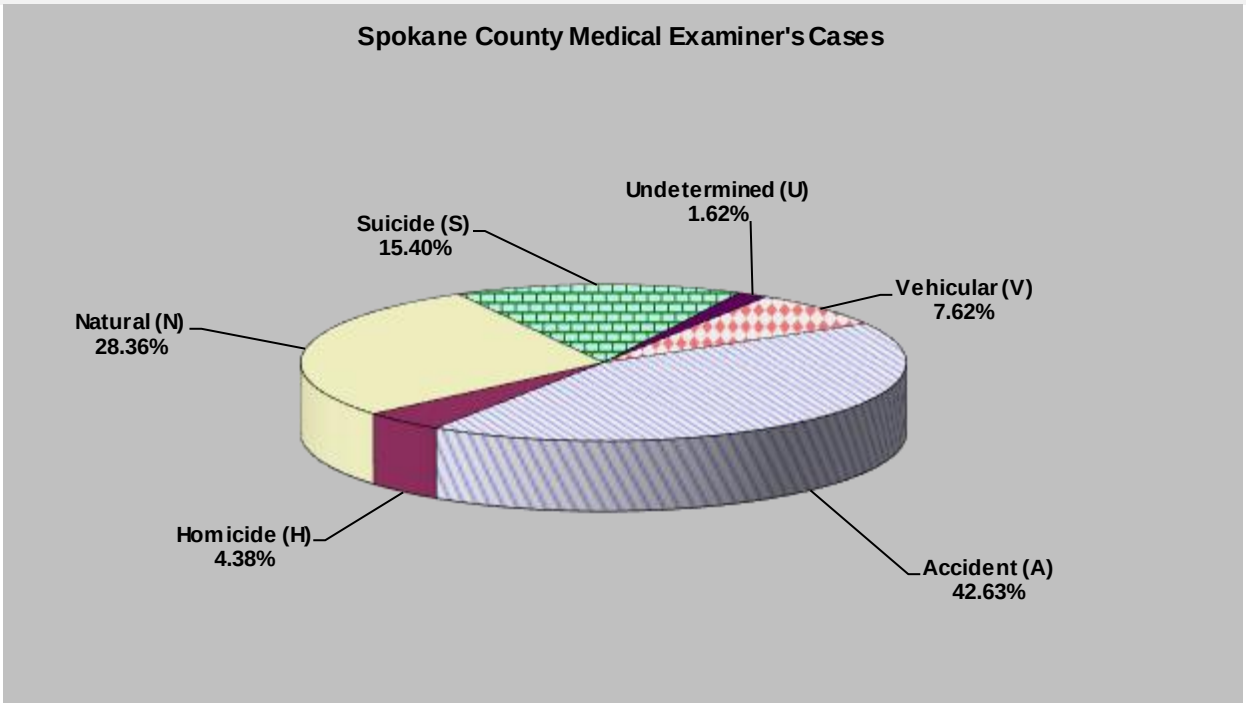
Section 2: Total Cases

Total Cases for 2012

Total Spokane County Population	475,735
Total Deaths in Spokane County	4,636
Total Deaths Reported to the Medical Examiner 2012	3,863
Total Jurisdiction Released after Investigation	3,247
Total Spokane County Medical Examiner Cases	618
Total Spokane County Autopsies Performed	408

Cases By Manner Of Death	Number Of Deaths	Percent Of Total
Accident (A)	263	42.63%
Homicide (H)	27	4.38%
Natural (N)	175	28.36%
Suicide (S)	95	15.40%
Undetermined (U)	10	1.62%
Vehicular (V)	47	7.62%

Total Cases for 2012



	Jurisdiction Released Cases	Outside Agency Deaths Reported (Adult Care Facilities, Nursing Homes, Hospice, etc)	Spokane County Autopsies Completed	Referral County Autopsies Completed
January	95	167	27	11
February	91	150	23	17
March	100	181	22	15
April	128	156	34	24
May	94	179	25	20
June	83	164	25	12
July	77	147	32	18
August	85	155	34	18
September	78	138	41	10
October	108	137	32	15
November	98	143	36	15
December	98	165	28	11
Total	**1135**	**1882**	**359**	**186**

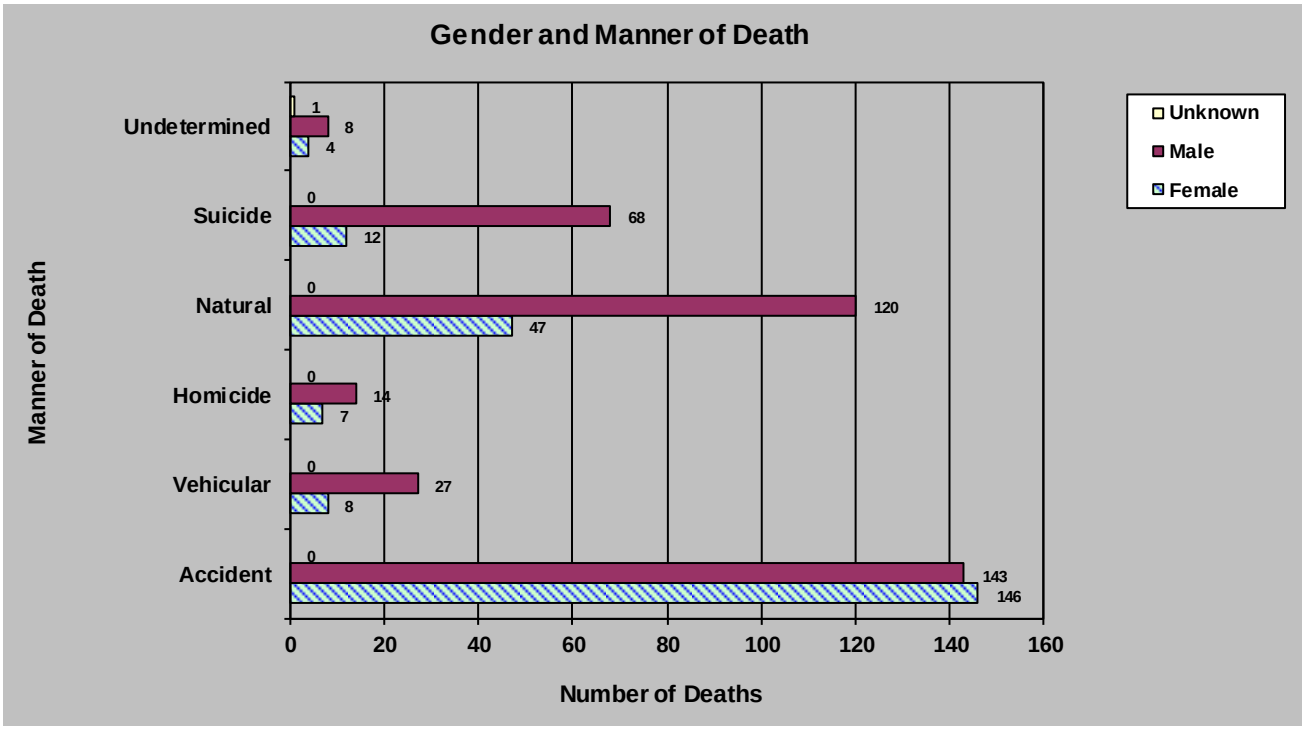
Includes full autopsies, 19 external only examinations and one partial autopsy. In addition to the Spokane County autopsies, the Medical Examiner's Office performed 186 complete autopsies for neighboring referral counties.

Total Cases by Gender and Manner of Death

Gender and Manner Of Death

Sex	A	V	H	N	S	U	Total	Percent
Female	146	8	7	47	12	4	224	37.02%
Male	143	27	14	120	68	8	380	62.81%
Unknown	0	0	0	0	0	1	1	0.17%
Total	**289**	**35**	**21**	**167**	**80**	**13**	**605**	

Unknown – includes deaths such as partial skeletal remains wherein the materials examined are so limited that sex cannot be determined.
The preponderance of males has been the historical norm in Spokane County, and is similar to the experience/practice of most other medical examiner systems.
In Jurisdiction Assumed (JA) cases, the Medical Examiner assumes responsibility for signing the death certificate. In 359 cases an autopsy was performed. In 200 cases the death certificate was signed based on death investigation and/or medical records.



Predominance of male gender in all categories of death coming under the jurisdiction of the Medical Examiner's Office reflects the experience of most death investigation systems. In most death investigation systems, this male predominance begins in infancy and extends to near the end of life spans.

Total Jurisdiction Assumed (JA) Cases by Race and Manner of Death

Race and Manner of Death

Race	A	H	N	S	U	V	Total
Asian	5	0	1	1	0	0	7
Black	2	1	8	2	0	4	17
Caucasian	258	18	148	71	10	27	532
Hispanic	3	1	2	1	0	0	7
Native American	2	1	5	1	0	1	10
Other	3	0	1	1	0	0	5
Unknown	16	0	2	3	3	3	27
Totals	**289**	**21**	**167**	**80**	**13**	**35**	**605**

These reflect the demographics of Spokane County, where the Caucasian race predominates statistically. Race determination is required on the death certificate.

Total Jurisdiction Assumed (JA) Cases by Age Group and Manner of Death

Age and Manner of Death

Age Group (Years)		A	H	N	S	U	V
0 to 9	26	5	2	16	0	3	0
10 to 19	11	4	1	2	2	0	2
20 to 29	49	14	7	4	16	2	6
30 to 39	46	17	3	9	12	1	4
40 to 49	71	23	4	20	13	6	5
50 to 59	117	40	2	48	18	1	8
60 to 69	79	25	1	41	10	0	2
70 to 79	52	31	0	13	5	0	3
80 to 89	94	71	1	13	4	0	5
90 to 99	59	58	0	1	0	0	0
100 to 109	1	1	0	0	0	0	0
Total	**605**	**289**	**21**	**167**	**80**	**13**	**35**

In the 0-9 age group, sudden unexplained infant deaths (SIDS or SUID) are classified as Natural in this jurisdiction. In older Spokane County deaths (age 70 plus) accidents predominate, and most result from falls with fractures or head injuries leading to death

Total Jurisdiction Assumed (JA) Cases by Age Group and Gender

Age Group (Years)		Female	Male	Unknown
0 to 9	26	11	14	1
10 to 19	11	2	9	0
20 to 29	49	10	39	0
30 to 39	46	13	33	0
40 to 49	71	23	48	0
50 to 59	117	32	85	0
60 to 69	79	22	57	0
70 to 79	52	23	29	0
80 to 89	94	52	42	0
90 to 99	59	36	23	0
100 to 109	1	0	1	0
Total	**605**	**224**	**380**	**1**

Males exceed females in each age group excluding 80 to 89. The female predominance 80 to 89 may have resulted from increased fall-related mortality, and the increased life expectancy of females over males.

Out of Area Incidents Leading to Death in Spokane County

In 2011 there were a total of 57 cases in which an event occurred outside of Spokane County that led to eventual death in Spokane County. In Washington State law, Medical Examiner and Coroner jurisdiction is based upon where the death occurs. The majority of these cases were transfers from out of county or out of state hospitals to one of the Spokane County hospitals. The manners of death in these cases are: 27 accidents, 6 homicides, 11 motor vehicle accidents, 5 natural, 5 suicides, and 3 undetermined. Please see the link to the data below.

