

**COUNTY OF SPOKANE
STATE OF WASHINGTON**



**5901 N LIDGERWOOD ST, STE 24B
SPOKANE WA 99208-1126
(509) 477-2296**

2010 ANNUAL REPORT

TABLE OF CONTENTS

Section 1: Overview.....	1
Mission Statement	1
Introduction	1
Foreword.....	1
Outside County Autopsies per County	2
Acknowledgment.....	3
Criteria for Reportable Deaths	3
Function of the Medical Examiner’s Office.....	3
Standard Annual Reports Data as Identified by the National Association of Medical Examiners (N.A.M.E.)	4
The National Academy of Sciences and Frontline reports on Forensic Sciences and Medical Examiner’s Offices.....	5
Spokane County Medical Examiner Cases in 2010	5
Forensic Unit.....	6
Chaplaincy Services	6
Section 2: Total Cases	6
Total Cases for 2010.....	6
Total Cases for 2010.....	7
Total Cases by Gender and Manner of Death.....	8
Total Jurisdiction Assumed (JA) Cases by Race and Manner of Death.....	9
Total Jurisdiction Assumed (JA) Cases by Age Group and Manner of Death	9
Total Jurisdiction Assumed (JA) Cases by Age Group and Gender.....	10
Out of Area Incidents Leading to Death in Spokane County	10
Section 3: Multi-Year Comparison	11
Manner Of Deaths Comparison (Jurisdiction Assumed – JA Deaths).....	11
Homicidal Methods Comparison	13
Suicidal Methods Comparison	14
Vehicular Deaths Comparison	15
Accidental Deaths Comparison.....	17
Drug Overdose Data Summary 2010.....	18
Accidental Deaths Comparison (Jurisdiction Assumed – JA Deaths)	19
Natural Deaths Comparison (Jurisdiction Assumed-JA Deaths).....	20
Undetermined Deaths Comparison (Jurisdiction Assumed – JA Deaths)	21
Section 4: Manner of Death	22
ACCIDENT.....	22
<i>Accident Deaths in Jurisdiction Assumed (JA) Cases by Month</i>	22
<i>Accident Mode by Gender</i>	23
<i>Accident Mode by Gender and Age Group (Autopsy Cases)</i>	24
HOMICIDE	25
<i>Homicide Deaths by Month</i>	25
<i>Homicide Deaths by Method, Gender, and Age Group</i>	26

<i>Homicide Deaths by Age Group</i>	26
<i>Homicide Deaths by Method</i>	27
NATURAL	28
<i>Natural Deaths by Month (Jurisdiction Assumed – JA Deaths)</i>	28
<i>Natural Deaths by Disease Process</i>	29
<i>Cause of Natural Deaths by Category</i>	30
<i>Natural Deaths by Disease Process and Gender</i>	31
<i>Natural Deaths by Gender and Age Group</i>	31
<i>Natural Deaths by Disease Process (Autopsied)</i>	32
<i>Natural Deaths Autopsied</i>	33
SUICIDE	34
<i>Suicide Deaths by Month</i>	34
<i>Suicide Method by Gender and Age Group</i>	35
VEHICULAR	36
<i>Vehicular Deaths by Month</i>	36
<i>Vehicular Deaths by Method, Gender, and Age Group</i>	37
UNDETERMINED	38
<i>Undetermined Deaths</i>	38
Glossary of Terms	39
Organizational Chart	41

Section 1: Overview

Mission Statement

“A regional forensic medicine center striving for continued excellence in providing scientific, compassionate, and professional services in the investigation of unexpected death.”

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 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 will be complete in the fall of 2011.

The Spokane County Medical Examiner’s grant from the Department of Justice for 2010 totals \$ 47,000, Grant funds will be used as follows:

- | | | |
|----|------------------------------|--------------|
| 1. | Laptop Computers: | \$ 6,000.00 |
| 2. | Cameras | \$ 12,000.00 |
| 3. | Digital Dictation | \$ 5,000.00 |
| 4. | Copy machines and printers | \$ 5,000.00 |
| 5. | Digital fingerprint scanning | \$ 4,500.00 |
| 6. | X-ray scanning | \$ 2,000.00 |
| 7. | Training and education | \$ 11,000.00 |

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 10 extra help employees. For more information about the Medical Examiner’s Office, visit our web site at www.spokanecounty.org/medexaminer.

Foreword

Information presented in this annual report has been compiled from deaths that were reported to the Spokane County Medical Examiner’s Office in 2010. 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 11 “outside” counties in Eastern Washington and the Idaho panhandle. In 2010 a total of 132 autopsies were performed for the following referral counties, Asotin, Benewah, Bonner, Boundary, Garfield, Kootenai, Lincoln, Nez Perce, Pend Oreille, Shoshone and Stevens. This is a mutually beneficial arrangement. 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 \$237,600 in 2010.

OUTSIDE COUNTY AUTOPSIES

2010	132
2009	157
2008	162
2007	138
2006	146
2005	144
2004	168
2003	151

SPOKANE COUNTY AUTOPSIES

2010	410
2009	394
2008	462
2007	430
2006	423
2005	426
2004	436
2003	418

Outside County Autopsies per County

	2010	2009	2008	2007	2006	2005	2004	2003
Asotin	6	3	5	0	3	5	2	N/A
Benewah	2	2	4	2	1	1	3	0
Bonner	8	19	20	11	11	20	13	14
Boundary	2	4	3	8	4	9	8	5
Garfield	1	0	N/A	N/A	N/A	N/A	N/A	N/A
Kootenai	69	54	62	48	38	52	65	40
Lincoln	1	8	7	5	8	2	6	5
Nez Perce	10	14	5	4	10	8	3	2
Pend Oreille	5	6	6	7	12	6	13	10
Shoshone	6	9	6	14	11	6	11	5
Stevens	22	34	36	31	43	27	38	55

The Spokane County Medical examiner's office began service to Garfield County in late 2009 .

The general decline in number of referral autopsies in 2010 is likely the result of two factors:

- 1.) The general economic downturn.*
- 2.) Spokane County increased the cost of Medical Examiner Services to referral counties to adequately cover the true autopsy costs to Spokane County.*

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 underwent another inspection and was again 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.

2010 Data

Deaths in Spokane County	4358
Deaths Reported to the Medical Examiner's Office	3531
Deaths Investigated by the Medical Examiner's Office	597
Scenes Investigated by the Medical Examiner Office	292
Bodies transported by order of the office via Contract Body Transport	437
**Total bodies transported to the Forensic Institute	617
Total External Autopsies	17
Total Partial Autopsies	1
Total Complete Autopsies	524
Hospital Autopsies Retained Under Medical Examiner Jurisdiction	0
Microscopic Studies Performed	524
Neuropathologic Studies Performed	2
Cardiac Pathologic Studies Performed	7
Autopsies Performed for Outside Jurisdictions	132
Bodies Unidentified after Examination	0
Organ Donations	11
Corneal Donations	44
Bone Donations	18
Connective Tissue Donations	9
Heart Valve Donations	11
Skin Donation	11
Unclaimed bodies	20
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.

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 has 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 required to be American Board of Medicolegal Death Investigators (ABMDI) certified. 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 2010

In 2010, there were 4,358 deaths in Spokane County (based on the latest census of 468,000, this represents approximately 1% of the population). Of these deaths, 3,531 (of all deaths) 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 594 (17%) 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.

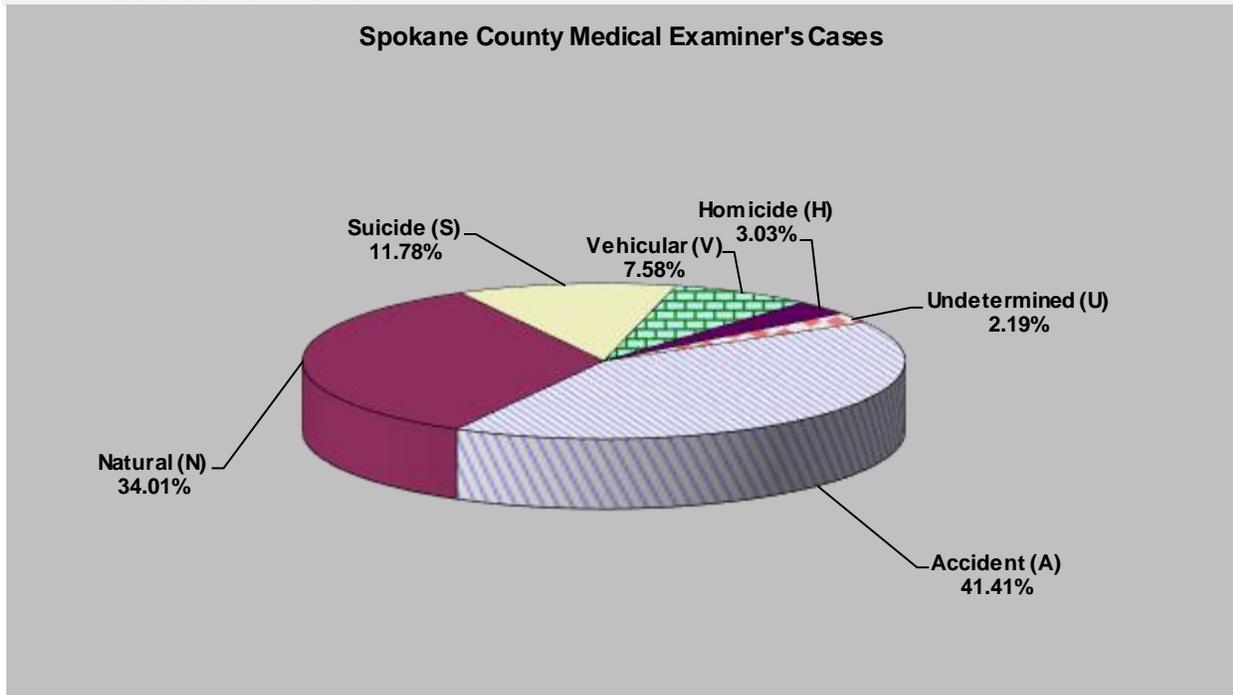
Section 2: Total Cases

Total Cases for 2010

Total Spokane County Population	468,000
Total Deaths in Spokane County	4,358
Total Deaths Reported to the Medical Examiner 2010	3,531
Total Jurisdiction Released after Investigation	2,936
Total Spokane County Medical Examiner Cases	3,531
Total Spokane County Autopsies Performed	410

