



This Report is dedicated
to all those who have died
in Columbiana County, Ohio in the year 2005
to their families, their loved ones
and their friends

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Annual Report – 2005

Office of the Coroner

Columbiana County
8473 County Home Road
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This publication marks the fifth annual report of the Office of the Coroner for Columbiana County. The report will take a somewhat different approach to reporting the statistics for the year 2005. We can now draw on the data and make observations of the year 2005 and compare it to the years from 1954 until 2004. Currently there are 6137 cases entered in the database partially representing known data from the years 1934 through 2005. The one case we have entered from 1934 is that of “Pretty Boy” Floyd which we discuss later on.

We will first present a short synopsis of general information about the coroner’s duties and how those duties may involve you. We will next report and graph data generated in 2005. We will next compare this data to that data collected from 1989 thru 2004. We will then present and document an alarming trend in Columbiana County ... that of **Drug Related Deaths**. And lastly, we will briefly review the short, but violent, visit “Pretty Boy” Floyd paid to this county in 1934.

For those readers unfamiliar with the mechanics of statistics, namely **Normal Distribution** and **Standard Deviation (SD)**, we provide a quick review in Appendix A.

General Information:

When to Report a Death

When a person dies under any of the below circumstances, the death must be reported to the local Office of the Coroner.

Accidental Deaths

If the death occurs when in apparent good health or in any suspicious or unusual manner including:

- Asphyxiation by gagging on foreign substance, including food in airway; compression of the airway or chest by hand, material, or ligature; drowning; handling cyanide; exclusion of oxygen; carbon monoxide; and/or other gasses causing suffocation.
- Blows or other forms of mechanical violence

- Burns from fire, liquid, chemical, radiation or electricity Carbon monoxide poisoning. (Resulting from natural gas, automobile exhaust or other.)
- Cutting, stabbing or gunshot wounds.
- Death from electrocution.
- Drowning (actual or suspected).
- Drug overdose from medication, chemical or poison ingestion, (actual or suspected). This includes any medical substance, narcotic or alcoholic beverage, whether sudden, short or long term survival has occurred.
- Electrical shock
- Explosion
- Falls, including hip fractures or other injury.
- Firearm injuries
- Stillborn or newborn infant death where there is a recent or past traumatic event involving the mother, such as vehicular accident, homicide, suicide attempt, or drug ingestion that may have precipitated delivery or had a detrimental effect to the newborn.
- Vehicular accidents, including auto, bus, train, motorcycle, bicycle, watercraft, snowmobile or aircraft, including driver, passenger, or related non-passenger, (e.g. such as being struck by parts flying or thrown from a vehicle).
- Weather related death (e.g. lightning, heat exhaustion, hypothermia or tornado).

Homicidal Deaths

- By any means, suspected or known.

Suicidal Deaths

- By any means, suspected or known.

Occupational Deaths

Instances in which the environment of present or past employment may have caused or contributed to death by trauma or disease. Deaths in this classification include caisson disease (bends), industrial infections, pneumoconiosis, present or past exposure to toxic waste or product (e.g. nuclear products, asbestos or coal dust), fractures, burns or any other injury received during employment or as a result of past employment, which may have contributed to death.

Sudden Deaths

If the death occurs when in apparent good health or in any suspicious or unusual manner including:

- DOA : Any person pronounced dead on arrival at any hospital, emergency room of a hospital or doctor's office shall be reported.
- Infants and young children : Any infant or young child found dead shall be reported, including Sudden Infant Death Syndrome (5.1.0.5. or Crib Death).
- All stillborn infants where there is suspected or actual injury to the mother.
- All deaths occurring within 24 hours of admission to a hospital unless the patient has been under the continuous care of a physician.
- Deaths occurring while in any jail, confinement or custody.

- All deaths occurring within 24 hours of admission to a hospital unless the patient has been under the continuous care of a physician.
- Deaths under unknown circumstances whenever there are no witnesses or where little or no information can be elicited concerning the deceased person.
- Sudden death on the street, at home, in a public place, or at place of employment.
- Alcoholism.
- Drug abuse, habitual use of drugs or drug addiction.

Special Circumstances

Any death involving allegations of suspicious medical malpractice or possibly poor medical/surgical care.

- Any maternal or infant death where there is suspicious or illegal interference by unethical or unqualified persons or self-induction.
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- "Delayed death," an unusual type of case, where the immediate cause of death may actually be from natural disease. However, injury may have occurred days, weeks, months, or even years before death and is responsible for initiating the sequence of medical conditions or events leading to death. This would be considered a Coroner's case and is therefore reportable. The most common examples of this type of case are 1) past traffic accidents with debilitating injury and long-term care in a nursing home and 2) hip fractures of the elderly where there is a downward course of condition after the injury.

Therapeutic Deaths

- Death occurring under the influence of anesthesia, during the anesthetic induction, during the post-anesthetic period without the patient regaining consciousness (including death following long-term survival if the original incident is thought to be related to the surgical procedure and/or anesthetic agent).
- Death during or following any diagnostic or therapeutic procedure, whether medical or surgical, if death is thought to be directly related to the procedure or complications from said procedure.
- Death due to the administration of a drug, serum, vaccine, or any other substance for any diagnostic, therapeutic or immunological purpose.

Any Death Where There is a Doubt, Question or Suspicion Not all reported cases fall into the above noted categories. After the investigation is completed, many will be returned to the jurisdiction or institution where the death certificate will be signed by the attending physician as a natural death.

Only the Coroner can legally sign a death certificate of a person who has died as a direct or indirect result of any cause listed in the previously noted reportable deaths.

How to Report a Death

In order to report a death, call the Office of your respective County Coroner, day or night, and state "I wish to report a death."

It is requested that the following information, if known, be provided:

- Name and address of the deceased
- Age and date of birth
- Sex and race
- Social Security number
- Marital status
- Next-of-kin, name, address, phone number
- Place and manner of occurrence
- Date and time of occurrence
- Date and time of death
- Name of person pronouncing death
- Name of person reporting death
- Any other information which may be helpful
- Location of the body
- Name of funeral home

Laws / Attorney General Opinion

Click on the link below to view the entire Ohio Revised Code Coroner Chapter.

Ohio Revised Code

The following selected sections of the Ohio Revised Code (ORC) are listed so that the responsible individual may fully understand that providing information to the Coroner is to comply with the law and that failure to do so would place that person in jeopardy of prosecution.

ORC 313.01 ELECTED; TERM

ORC 313.02 QUALIFICATIONS FOR CORONER; CONTINUING EDUCATION

ORC 313.14 NOTICE TO RELATIVES; DISPOSITION OF PROPERTY

ORC 313.01 ELECTED; TERM

A coroner shall be elected quadrennially in each county, who shall hold his office for a term of four years, beginning on the first Monday of January next after his election. As used in the Revised Code, unless the context otherwise requires, "coroner" means the coroner of the county in which death occurs or the dead human body is found.