Out of Area Incidents Leading to Death in Spokane County

Section 3: Multi-Year Comparison

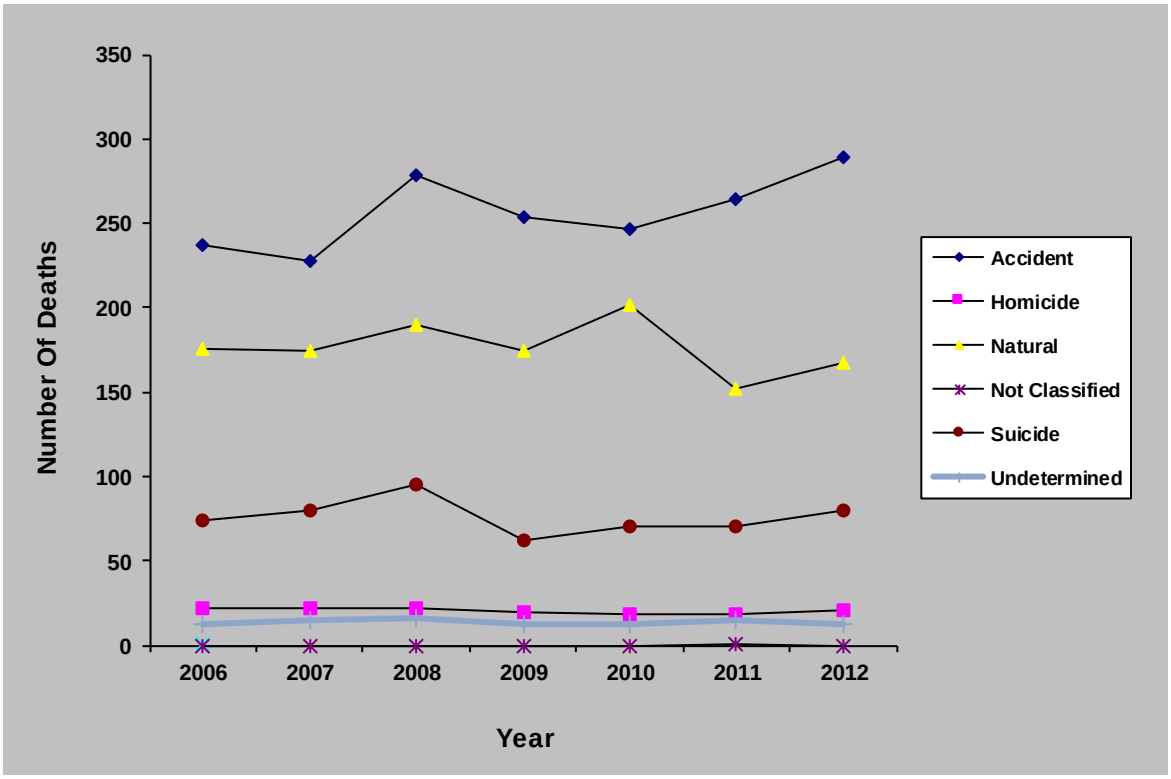
The Medical Examiner's Office replaced the coroner's system on January 1, 1999. From 1999 to present, the Spokane County deaths which have fallen under the jurisdiction of the Medical Examiner System have ranged from a low of 550 to a high of 635, with the number of autopsies performed typically under 450.

Overdose deaths are classified as "accidents". The federal government data categorizes overdose deaths as "unintentional poisoning deaths". Federal data indicates that poisoning deaths have increased significantly in the last decade. Most of the poisoning death increases have resulted from prescription drug deaths. The number of prescription drug overdose deaths declined from 109 in 2008 to 77 in 2009, to 64 in 2010, with a slight increase to 66 in 2011. The "accident" manner of death category has had a slight increase from 2010 to 2011.

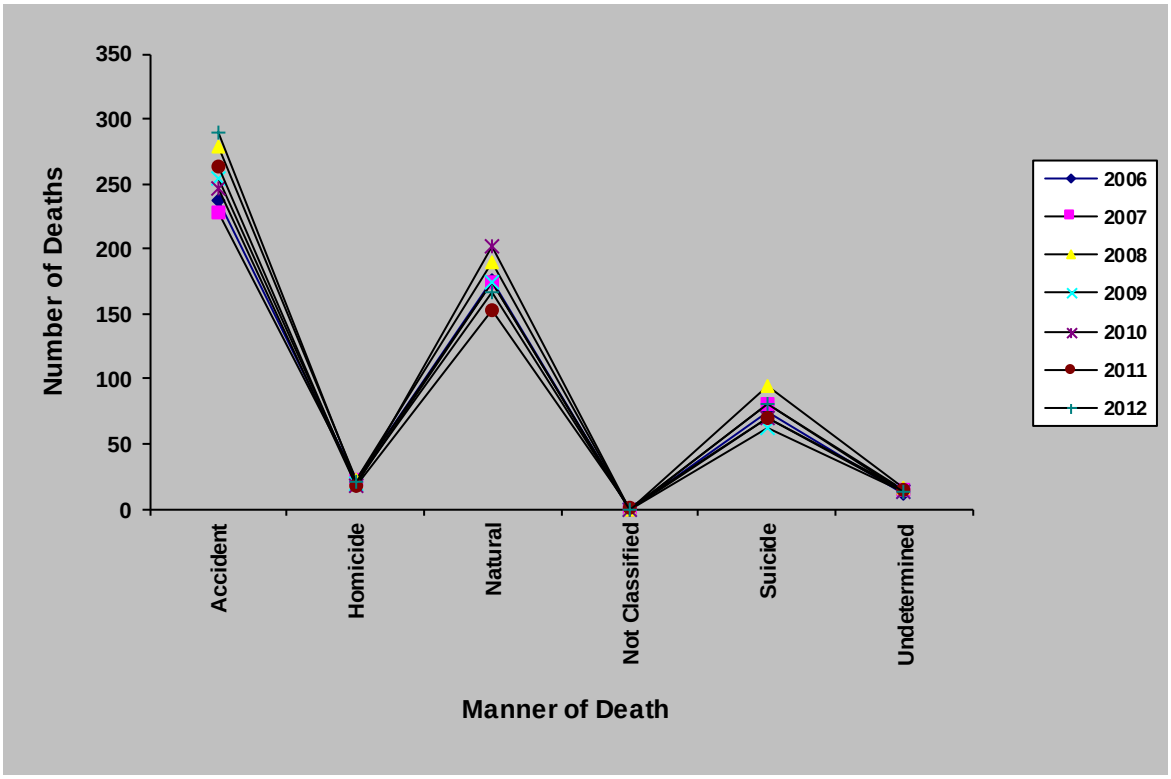
Manner Of Deaths Comparison (Jurisdiction Assumed – JA Deaths)

Comparison of Manners of Death 2006 - 2012

Manner of Death	2006	2007	2008	2009	2010	2011	2012
Accident	237	228	279	254	246	264	289
Homicide	22	22	22	19	18	18	21
Natural	176	175	190	174	202	152	167
Not Classified	0	0	0	0	0	1	0
Suicide	74	80	95	62	70	70	80
Undetermined	12	15	16	13	13	15	13
Vehicular	36	46	34	65	45	39	35
Total	**557**	**566**	**636**	**587**	**594**	**559**	**605**



Medical Examiner Homicide numbers may not mirror the Police Department reports of homicide deaths, because the Medical Examiner certification of homicide is broader in some situations and more narrow in others. The Medical Examiner is using these classifications for the purposes of statistical analysis based on death certificate classification.



Total Annual Medical Examiner's Cases 2006 - 2012

Manner of Death	2006	2007	2008	2009	2010	2011	2012
Accident	42.55%	40.28%	43.87%	43.27%	41.41%	47.23%	47.77%
Homicide	3.95%	3.89%	3.46%	3.24%	3.03%	3.22%	3.47%
Natural	31.60%	30.92%	29.87%	29.64%	34.01%	27.19%	27.60%
Not Classified	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	0.00%
Suicide	13.29%	14.13%	14.94%	10.56%	11.78%	12.52%	13.22%
Undetermined	2.15%	2.65%	2.52%	2.21%	2.19%	2.68%	2.15%
Vehicular	6.46%	8.13%	5.35%	11.07%	7.58%	6.98%	5.79%

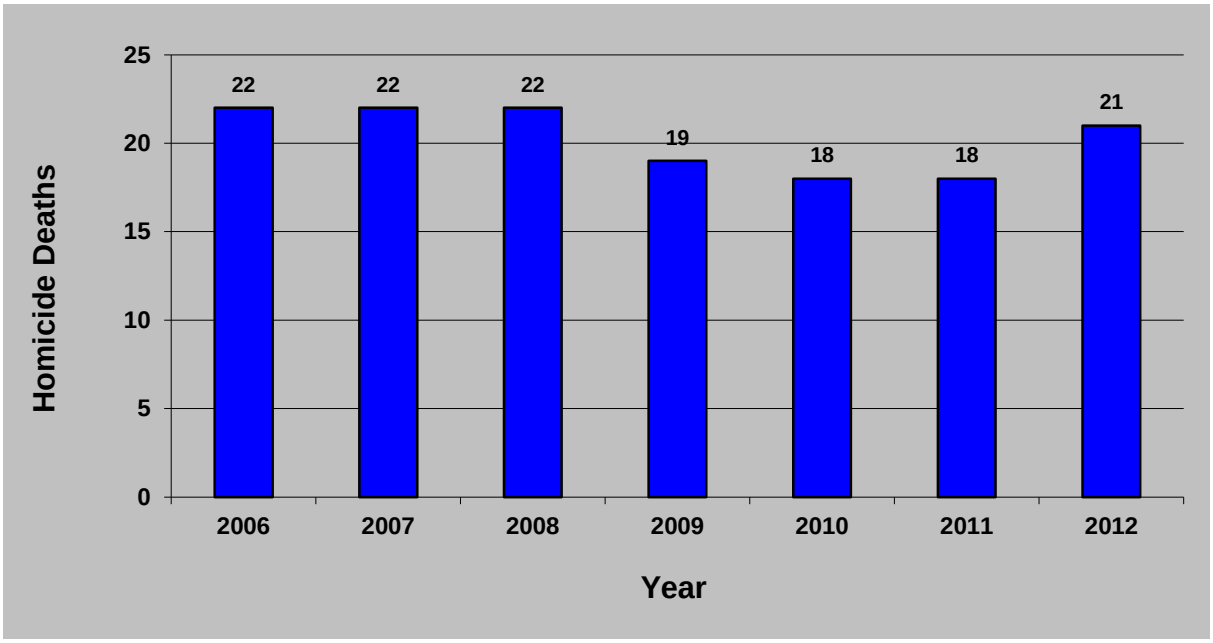
Ideally, a Medical Examiner System strives to keep the percentage of “undetermined” manner of death cases to less than five percent. This requires thorough investigation and autopsy. In the Spokane County Medical Examiner’s Office, every “undetermined” manner case is reviewed as part of the office Performance Improvement Program.

