Kent County Medical Examiner

2006 Annual Report

Office of the Medical Examiner
700 Fuller N.E.
Grand Rapids, Michigan 49503

2006 Kent County Medical Examiner Annual Report

To the Kent County Board of Commissioners,
and to the Citizens of Kent County:

1,322 cases were referred to the medical examiner in 2006; of these, approximately three-fourths were accepted for investigation. We also reviewed cases for which a cremation permit was requested; we investigated approximately five percent of these cases in which the medical examiner should have been notified but was not. The autopsy rate increased by 11% from 2005. In addition, approximately 45 bodies that were not autopsied were brought into the morgue for visual inspection or temporary holding. A number of consultations for bones or other possible human remains were also performed. We conduct a monthly review conference in which we review the cases of the prior month and invite area law enforcement and medical professionals to attend. Our department also participated in a review of 25 child deaths in 2006.

There are five possible manners of death assigned by the medical examiner: natural, accident, suicide, homicide and indeterminable. In 2006, we experienced a 5.4% decrease in natural deaths, an increase in suicides from 4.6% to 6.5% and a 3.4% increase in accidental deaths compared to 2005.

The average number of homicides over a three-year period continued to increase. In the 2001-2003 period, homicides averaged 18.3 a year, compared to the average of 25.3 for the 2004-2006 period, more than a 35% increase. In 2006, nearly three-fourths of our homicide victims were black, nearly one-quarter were white and just under four percent were Hispanic. As is the norm, the single, biggest group of homicide victims was in the 20-44 year age group. The dominant weapon used in our homicides was firearms, accounting for nearly 60% of the homicidal deaths.

Suicidal deaths continued to peak in the 20-44 year age group, however, there was a large increase of suicides, from 26% to 36%, in the 45-64 year age group. Suicide by gunshot continued to be the most popular method, followed by hanging and drug overdose in approximately equal proportions, about 20% each.

The 24-44 year age group accounted for a substantial majority of death by drug overdose at 61%, followed by the 45-64 year age group at 35%. This represents no significant change from prior years. Over 80% of the drug overdose deaths are accidental, representing abuse of either prescription drugs, such as narcotics, or illicit street drugs, such as cocaine and heroin. The most significant drug causing death in 2006 was narcotic analgesics, such as morphine, fentanyl and hydrocodone; these accounted for 30% of our drug related deaths, a substantial increase over the 17% in 2005. Methadone also showed an increase of 12% from 2005 to 2006. There was a sharp decline of 36% in cocaine and of 48% in heroin from 2005 to 2006, perhaps the result of increased police surveillance and criminal prosecution of the suppliers.

As in other categories, the 21-44 year age group contributed the most deaths in vehicular accidents, nearly 41%, an increase from 31% in 2005. The 45-64 year age group came in second, accounting for nearly 24% of the deaths while approximately 22% of the deaths occurred in the over 65 year age group.

Of the accidental deaths, falls accounted for the highest percentage of deaths at 36%, followed by approximately 30% of the deaths occurring in motor vehicle crashes. Drug overdosages were the third major category accounting for 18% of the deaths. The age group representing the highest percentage, 43%, of accidental death victims was the over 65 year age group, and they accounted for 85% of the deaths by falling.

On behalf of the Medical Examiner's Office of Kent County, I would like to thank the citizens of Kent County and the Board of Commissioners for supporting our efforts. I am pleased to present to you the 2006 Medical Examiner's Annual Report.

Respectively submitted,

Stephen D. Cohle, MD
Chief Medical Examiner

Office of the Kent County Medical Examiner

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Medical Examiner Personnel

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John T. Connolly
Medical Examiner Investigator

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Medical Examiner Investigator

Cynthia L. Debiak, RN
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Medical Examiner Investigator

Theodore E. Oostendorp
Medical Examiner Investigator

Richard Washburn
Kent County Conveyance Specialist and
Scene Investigator

Amy L. M. Kjaer
Medical Examiner Support Staff

Carmen M. Perez
Medical Examiner Support Staff and
Child Death Review Coordinator

Board Certification
The American Board of Medicolegal Death Investigators (ABMDI) sets quality and process standards for death investigators. Medical examiners who pass the certification requirements of the ABMDI are designated as registered Diplomats (D-ABMDI). Medical examiners with continued time in investigation and who pass required tests are designated as certified Fellows (F-ABMDI).

Medical Examiner Program Expenditures, 2005 and 2006

	2005		2006	
	Amount	Percentage	Amount	Percentage
Medical examiner (compensation)	$155,013	13.9%	$169,793	14.3%
Autopsies	765,664	68.8%	806,571	68.0%
Cadaver transportation	61,479	5.5%	77,292	6.5%
Support services	45,335	4.1%	46,958	4.0%
Administration	85,000	7.6%	85,000	7.2%
Total	$1,112,491	100.0%	$1,185,614	100.0%

	2005	2006
Average cost per case investigated	$1,106	$1,219

Medical Examiner Reportable Deaths and Autopsy

The Michigan County Medical Examiners Law, P.A. 181 of 1953, as amended, and the Michigan Public Health Code, P.A. 368 of 1978, as amended, mandates that specific types of deaths (listed below, left) be referred to the medical examiner for investigation. Medical examiner investigation of a death may also be ordered by the county's prosecuting attorney, the Michigan Attorney General or, upon the filing of a petition, signed by six (6) electors of a county. Not all deaths referred to the medical examiner for investigation necessarily result in an autopsy; however, an autopsy is generally ordered in certain circumstances (listed below, right), to determine more accurately the cause and manner of death.

Types of Deaths Reportable to the Medical Examiner, P.A. 368 of 1978

1. Sudden deaths and unexpected deaths (all deaths occurring in operating room, in recovery room, anesthesia related, natural death but not expected, occupational related deaths, subdural hematoma, intracerebral hemorrhage, etc.)*
2. Accidental deaths (motor vehicle, burns, drowning, falls, broken bones, drug overdose, drug toxicity, subdural hematoma, recent or past trauma, etc.)
3. Violent deaths (homicide, gunshot, stabbing, suicide, subdural hematoma, etc.)*
4. Suspicious circumstances surrounding a death.*
5. Deaths occurring as a result of an abortion.
6. Upon written order of the prosecuting attorney or the attorney general or upon the filing of a petition signed by six (6) electors of a county.
7. Death of a prisoner in any county or city jail who dies while so imprisoned.
8. If a fetal death occurs without medical attendance at or after the delivery.

In terms of a physician attendance: for the purposes of the medical examiner program, we consider that an investigation is required when:

A. The deceased was last seen by a physician more than **ten (10) days before his or her death, if the cause of death appears to be other than the illness or condition for which the deceased was being treated.
B. The attending physician cannot accurately determine the cause of death.
C. When the deceased has not received any medical attention during the ***48 hours prior to the hour of death unless the attending physician, if any, is able to accurately determine the cause of death.