ORC 313.02 QUALIFICATIONS FOR CORONER; CONTINUING EDUCATION

(A) No person shall be eligible to the office of coroner except a physician who has been licensed to practice as a physician in this state for a period of at least two years immediately preceding election or appointment as a coroner, and who is in good standing in the person's profession, or is a person who was serving as coroner on October 12, 1945.

B)(1) Beginning in calendar year 2000 and in each fourth year thereafter, each newly elected coroner, after the general election but prior to commencing the term of office to which elected, shall attend and successfully

complete sixteen hours of continuing education at programs sponsored by the Ohio state coroners association. Within ninety days after appointment to the office of coroner under section 305.02 of the Revised Code, the newly appointed coroner shall attend and successfully complete sixteen hours of continuing education at programs sponsored by the association. Hours of continuing education completed under the requirement described in division (B)(1) of this section shall not be counted toward fulfilling the continuing education requirement described in division (B)(2) of this section.

As used in division (B)(1) of this section, "newly elected coroner" means a person who did not hold the office of coroner on the date the person was elected coroner.

(2) Except as otherwise provided in division (B)(2) of this section, beginning in calendar year 2001, each coroner, during the coroner's four-year term, shall attend and successfully complete thirty-two hours of continuing education at programs sponsored by the Ohio state coroners association. Except as otherwise provided in division (B)(2) of this section, each coroner shall attend and successfully complete twenty-four of these thirty-two hours at statewide meetings, and eight of these thirty-two hours at regional meetings, sponsored by the association. The association may approve attendance at continuing education programs it does not sponsor but, if attendance is approved, successful completion of hours at these programs shall be counted toward fulfilling only the twenty-four-hour requirement described in division (B)(2) of this section.

(3) Upon successful completion of a continuing education program required by division (B)(1) or (2) of this section, the person who successfully completes the program shall receive from the association or the sponsoring organization a certificate indicating that the person successfully completed the program.

ORC 313.14 NOTICE TO RELATIVES; DISPOSITION OF PROPERTY

The coroner shall notify any known relatives of a deceased person who meets death in the manner described by section 313.12 of the Revised Code by letter or otherwise. The next of kin, other relatives, or friends of the deceased person, in the order named, shall have prior right as to disposition of the body of such deceased person. If relatives of the deceased are unknown, the coroner shall make a diligent effort to ascertain the next of kin, other relatives, or friends of the deceased person. The coroner shall take charge and possession of all moneys, clothing, and other valuable personal effects of such deceased person, found in connection with or pertaining to such body, and shall store such possessions in the county coroner's office or such other suitable place as is provided for such storage by the board of county commissioners. If the coroner considers it advisable, he may[,] after taking adequate precautions for the security of such possessions, store the possessions where he finds them until other storage space becomes available. After using such of the clothing as is necessary in the burial of the body, in case the cost of the burial is paid by the county, the coroner shall sell at public auction the valuable personal effects of such deceased persons, found in connection with or pertaining to the unclaimed dead body, except firearms, which shall be disposed of as provided by section 313.141 [313.14.1] of the Revised Code, and he shall make a verified inventory of such effects. Such effects shall be sold within eighteen months after burial, or after delivery of such body in accordance with section 1713.34 of the Revised Code. All moneys derived from such sale shall be deposited in the county treasury. A notice of such sale shall be given in one newspaper of general circulation in the county, for five days in succession, and the sale shall be held immediately thereafter. The cost of such advertisement and notices shall be paid by the board upon the submission of a verified statement therefore, certified to the coroner.

This section does not invalidate section 1713.34 of the Revised Code.

Frequently Asked Questions

How long does it take for a death ruling to be made?

This procedure is handled differently by various Counties. However, in most cases, a signed death certificate accompanies the body when it is released by the Coroner. When there is insufficient information available to complete the death certificate, a pending Findings, Fact and Verdict death certificate is issued that accompanies the body. This death certificate enables the funeral services and burial to take place while additional chemical, microscopic slide preparation and examination, and investigation continues. At the culmination of these tests and investigation, the ruling is made based on all available information. A supplemental death certificate is then issued with the cause of death and ruling which supersedes the pending death certificate.

When will the autopsy report be completed?

The autopsy report, also called the protocol, usually takes about four weeks to be completed after the autopsy. If microscopic and chemical tests are performed, this time period can lengthen to six to eight weeks.

Where may the clothing of the deceased be located?

Usually, the clothing of the deceased is released to the funeral director for disposal or use as the family requests. In cases of homicide, various suicides, or vehicular deaths, the clothing may be held by the Coroner or the investigating law enforcement agency for use as evidence.

How is a funeral director selected?

Most often, the next-of-kin discusses the selection of the funeral director with the other family members, clergy or friends. The Office of the Coroner is prohibited from recommending a funeral director. A listing of funeral directors is available in the telephone book as well as other sources.

What is an autopsy and is there a charge for it?

An autopsy is a systematic examination by a qualified physician of the body of a deceased person for the purpose of determining the cause of death. A record is made of the findings of the autopsy, including microscopic and toxicological laboratory tests. These laboratory tests are conducted before the release of the body to the next-of-kin for burial. There is no charge to the next-of-kin for an autopsy, nor for any of the tests that may be conducted by the Coroner.

Does the Coroner need permission from the next-of-kin for an autopsy?

Ohio Law (ORC 2108-52) provides that the Coroner does not need permission for an autopsy. The Office of the Coroner will attempt to comply with the wishes of the next-of-kin, provided this does not conflict with the duties of the Coroner as charged by Ohio Law including due regard for the deceased's religious persuasion.

When is an autopsy performed?

Not all persons brought to the Coroner's Office are autopsied. Certain cases are not autopsied where no foul play is suspected and evidence of a natural death is present. In other cases where the possibility of legal proceedings may arise as a result of a homicide, accident, suicide, etc., an autopsy will be performed. In these cases, both positive and negative information ordinarily is found which substantiates the ruling and cause of death as signed by the Coroner. Under a recent change in the Ohio Revised Code, any child under the age of two years that is referred to the Coroner's Office with no known potentially lethal disease shall be autopsied unless contrary to the parents' religious beliefs. (ORC 313.131)

Why is a body brought to the Coroner's Office?

The remains of deceased persons are brought to the Coroner's Office because Ohio Law requires that the Coroner investigate deaths of persons dying from criminal violence, by accident, by suicide, suddenly, when unattended by a physician for a reasonable period of time, in detention, or in any suspicious or unusual manner. Another reason that a body may be brought to the Coroner's Office is that the identity of the deceased or the next-of-kin is unknown.