Homicidal Methods Comparison

Comparison of Homicidal Methods 2006 - 2012

Method Used	2006	2007	2008	2009	2010	2011	2012
Asphyxia	1	0	0	0	1	0	0
Blunt Impact	2	3	0	0	0	1	0
Child Abuse	2	3	2	2	2	1	1
Firearms	5	9	9	7	12	9	11
Homicidal Violence	2	1	1	3	1	2	1
Other	4	4	0	1	1	4	0
Stabbing	4	2	8	6	0	0	3
Strangulation	1	0	2	0	1	1	5
Unknown	1	0	0	0	0	0	0
Total	**22**	**22**	**22**	**19**	**18**	**18**	**21**

Homicides 2006 - 2012

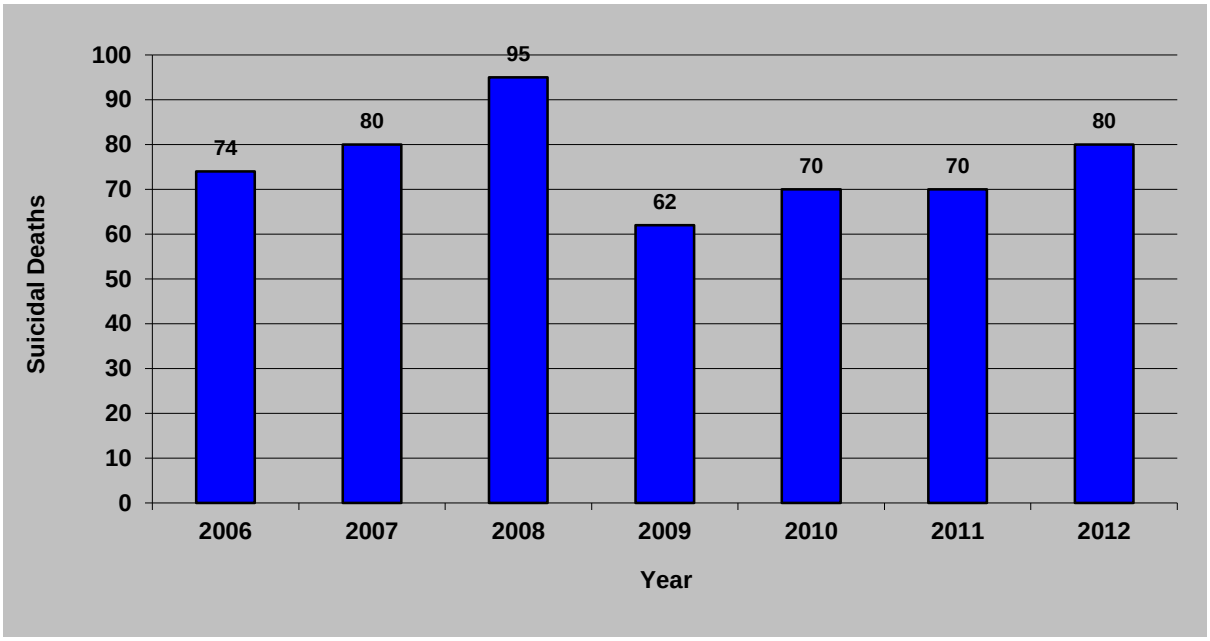


Suicidal Methods Comparison

Comparison of Suicidal Methods 2006 - 2012

Method Used	2006	2007	2008	2009	2010	2011	2012
Carbon Monoxide	4	7	5	1	1	3	1
Drowning	4	0	0	0	1	0	3
Drugs/Poisons	19	19	19	7	13	13	11
Firearms	37	32	51	37	35	39	42
Hanging	8	17	17	15	13	7	15
Jumping	1	3	1	1	3	3	4
Other	1	2	0	1	2	2	0
Plastic Bag	0	0	1	0	0	2	3
Stab/incised wound	0	0	1	0	2	1	1
Total	**74**	**80**	**95**	**62**	**70**	**70**	**80**

Suicides 2006 - 2012



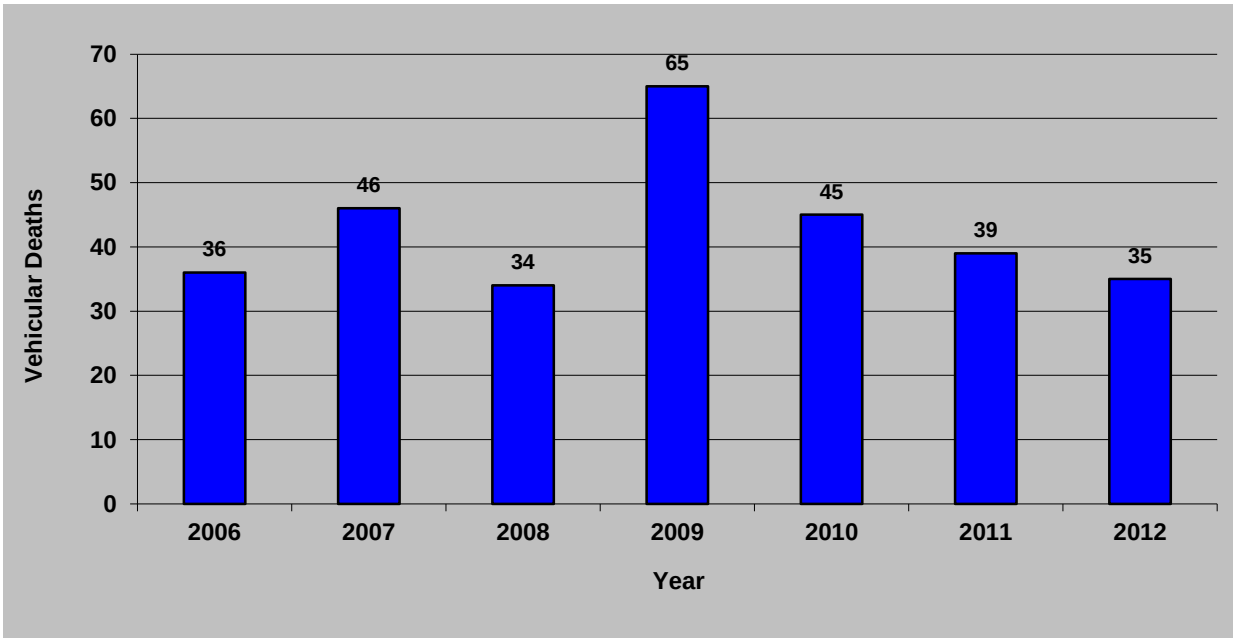
Vehicular Deaths Comparison

Vehicular-related fatalities are separated from other accidents because some community groups have special needs in examining vehicular-related deaths.

Comparison of Vehicular Deaths 2006 - 2012

Vehicle Circumstances	2006	2007	2008	2009	2010	2011	2012
Automobile Driver	18	14	22	29	19	20	12
Automobile Passenger	8	12	6	10	11	4	3
Bicyclist	2	1	0	1	3	1	1
Motorcycle Driver	6	5	6	6	6	8	6
Motorcycle Passenger	0	1	0	3	1	0	0
Other	1	2	0	1	2	0	1
Pedestrian	1	9	0	14	2	6	9
Unknown	0	2	0	1	1	0	3
Total	**36**	**46**	**34**	**65**	**45**	**39**	**35**

Vehicular Deaths 2006 - 2012



Accidental Deaths Comparison

Accident Circumstances	2006	2007	2008	2009	2010	2011	2012
Aircraft	0	0	0	0	1	0	0
Alcohol Abuse	2	1	1	5	1	1	1
Asphyxiation	8	5	3	1	2	1	4
Aspiration	3	3	3	3	2	0	4
Bicycle Fall	1	0	1	0	1	1	1
Boating	0	0	1	0	0	0	0
Choking	2	1	0	2	3	5	6
Drowning	12	3	6	2	7	7	8
Drugs	47	38	48	41	24	36	30
Prescribed Drugs	50	61	61	36	40	30	43
Electrocution	1	0	2	0	1	1	0
Fall	97	101	131	143	137	167	172
Farm	0	1	0	1	3	0	0
Fire/burns	0	1	4	5	8	6	3
Firearms	1	1	1	2	2	0	1
Hyperthermia	2	1	1	0	0	0	0
Hypothermia	2	4	5	3	2	2	2
Industrial Accident	2	2	2	1	2	0	1
Motorcycle Driver (race track)	0	0	0	0	0	1	0
Other	4	2	8	9	9	6	13
Surgical Procedure	0	0	0	0	1	0	0
Therapy Complication	3	3	1	0	0	0	0
Total	**237**	**228**	**279**	**254**	**246**	**264**	**289**

Toxicology may show numerous combinations of medications and illicit drugs, but such deaths are categorized in the chart above as “Drugs”.

Drug Overdose Data Summary 2012

Overview

A total of 81 deaths were attributed to (prescription and/or illicit) drug overdoses in 2011. Of these 66 were classified as accidents and would be comparable to United States Centers for Disease Control Data that uses the term “unintentional poisoning deaths”. Of the 66 accidental overdose deaths in Spokane County 26 (39%) were females and 40 (61%) were males. Number of deaths due to accidental overdose were similar in 2010 and 2011 (64 and 66 respectively). Accidental overdose deaths appear to have peaked in 2008, with 109 deaths in that year.

The overdose data for 2011 includes 13 suicides, in addition to the 66 accidental deaths. Two (2) deaths were categorized as undetermined; in those deaths it generally could not be determined if the overdose was intentional (suicide) or accidental.

Types and Combinations of Drugs

Twelve of these 66 deaths could be attributed to illicit drugs only (2 cocaine, 5 heroin, and 5 methamphetamine). One of these deaths was in a methamphetamine body packer, attempting to transport methamphetamine in balloon packages in the stomach. Several balloons ruptured causing rapid death. Eight deaths resulted from only prescription medicines. The remaining 46 deaths resulted from combinations of prescription drugs, not necessarily prescribed to the decedent, illicit drugs, and/or ethanol. Most of these combination deaths demonstrated at least one opiate, such as methadone.

In most deaths involving prescription medications, the source of the prescription medications remained unknown despite investigation. In a few cases the prescriptions had been diverted from another individual. In 31 of the 66 deaths, the source of some or all of the prescriptions was unknown.

Most Common Medications

The most common medications/drugs found in testing of blood removed at autopsy were morphine (20 listings), methadone (17), cannabinoids (15), ethanol (14), followed by acetaminophen (11 listings) and clonazepam and methamphetamine with 14 listings each. When benzodiazepine medications were analyzed as a group (clonazepam, diazepam, lorazepam, oxazepam, and temazepam) these were found in 28 toxicology listings. Nationally, in prescription drug overdose deaths, benzodiazepines commonly are found in conjunction with opiate medications.