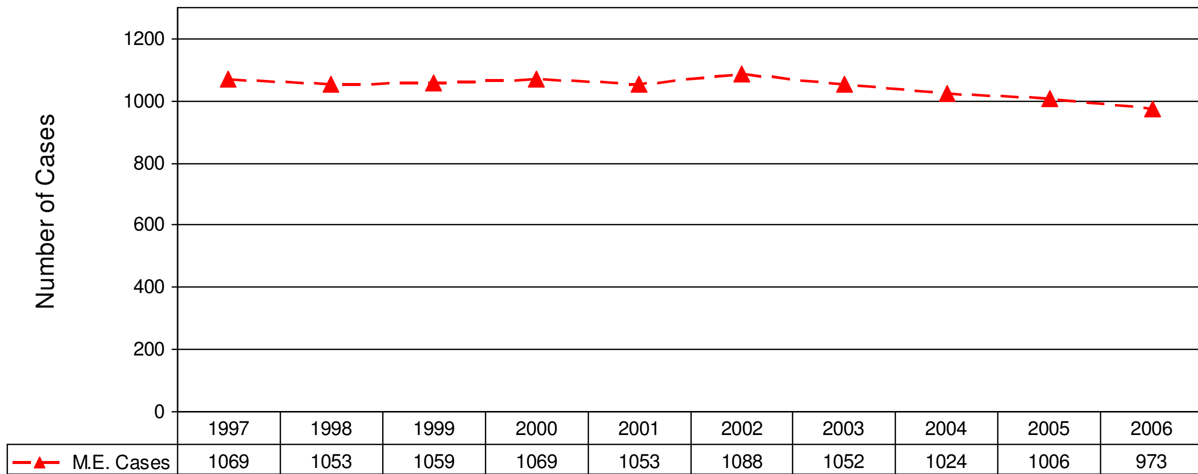
* All trauma related deaths no matter when the trauma occurred.
** The ten (10) day requirement relates solely to physician attendance.
*** The 48 hour requirement triggers an investigation when there has been no medical attendance of any kind (i.e., nursing care, etc.)

Types of Medical Examiner Cases for which Autopsy is Generally Ordered

1. Sudden deaths and unexpected deaths only when in the medical examiner's judgment, sufficient medical history is not available to determine cause and manner of death.
2. Accidental deaths such as motor vehicle, burns, drowning, etc. If an individual has been hospitalized for a length of time, it is the medical examiner's decision to order an autopsy.
3. Violent deaths such as homicide, suicide, gunshot, stabbing, etc.
4. Suspicious circumstances surrounding death, including unidentified bodies.
5. Death related to an abortion.
6. Sudden infant deaths (SIDS) and deaths of children 18 and under without significant medical history.
7. Death of a prisoner imprisoned at any county or city jail.
8. In a fetal death occurring without medical attendance at or after delivery.
9. An autopsy may be ordered at the discretion of the medical examiner if the cause of death appears to be other than the illness or condition for which the deceased was being treated, or if the attending physician cannot accurately determine the cause of death.
10. Anesthesia-related and unexpected deaths of patient in health care institutions.

2006 Medical Examiner Caseload

Figure 1: Accepted Kent County Medical Examiner Cases, 1997-2006

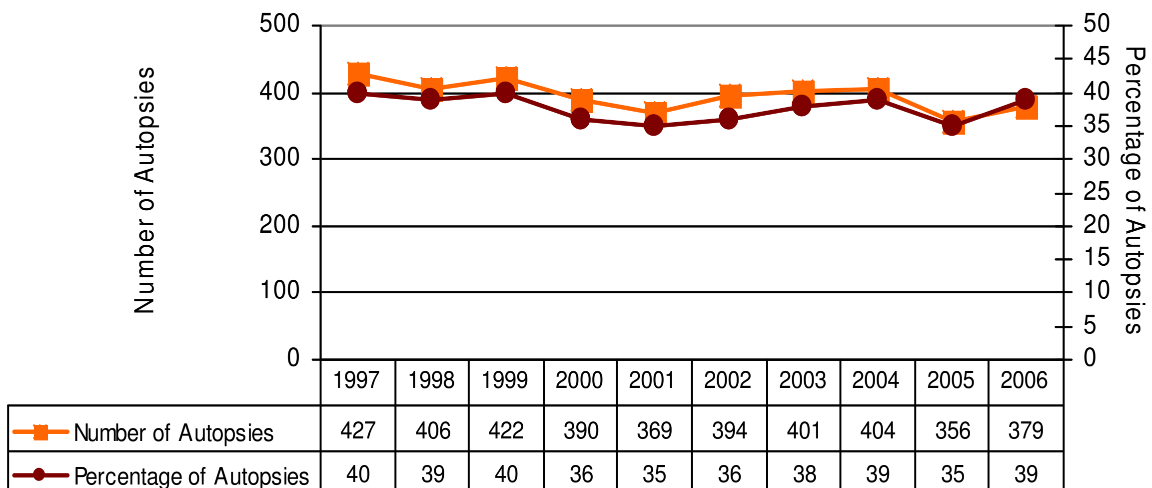


Total Referred Medical Examiner Cases in 2006: 1,322

Accepted	973	73.6%
Declined	349	26.4%

In 2006, there were 4,727 deaths in Kent County. The medical examiner was contacted regarding 1,322 of these deaths. Only 973 cases were accepted for investigation, while 349 were declined and did not fall within the requirements for investigation by the Medical Examiner's Office.

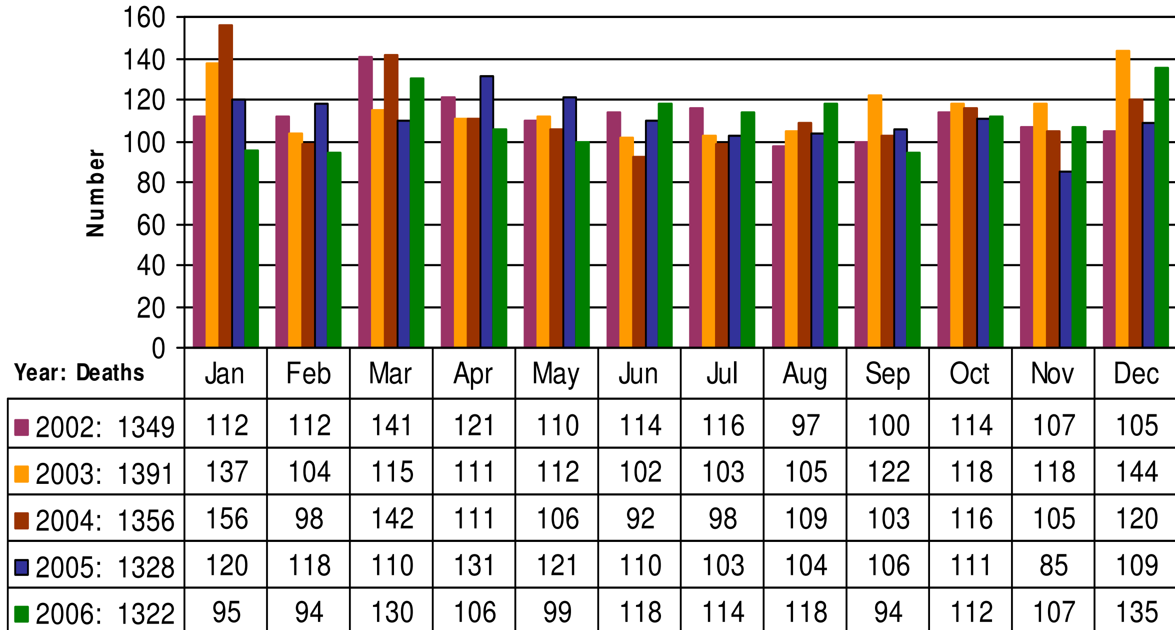
Figure 2: Medical Examiner Cases with Autopsy, 1997-2006