How can the deceased's personal effects and other valuables be obtained?

By Ohio Law (ORC 313.14), the Office of the Coroner will take possession of monies and other personal effects of the deceased. These items are inventoried and released to the next-of-kin. (Money over \$100.00 may only be released with a release From Probate Order from the court or a letter of Appointment naming an executor of the estate of the deceased.)

How do I make arrangements for a body to be released from the Office of the County Coroner?

Routinely, the Coroner releases the body to a licensed funeral director. The next-of-kin of the deceased person should notify a funeral director who, in turn, will arrange transportation for the deceased to the funeral home and obtain the necessary documents for burial or cremation.

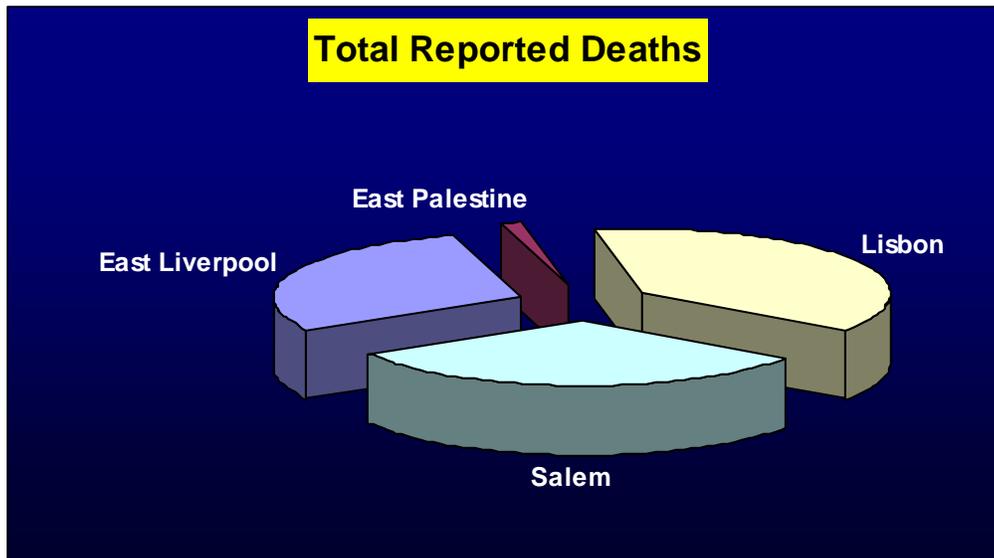
Where can copies of the death certificate be obtained?

Certified copies of death certificates can be obtained only from the Bureau of Vital Statistics of each respective county.

How can I obtain records, including a Coroner's report, autopsy report, and/or toxicology report, pertaining to a death on a case that was referred to the Coroner?

This procedure differs from County to County. To obtain this information, contact your County Coroner.

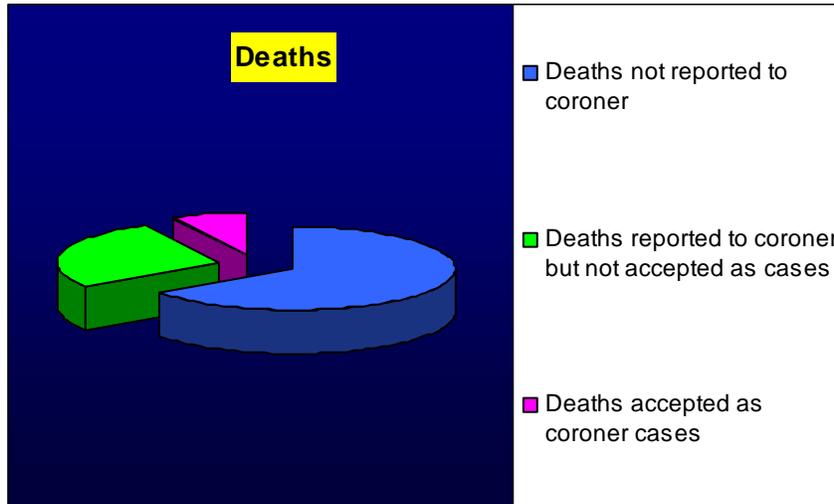
Total reported deaths in 2005



From January 1, 2005 to December 31, 2005 there were 1089 deaths reported in Columbiana County. The figures were obtained from the health departments of the following locations:

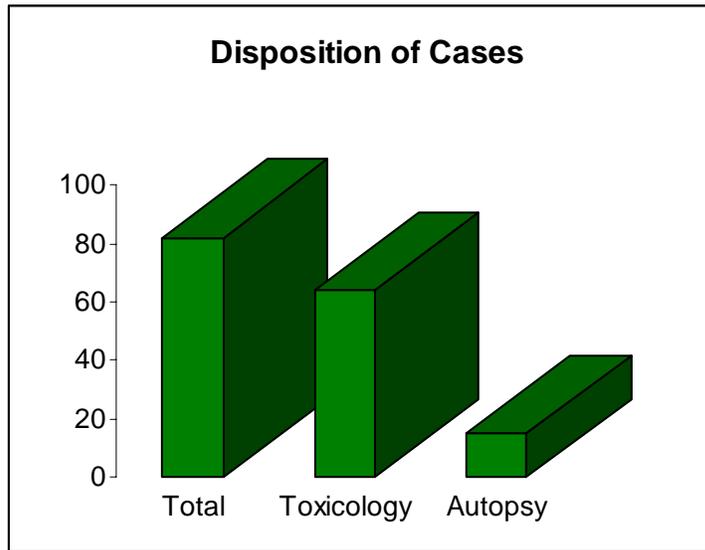
East Liverpool:	315
East Palestine:	16
Lisbon:	411
Salem:	347
Total	1089

Total versus Reported versus Accepted



Of the 1089 deaths, 377 deaths were reported to the Coroner's Office. Of the 377 deaths reported to the Coroner's Office, 82 were accepted.