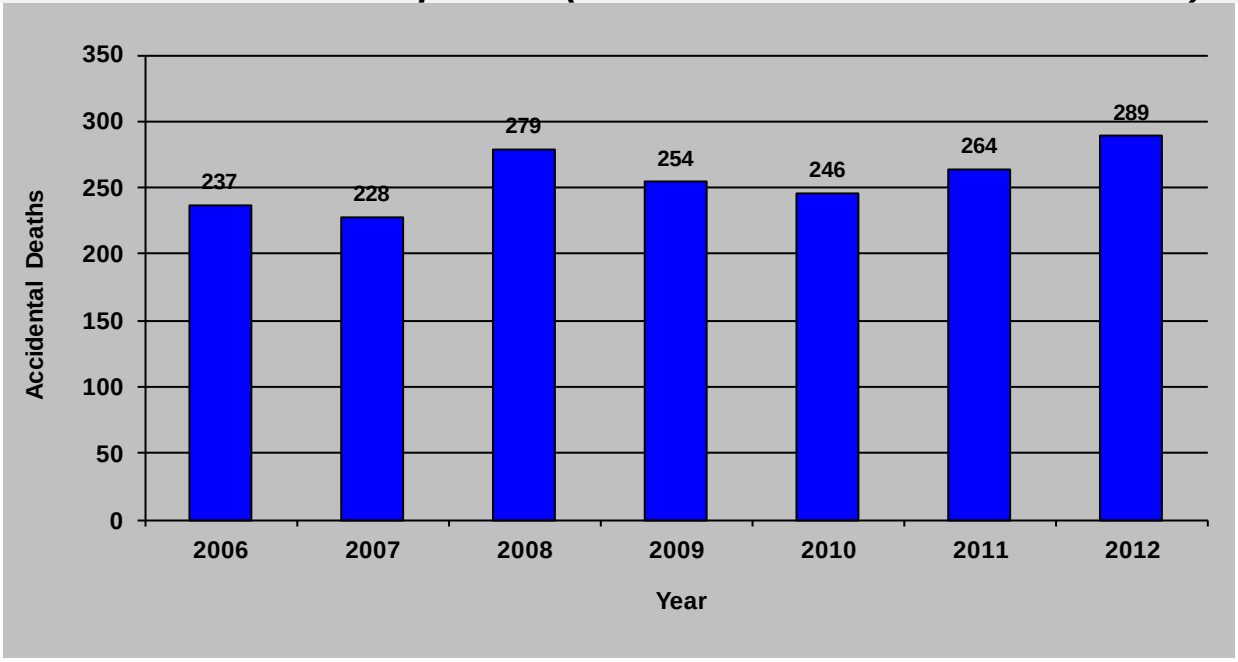
In toxicologic testing, measured morphine can be the result of prescription morphine use, codeine use, or can be from heroin use (heroin is converted to morphine in the body). It is unclear whether the morphine listings in toxicology reports in 2011 reflect the re-emergence of heroin use being described nationally. The morphine and methadone numbers are slightly increased from 2010.

Below are 2 links to the overdose data in Spokane County, these 2 links show the data in alternative methods.

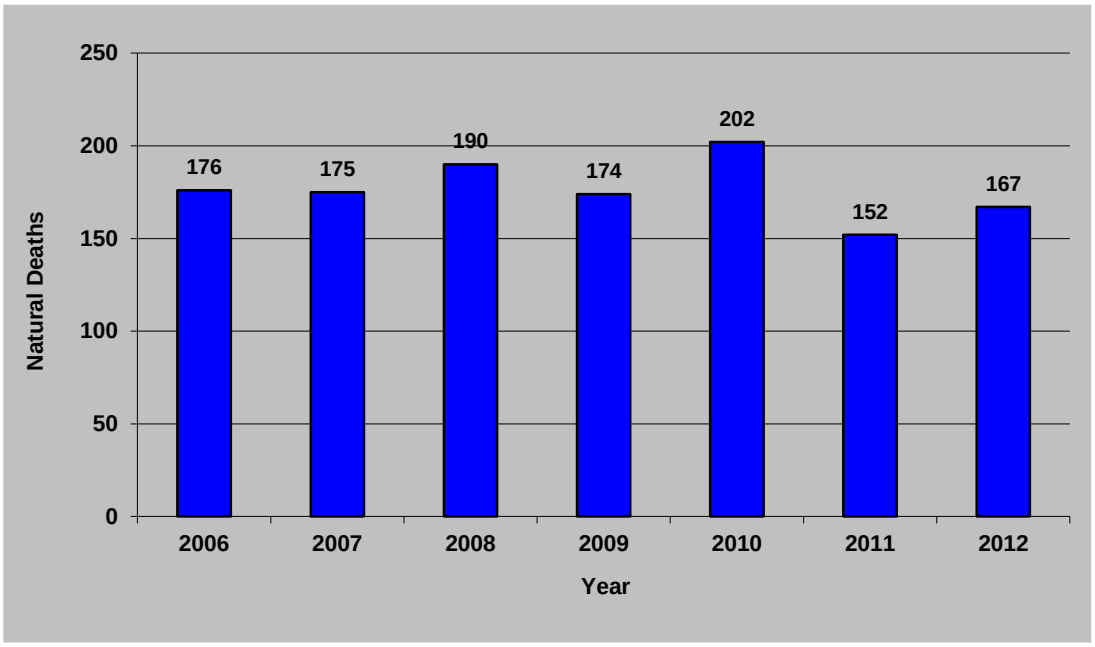
2012 Toxicology Numbers

2012 Overdose Sources

Accidental Deaths Comparison (Jurisdiction Assumed – JA Deaths)



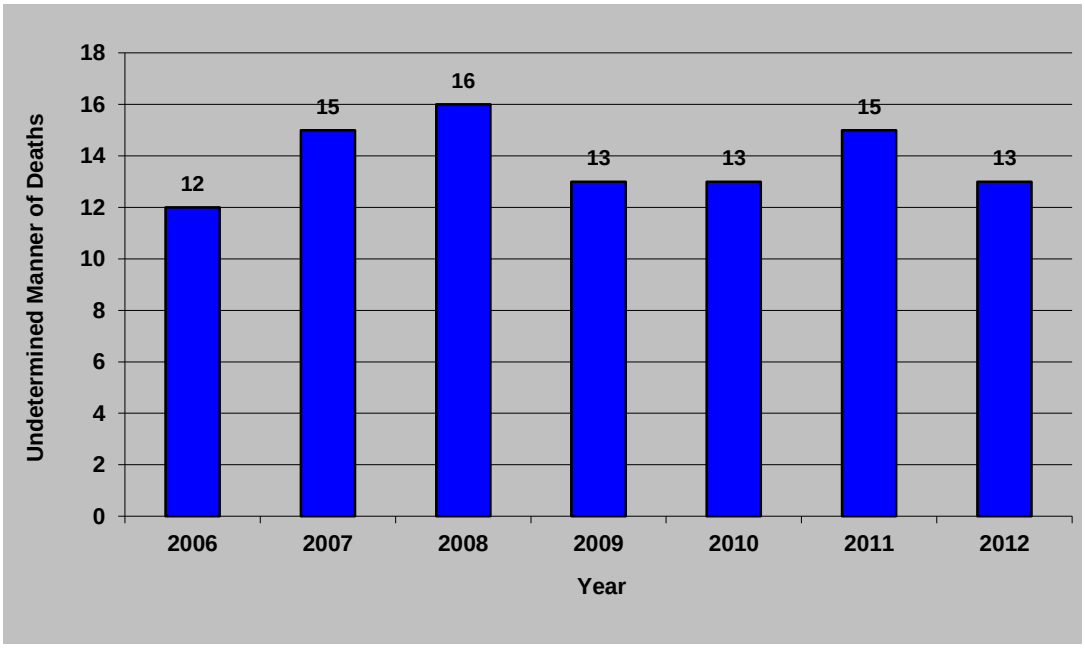
Natural Deaths Comparison (Jurisdiction Assumed-JA Deaths)



The decline in natural deaths by 50 from 2010 may reflect stricter cases selection resulting from tight Medical Examiner staffing, with prioritization of unnatural.

Undetermined Deaths Comparison (Jurisdiction Assumed – JA Deaths)

Deaths of Undetermined Manner 2006 - 2012

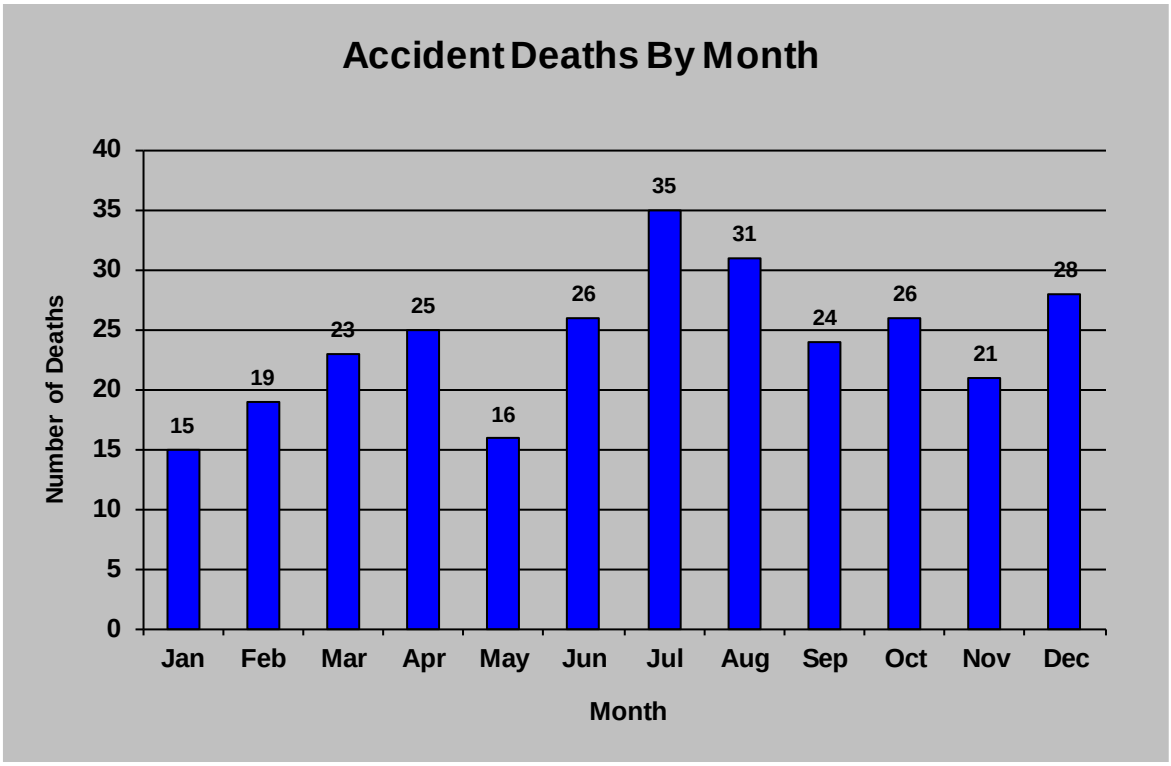


Ideally the Medical Examiner Systems use the undetermined manner of death category in less than five percent of cases. This reflects fullest utilization of available investigative and autopsy tools. In 2012, the undetermined classification was used in 2.86% of Spokane Medical Examiner cases.

Section 4: Manner of Death

ACCIDENT

Accident Deaths in Jurisdiction Assumed (JA) Cases by Month



Accident Mode by Gender

Statistically, women are more likely to seek prescription medications from multiple health care providers, so called “Doctor shopping.” This might explain the slight excess of women in prescription overdose deaths.