Of the 379 autopsies performed, 355 were charged to Kent County. The remaining 24 autopsies were performed either by a request from the family or another county.

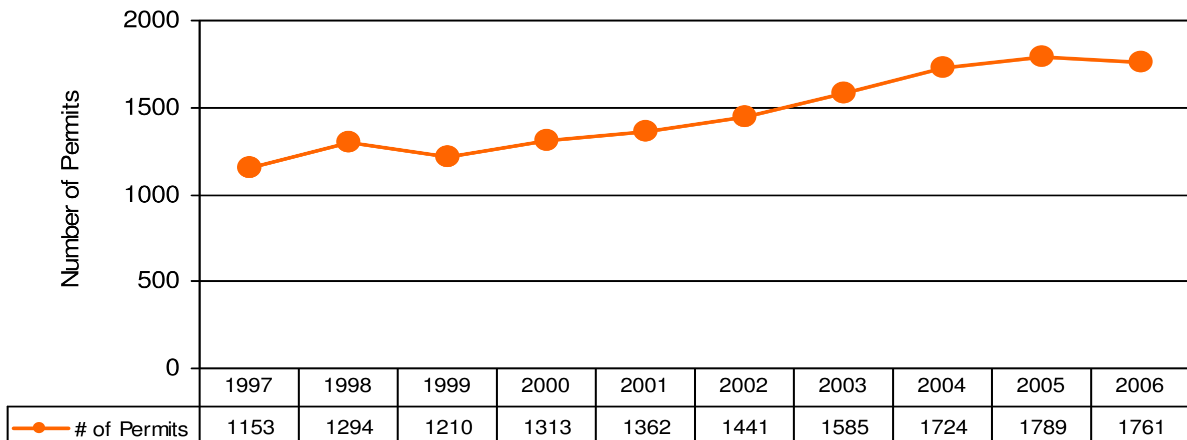
2006 Medical Examiner Caseload

Figure 3: Referred Medical Examiner Caseload by Month, 2002-2006



Year: Deaths	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002: 1349	112	112	141	121	110	114	116	97	100	114	107	105
2003: 1391	137	104	115	111	112	102	103	105	122	118	118	144
2004: 1356	156	98	142	111	106	92	98	109	103	116	105	120
2005: 1328	120	118	110	131	121	110	103	104	106	111	85	109
2006: 1322	95	94	130	106	99	118	114	118	94	112	107	135

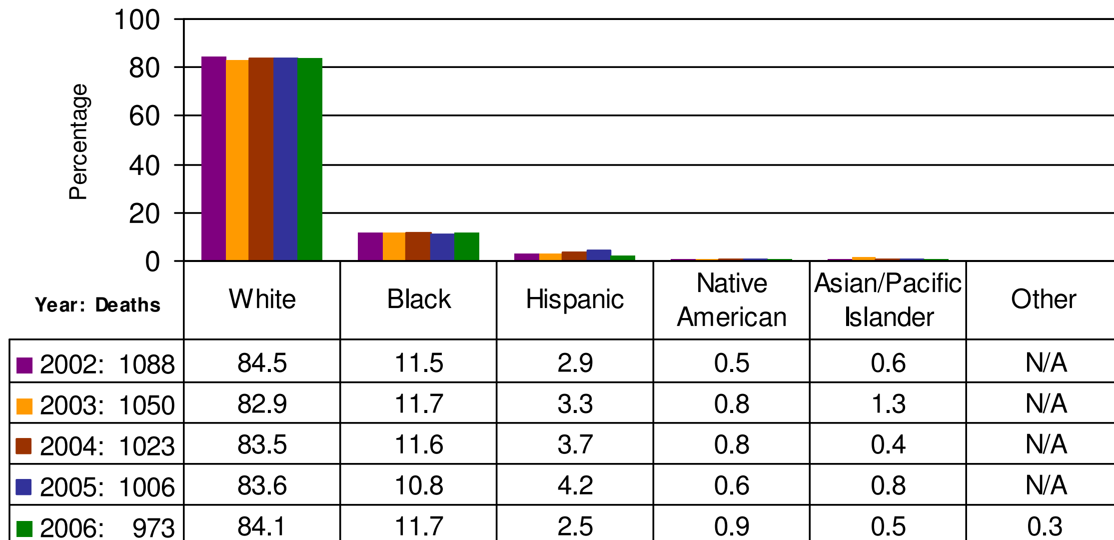
Figure 4: Cremation Permits Issued, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
# of Permits	1153	1294	1210	1313	1362	1441	1585	1724	1789	1761