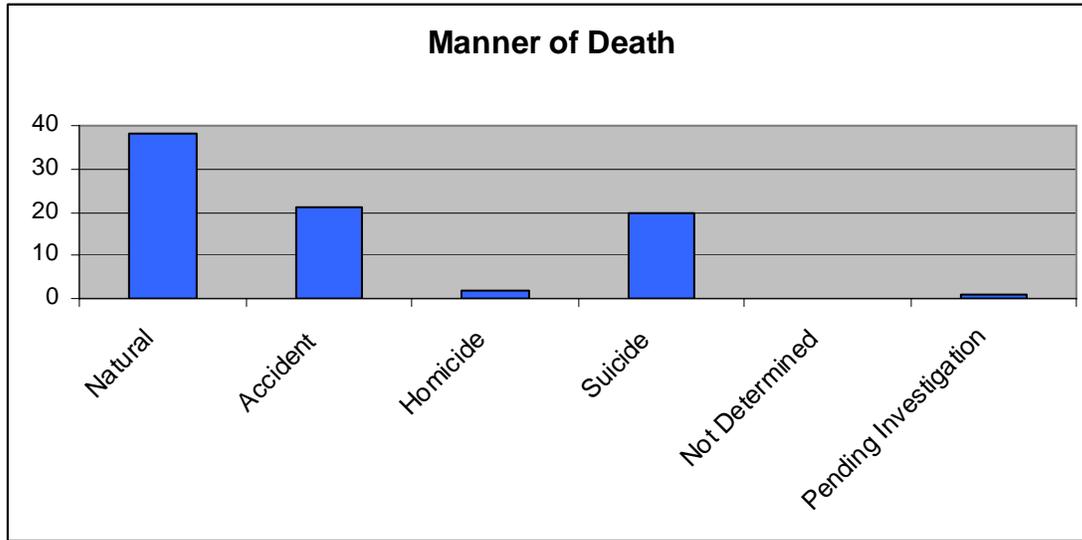
Disposition of cases



Further examination required

Of the 82 deaths accepted as coroner cases, 64 had toxicology performed and 15 autopsies were performed.

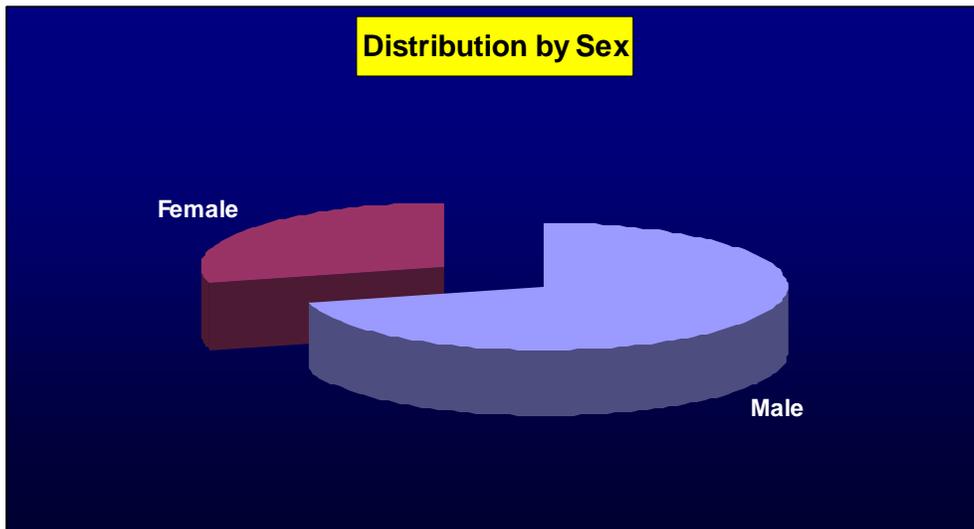
Classification by Manner of Death



Each of the accepted cases was classified as to manner of death after investigation, toxicology and autopsy.

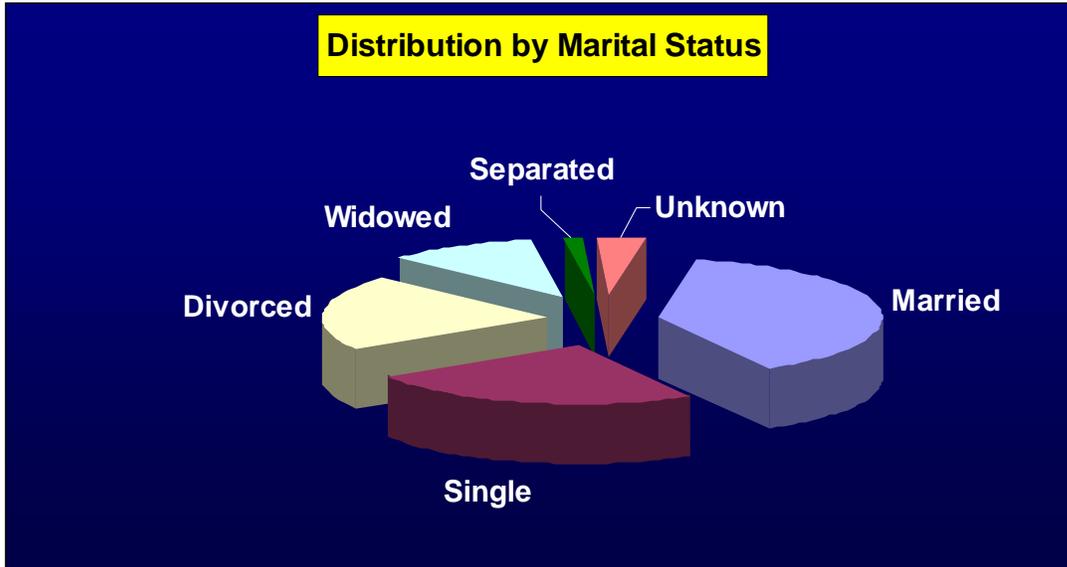
Natural	38
Accident	21
Homicide	2
Suicide	20
Not determined	0
Pending Investigation	1
Total	82

Distribution by Sex in 2005



Of the 82 cases investigated in 2005, 58 were male and 24 were female.

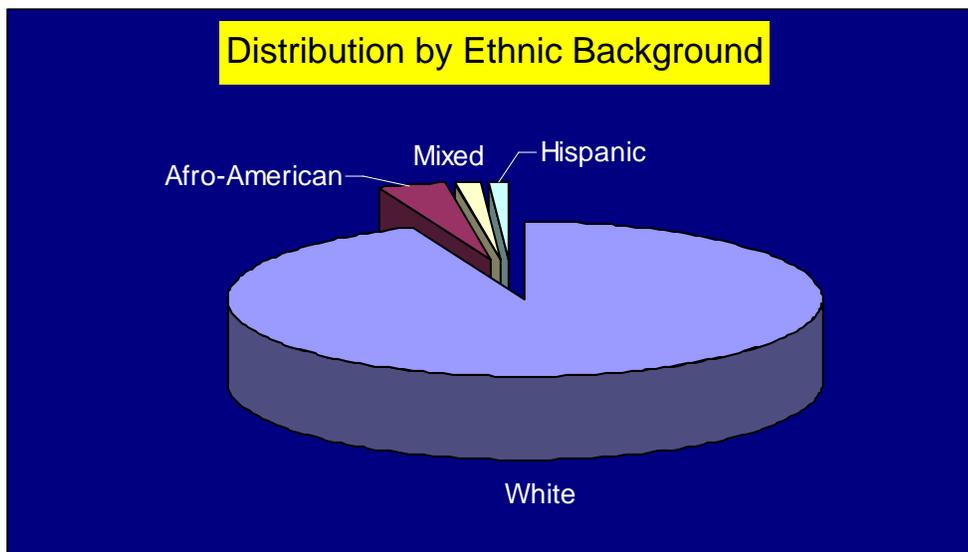
Distribution by Marital Status



Of the 82 cases investigated in 2005, the marital status was as follows:

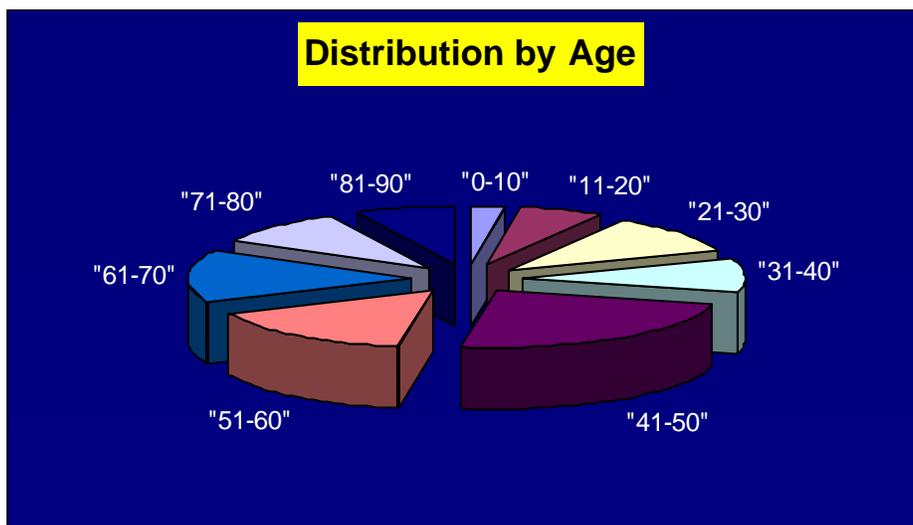
Married	32	39.0%	Separated	1	1.2%
Single	20	24.4%	Unknown	3	3.7%
Divorced	17	20.7%			
Widowed	9	11.0%			

Distribution by Ethnic Background



The distribution by ethnic background was 77 Caucasian, 3 Afro-American, 1 Hispanic, and 1 of mixed race. There were no American Indian, or Asian backgrounds identified.

Distribution by Age



The ages of decedents varied from 0 years (4 months and 14 days) to 90 years of age.

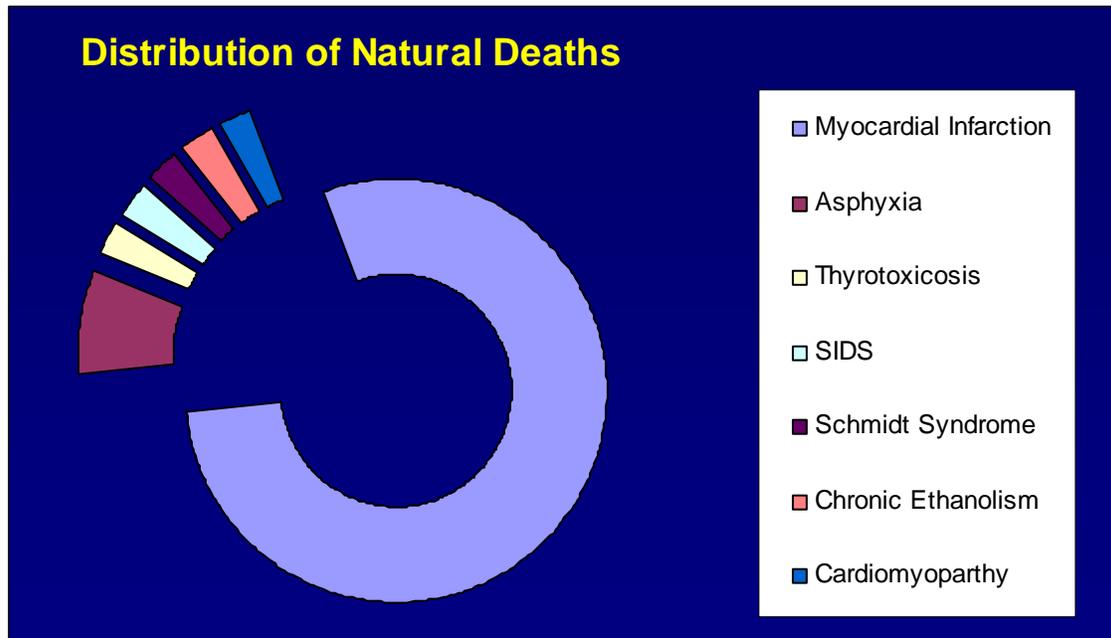
0 to 10 years	2	51 to 60 years	13
11 to 20 years	5	61 to 70 years	12
21 to 30 years	9	71 to 80 years	8
31 to 40 years	8	81 to 90 years	6
41 to 50 years	19	91 to 100 years	0

The age distribution by manner of death for 2005 was as follows:

Ages	Natural	Accident	Suicide	Homicide	Not Determined	Total
0-10	1					2*
11-20	1	2	2			5
21-30	2	4	3			9
31-40	1	3	3	1		8
41-50	6	7	5	1		19
51-60	9	1	3			13
61-70	9	1	2			12
71-80	6	2				8
81-90	3	1	2			6
91-100						0
Totals	38	21	20	2	0	82