Cases By Manner Of Death	Number Of Deaths	Percent Of Total
Accident (A)	246	41.41%
Natural (N)	202	34.01%
Suicide (S)	70	11.78%
Vehicular (V)	45	7.58%
Homicide (H)	18	3.03%
Undetermined (U)	13	2.19%

Total Cases for 2010



	Jurisdiction Released Cases	Outside Agency Deaths Reported (Adult Care Facilities, Nursing Homes, Hospice, etc)	Spokane County Autopsies Completed	Referral County Autopsies Completed
January	73	149	26	13
February	91	148	28	6
March	107	158	39	16
April	79	152	24	7
May	110	142	24	7
June	87	149	44	12
July	105	162	34	16
August	92	132	44	12
September	94	152	30	15
October	109	149	39	8
November	91	155	38	8
December	97	153	40	12
Total	1135	1801	410	132

Includes full autopsies, 17 external only examinations and one partial autopsy. In addition to the Spokane County autopsies, the Medical Examiner's Office performed 132 complete autopsies for neighboring referral counties.

Total Cases by Gender and Manner of Death

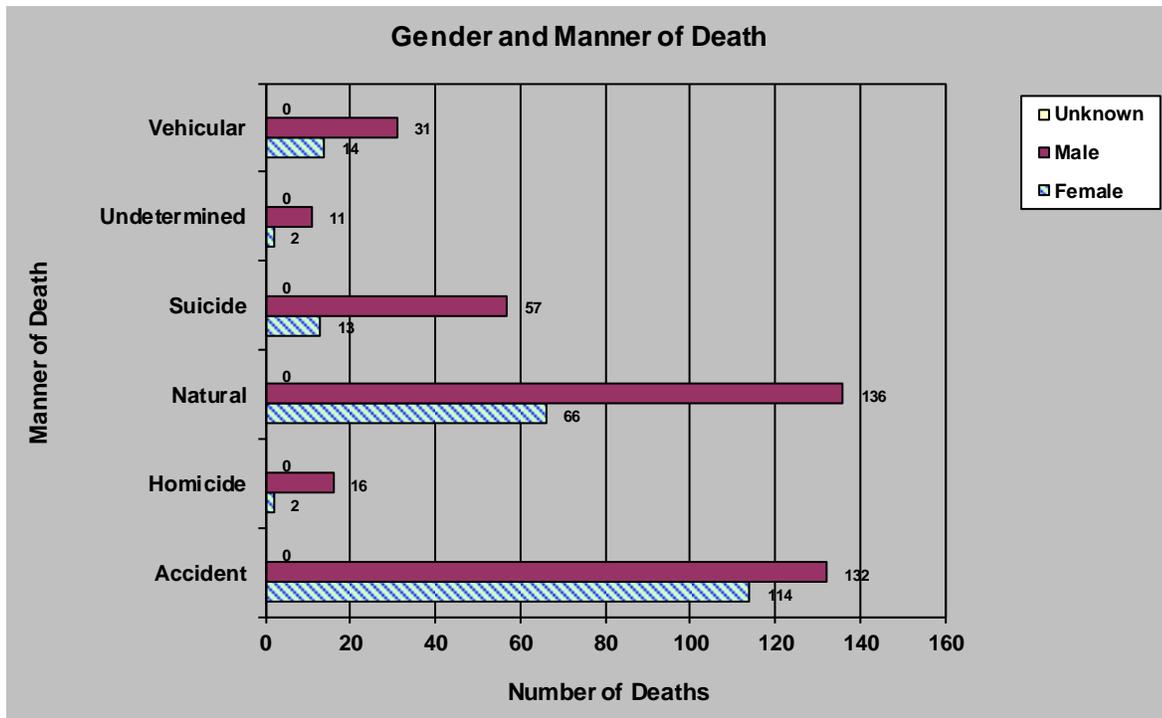
Gender and Manner Of Death

Sex	A	H	N	S	U	V	Total	Percent
Female	114	2	66	13	2	14	211	35.52%
Male	132	16	136	57	11	31	383	64.48%
Unknown	0	0	0	0	0	0	0	0.00%
Total	246	18	202	70	13	45	594	

Unknown – includes deaths such as partial skeletal remains wherein the materials examined are so limited that sex cannot be determined.

The 2/3 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 410 cases an autopsy was performed. In 184 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	2	0	0	0	0	1	3
Black	4	1	3	0	1	2	11
Caucasian	221	14	184	66	11	39	535
Hispanic	2	0	4	1	0	0	7
Native American	1	0	2	1	0	1	5
Other	1	1	0	0	0	1	3
Unknown	15	2	9	2	1	1	30
Total	246	18	202	70	13	45	594

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	19	4	3	9	0	0	3
10 to 19	16	3	0	2	6	0	5
20 to 29	36	11	5	4	7	2	7
30 to 39	59	16	3	16	13	4	7
40 to 49	88	30	3	32	13	4	6
50 to 59	125	31	3	66	16	2	7
60 to 69	70	21	0	35	8	1	5
70 to 79	50	23	1	20	3	0	3
80 to 89	80	60	0	15	3	0	2
90 to 99	50	46	0	3	1	0	0
100 to 109	1	1	0	0	0	0	0
Total	594	246	18	202	70	13	45

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. In 2010 the 10-19 age group suicides and vehicular deaths accounted for 11/16 deaths.

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

Age Group (Years)		Female	Male	Unknown
0 to 9	19	9	10	0
10 to 19	16	7	9	0
20 to 29	36	10	26	0
30 to 39	59	18	41	0
40 to 49	88	35	53	0
50 to 59	125	32	93	0
60 to 69	70	15	55	0
70 to 79	50	18	32	0
80 to 89	80	45	35	0
90 to 99	50	22	28	0
100 to 109	1	0	1	0
Total	594	211	383	0

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 2010 there were a total of 48 cases in which an event occurred outside of Spokane County that led to eventual death in Spokane County. 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: 28 accidents, 9 motor vehicle accidents, 6 natural, 1 homicides, and 4 suicides. Please see the link to the data below.

[Out of area incidents leading to death in Spokane County](#)

Section 3: Multi-Year Comparison

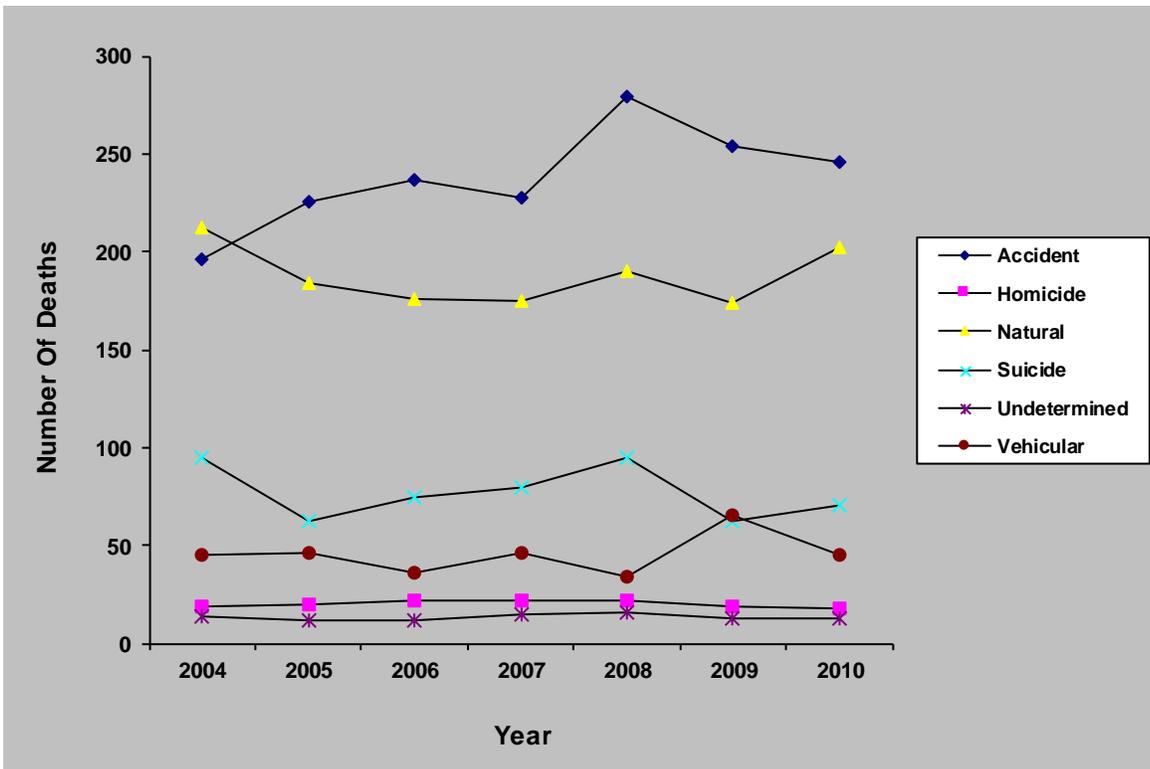
The Medical Examiner’s Office replaced the coroner’s system on January 1, 1999. From 1999 to present, the Spokane County deaths which have fallen under the jurisdiction of the Medical Examiner System have ranged from a low of 550 to a high of 635, with the number of autopsies performed typically under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

As seen in the comparison chart on the following page, the Medical Examiner System has assumed jurisdiction in an increasing number of accident cases through 2008. This increase may be attributed to improved reporting techniques, full investigation of fracture related deaths in the elderly and to an increase in the number of deaths attributed to “overdose”. The federal government data classifies 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, and to 64 in 2010. The “accident” manner of death category has leveled in numbers of deaths in 2009 and 2010.