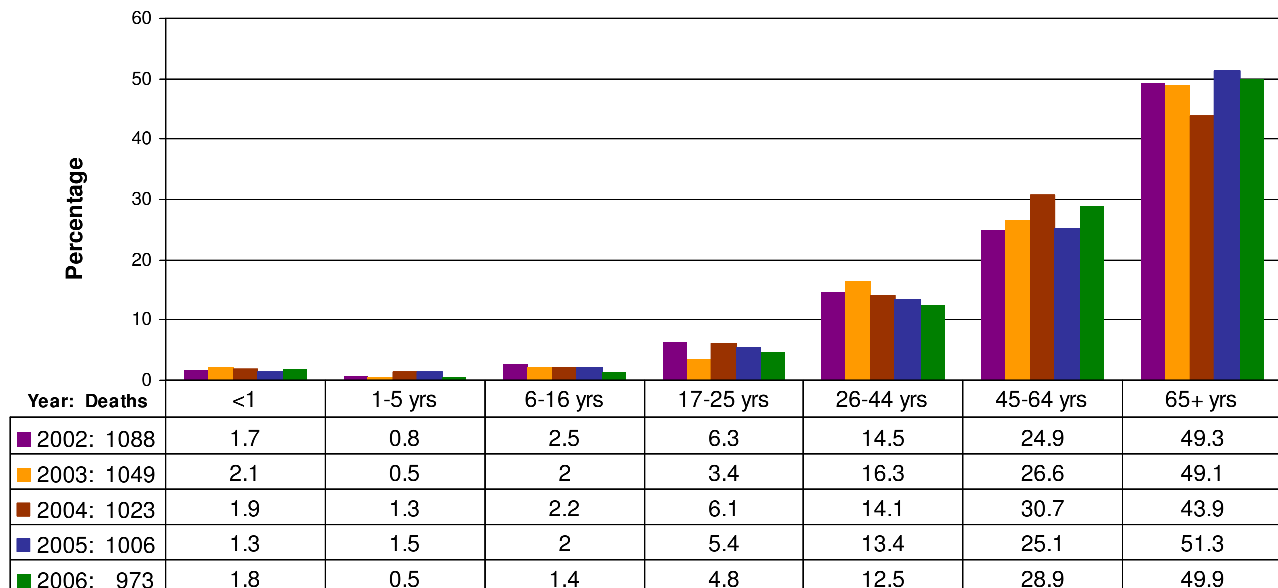
Demographics of Medical Examiner Cases

Figure 5: Medical Examiner Cases by Race/Ethnicity, 2002-2006



Year: Deaths	White	Black	Hispanic	Native American	Asian/Pacific Islander	Other
2002: 1088	84.5	11.5	2.9	0.5	0.6	N/A
2003: 1050	82.9	11.7	3.3	0.8	1.3	N/A
2004: 1023	83.5	11.6	3.7	0.8	0.4	N/A
2005: 1006	83.6	10.8	4.2	0.6	0.8	N/A
2006: 973	84.1	11.7	2.5	0.9	0.5	0.3

Figure 6: Medical Examiner Cases by Age at Death, 2002-2006



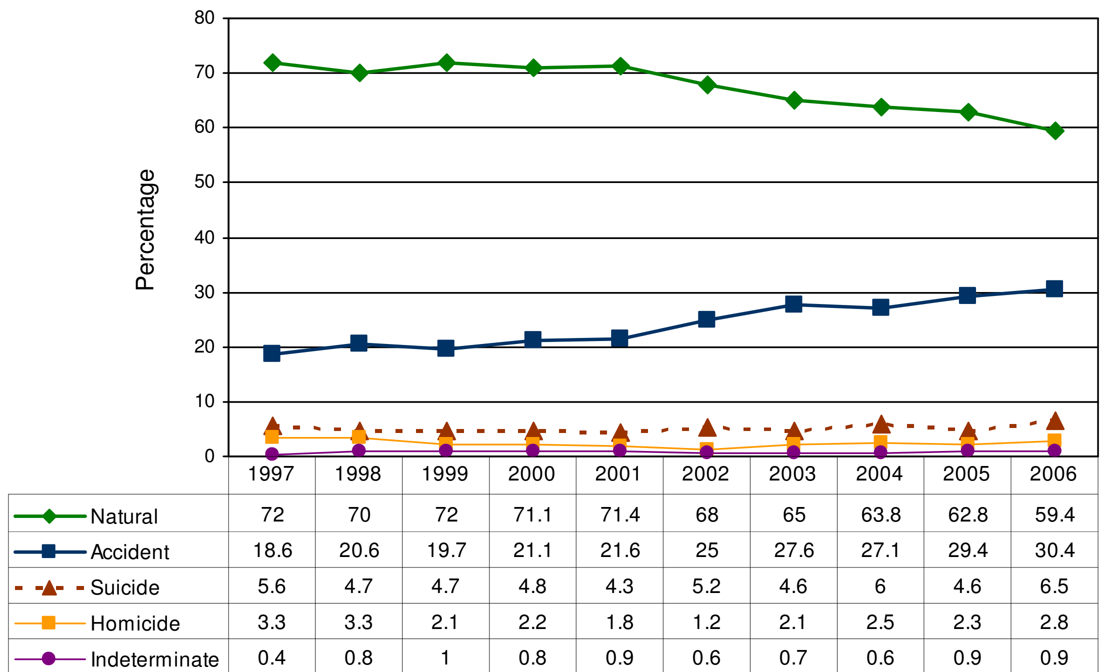
Year: Deaths	<1	1-5 yrs	6-16 yrs	17-25 yrs	26-44 yrs	45-64 yrs	65+ yrs
2002: 1088	1.7	0.8	2.5	6.3	14.5	24.9	49.3
2003: 1049	2.1	0.5	2	3.4	16.3	26.6	49.1
2004: 1023	1.9	1.3	2.2	6.1	14.1	30.7	43.9
2005: 1006	1.3	1.5	2	5.4	13.4	25.1	51.3
2006: 973	1.8	0.5	1.4	4.8	12.5	28.9	49.9

Table 1: Medical Examiner Cases by Gender, 2002-2006

	2002	2003	2004	2005	2006
Female	39.4%	39.5%	38.5%	39.7%	39.5% (370 cases)
Male	60.6%	60.5%	61.5%	60.5%	60.5% (603 cases)

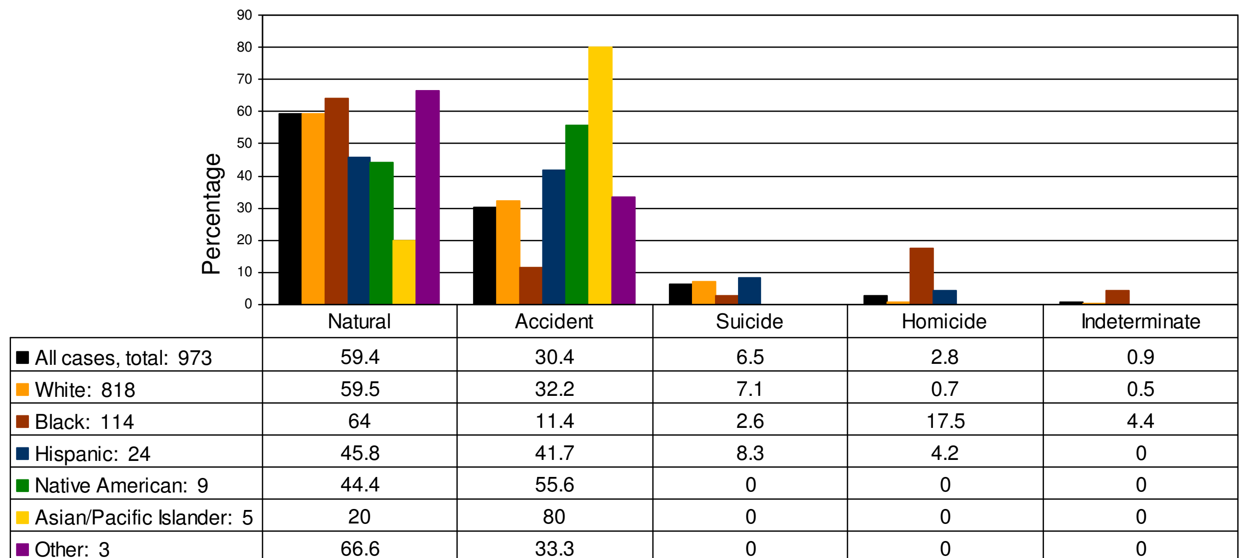
Manner of Death

Figure 7: Medical Examiner Cases by Manner of Death, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Natural	72	70	72	71.1	71.4	68	65	63.8	62.8	59.4
Accident	18.6	20.6	19.7	21.1	21.6	25	27.6	27.1	29.4	30.4
Suicide	5.6	4.7	4.7	4.8	4.3	5.2	4.6	6	4.6	6.5
Homicide	3.3	3.3	2.1	2.2	1.8	1.2	2.1	2.5	2.3	2.8
Indeterminate	0.4	0.8	1	0.8	0.9	0.6	0.7	0.6	0.9	0.9