Accident Mode By Gender

Accident Mode	Female	Male	Total
Alcohol Abuse	0	1	1
Asphyxiation	2	2	4
Aspiration	2	2	4
Bicycle Fall	1	0	1
Choking	1	5	6
Drowning	1	7	8
Drugs	8	22	30
Prescribed Drugs	22	21	43
Fall	101	71	172
Fire/burns	3	0	3
Firearms	1	0	1
Hypothermia	0	2	2
Industrial Accident	0	1	1
Other	4	9	13
Total	**146**	**143**	**289**

Accident Mode by Gender and Age Group (Autopsy Cases)

Accident Mode, Gender and Age Group

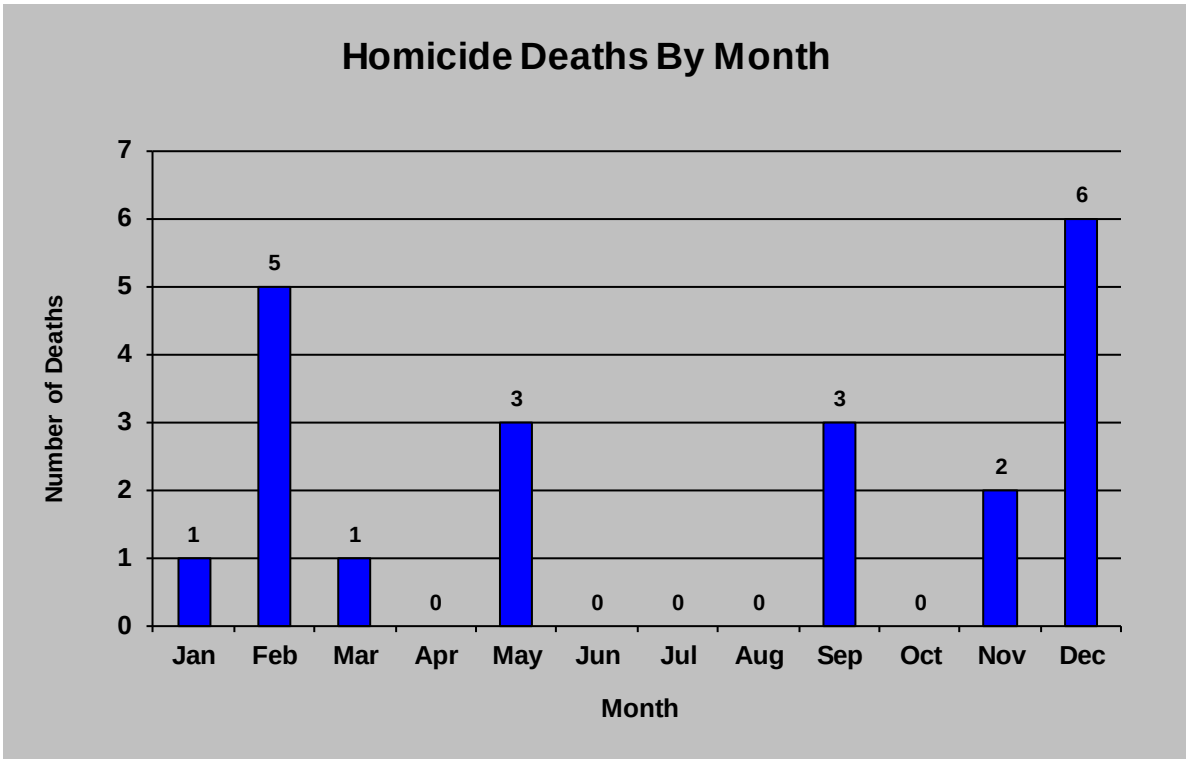
Accident Mode	Sex	<1	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	>=100	Total
Alcohol Abuse	Male	0	0	0	0	0	0	1	0	0	0	0	0	1
Alcohol Abuse Total														**1**
Asphyxiation	Female	1	0	0	0	0	0	0	1	0	0	0	0	2
Asphyxiation	Male	0	0	0	0	0	1	1	0	0	0	0	0	2
Asphyxiation Total														**4**
Aspiration	Female	0	1	0	0	1	0	0	0	0	0	0	0	2
Aspiration	Male	0	0	0	0	1	0	0	0	0	0	1	0	2
Aspiration Total														**4**
Bicycle Fall	Female	0	1	0	0	0	0	0	0	0	0	0	0	1
Bicycle Fall Total														**1**
Choking	Female	0	0	0	0	0	0	0	1	0	0	0	0	1
Choking	Male	0	0	0	0	0	0	2	1	1	1	0	0	5
Choking Total														**6**
Drowning	Female	0	0	0	0	1	0	0	0	0	0	0	0	1
Drowning	Male	0	0	2	3	1	0	1	0	0	0	0	0	7
Drowning Total														**8**
Drugs	Female	0	0	0	0	0	2	4	2	0	0	0	0	8
Drugs	Male	0	0	0	2	5	5	7	3	0	0	0	0	22
Drugs Total														**30**
Prescribed Drugs	Female	0	1	0	2	3	8	6	1	1	0	0	0	22
Prescribed Drugs	Male	0	0	0	5	2	5	7	1	1	0	0	0	21
Prescribed Drugs Total														**43**
Fall	Female	0	1	1	0	0	1	1	4	14	46	33	0	101
Fall	Male	0	0	0	0	1	0	5	8	10	24	22	1	71
Fall Total														**172**
Fire/burns	Female	0	0	0	0	0	1	1	0	0	0	1	0	3
Fire/burns Total														**3**
Firearms	Female	0	0	0	0	0	0	1	0	0	0	0	0	1
Firearms Total														**1**
Hypothermia	Male	0	0	0	0	0	0	0	0	2	0	0	0	2
Hypothermia Total														**2**
Industrial Accident	Male	0	0	0	0	1	0	0	0	0	0	0	0	1
Industrial Accident Total														**1**
Other	Female	0	0	0	2	0	0	0	0	1	0	1	0	4
Other	Male	0	0	1	0	1	0	3	3	1	0	0	0	9
Other Total														**13**
Grand Total		**1**	**4**	**4**	**14**	**17**	**23**	**40**	**25**	**31**	**71**	**58**	**1**	**289**

Falls that result in mortality are significantly correlated with increasing age. Illicit drug deaths peak in middle ages. In 2012, prescription drug deaths also were most common in middle age.

HOMICIDE

In 2012 the recorded 27 homicides represents an increase by 3 from the previous year. The small number makes homicide comparisons and statistics difficult to interpret. Firearms accounted for the single largest method of homicide. Firearms also accounted for the largest number of deaths by suicide. The most frequent age group of homicide victims in 2012 was 20-29 years.