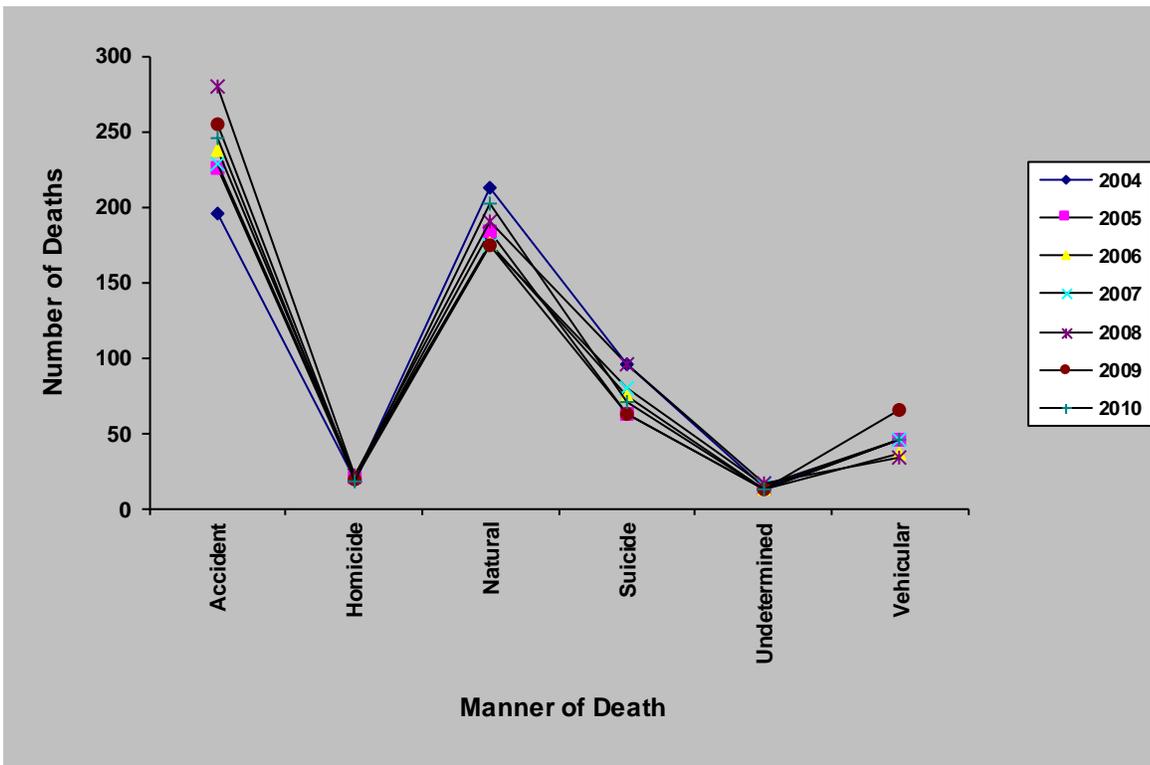
Manner Of Deaths Comparison (Jurisdiction Assumed – JA Deaths)

Comparison of Manners of Death 2004 - 2010

Manner of Death	2004	2005	2006	2007	2008	2009	2010
Accident	196	226	237	228	279	254	246
Homicide	19	20	22	22	22	19	18
Natural	212	184	176	175	190	174	202
Suicide	95	62	74	80	95	62	70
Undetermined	14	12	12	15	16	13	13
Vehicular	45	46	36	46	34	65	45
Total	581	550	557	566	636	587	594



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.



Comparison of Manners of Death as Percentage of Total Annual Medical Examiner's Cases 2004 - 2010

Manner of Death	2004	2005	2006	2007	2008	2009	2010
Accident	33.73%	41.09%	42.55%	40.28%	43.87%	43.27%	41.41%
Homicide	3.27%	3.64%	3.95%	3.89%	3.46%	3.24%	3.03%
Natural	36.49%	33.45%	31.60%	30.92%	29.87%	29.64%	34.01%
Suicide	16.35%	11.27%	13.29%	14.13%	14.94%	10.56%	11.78%
Undetermined	2.41%	2.18%	2.15%	2.65%	2.52%	2.21%	2.19%
Vehicular	7.75%	8.36%	6.46%	8.13%	5.35%	11.07%	7.58%

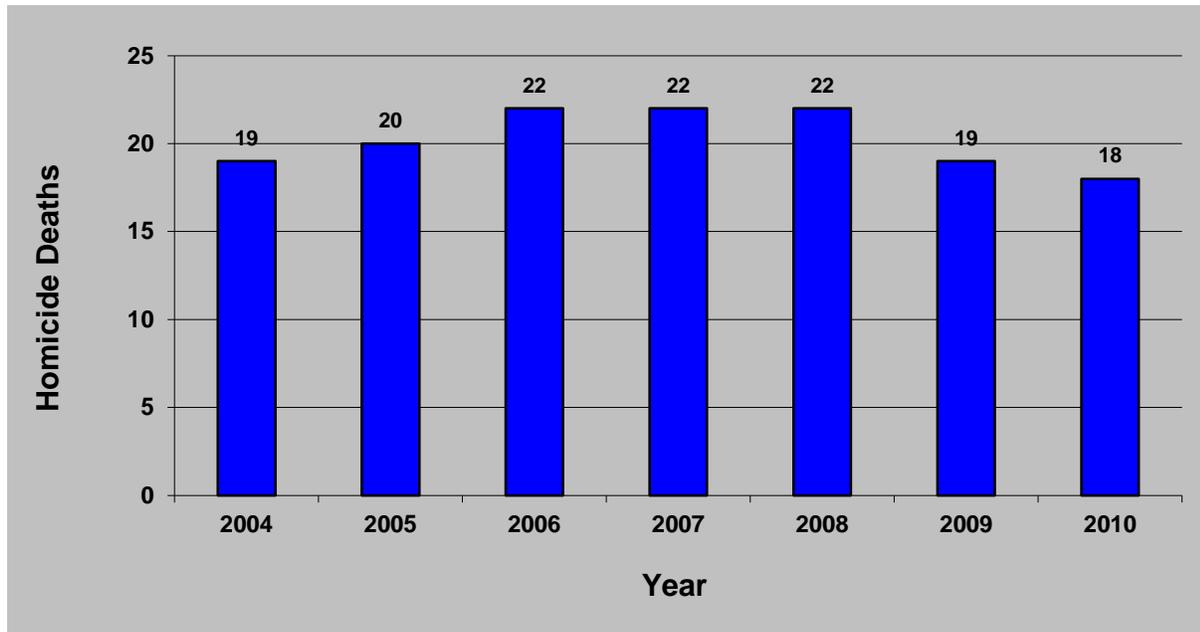
Ideally, a Medical Examiner System strives to keep the percentage of “undetermined” manner of death cases to less than five percent. This requires thorough investigation and autopsy. In the Spokane County Medical Examiner’s Office, every “undetermined” manner case is reviewed as part of the office Performance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

Homicidal Methods Comparison

Comparison of Homicidal Methods 2004 - 2010

Method Used	2004	2005	2006	2007	2008	2009	2010
Asphyxia	0	0	1	0	0	0	1
Blunt Impact	3	2	2	3	0	0	0
Child Abuse	1	2	2	3	2	2	2
Firearms	7	7	5	9	9	7	12
Homicidal Violence	3	4	2	1	1	3	1
Other	2	2	4	4	0	1	1
Stabbing	2	3	4	2	8	6	0
Strangulation	1	0	1	0	2	0	1
Unknown	0	0	1	0	0	0	0
Total	19	20	22	22	22	19	18

Homicides 2004 - 2010

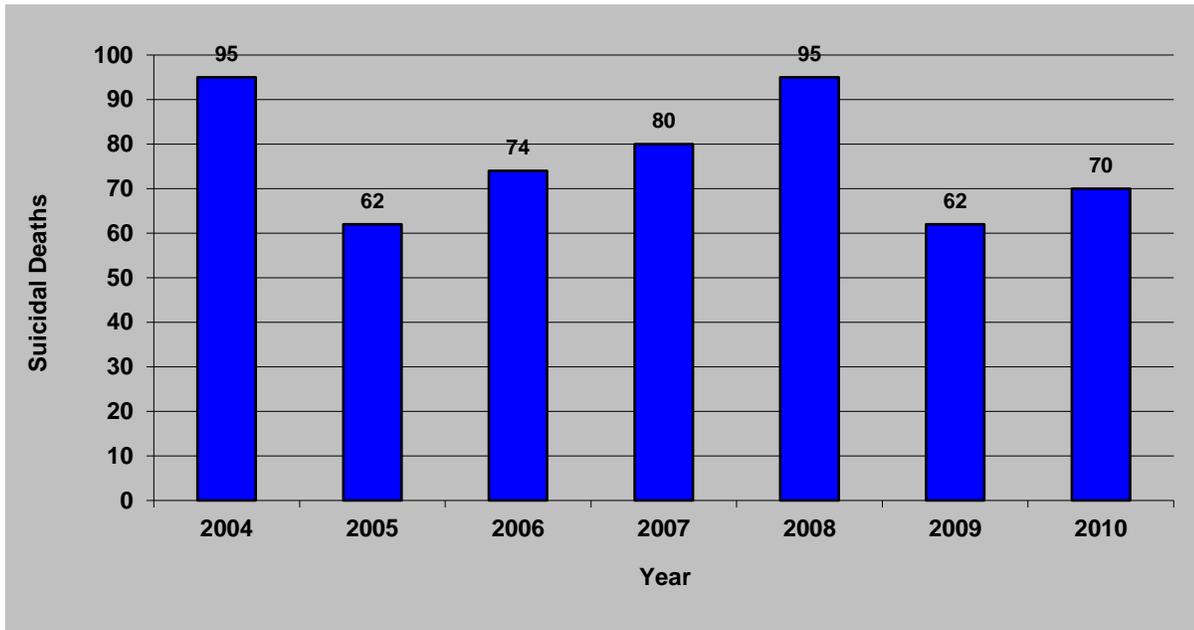


Suicidal Methods Comparison

Comparison of Suicidal Methods 2004 - 2010

Method Used	2004	2005	2006	2007	2008	2009	2010
Carbon Monoxide	3	5	4	7	5	1	1
Drowning	1	0	4	0	0	0	1
Drugs/Poisons	24	20	19	19	19	7	13
Firearms	50	21	37	32	51	37	35
Hanging	15	14	8	17	17	15	13
Jumping	0	0	1	3	1	1	3
Other	2	0	1	2	0	1	2
Plastic Bag	0	0	0	0	1	0	0
Stab/incised wound	0	2	0	0	1	0	2
Total	95	62	74	80	95	62	70