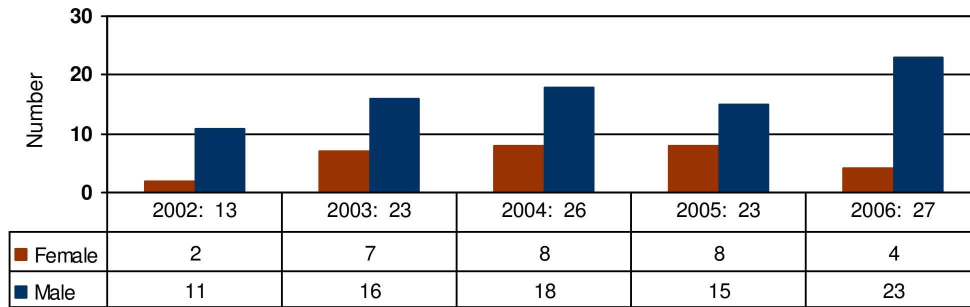
Figure 8: Manner of Death by Race/Ethnicity, 2006



	Natural	Accident	Suicide	Homicide	Indeterminate
All cases, total: 973	59.4	30.4	6.5	2.8	0.9
White: 818	59.5	32.2	7.1	0.7	0.5
Black: 114	64	11.4	2.6	17.5	4.4
Hispanic: 24	45.8	41.7	8.3	4.2	0
Native American: 9	44.4	55.6	0	0	0
Asian/Pacific Islander: 5	20	80	0	0	0
Other: 3	66.6	33.3	0	0	0

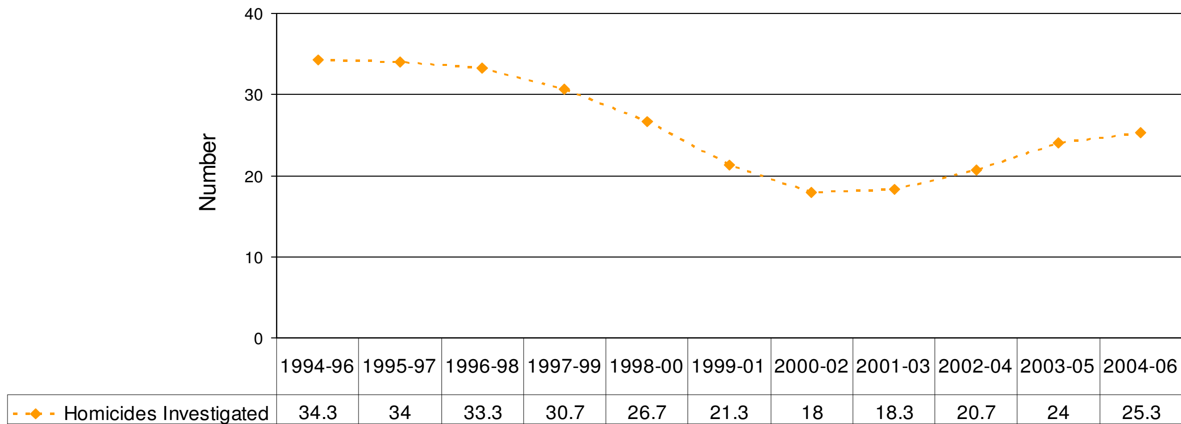
Manner of Death

Figure 9: Kent County Homicides by Gender, 2002-2006



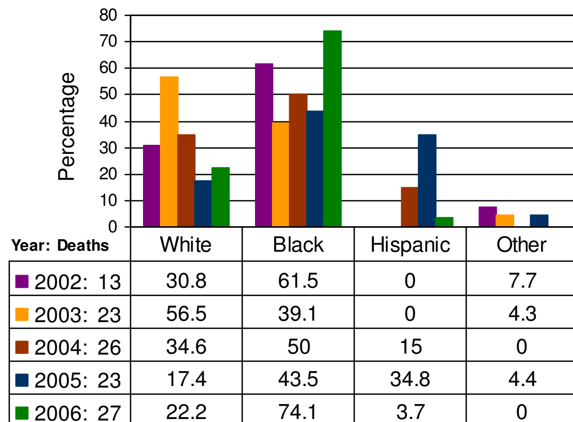
	2002: 13	2003: 23	2004: 26	2005: 23	2006: 27
Female	2	7	8	8	4
Male	11	16	18	15	23

Figure 10: Kent County Homicides, Three-Year Moving Averages, 1994-2006



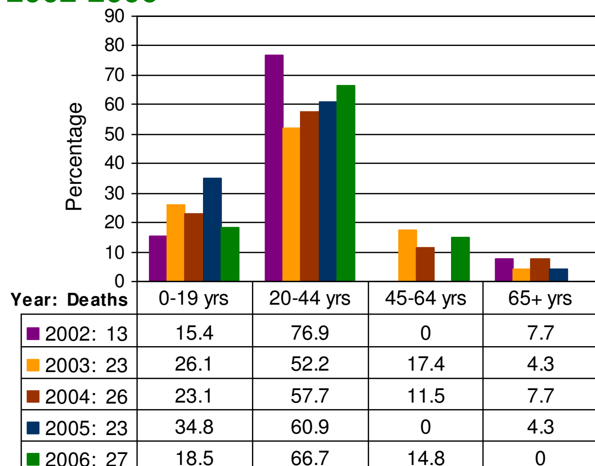
	1994-96	1995-97	1996-98	1997-99	1998-00	1999-01	2000-02	2001-03	2002-04	2003-05	2004-06
Homicides Investigated	34.3	34	33.3	30.7	26.7	21.3	18	18.3	20.7	24	25.3

Figure 11: Homicides by Race, 2002-2006



Year: Deaths	White	Black	Hispanic	Other
2002: 13	30.8	61.5	0	7.7
2003: 23	56.5	39.1	0	4.3
2004: 26	34.6	50	15	0
2005: 23	17.4	43.5	34.8	4.4
2006: 27	22.2	74.1	3.7	0