- In the 0-10 year range there remains one still Pending Investigation

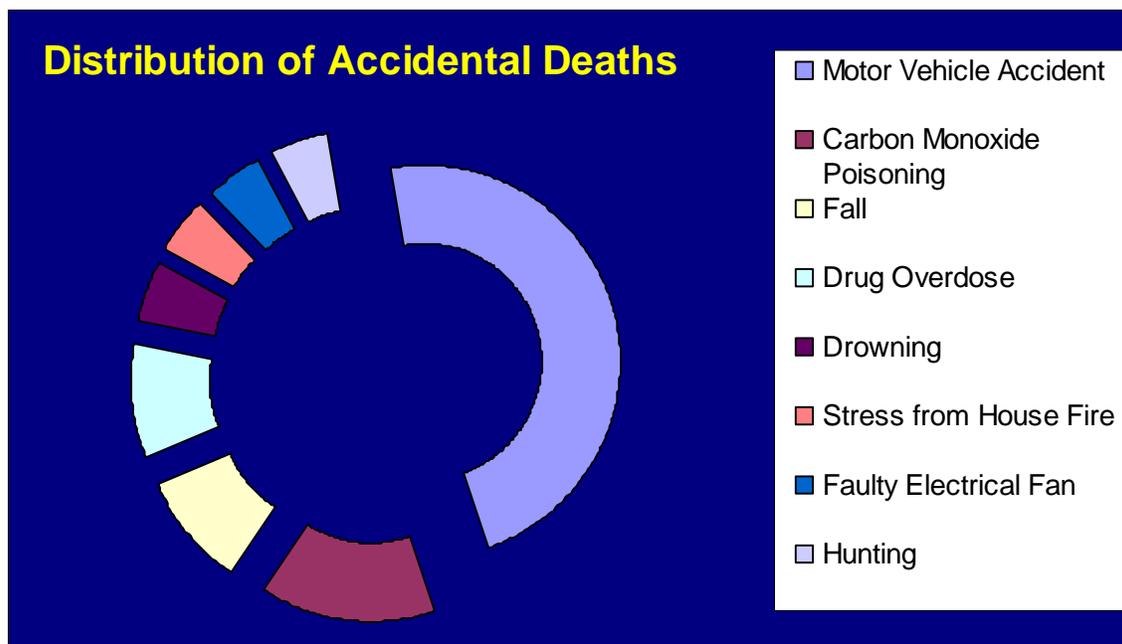
Distribution of Natural Deaths



Looking at the 38 Natural deaths we have:

Myocardial Infarction	30
Asphyxia	3
Cardiomyopathy	1
Thyrotoxicosis	1
SIDS	1
Chronic Ethanolism	1
Schmidt Disease	1

Distribution of Accidental Deaths



Looking at the 21 accidental deaths we have:

Moving Vehicle Accident	10	Drowning	1
Carbon Monoxide Poisoning	3	Stress from House Fire	1
Fall	2	Faulty Electrical Fan	1
Drug Overdose	2	Hunting Accident	1

Distribution of Suicidal Deaths



Looking at the 20 suicidal deaths we have:

Gunshot	11
Drug Overdose	6
Carbon Monoxide Poisoning	2
Hanging	1

Having seen the data and the graphs of the year 2005 ... we ask the question, "Was this a 'normal' year?" We will answer this question by comparing it to the previous 16 years of data. We will use the statistical tools of **Normal Distribution** and **Standard Deviation (SD)**. Refer to appendix A for a quick refresher course if needed.

Let's look first at the number of cases for the year 2005:

Year	Total Cases	Male	Female	Ratio
1989	94	69	25	0.734043
1990	99	76	23	0.767677
1991	78	51	27	0.653846
1992	90	60	30	0.666667
1993	78	64	14	0.820513
1994	73	50	23	0.684932
1995	89	68	21	0.764045
1996	120	95	25	0.791667
1997	88	66	22	0.750000
1998	88	57	31	0.647727
1999	98	71	27	0.724490
2000	86	56	30	0.651163
2001	96	64	32	0.666667
2002	117	73	44	0.623932
2003	94	66	28	0.702128
2004	108	78	30	0.722222
2005	82	58	24	0.707317
Sum	1496	1064	432	11.37172
Mean	93.50000	66.50000	27	.710732
SD	13.09453	11.17736	6.47046	0.057738
- 3 SD	54.21641	32.96792	7.58862	.537518
- 2 SD	67.31094	44.14528	14.05908	.595256
2005	82	58	24	0.707317
+ 2 SD	119.68906	88.85472	39.94092	.826208
+ 3 SD	132.78359	100.03208	46.41138	.883946

Both the number of cases and the male to female ratio are well within the -2 SD and +2 SD range.

As we can observe the year was essentially "normal" having a decrease of 11.5000 (82–93.5000) from the mean of the years 1989 thru 2004. The ratio of Male to Female is also within 0.003415 (0.707317 – 0.710732) of the mean and is thus "normal".

Now let's look at the number of homicides in the year 2005:

Year	Homicide	Male	Female	Ratio
1989	2	0	2	0.000000
1990	2	0	2	0.000000
1991	0	0	0	0.000000
1992	3	1	2	0.333333
1993	2	1	1	0.500000
1994	1	1	0	1.000000
1995	5	3	2	0.600000
1996	3	2	1	0.666667
1997	2	0	2	0.000000
1998	2	1	1	0.500000
1999	1	1	0	1.000000
2000	1	0	1	0.000000
2001	2	1	1	0.500000
2002	4	2	2	0.500000
2003	1	1	0	1.000000
2004	2	1	1	0.500000
2005	2	1	1	0.500000
Sum	33	15	18	7.1
Mean	2.0625	.9375	1.125	.44375
SD	1.236595	.853913	.806226	.366509
- 3 SD	-1.64728	-1.62424	-1.29368	-.65578
- 2 SD	-0.41069	-0.77033	-0.48745	-0.28927
2005	2	1	1	0.500000
+ 2 SD	4.53569	2.645325	2.737452	1.176768
+ 3 SD	5.772284	3.466238	3.543677	1.543276

Both the number of homicides and the Male to Female ratio fit well within the – 2 SD and the + 2 SD range.

As we can observe the number of homicides is 0.0625 (2.0625 – 2) below the mean for the years 1989 thru 2004. Also the ratio of Male to Female is only 0.05625 (0.5 - 0.4375) above the mean for the years 1989 thru 2004. Thus we must say that in statistical terms the year 2004 was “normal”.

The two cases this past year have very few similarities- race and marital status. They differ in age, sex, area of injury and manner of death. The firsts was woman who died of multiple gunshot wounds. Her case has since been closed. The second was a man who suffered from blunt force trauma. His case is still pending investigation.

The next data set involves Suicides in the year 2005:

Year	Suicide	Male	Female	Ratio
1989	13	12	1	0.923077
1990	11	9	2	0.818182
1991	18	15	3	0.833333
1992	12	10	2	0.833333
1993	12	10	2	0.833333
1994	12	11	1	0.916667
1995	11	9	2	0.818182
1996	17	15	2	0.882353
1997	15	12	3	0.800000
1998	17	9	8	0.529412
1999	8	6	2	0.750000
2000	9	9	0	1.000000
2001	13	11	2	0.846154
2002	12	7	5	0.583333
2003	16	14	2	0.875000
2004	12	9	3	0.750000
2005	20	17	3	0.850000
Sum	196	168	40	12.99236
Mean	13	10.5	2.5	0.816157
SD	2.875181	2.607681	1.825742	0.118361
- 3 SD	4.374457	2.676957	-2.97723	0.461074
- 2 SD	7.249638	5.284638	-1.15148	0.579435
2004	20	17	3	0.850000
+ 2 SD	18.75036	15.71536	6.151484	1.052880
+ 3 SD	21.62554	18.32304	7.977226	1.171241

The number of suicides is 7 (20-13) above the mean. Also the ratio of Male to Female is .033843 (0.850000 – 0.816157) above the mean but does not approach the + 2 SD of 1.052880. Thus, we must say again that in statistical terms the suicide deaths for 2004 were within “normal” limits.