Suicides 2004 - 2010



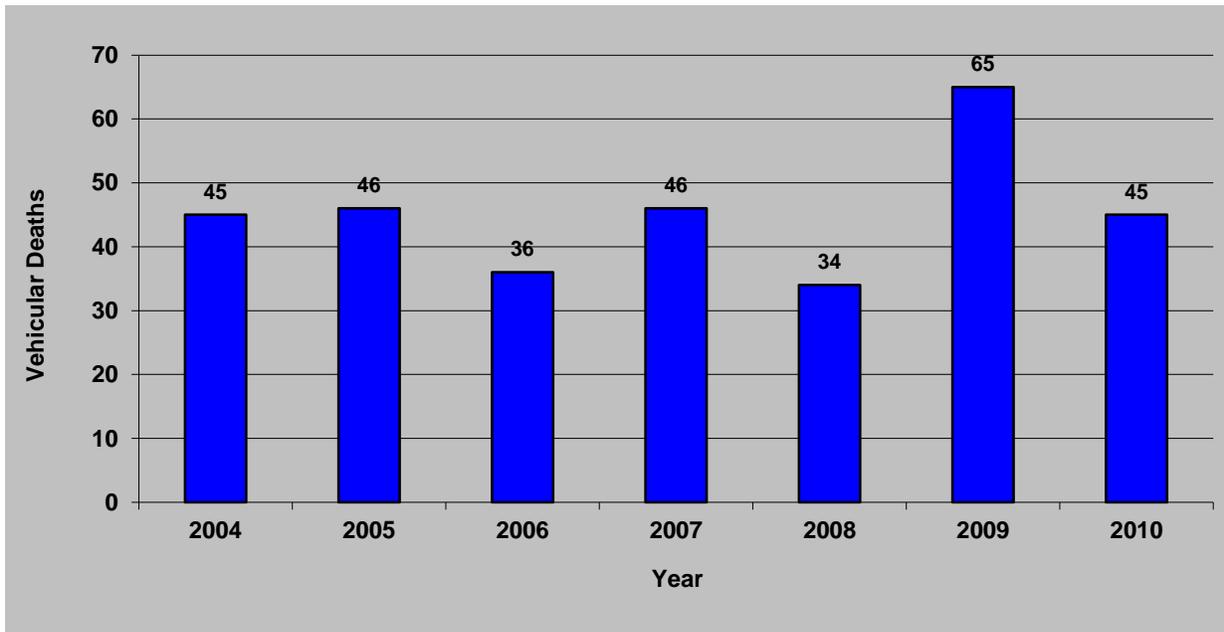
Vehicular Deaths Comparison

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

Comparison of Vehicular Deaths 2004 - 2010

Vehicle Circumstances	2004	2005	2006	2007	2008	2009	2010
Automobile Driver	20	17	18	14	22	29	19
Automobile Passenger	7	15	8	12	6	10	11
Bicyclist	0	3	2	1	0	1	3
Motorcycle Driver	10	5	6	5	6	6	6
Motorcycle Passenger	3	0	0	1	0	3	1
Other	0	0	1	2	0	1	2
Pedestrian	4	5	1	9	0	14	2
Unknown	1	1	0	2	0	1	1
Total	45	46	36	46	34	65	45

Vehicular Deaths 2004 - 2010



Accidental Deaths Comparison

Comparison of Accidental Deaths 2004 - 2010

Accident Circumstances	2004	2005	2006	2007	2008	2009	2010
Aircraft	1	0	0	0	0	0	1
Alcohol Abuse	1	2	2	1	1	5	1
Asphyxiation	4	7	8	5	3	1	2
Aspiration	0	3	3	3	3	3	2
Bicycle Fall	0	0	1	0	1	0	1
Boating	0	0	0	0	1	0	0
Choking	2	0	2	1	0	2	3
Dog Bite	1	0	0	0	0	0	0
Drowning	7	4	12	3	6	2	7
Drugs	70	48	47	38	48	41	24
Prescribed Drugs	0	35	50	61	61	36	40
Electrocution	1	0	1	0	2	0	1
Fall	93	102	97	101	131	143	137
Farm	0	0	0	1	0	1	3
Fire/burns	3	3	0	1	4	5	8
Firearms	0	0	1	1	1	2	2
Hyperthermia	0	0	2	1	1	0	0
Hypothermia	2	5	2	4	5	3	2
Industrial Accident	2	3	2	2	2	1	2
Other	6	13	4	2	8	9	9
Struck by Object	1	0	0	0	0	0	0
Surgical Procedure	1	1	0	0	0	0	1
Therapy Complication	1	0	3	3	1	0	0
Total	196	226	237	228	279	254	246

Toxicology may show numerous combinations of medications and illicit drugs, but such deaths are categorized in the chart above as "Drugs". The fire/burns category in 2010 reflects several fires that resulted in more than one fatality.

Drug Overdose Data Summary 2010

Overview

A total of 81 deaths were attributed to (prescription and/or illicit) drug overdoses in 2010. Of these 64 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 64 accidental overdose deaths in Spokane County 29 (45%) were females and 35 (54%) were males. These 64 deaths represent a decline in accidental overdose deaths from 2009, in that year there were 77 such deaths. Accidental overdose deaths appear to have peaked in 2008, with 109 deaths in that year.

The overdose data for 2010 includes 13 suicides, in addition to the 64 accidental deaths. Four (4) 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

Only 9 of these 64 deaths could be attributed to illicit drugs only (3 cocaine, 2 heroin, one heroin plus methamphetamine, and 2 methamphetamine). One of these deaths was in a cocaine body packer, attempting to transport cocaine in balloon-packages in the stomach. Several of the balloons ruptured. Eleven deaths resulted from only prescription medicines, though the medicines were not necessarily prescribed to the decedent. The remaining 44 deaths resulted from combinations of prescription drugs, 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 32 of the 64 deaths, the source of some or all of the prescriptions was unknown.

Most Common Medications

The most common medications found in testing of blood removed at autopsy were morphine (17 listings), methadone (16), oxycodone (14), hydrocodone (13), followed by acetaminophen and ethanol with 11 listings each. When benzodiazepine medications were analyzed as a group (clonazepam, diazepam, lorazepam, oxazepam, and temazepam) these were found in 18 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 2010 reflect the re-emergence of heroin use being described nationally. The morphine and methadone numbers are comparable to those in 2009.

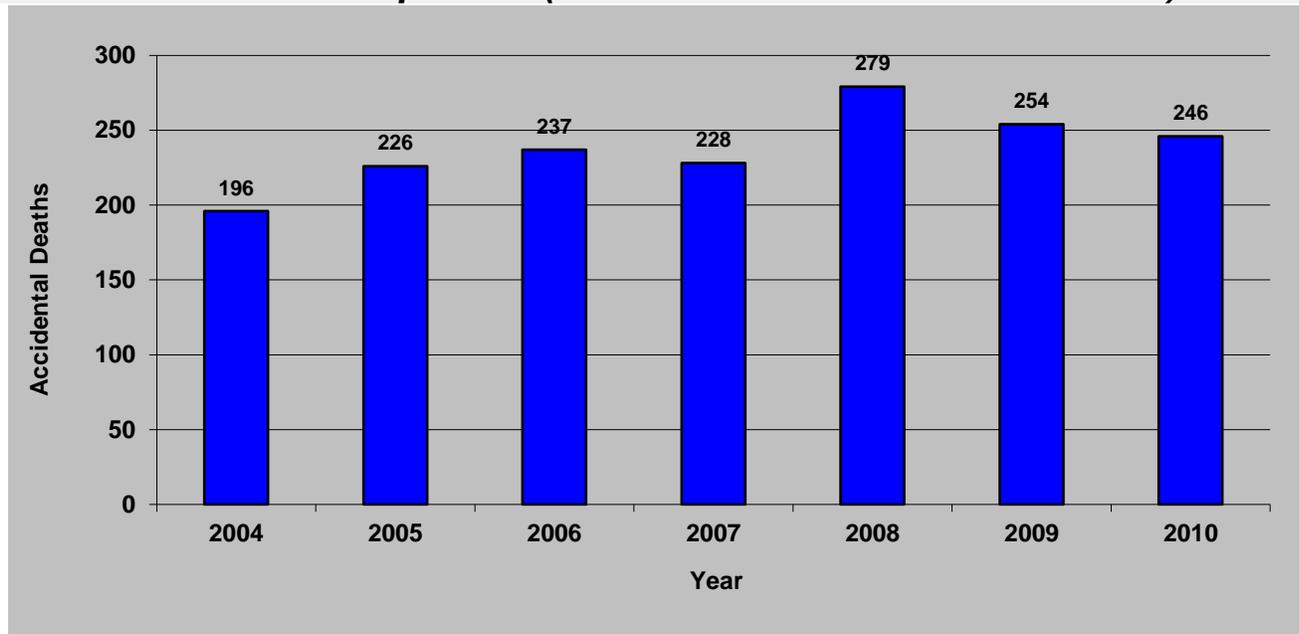
Below are 3 links to the overdose data in Spokane County, these 3 links show the data in alternative methods.