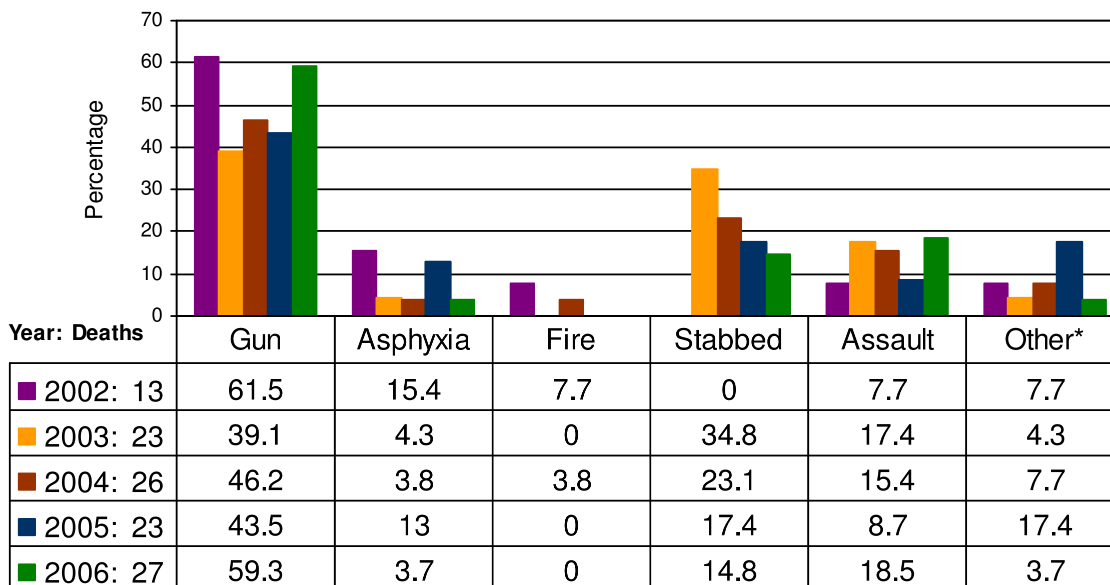
Figure 12: Homicides by Age, 2002-2006



Year: Deaths	0-19 yrs	20-44 yrs	45-64 yrs	65+ yrs
2002: 13	15.4	76.9	0	7.7
2003: 23	26.1	52.2	17.4	4.3
2004: 26	23.1	57.7	11.5	7.7
2005: 23	34.8	60.9	0	4.3
2006: 27	18.5	66.7	14.8	0

Manner of Death

Figure 13: Homicide Cases by Method Used, 2002-2006



Year: Deaths	Gun	Asphyxia	Fire	Stabbed	Assault	Other*
2002: 13	61.5	15.4	7.7	0	7.7	7.7
2003: 23	39.1	4.3	0	34.8	17.4	4.3
2004: 26	46.2	3.8	3.8	23.1	15.4	7.7
2005: 23	43.5	13	0	17.4	8.7	17.4
2006: 27	59.3	3.7	0	14.8	18.5	3.7

*For 2006, there was 1 homicide where the cause of death could not be determined.

Table 2: Gun Homicides by Age, 2002-2006

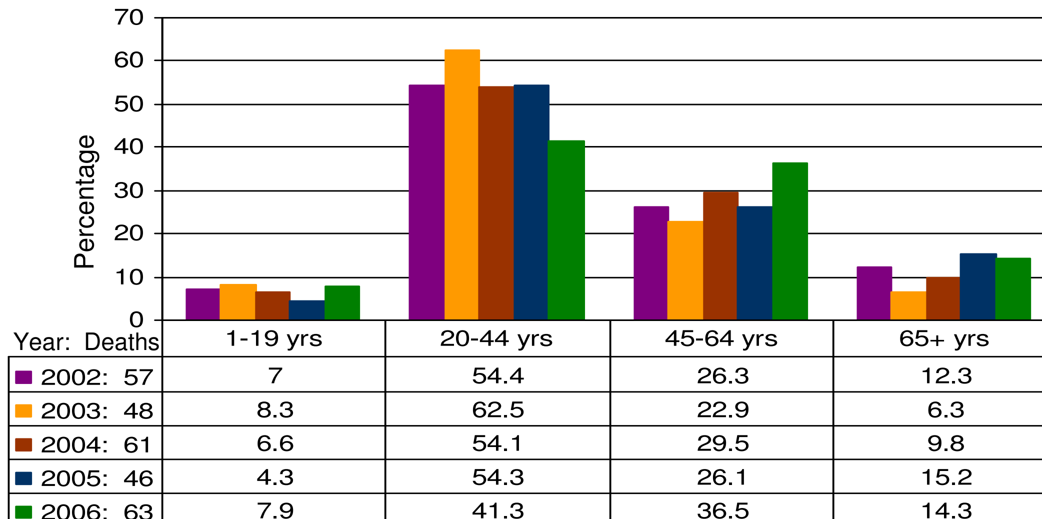
	AGE			
Year: Deaths	0-19 yrs	20-29 yrs	30-39 yrs	40+ yrs
2002: 8	1	4	1	2
2003: 9	2	4	1	2
2004: 12	2	5	3	2
2005: 10	2	5	3	0
2006: 16	3	7	2	4

Table 3: Suicide Cases by Race, 2002-2006

	White	Black	Hispanic	Native American	Asian
2002: 57	80.7%	10.5%	8.8%	0%	0%
2003: 48	85.4%	10.4%	0%	2.1%	2.1%
2004: 61	83.6%	3.3%	8.2%	0%	4.9%
2005: 46	82.6%	6.5%	8.7%	0%	1%
2006: 63	92.1%	4.8%	3.2%	0%	0%