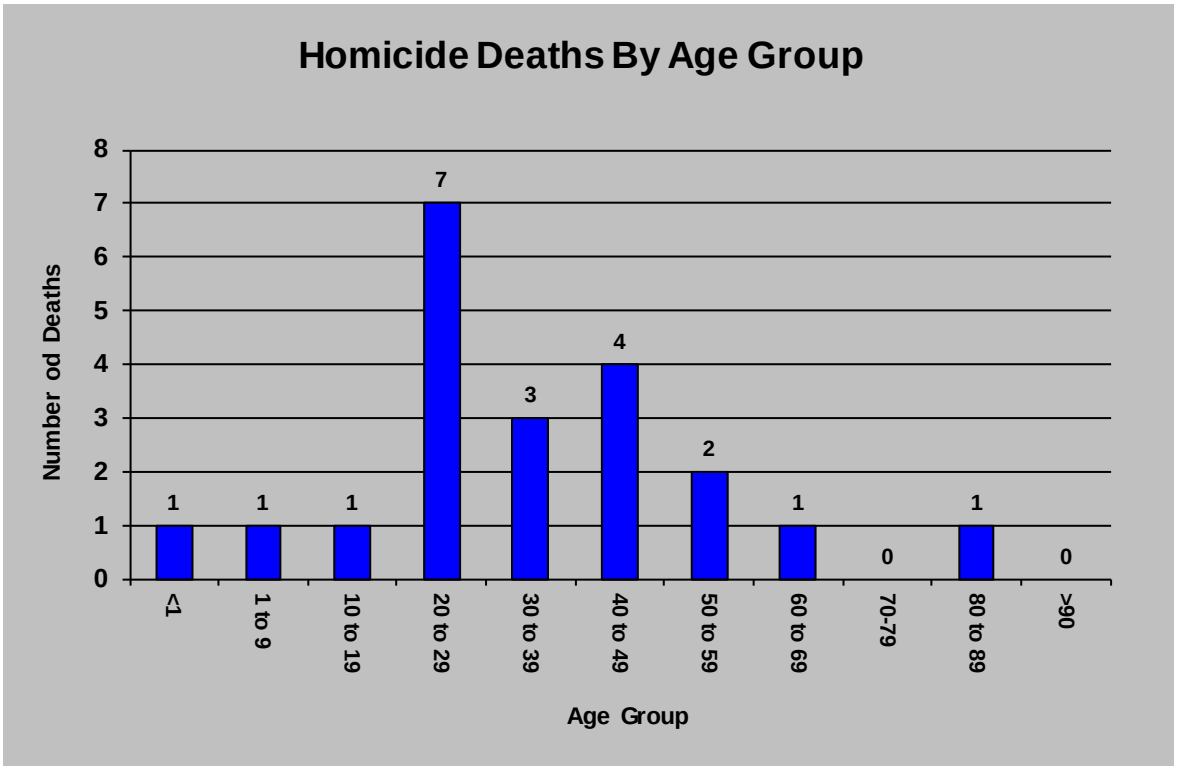
Homicide Deaths by Month



Homicide Deaths by Method, Gender, and Age Group

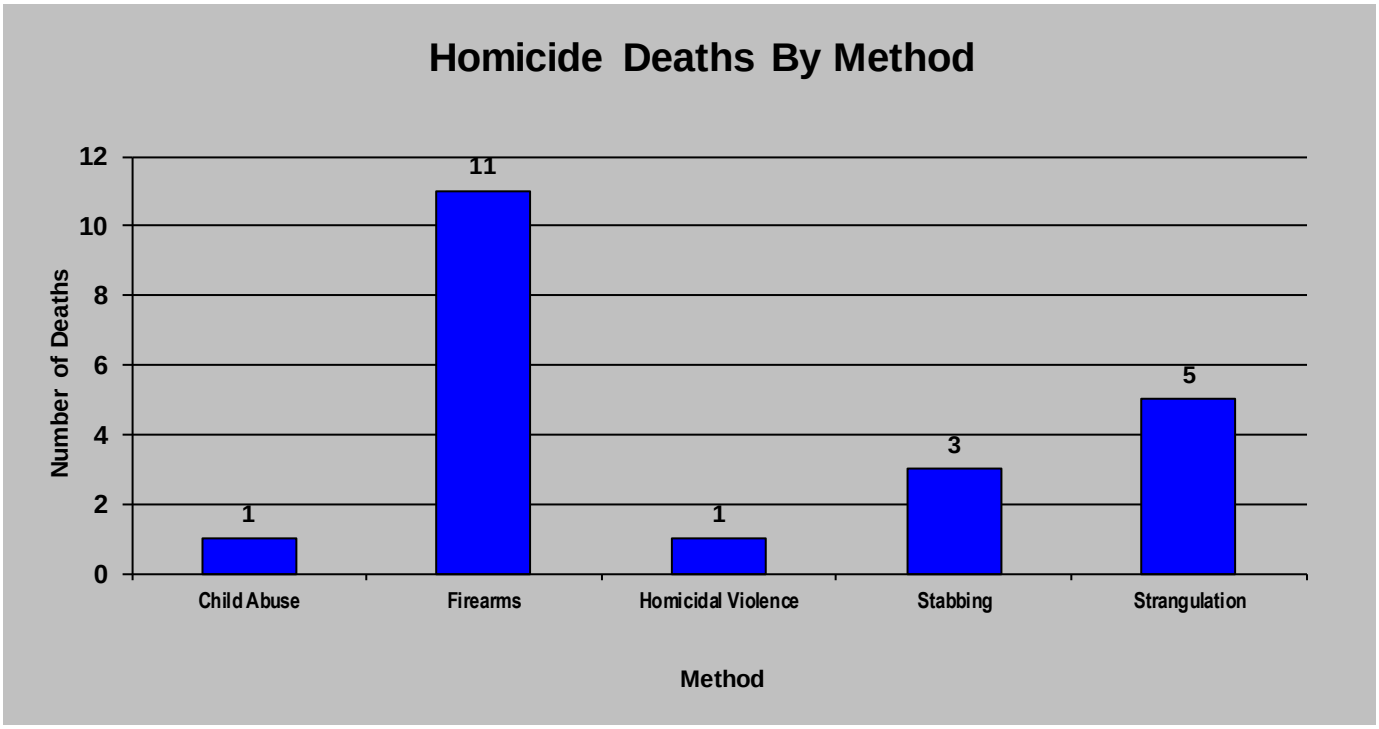
Homicide Method	Sex	<1	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	>=100	Total
Child Abuse	Female	1	0	0	0	0	0	0	0	0	0	0	0	1
Child Abuse Total														**1**
Firearms	Female	0	0	0	1	1	0	0	0	0	1	0	0	3
Firearms	Male	0	0	0	4	1	3	0	0	0	0	0	0	8
Firearms Total														**11**
Homicidal Violence	Male	0	0	0	0	0	0	0	1	0	0	0	0	1
Homicidal Violence Total														**9**
Stabbing	Female	0	0	0	0	0	0	1	0	0	0	0	0	1
Stabbing	Male	0	0	0	2	0	0	0	0	0	0	0	0	2
Stabbing Total														**3**
Strangulation	Female	0	0	0	0	1	1	0	0	0	0	0	0	2
Strangulation	Male	0	1	1	0	0	0	1	0	0	0	0	0	3
Strangulation Total														**5**
Grand Total		**1**	**1**	**1**	**7**	**3**	**4**	**2**	**1**	**0**	**1**	**0**	**0**	**21**

Homicide Deaths by Age Group



This graph is limited statistically by the small number of total deaths it represents.

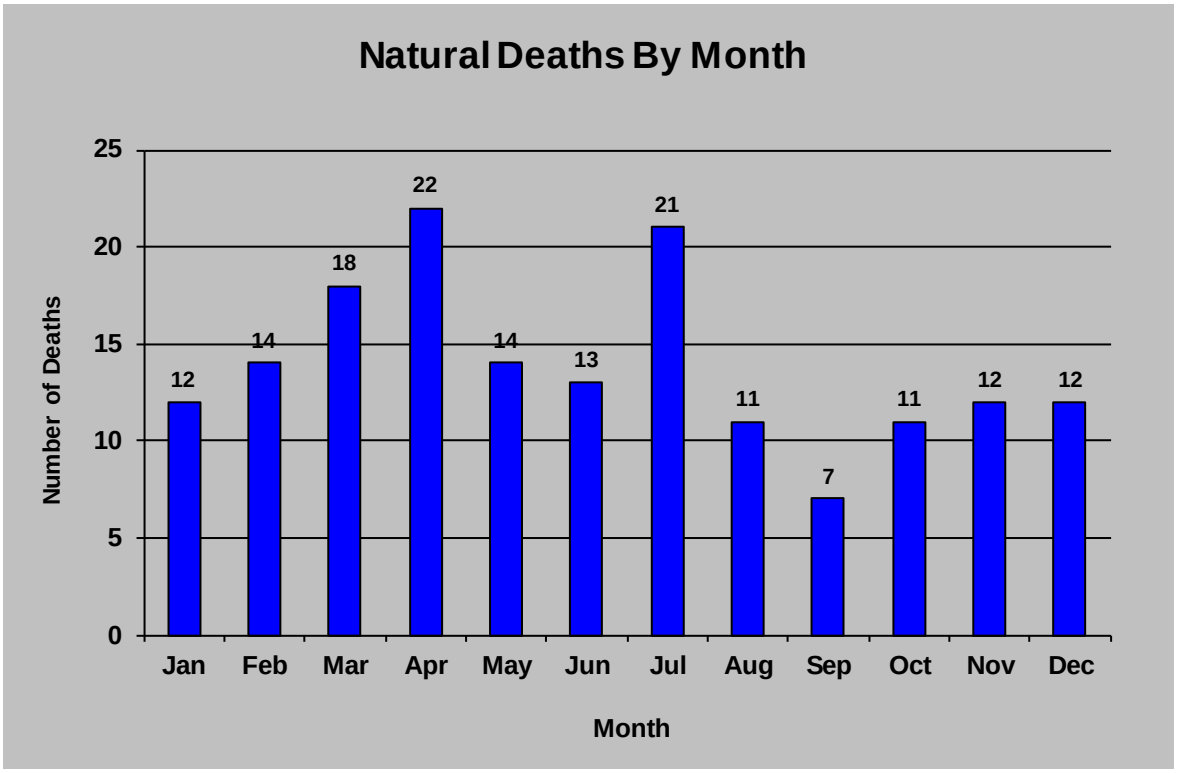
Homicide Deaths by Method



NATURAL

Typically, the Medical Examiner's Office assumes jurisdiction in cases of natural death when the death occurs in a young age group without medical history and is therefore unexpected.

Natural Deaths by Month (Jurisdiction Assumed – JA Deaths)



Natural Deaths by Disease Process

Natural Deaths by Disease Process

AA= Alcohol Abuse
C= Cardiovascular
CNV= Central Nervous System
M= Malignancy
OF= Organ Failure
O= Other
R= Respiratory
S= Seizure Disorder
U= Undetermined

(Total # of Natural Deaths including those not examined by full autopsy.)

	AA	C	M	O	R	S	U	TOTAL
Asthma					1			1
Atherosclerotic Cardiovascular Disease		55						55
Cardiac Dysrhythmia		2						2
Cardiomyopathy		18						18
Cerebrovascular Accident (CVA)		1						1
Chronic Alcoholism	6							6
Chronic Obstructive Pulmonary Disease		1			4			5
Congestive heart failure		2						2
Coronary Thrombosis		1						1
Diabetes Mellitus				7				7
Emphysema					4			4
From History						1		1
Gastrointestial Bleed				2				2
Hepatitis C				2				2
Hypertensive heart disease		2						2
Myocardial Infarction		2						2
Other		4	1	18	4			27
Peritonitis				1				1
Pneumonia					6			6
Pulmonary embolism					3			3
Seizure Disorder				2				2
SIDS				8				8
Subarachnoid Hemorrhage				2				2
undetermined							7	7
Total	**6**	**88**	**1**	**42**	**22**	**1**	**7**	**167**

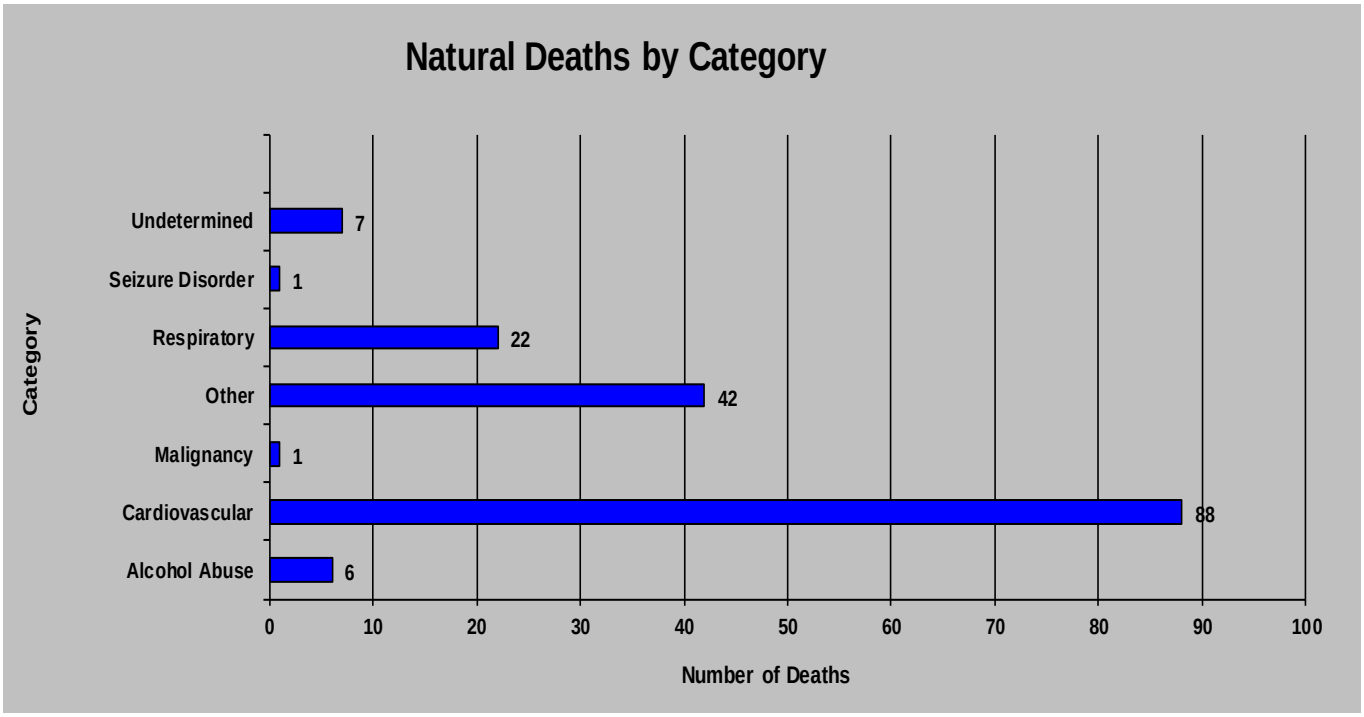
“Undetermined Natural Cause” is sometimes assigned to a death in a very elderly person, without evidence of injury, with little or no medical history, when an autopsy is not performed.

Natural Deaths by Category (Jurisdiction Assumed – JA Deaths)

The high proportion of deaths related to the cardiovascular system is typical of national statistics defining the categories of natural deaths. By convention, in most Medical Examiner and Coroner's offices, alcohol abuse is considered "natural".

The cancer deaths are usually not diagnosed until autopsy or are investigated for mitigating circumstances such as concern of overdose.