[2010 Overdose Data](#)

[2010 Overdose Toxicology Numbers](#)

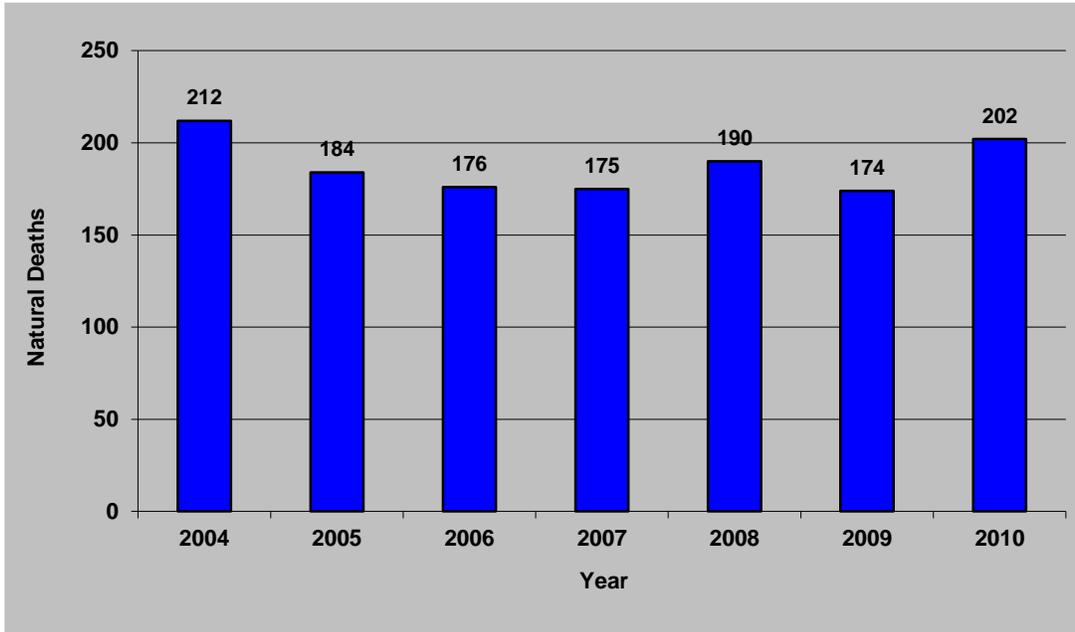
[2010 Overdose Sources](#)

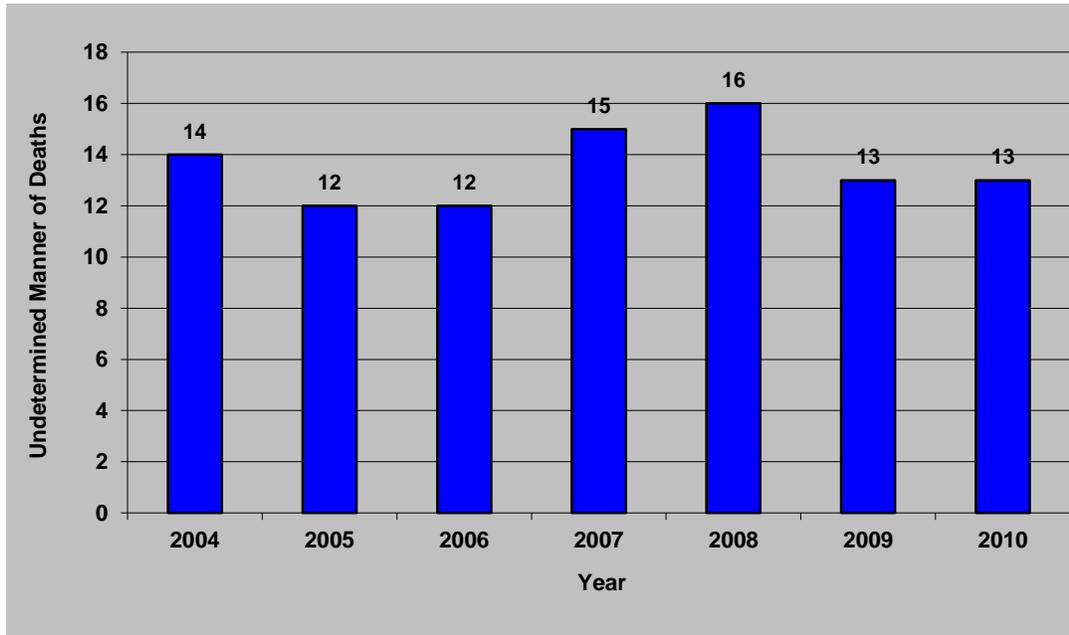
Accidental Deaths Comparison (Jurisdiction Assumed – JA Deaths)



Natural Deaths Comparison (Jurisdiction Assumed-JA Deaths)

Natural Deaths 2004 - 2010



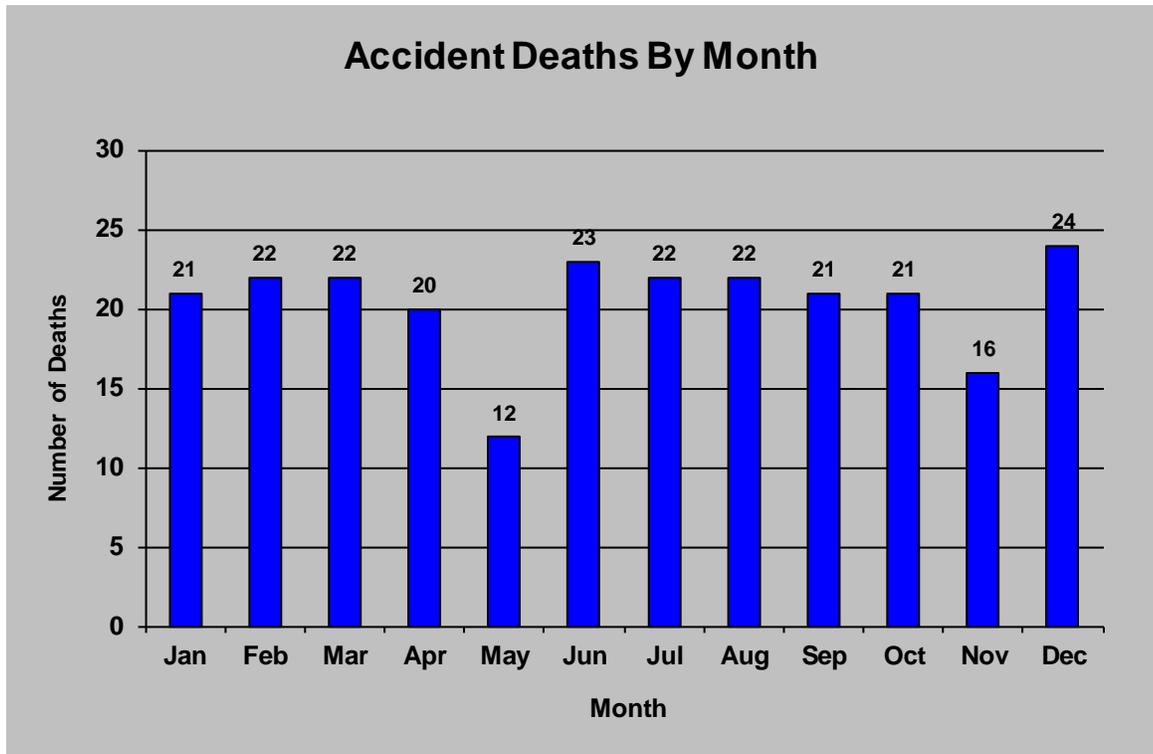
Undetermined Deaths Comparison (Jurisdiction Assumed – JA Deaths)**Deaths of Undetermined Manner 2004 - 2010**

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 2010, the undetermined classification was used in 2.21% of Spokane Medical Examiner cases.

Section 4: Manner of Death

ACCIDENT

Accident Deaths in Jurisdiction Assumed (JA) Cases by Month



*Accident Mode by Gender***Accident Mode By Gender**

Accident Mode	Female	Male	Total
Aircraft	0	1	1
Alcohol Abuse	0	1	1
Asphyxiation	1	1	2
Aspiration	1	1	2
Bicycle Fall	1	0	1
Choking	1	2	3
Drowning	3	4	7
Drugs	8	16	24
Prescribed Drugs	21	19	40
Electrocution	0	1	1
Fall	69	68	137
Farm	1	2	3
Fire/burns	4	4	8
Firearms	0	2	2
Hypothermia	0	2	2
Industrial Accident	0	2	2
Other	3	6	9
Surgical Procedure	1	0	1
Total	114	132	246

Accident Mode by Gender and Age Group (Autopsy Cases)