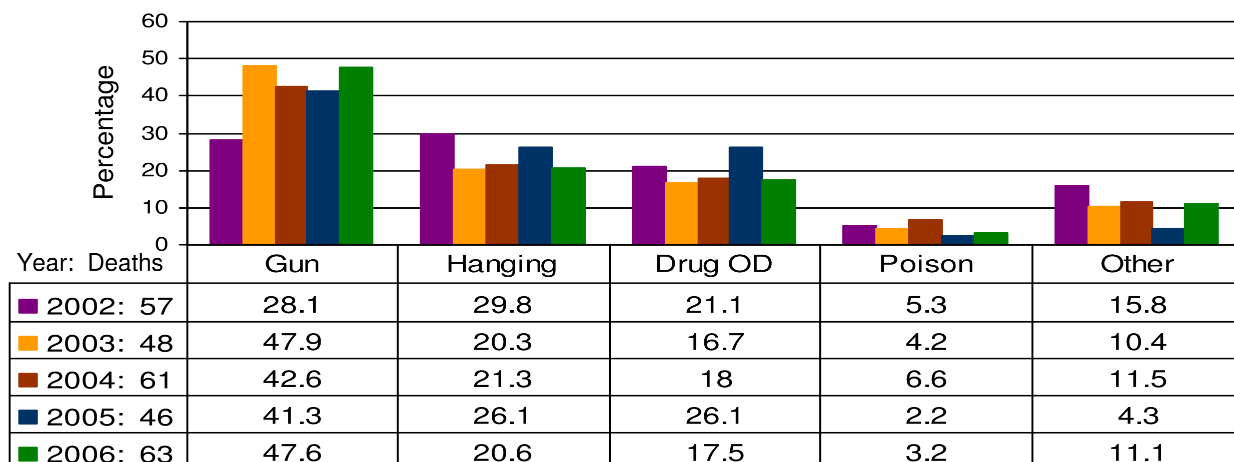
Manner of Death

Figure 14: Suicide Cases by Age, 2002-2006



Year: Deaths	1-19 yrs	20-44 yrs	45-64 yrs	65+ yrs
2002: 57	7	54.4	26.3	12.3
2003: 48	8.3	62.5	22.9	6.3
2004: 61	6.6	54.1	29.5	9.8
2005: 46	4.3	54.3	26.1	15.2
2006: 63	7.9	41.3	36.5	14.3

Figure 15: Suicide Cases by Method Used, 2002-2006



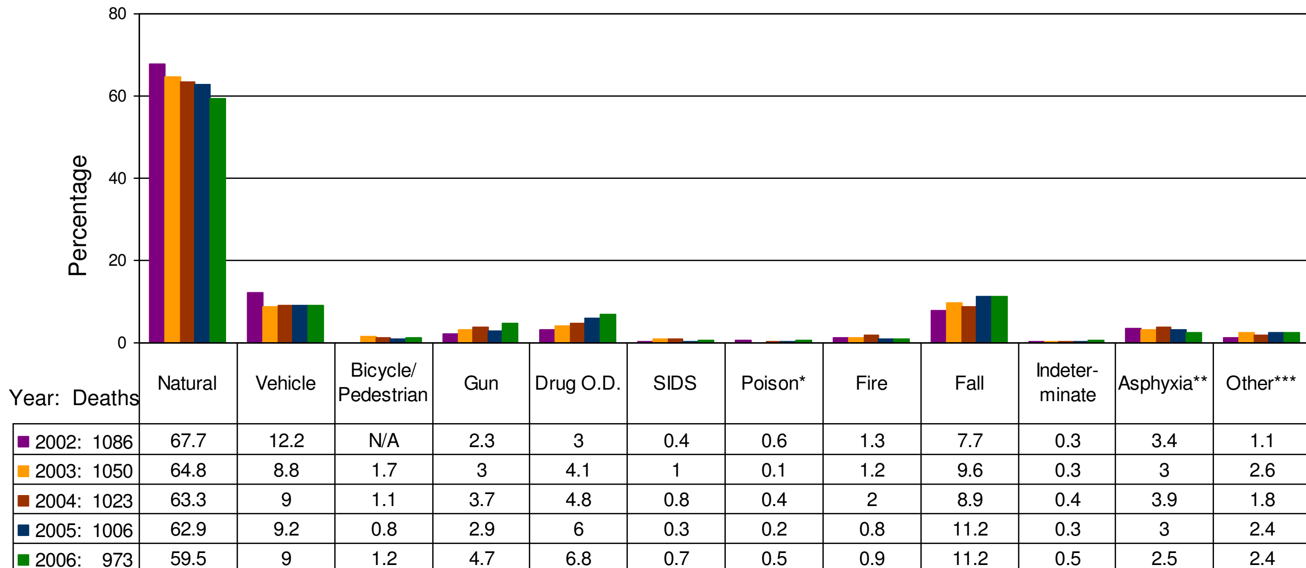
Year: Deaths	Gun	Hanging	Drug OD	Poison	Other
2002: 57	28.1	29.8	21.1	5.3	15.8
2003: 48	47.9	20.3	16.7	4.2	10.4
2004: 61	42.6	21.3	18	6.6	11.5
2005: 46	41.3	26.1	26.1	2.2	4.3
2006: 63	47.6	20.6	17.5	3.2	11.1

In 2006, Poison is carbon monoxide poisoning, while Other consists of asphyxia (3; 42.9%), fire (3; 42.9%) and pedestrian (1; 14.3%).

Of the 63 suicide deaths for 2006, females accounted for 14 (22.2%) deaths, while males accounted for 49 (77.8%).

Cause of Death

Figure 16: Medical Examiner Cases by Cause of Death, 2002-2006



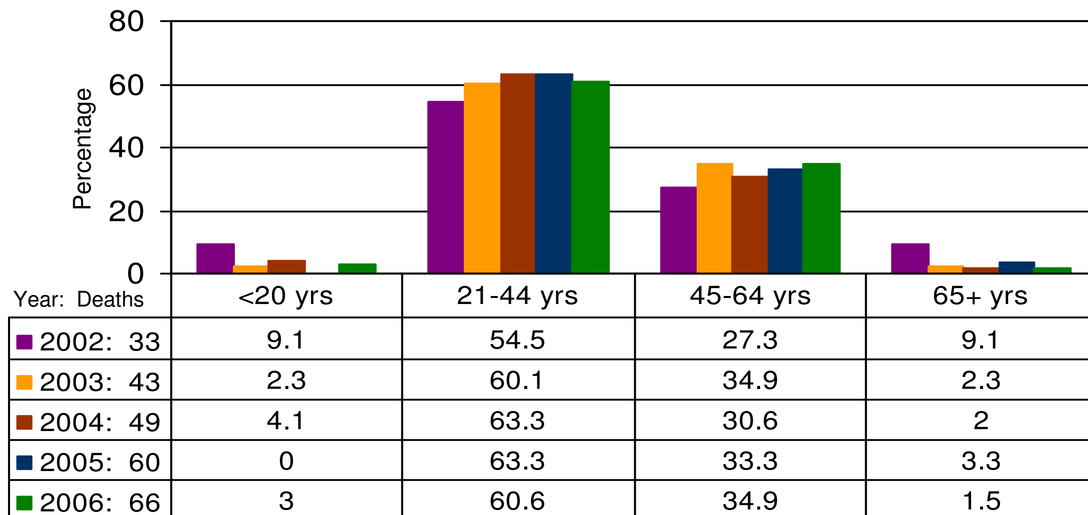
Year: Deaths	Natural	Vehicle	Bicycle/ Pedestrian	Gun	Drug O.D.	SIDS	Poison*	Fire	Fall	Indeter-minate	Asphyxia**	Other***
2002: 1086	67.7	12.2	N/A	2.3	3	0.4	0.6	1.3	7.7	0.3	3.4	1.1
2003: 1050	64.8	8.8	1.7	3	4.1	1	0.1	1.2	9.6	0.3	3	2.6
2004: 1023	63.3	9	1.1	3.7	4.8	0.8	0.4	2	8.9	0.4	3.9	1.8
2005: 1006	62.9	9.2	0.8	2.9	6	0.3	0.2	0.8	11.2	0.3	3	2.4
2006: 973	59.5	9	1.2	4.7	6.8	0.7	0.5	0.9	11.2	0.5	2.5	2.4

*Poison includes carbon monoxide poisoning (4; 80%) and other chemical poisoning (1; 20%).