Cause of Natural Deaths by Category



Natural Deaths by Disease Process and Gender

Disease Process By Gender

Disease Process	Female	Male	Unknown	Total
Alcohol Abuse	2	4	0	6
Cardiovascular	23	65	0	88
Malignancy	0	1	0	1
Other	12	30	0	42
Respiratory	8	14	0	22
Seizure Disorder	0	1	0	1
Undetermined	2	5	0	7
Total	**47**	**120**	**0**	**167**

Natural Deaths by Gender and Age Group

Natural Death Gender and Age Group

Disease Process	Sex	<1	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	>=100	Total
Alcohol Abuse	F	0	0	0	0	0	0	2	0	0	0	0	0	2
Alcohol Abuse	M	0	0	0	0	0	1	2	1	0	0	0	0	4
Alcohol Abuse Total														**6**
Cardiovascular	F	0	0	0	0	2	2	8	4	4	2	1	0	23
Cardiovascular	M	0	0	1	2	2	7	21	20	4	8	0	0	65
Cardiovascular Total														**88**
Malignancy	M	0	0	0	0	0	0	1	0	0	0	0	0	1
Malignancy Total														**1**
Other	F	5	0	1	0	0	1	1	2	2	0	0	0	12
Other	M	9	0	0	0	3	6	7	3	1	1	0	0	30
Other Total														**42**
Respiratory	F	0	0	0	1	1	2	1	2	1	0	0	0	8
Respiratory	M	1	0	0	1	1	1	5	4	1	0	0	0	14
Respiratory Total														**22**
Seizure Disorder	M	0	1	0	0	0	0	0	0	0	0	0	0	1
Seizure Disorder Total														**1**
Undetermined	F	0	0	0	0	0	0	0	2	0	0	0	0	2
Undetermined	M	0	0	0	0	0	0	0	3	0	2	0	0	5
Undetermined Total														**7**
Grand Total		**15**	**1**	**2**	**4**	**9**	**20**	**48**	**41**	**13**	**13**	**1**	**0**	**167**

Seven of the deaths listed as “other” are attributed to Sudden Unexplained Infant Death. ***Sudden unexplained infant death (SUID)*** applies to the death of an infant less than one year of age, in which investigation, autopsy, medical history review, and appropriate laboratory testing fails to identify a specific cause of death.

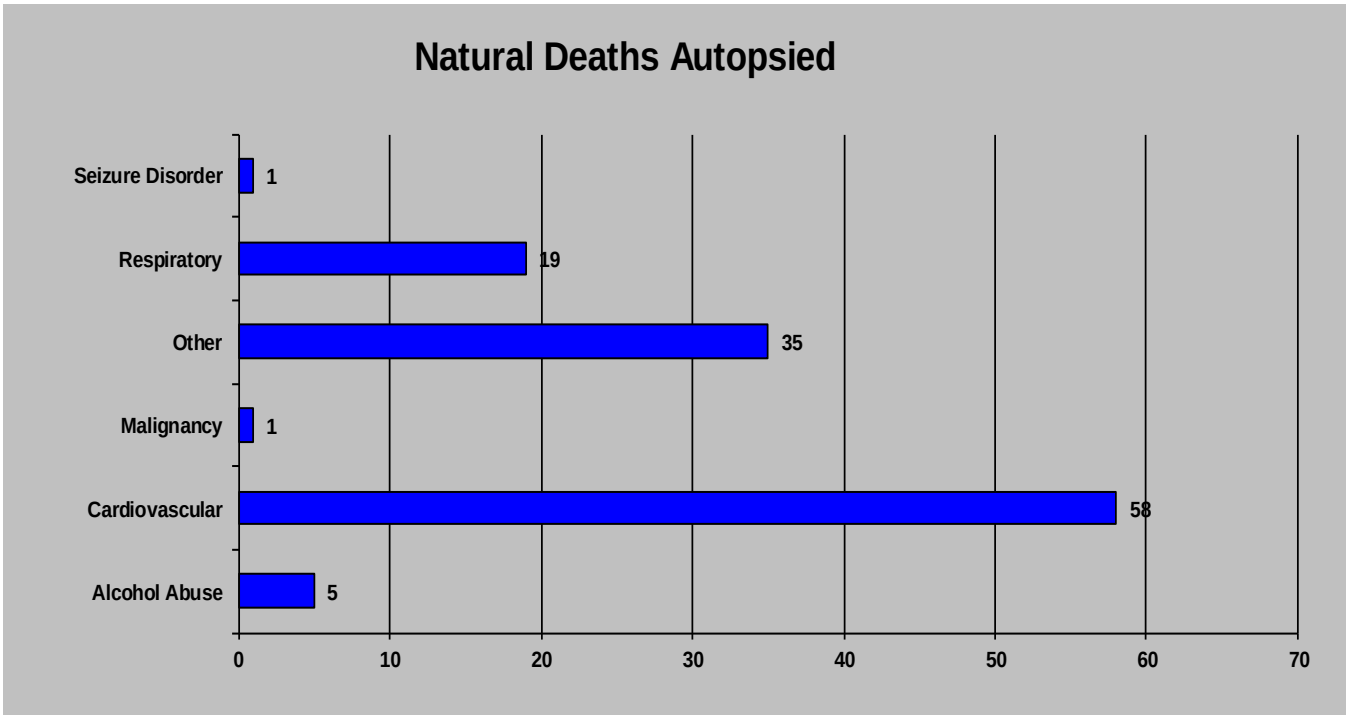
Natural Deaths by Disease Process (Autopsied)

Disease Process in Autopsied Deaths

AA= Alcohol Abuse
C= Cardiovascular
CNV= Central Nervous System
M= Malignancy
OF= Organ Failure
O= Other
R= Respiratory
SD= Seizure Disorder
U= Undetermined

	AA	C	M	O	R	SD	Total
Asthma	0	0	0	0	1	0	1
Atherosclerotic Cardiovascular Disease	0	28	0	0	0	0	28
Cardiac Dysrhythmia	0	2	0	0	0	0	2
Cardiomyopathy	0	18	0	0	0	0	18
Chronic Alcoholism	5	0	0	0	0	0	5
Chronic Obstructive Pulmonary Disease	0	1	0	0	2	0	3
Congestive heart failure	0	1	0	0	0	0	1
Coronary Thrombosis	0	1	0	0	0	0	1
Diabetes Mellitus	0	0	0	5	0	0	5
Emphysema	0	0	0	0	4	0	4
From History	0	0	0	0	0	1	1
Gastrointestial Bleed	0	0	0	1	0	0	1
Hepatitis C	0	0	0	2	0	0	2
Hypertensive heart disease	0	2	0	0	0	0	2
Myocardial Infarction	0	2	0	0	0	0	2
Other	0	3	1	15	3	0	22
Peritonitis	0	0	0	1	0	0	1
Pneumonia	0	0	0	0	6	0	6
Pulmonary embolism	0	0	0	0	3	0	3
Seizure Disorder	0	0	0	2	0	0	2
SIDS	0	0	0	8	0	0	8
Subarachnoid Hemorrhage	0	0	0	1	0	0	1
Total	**5**	**58**	**1**	**35**	**19**	**1**	**119**

Natural Deaths Autopsied



The numbers of cardiovascular deaths reflect the fact that the first symptom of significant heart disease is often a fatal heart attack. The natural manners of death with “undetermined” cause are deaths in which the scene investigation was highly suggestive of a natural death. However complete autopsies, including microscopic examination of biopsies and toxicology testing did not show a definitive cause of death, but excluded evidence of any unnatural contribution to death. Some of these deaths might be a result of “chemical” failures of systems at a submicroscopic level.

SUICIDE

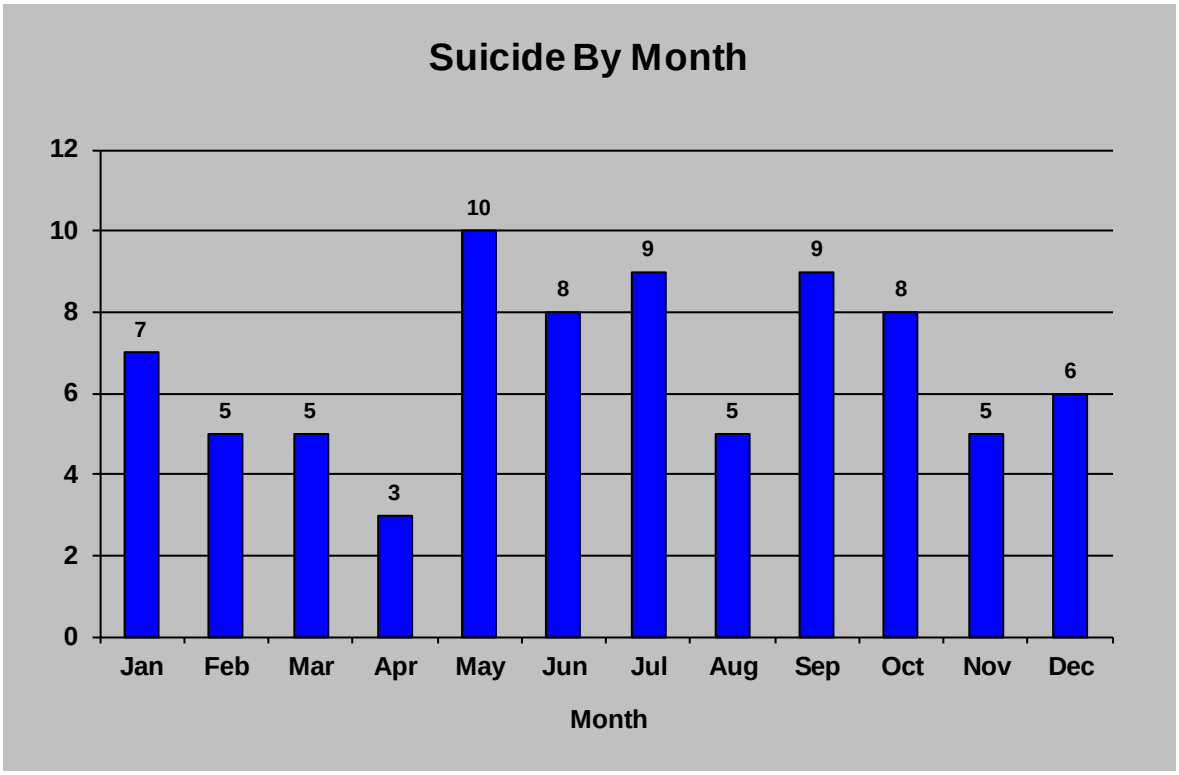
Suicides are those deaths caused by intentional, self-inflicted injuries. In Spokane County there were (80) suicides in 2012, this shows no increase or decrease from 2010.

The highest number (50/70) of suicides fell within the 20-59 age groups. In the United States, suicide numbers were highest in the 45-54 age range, but the rate was highest in males older that 85 (2008 data). Nationally, suicide deaths in older Americans are associated statistically with depression, relationship problems, drug and alcohol abuse, and serious physical health problems. Five suicides occurred in teenagers in Spokane in 2011, and 13 in the 20-29 age group.