Accident Mode, Gender and Age Group

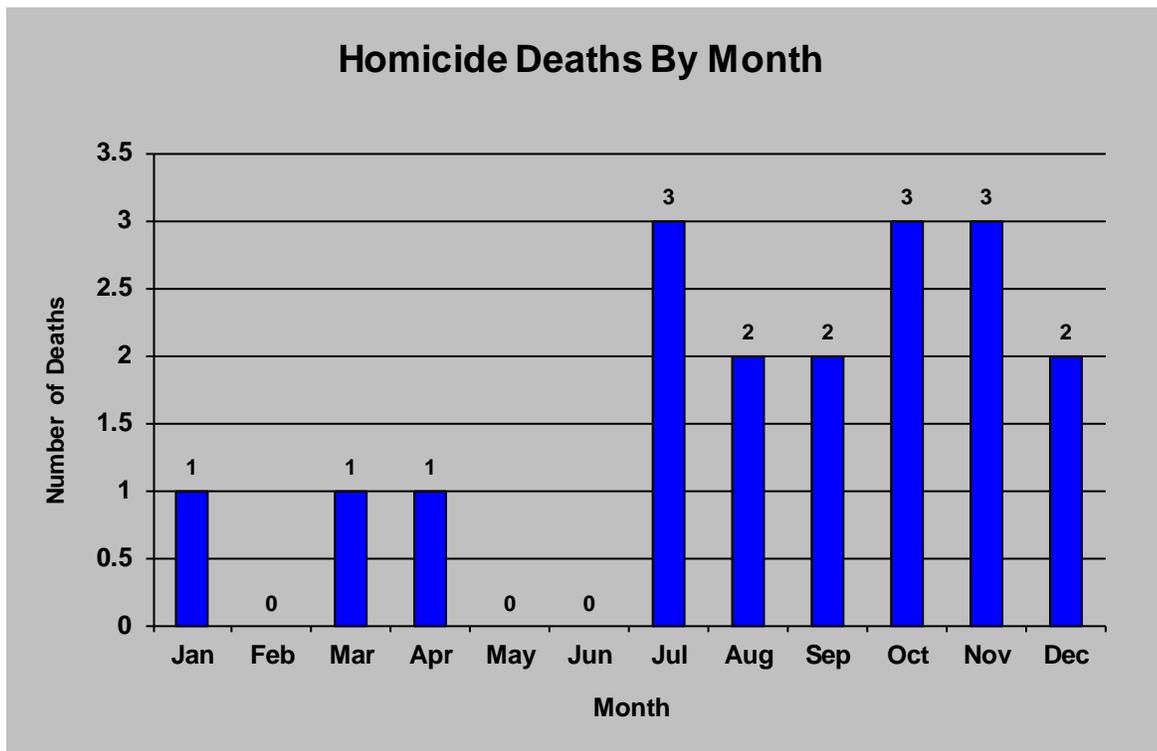
Accident Mode	Sex	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	>=100	Total
Aircraft	Male	0	0	1	0	0	0	0	0	0	0	0	1
Aircraft Total													1
Alcohol Abuse	Male	0	0	0	0	0	1	0	0	0	0	0	1
Alcohol Abuse Total													1
Asphyxiation													1
Asphyxiation	Male	1	0	0	0	0	0	0	0	0	0	0	1
Asphyxiation Total													2
Aspiration	Female	0	0	0	1	0	0	0	0	0	0	0	1
Aspiration	Male	0	0	0	1	0	0	0	0	0	0	0	1
Aspiration Total													2
Bicycle Fall	Female	0	0	0	0	0	0	1	0	0	0	0	1
Bicycle Fall Total													1
Choking	Female	0	0	0	0	0	0	0	1	0	0	0	1
Choking	Male	1	0	0	0	0	0	0	0	1	0	0	2
Choking Total													3
Drowning	Female	1	0	1	0	0	0	0	0	1	0	0	3
Drowning	Male	1	1	0	0	0	2	0	0	0	0	0	4
Drowning Total													7
Drugs	Female	0	1	1	2	2	2	0	0	0	0	0	8
Drugs	Male	0	0	3	3	3	6	1	0	0	0	0	16
Drugs Total													24
Electrocution	Male	0	0	0	0	1	0	0	0	0	0	0	1
Electrocution Total													1
Fall	Female	0	0	0	0	1	2	3	8	35	20	0	69
Fall	Male	0	0	0	0	2	3	6	12	19	25	1	68
Fall Total													137
Farm	Female	0	0	0	0	0	0	0	0	1	0	0	1
Farm	Male	0	0	0	0	0	0	1	0	1	0	0	2
Farm Total													3
Fire/burns	Female	0	0	0	0	1	2	0	0	0	1	0	4
Fire/burns	Male	0	0	0	0	1	1	2	0	0	0	0	4
Fire/burns Total													8
Firearms	Male	0	1	0	0	0	0	1	0	0	0	0	2
Firearms Total													2
Hypothermia	Male	0	0	0	0	0	1	0	0	1	0	0	2
Hypothermia Total													2
Industrial Accident	Male	0	0	0	0	1	1	0	0	0	0	0	2
Industrial Accident Total													2
Other	Female	0	0	1	1	0	0	1	0	0	0	0	3
Other	Male	0	0	0	0	2	0	2	2	0	0	0	6
Other Total													9
Prescribed Drugs	Female	0	0	2	4	10	3	1	0	1	0	0	21
Prescribed Drugs	Male	0	0	2	4	5	7	1	0	0	0	0	19
Prescribed Drugs Total													40
Surgical Procedure	Female	0	0	0	0	1	0	0	0	0	0	0	1
Surgical Procedure Total													1
Grand Total		4	3	11	16	30	31	21	23	60	46	1	246

Falls that result in mortality are significantly correlated with increasing age. Illicit drug deaths peak in middle ages. In 2010, prescription drug deaths also were most common in middle age.

HOMICIDE

In 2010 the recorded 18 homicides represents a decrease by 1 from the previous year. 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 2010 was 20-29 years.

Homicide Deaths by Month



Homicide Deaths by Method, Gender, and Age Group

Homicide Mode, 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
Asphyxia	Male	0	0	0	0	0	0	1	0	0	0	0	0	1
Asphyxia Total														1
Child Abuse	Male	0	2	0	0	0	0	0	0	0	0	0	0	2
Child Abuse Total														2
Firearms	Female	0	0	0	1	1	0	0	0	0	0	0	0	2
Firearms	Male	0	1	0	3	2	2	1	0	1	0	0	0	10
Firearms Total														12
Homicidal Violence	Male	0	0	0	0	0	1	0	0	0	0	0	0	1
Homicidal Violence Total														1
Other	Male	0	0	0	1	0	0	0	0	0	0	0	0	1
Other Total														1
Strangulation	Male	0	0	0	0	0	0	1	0	0	0	0	0	1
Strangulation Total														1
Grand Total		0	3	0	5	3	3	3	0	1	0	0	0	18

Homicide Deaths by Age Group



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

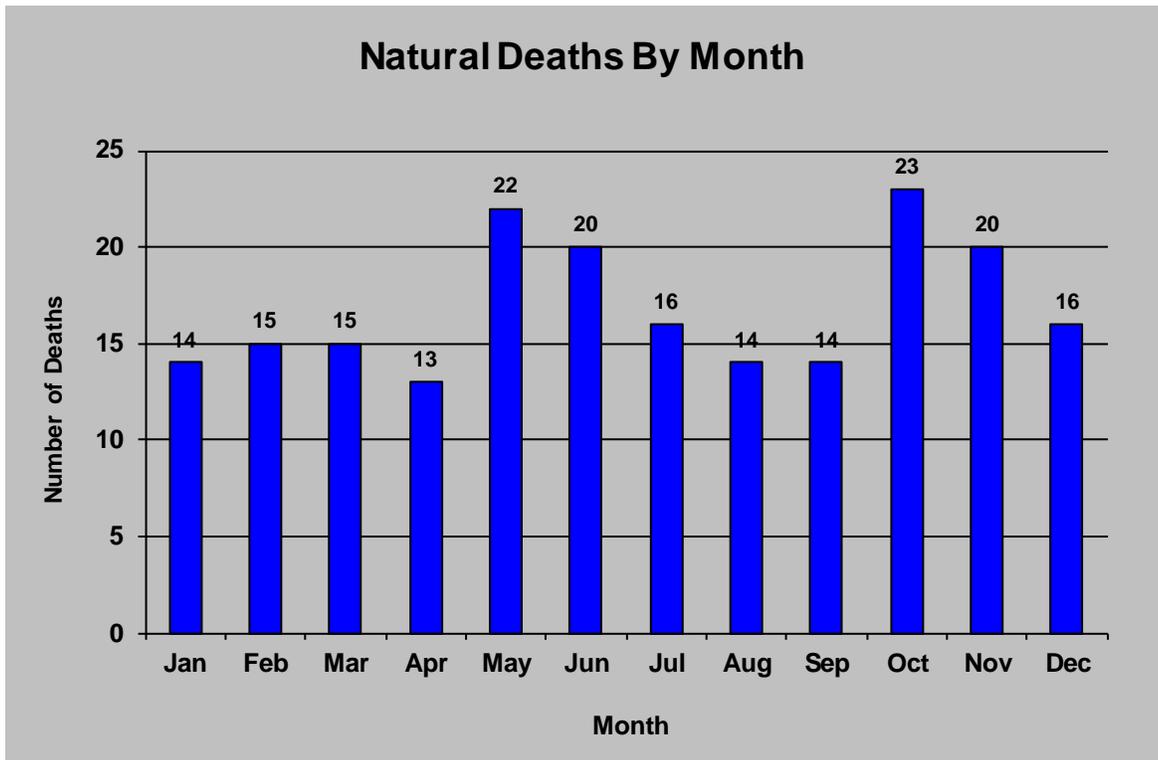
Homicide Deaths by Method



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	OF	O	R	S	U	TOTAL
Asthma						1			1
Atherosclerotic Cardiovascular Disease		73							73
Cardiac Dysrhythmia		5							5
Cardiac Tamponade		2							2
Cardio Pulmonary Arrest		1							1
Cardiomyopathy		19							19
Cerebral Hemorrhage					1				1
Chronic Alcoholism	5								5
Chronic obstructive pulmonary disease						6			6
Cirrhosis of the Liver	3								3
Congenital Abnormality					2				2
Congestive heart failure		1							1
Diabetes Mellitus					6				6
Emphysema						3			3
End Stage Liver Disease					1				1
Epilepsy							4		4
Gastro Intestinal Bleed	4								4
Gastrointestinal Bleed					2				2
Hypertensive heart disease		4							4
Laryngeal Cancer			1						1
Lung Cancer			2						2
Myocardial Infarction		5							5
Other		1	4	2	9	1			17
Pancreatitis					1				1
Peritonitis					1				1
Phlebothrombosis						1			1
Pneumonia						10			10
Pulmonary embolism						7			7
Seizure Disorder					1				1
SIDS					4				4
Subarachnoid Hemorrhage					3				3
undetermined								5	5
Ventricular Fibrillation		1							1
Total	12	112	7	2	31	29	4	5	202