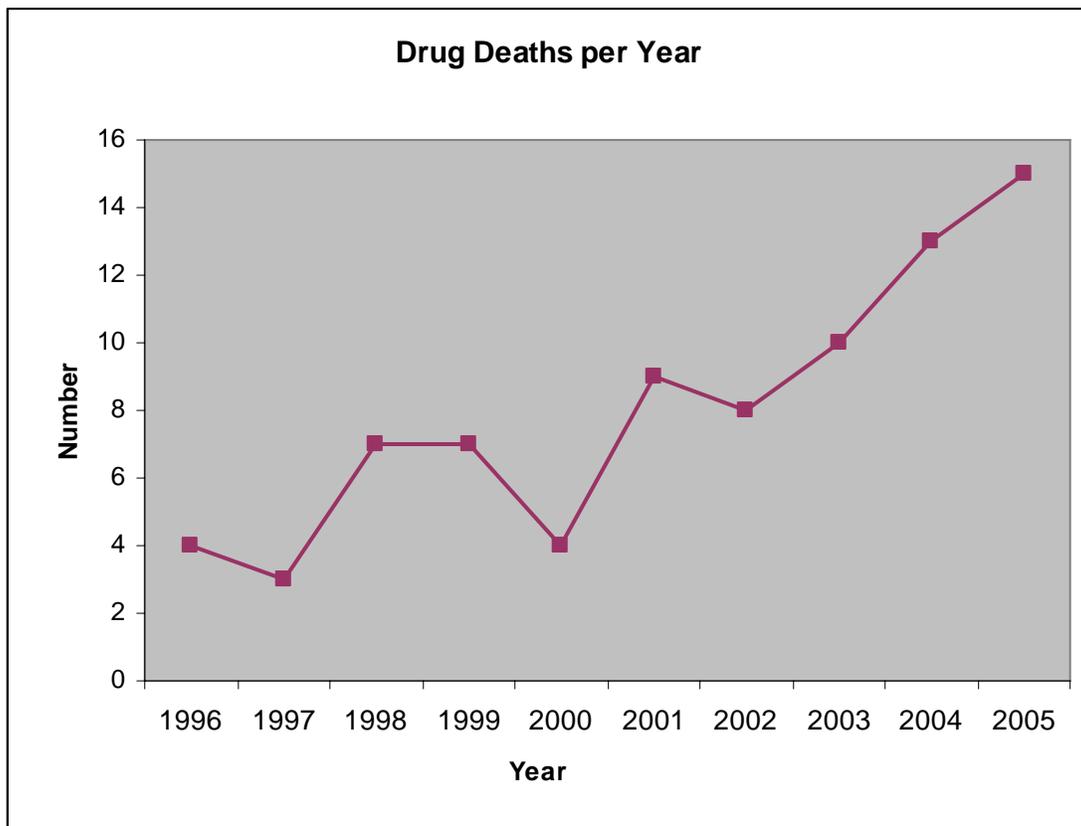
The number of suicides dramatically increased this year from 2004. The most common manner of death was a gunshot (11 of 20). The victims of this manner of death were predominantly males and outnumber females 10:1. Of the total suicides in 2005, it is seen that most victims (75%) were married (9) or divorced (6). The remaining 5 deaths were comprised of single (3), widowed (1) and separated (1) victims. Nearly half of these victims are under the influence of drugs and/ or alcohol, as will be discussed in the next section.

Drug Related Deaths

This Annual Report (Year 2005) is being compiled in June 2006. As of this date, the Coroner's Office has documented 8 drug related deaths out of 45 total cases accepted by the Coroner's Office. This represents 18% of cases due to drugs. In comparison to the first year (1989) of this Coroner's time in office, only 1 drug related death had occurred by June of 1989.

A review of the last ten years of the Coroner's Office records shows an alarming trend. The findings are graphed below.

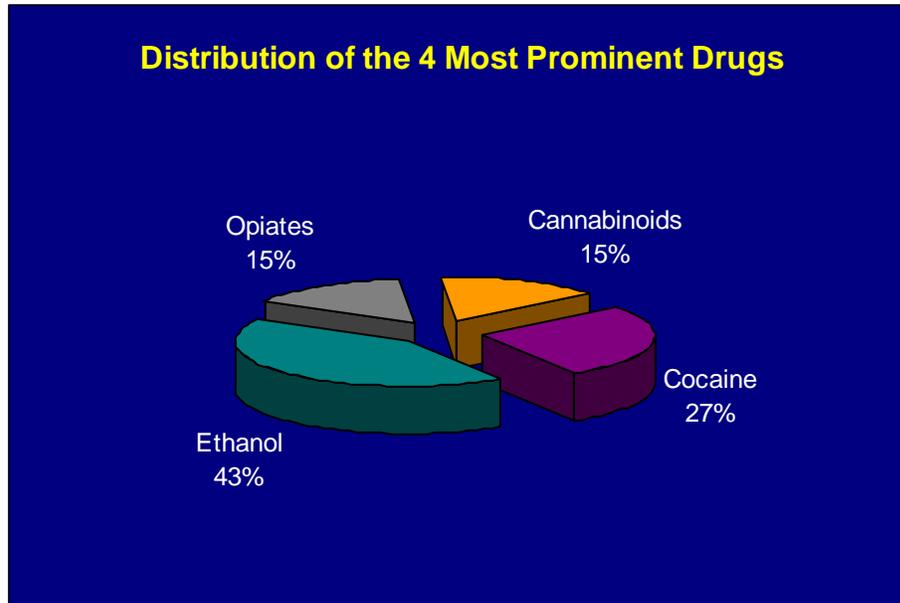
Coroner, Columbiana County Drug Deaths per Year



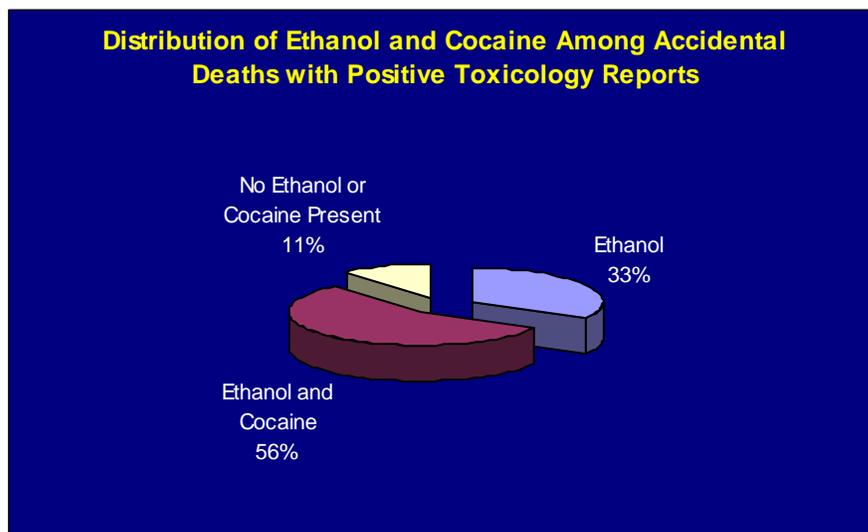
One could interpret this graph as a 4 to 5 time increase in drug deaths per the ten year period. During this same period there have been more drug arrests and more drug related crime.