Below is a link to the Centers for Disease Control and Prevention Morbidity and Mortality report regarding Suicidal Thoughts and Behaviors Among Adults:

MMWR Suicidal Thoughts and Behaviors Report

Suicide Deaths by Month



Suicide Method by Gender and Age Group

Suicide Method Gender and Age Group

Suicide Method	Sex	<1	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	>100	Total
Carbon Monoxide	M	0	0	0	0	0	0	0	1	0	0	0	0	1
Carbon Monoxide Total														**1**
Drowning	F	0	0	0	0	1	0	0	0	0	0	0	0	1
Drowning	M	0	0	0	1	1	0	0	0	0	0	0	0	2
Drowning Total														**3**
Drugs/Poisons	F	0	0	0	0	1	2	3	0	0	0	0	0	6
Drugs/Poisons	M	0	0	0	0	0	0	3	1	0	1	0	0	5
Drugs/Poisons Total														**11**
Firearms	F	0	0	0	0	0	1	0	1	0	0	0	0	2
Firearms	M	0	0	1	12	4	4	7	4	5	3	0	0	40
Firearms Total														**42**
Hanging	F	0	0	0	1	1	0	0	0	0	0	0	0	2
Hanging	M	0	0	1	1	4	3	3	1	0	0	0	0	13
Hanging Total														**15**
Jumping	F	0	0	0	0	0	0	0	1	0	0	0	0	1
Jumping	M	0	0	0	0	0	2	1	0	0	0	0	0	3
Jumping Total														**4**
Plastic Bag	M	0	0	0	1	0	1	1	0	0	0	0	0	3
Plastic Bag Total														**3**
Stab/incised wound	M	0	0	0	0	0	0	0	1	0	0	0	0	1
Stab/incised wound Total														**1**
Grand Total		**0**	**0**	**2**	**16**	**12**	**13**	**18**	**10**	**5**	**4**	**0**	**0**	**80**

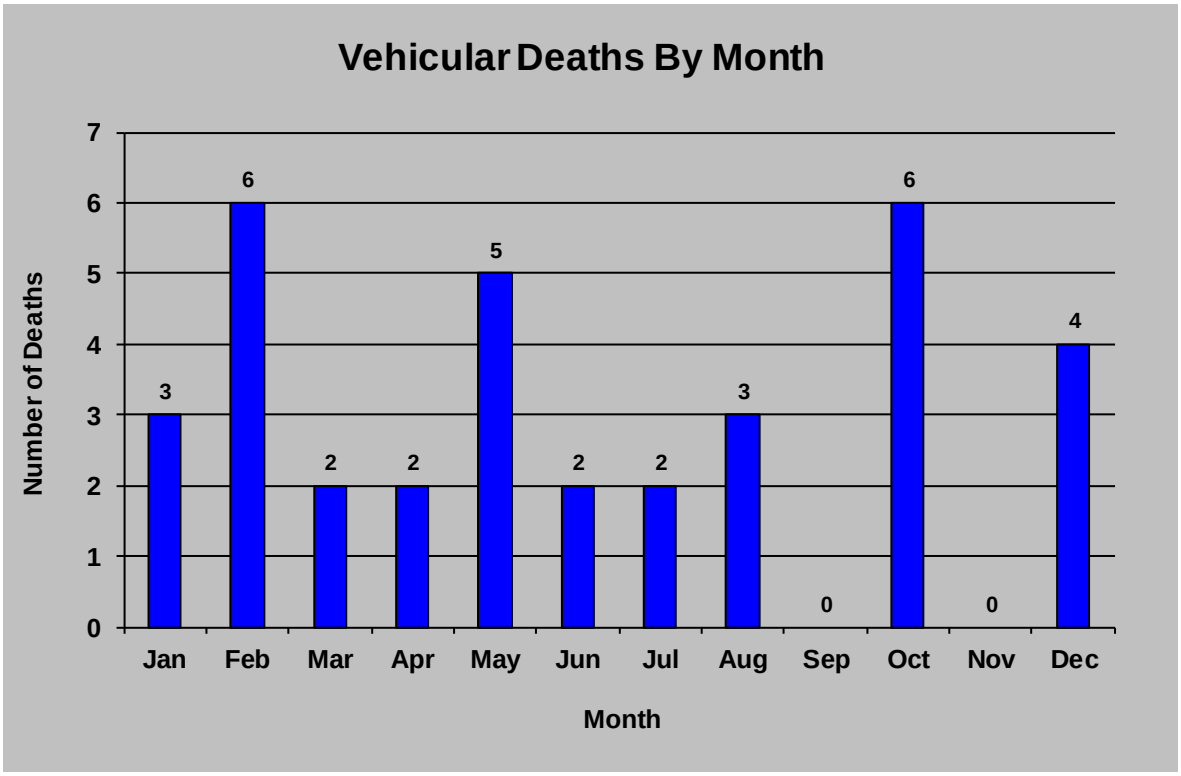
As has been the case in many Medical Examiner years, gunshot wounds remain the most frequent suicide method partly because of the inherent lethality of firearm injuries. Gunshot wounds are followed by 13 intentional overdoses and 7 suicidal hanging.

VEHICULAR

During the calendar year of 2012, the Medical Examiner's Office participated in the investigation of (35) deaths categorized as vehicular. This represents a 10% decrease over 2010.

In vehicle collisions there were 24 deaths, 20 drivers and 4 passengers. In addition there was 1 bicycle related death, 8 deaths among motorcycle operators and 6 pedestrian deaths.

Vehicular Deaths by Month



Vehicular Deaths by Method, Gender, and Age Group

Vehicular Method Gender and Age Group

Vehicular Method	Sex	<1	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	>=100	Total
Automobile Driver	F	0	0	0	2	0	0	0	0	0	1	0	0	3
Automobile Driver	M	0	0	0	2	3	1	1	0	1	1	0	0	9
Automobile Driver Total														**12**
Automobile Passenger	M	0	0	0	0	1	0	2	0	0	0	0	0	3
Automobile Passenger Total														**3**
Bicyclist	M	0	0	0	0	0	1	0	0	0	0	0	0	1
Bicyclist Total														**1**
Motorcycle Driver	F	0	0	0	0	0	0	1	0	0	0	0	0	1
Motorcycle Driver	M	0	0	0	2	0	0	2	0	1	0	0	0	5
Motorcycle Driver Total														**6**
Other	F	0	0	0	0	0	0	0	1	0	0	0	0	1
Other Total														**1**
Pedestrian	F	0	0	0	0	0	0	1	0	0	1	0	0	2
Pedestrian	M	0	0	0	0	0	3	1	1	1	1	0	0	7
Pedestrian Total														**9**
Unknown	F	0	0	0	0	0	0	0	0	0	1	0	0	1
Unknown	M	0	0	2	0	0	0	0	0	0	0	0	0	2
Unknown Total														**3**
Grand Total		**0**	**0**	**2**	**6**	**4**	**5**	**8**	**2**	**3**	**5**	**0**	**0**	**35**

Traffic Fatalities and Use of Restraint

Traffic Fatalities and Use of Restraint

Circumstances	Restrained	Unrestrained	Unknown	Total
Automobile Driver	3	3	6	12
Automobile Passenger	0	3	0	3
Total	**3**	**6**	**6**	**15**

UNDETERMINED

"Undetermined" manner is used to designate that a death does not exactly fit the categories natural, suicide, homicide, accident, or overlaps between two categories. An example is a death due to medication overdose. In some such deaths the determination between accident and suicide cannot be made as the decedent's intent is not clear. Information concerning the circumstances may be lacking because of the absence of background information, or because of a delay between death and discovery of the body. If an extensive investigation and autopsy cannot clarify the circumstances, the death is placed in this category. There were (13) undetermined manner deaths in Spokane County in 2012.

Although the cause of death was established in almost all of these deaths, the manner still could not be established. Again, the reason for undetermined manner is lack of information or conflicting information.

Undetermined Deaths

Manner-Undetermined Deaths 2012

Number	Cause of Death	Month	Sex	Age	Race
1	transtentorial herniation of brain with brain infarcts; d/t skull fracture, subdural hemorrhage, and epidural hemorrhage; d/t blunt impact to head	Feb	M	45	Unknown
2	blunt head chest, and abdominal injuries	Feb	M	30	Caucasian
3	combined drug toxicity; d/t simultaneous use of nortriptyline, tramadol, diltiazem, and burprion	Mar	M	42	Caucasian
4	undetermined	May	F	20	Caucasian
5	status epilepticus; d/t intractable epilepsy; d/t remote blunt force head injury with right parietal/temporal encephalopathy	Jun	M	42	Caucasian
6	combined drug toxicity; d/t simultaneous use of ethanol, hydrocodone, sertraline, and morphine	Jul	F	45	Caucasian
7	combined drug toxicity; d/t simultaneous use of amitriptyline, cyclobenzaorine, and morphine	Jul	F	42	Caucasian
8	undetermined, after complete autopsy	Jul	M	2	Caucasian
9	gunshot wound of the head	Aug	M	27	Caucasian
10	Large hemoperitoneum; d/t lacerations of spleen	Aug	M	49	Caucasian
11	combined drug toxicity; d/t simultaneous use of ethanol and fentanyl	Sep	F	53	Unknown
12	undetermined	Nov	U	Unknown	Unknown
13	sudden unexplained death during childhood	Nov	M	3	Caucasian

Glossary of Terms

Blood Alcohol Level	The concentration of ethanol (alcohol) found in blood following ingestion. Measured in grams per 100 ml of blood or grams % In the State of Washington, 0.08 grams % and above is considered the legal limit of intoxication for drivers.
Prescription Drug	Therapeutic drug or Medicine: A substance, other than food, used in the prevention, diagnosis, alleviation, treatment, or cure of disease.
Illicit drug	A drug used non-medically for personal stimulation/depression/euphoria, use or abuse.
Drug Caused Death	Death directly caused by a drug or drugs in combination with each other, including psychiatric drugs or therapeutic drugs for conditions such as asthma or epilepsy
Jurisdiction	The jurisdiction of the Medical Examiner's Office extends to all reportable deaths occurring within the boundaries of Spokane County, whether or not the incident leading to the death (such as an accident) occurred within the county. Also included are people who are transferred to Spokane area hospitals from surrounding Counties/States, who then expire in Spokane.
Manner	A statistical classification on the death certificate of the way in which the cause of death came about (accident, homicide, suicide, natural, or undetermined).
Manner: Accident	Death other than natural, where there is no evidence of intent, i.e., unintentional. In this report, vehicle accidents are identified separately.
Manner: Homicide	Death due to the acts of another.
Manner: Natural	Death caused solely by organic disease. If natural death is hastened by injury (such as a fall), the manner of death will not be considered natural.
Manner: Suicide	Death as a result of a purposeful action, with intent (explicit or implicit) to end one's life.
Manner: Traffic or Vehicular	Unintentional deaths of drivers (automobile, bicycle or motorcycle), passengers, and pedestrians involving motor vehicles on public roadways. By convention, and at the direction of state vital records, accidents involving motor vehicles on private property (such as driveways) are not included in this category.

Manner: Undetermined	Manner assigned when there is insufficient evidence or information to assign to accident, homicide, suicide, or natural categories, or when two plausible manners are equally likely.
Opiate	A broad class of drugs including morphine, heroin, and synthetic medicine such as methadone.
Poison	Any substance, either taken internally or applied externally, that is injurious to health or dangerous to life.
Race	The racial categories used in this report are: Asian, Black, Caucasian, Hispanic, Native American, Other and Unknown.
Sudden Infant Death Syndrome (SIDS)	Sudden Infant Death Syndrome is defined as the sudden death of an infant less than one year of age that cannot be explained after a thorough investigation is conducted, including complete autopsy, examination of the death scene, and review of clinical history.
Sudden Unexplained Infant Death (SUID)	Applies to the death of an infant less than one year of age, in which *(SUID)* investigation, autopsy, medical history review, and appropriate laboratory testing fails to identify a specific cause of death. SUID includes cases that meet the definition of Sudden Infant Death Syndrome.

Organizational Chart

Spokane County
Medical Examiner's Office