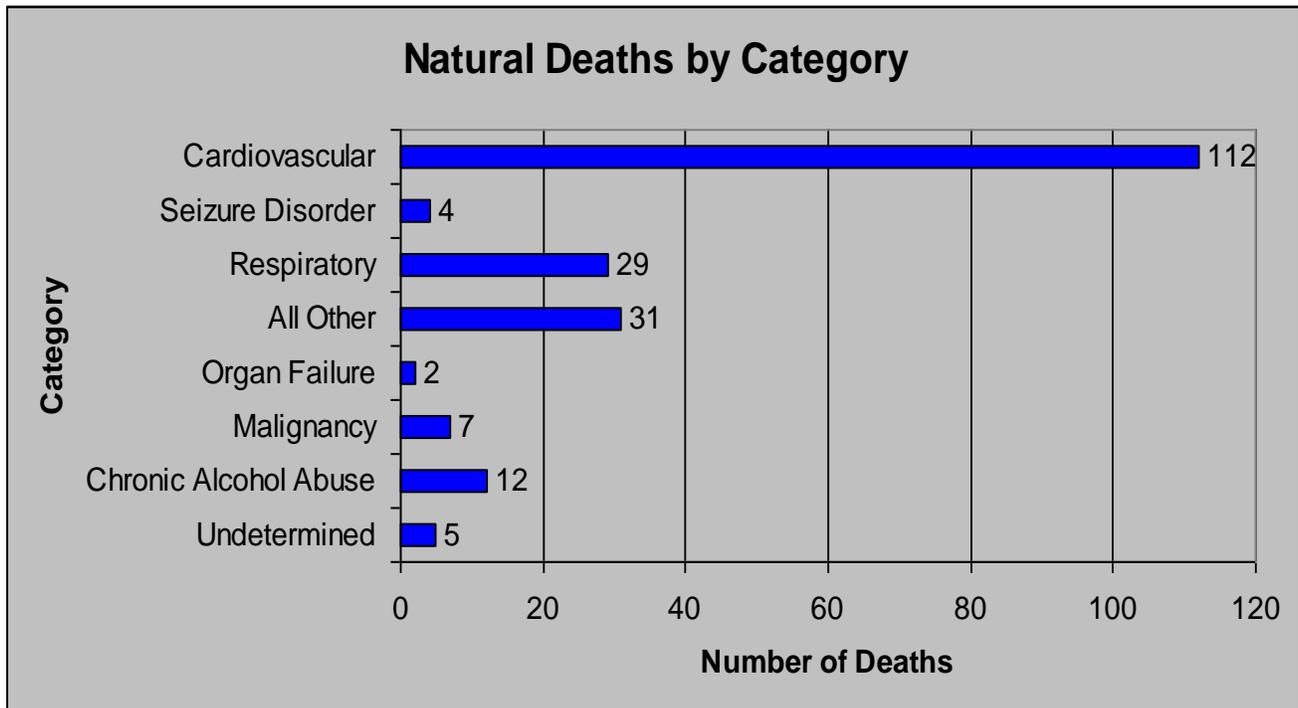
“Undetermined Natural Cause” is sometimes assigned to a death in a very elderly person, without evidence of injury, with little or no medical history, when an autopsy is not performed.

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 Coroner and Medical Examiner systems, 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

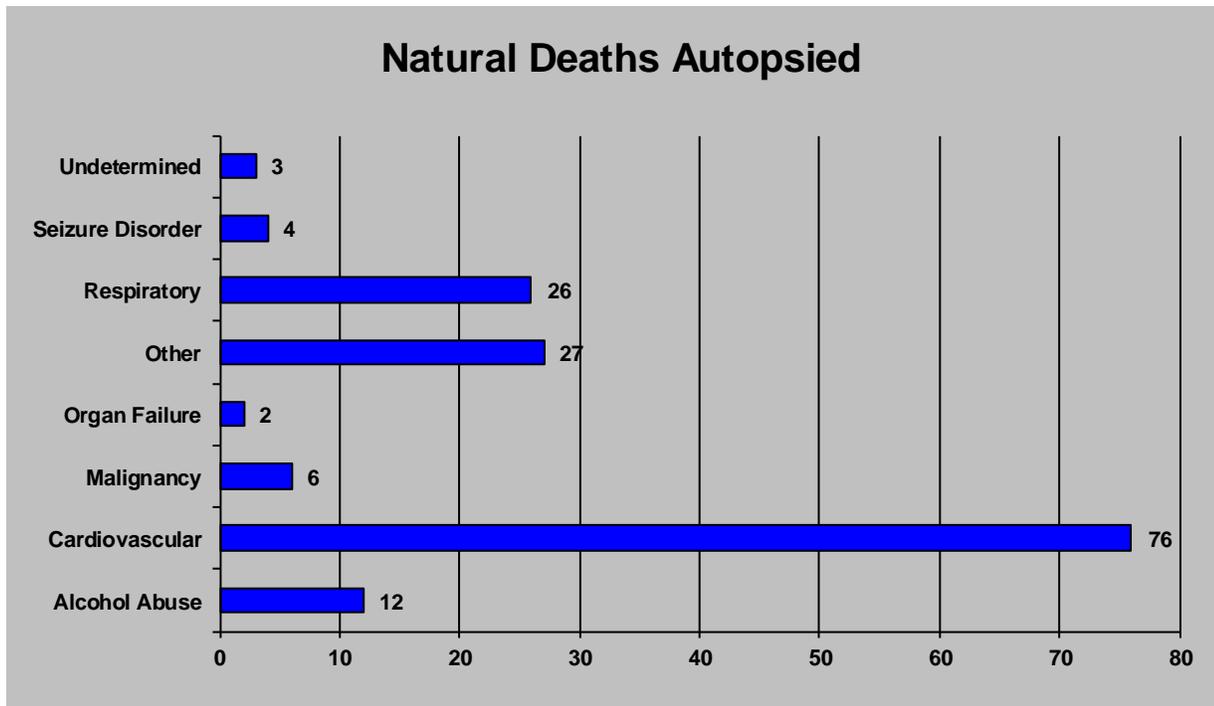
Disease Process	Female	Male	Unknown	Total
Alcohol Abuse	3	9	0	12
Cardiovascular	28	84	0	112
Malignancy	0	7	0	7
Organ Failure	1	1	0	2
Other	14	17	0	31
Respiratory	14	15	0	29
Seizure Disorder	4	0	0	4
Undetermined	2	3	0	5
Total	66	136	0	202

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	1	0	2	0	0	0	0	0	3
Alcohol Abuse	M	0	0	0	1	0	2	6	0	0	0	0	0	9
Alcohol Abuse Total														12
Cardiovascular	F	1	0	0	0	4	5	5	4	5	4	0	0	28
Cardiovascular	M	0	0	1	1	5	11	27	24	10	3	2	0	84
Cardiovascular Total														112
Malignancy	M	0	0	0	0	0	1	3	1	0	2	0	0	7
Malignancy Total														7
Organ Failure	F	0	0	0	0	0	0	1	0	0	0	0	0	1
Organ Failure	M	0	0	0	0	0	1	0	0	0	0	0	0	1
Organ Failure Total														2
Other	F	2	2	0	0	2	2	4	1	1	0	0	0	14
Other	M	3	1	0	0	2	4	6	1	0	0	0	0	17
Other Total														31
Respiratory	F	0	0	0	0	0	4	7	0	0	2	1	0	14
Respiratory	M	0	0	0	0	2	1	5	3	0	4	0	0	15
Respiratory Total														29
Seizure Disorder	F	0	0	1	2	0	1	0	0	0	0	0	0	4
Seizure Disorder Total														4
Undetermined	F	0	0	0	0	0	0	0	0	2	0	0	0	2
Undetermined	M	0	0	0	0	0	0	0	1	2	0	0	0	3
Undetermined Total														5
Grand Total		6	3	2	4	16	32	66	35	20	15	3	0	202

Three of the deaths listed as “other” are attributed to Sudden Unexplained Infant Death. Two of the deaths listed as “other” were sudden unexplained death in childhood. **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 Autopsied