Because of this trend, we researched the cases from 2005 in which there were positive toxicology reports and found the following to be true:

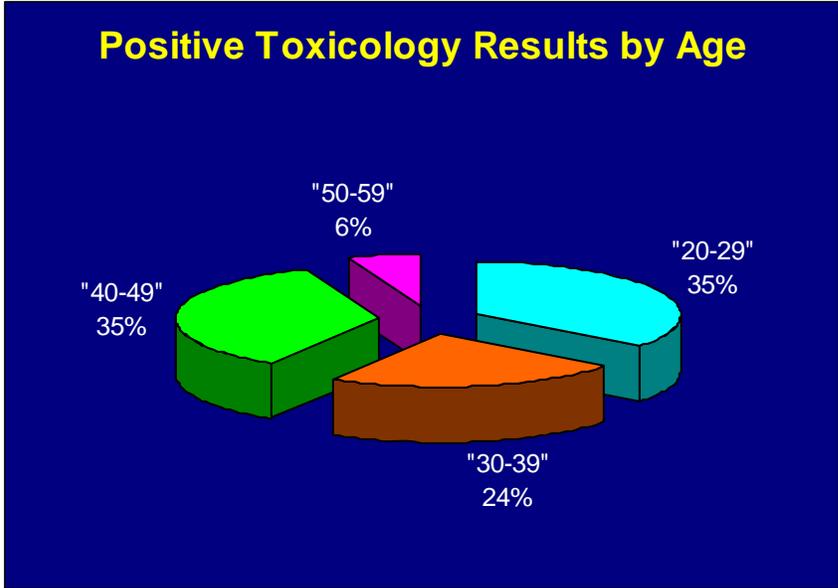
- Ethanol and cocaine were the most prominent drugs this year, found in 11 and 7 cases, respectively.



- Of the 21 accidental deaths this year, 9 tested positive for drugs and/or alcohol.
- Of those 9 cases, 8 were positive for ethanol and 5 were positive for cocaine.



- 75% of Cannabinoid users were males in their early 40's.
- Of the 17 positive tests, the age ranges with the highest rate of drug usage were the 20-29 and 40-49 age ranges, with 6 cases each. 16 of the 17 cases fell between the ages of 20 and 48.



Hopefully these statistics will prove to be a useful tool in the prevention of more drug related deaths and crimes here in Columbiana County.

Summary

The calendar year 2005 was an eventful year. Of the 1100 deaths in the county 377 were reported to the coroner, and of those the coroner accepted 82. Of the 82 accepted cases, 64 had a toxicology performed and another 15 had an autopsy performed. The 82 were classified as follows:

Natural	38
Accident	21
Homicide	2
Suicide	20
Not determined	0
Pending investigation	1
Total	82

Of the 82, 58 were male and 24 were female. The marital status was as follows:

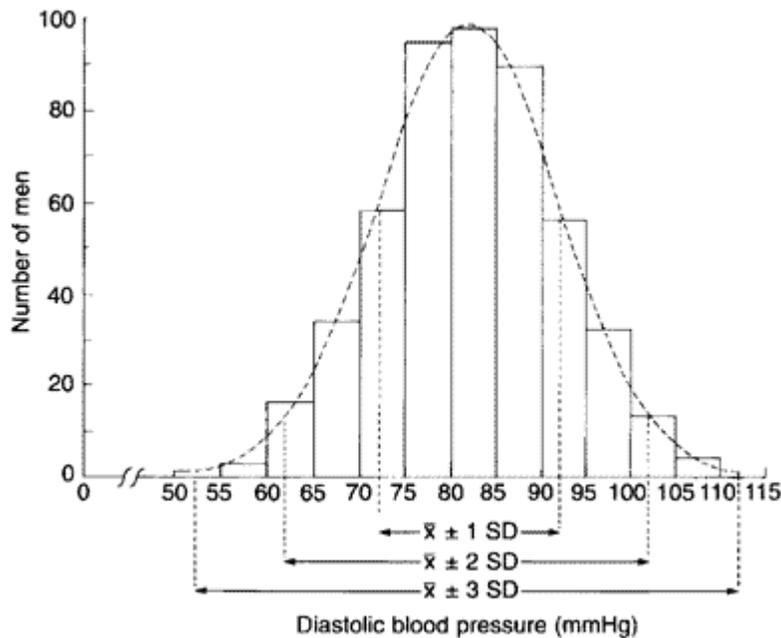
Married	32
Single	20
Divorced	17
Widowed	9
Separated	1
Unknown	3

The ethnic background & age distribution by manner of death was described. As in years previous, heart attacks were the major “natural” killer, and gunshot the major instrument of suicidal deaths.

We must acknowledge the help and encouragement offered to us by the Trumbull County and the Cuyahoga County Coroner offices. We also acknowledge the help obtained online from the websites: <http://bmj.com/collections/statsbk/2.shtml> and www.census.gov/cgi-bin/gazetteer for the statistical primer and the census data.

Appendix A:

Many biological measurements conform to a **Normal Distribution** – for example, heights of adult men and women, blood pressures in a healthy population, random errors in many types of laboratory measurements, and biochemical data. The figure below shows a Normal curve calculated from the diastolic blood pressures of 500 men, mean 82 mmHg, **Standard Deviation** 10 mmHg. The ranges representing $\pm 1SD$, $\pm 2SD$, and $\pm 3SD$ about the mean are marked.



The reason why **Standard Deviation (SD)** is such a useful measure of the scatter of the observations is this: if the observations follow a **Normal distribution**, a range covered by one standard deviation above the mean and one standard deviation below it includes about 68% of the observations; a range of two standard deviations above and two below about 95% of the observations; and of three standard deviations above and three below about 99.7% of the observations. Thus, when one encounters statistical values greater than 2SD or 3SD, a **significant observation has been found**.