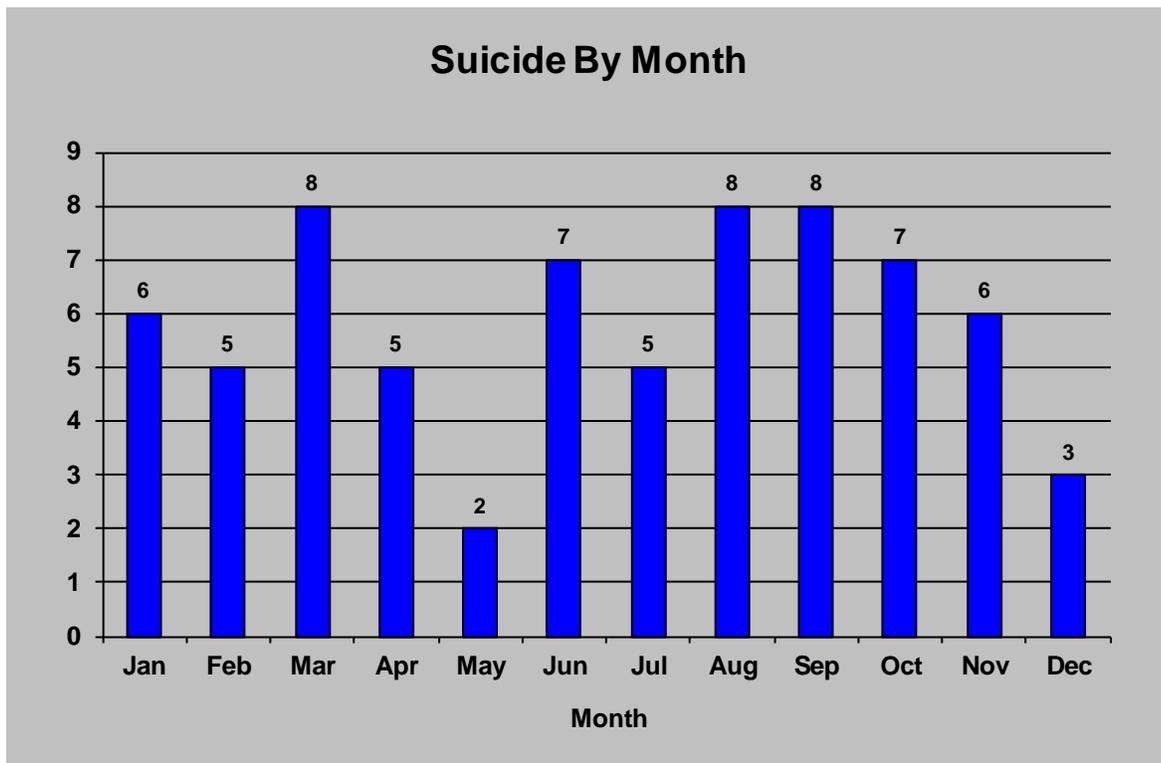
The numbers of cardiovascular deaths reflect the fact that the first symptom of significant heart disease is often a fatal heart attack. The natural manners of death with “undetermined” cause are deaths in which the scene investigation was highly suggestive of a natural death. However complete autopsies, including microscopic examination of biopsies and toxicology testing did not show cause of 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 (70) suicides in 2010, up from 62 in 2009.

The highest number (55/70) of suicides fell within the 20-59 age groups. However, looking at suicides in persons (50) years and older, in 2009 these age groups represented 44% (31/70) of all suicides occurring in Spokane County. Nationally, suicide deaths in older Americans are associated statistically with financial concerns, illness and declining health. Six suicides occurred in teenagers, and 7 in the 20-29 age group.

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	1	0	0	0	0	0	1
Carbon Monoxide Total														1
Drowning	F	0	0	0	0	0	1	0	0	0	0	0	0	1
Drowning Total														1
Drugs/Poisons	F	0	0	0	1	0	2	1	1	0	0	0	0	5
Drugs/Poisons	M	0	0	0	3	0	2	2	1	0	0	0	0	8
Drugs/Poisons Total														13
Firearms	F	0	0	0	0	0	0	2	0	1	0	0	0	3
Firearms	M	0	0	3	2	8	1	7	5	2	3	1	0	32
Firearms Total														35
Hanging	F	0	0	1	0	0	2	0	0	0	0	0	0	3
Hanging	M	0	0	1	1	2	3	2	1	0	0	0	0	10
Hanging Total														13
Jumping	F	0	0	1	0	0	0	0	0	0	0	0	0	1
Jumping	M	0	0	0	0	2	0	0	0	0	0	0	0	2
Jumping Total														3
Other	M	0	0	0	0	1	1	0	0	0	0	0	0	2
Other Total														2
Stab/incised wound	M	0	0	0	0	0	1	1	0	0	0	0	0	2
Stab/incised wound Total														2
Grand Total		0	0	6	7	13	13	16	8	3	3	1	0	70

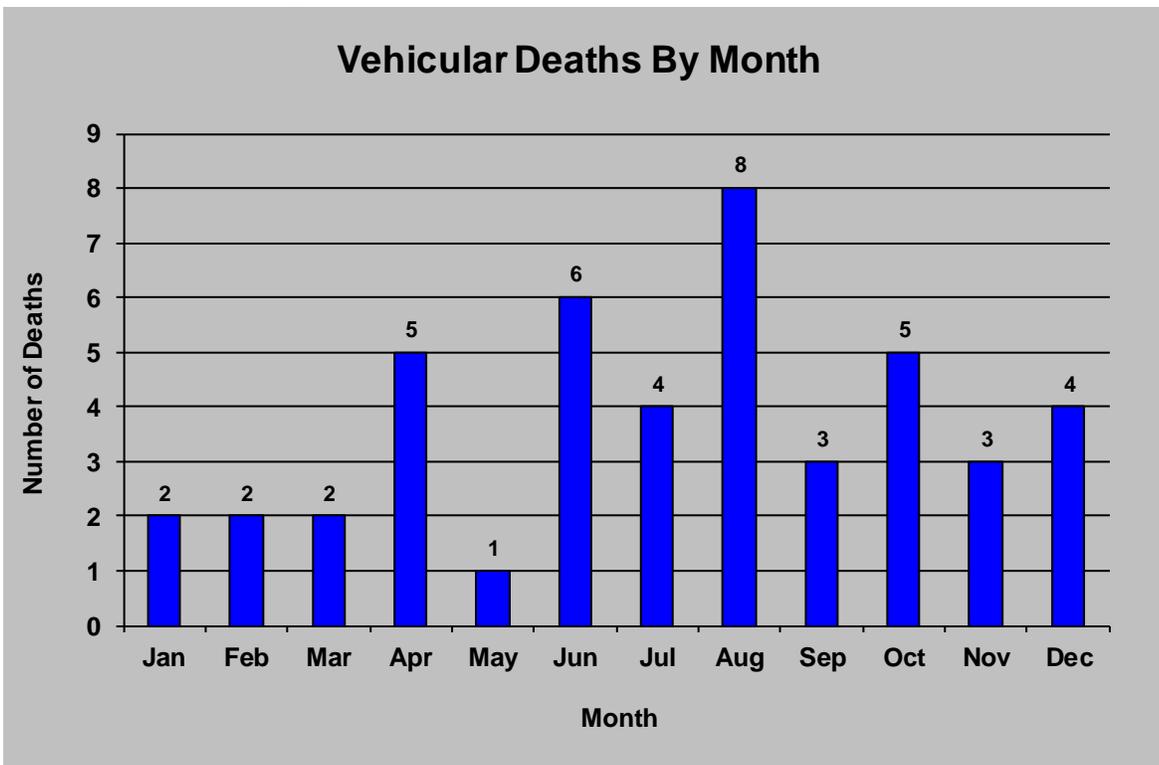
As has been the case in many Medical Examiner years, gunshot wounds remain the most frequent suicide method partly because of the inherent lethality of firearm injuries. Gunshot wounds are followed by suicidal hanging and intentional overdoses in equal numbers.

VEHICULAR

During the calendar year of 2010, the Medical Examiner’s Office participated in the investigation of (45) deaths categorized as vehicular. This represents more than a 31% decrease over 2009.

In vehicle collisions there were 30 deaths, 19 drivers and 11 passengers. In addition there were 6 deaths among motorcycle operators.

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	1	1	1	0	1	0	1	0	0	5
Automobile Driver	M	0	0	2	3	1	1	4	1	2	0	0	0	14
Automobile Driver Total														19
Automobile Passenger	F	0	2	3	0	0	0	0	1	0	0	0	0	6
Automobile Passenger	M	0	0	0	2	1	1	0	0	0	1	0	0	5
Automobile Passenger Total														11
Bicyclist	M	0	0	0	0	1	1	1	0	0	0	0	0	3
Bicyclist Total														3
Motorcycle Driver	F	0	0	0	0	0	0	1	0	0	0	0	0	1
Motorcycle Driver	M	0	0	0	1	2	1	1	0	0	0	0	0	5
Motorcycle Driver Total														6
Motorcycle Passenger	F	0	0	0	0	0	1	0	0	0	0	0	0	1
Motorcycle Passenger Total														1
Other	F	1	0	0	0	0	0	0	0	0	0	0	0	1
Other	M	0	0	0	0	0	0	0	0	1	0	0	0	1
Other Total														2
Pedestrian	M	0	0	0	0	0	0	0	2	0	0	0	0	2
Pedestrian Total														2
Unknown	M	0	0	0	0	1	0	0	0	0	0	0	0	1
Unknown Total														1
Grand Total		1	2	5	7	7	6	7	5	3	2	0	0	45

Traffic Fatalities and Use of Restraint

Traffic Fatalities and Use of Restraint

Circumstances	Restrained	Unrestrained	Unknown	Total
Automobile Driver	10	4	4	18
Automobile Passenger	6	4	1	11
Total	16	8	5	29

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 2010.

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 2010

Number	Cause of Death	Month	Sex	Age	Race
1	undetermined after complete autopsy	Jan	F	34	Caucasian
2	unknown cause	Jan	M	49	Caucasian
3	hanging by ligature	Mar	M	21	Caucasian
4	hypoxic encephalopathy due to cardiac arrest due to digoxin toxicity with hyperkalemia	Mar	M	46	Caucasian
5	uncal and subcalpine herniation of the brain due to right subdural hemorrhage and brain contusions status post surgical treatment due to blunt impact to head	May	M	52	Caucasian
6	methadone toxicity	May	F	43	Caucasian
7	combined drug toxicity due to simultaneous use of diphenhydramine, venlafaxine, lorazepam, fluoxetine, and acetaminophen	Jun	F	40	Caucasian
8	probable drowning	Jun	M	38	Black
9	blunt injuries of the head, trunk and extremities	Jun	M	38	Caucasian
10	seizure disorder	Aug	M	23	Caucasian
11	combined drug toxicity due to simultaneous use of ethanol, methamphetamine and amitriptyline	Aug	M	51	Caucasian
12	drowning	Nov	M	34	Unknown
13	blunt chest, pelvic, and extremity injuries	Dec	M	66	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 % is considered the legally intoxicated concentration while driving.
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.
Fetal Death/Perinatal	Category of deaths that occur within the uterus (fetal) or shortly before, during, or shortly after birth (perinatal).
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 (<i>SUID</i>) 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