**Asphyxia includes deaths from choking on food (2; 8%), drowning (1; 4.2%), hanging (13; 54.2%), strangulation (1; 4.2%) and suffocation (7; 29.2%).

***Other is comprised of deaths from anaphylactic shock (1; 4.3%), assault (4; 17.4%), hypoxic encephalopathy from choking on food (2; 8.7%), crushing (2; 8.7%), electrocution (1; 4.3%), hyperthermia (2; 8.7%), hypothermia (1; 4.3%), indeterminate (1; 4.3%), medical procedure (1; 4.3%), negligent care (1; 4.3%), stabbing (4; 16.7%) and struck by object (3; 13%).

Figure 17: Drug Deaths by Age, 2002-2006



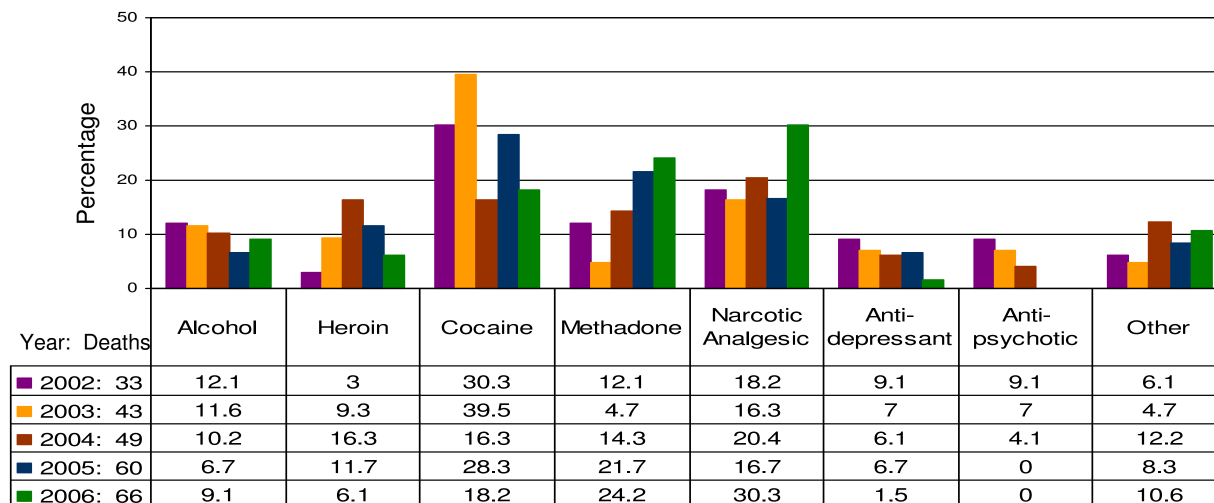
Year: Deaths	<20 yrs	21-44 yrs	45-64 yrs	65+ yrs
2002: 33	9.1	54.5	27.3	9.1
2003: 43	2.3	60.1	34.9	2.3
2004: 49	4.1	63.3	30.6	2
2005: 60	0	63.3	33.3	3.3
2006: 66	3	60.6	34.9	1.5

Table 4: Drug Deaths by Gender, 2006

	Female (23)	Male (43)
Accident	18	36
Suicide	4	7
Indeterminate	1	0

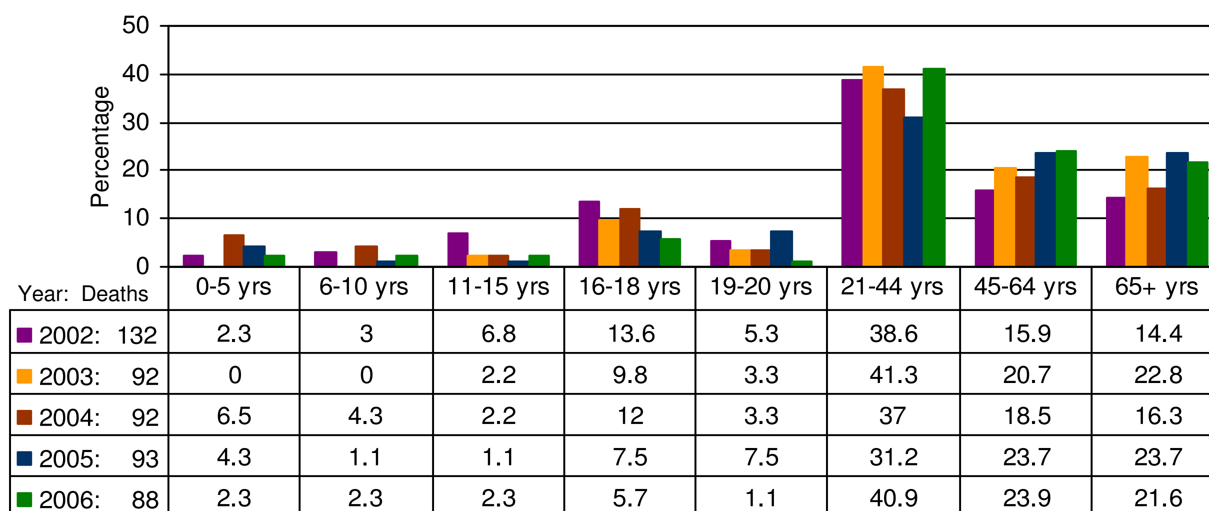
Cause of Death

Figure 18: Drug Deaths by Drug of First Mention, 2002-2006



Year: Deaths	Alcohol	Heroin	Cocaine	Methadone	Narcotic Analgesic	Anti-depressant	Anti-psychotic	Other
2002: 33	12.1	3	30.3	12.1	18.2	9.1	9.1	6.1
2003: 43	11.6	9.3	39.5	4.7	16.3	7	7	4.7
2004: 49	10.2	16.3	16.3	14.3	20.4	6.1	4.1	12.2
2005: 60	6.7	11.7	28.3	21.7	16.7	6.7	0	8.3
2006: 66	9.1	6.1	18.2	24.2	30.3	1.5	0	10.6

Figure 19: Vehicular Deaths by Age, 2002-2006



Year: Deaths	0-5 yrs	6-10 yrs	11-15 yrs	16-18 yrs	19-20 yrs	21-44 yrs	45-64 yrs	65+ yrs
2002: 132	2.3	3	6.8	13.6	5.3	38.6	15.9	14.4
2003: 92	0	0	2.2	9.8	3.3	41.3	20.7	22.8
2004: 92	6.5	4.3	2.2	12	3.3	37	18.5	16.3
2005: 93	4.3	1.1	1.1	7.5	7.5	31.2	23.7	23.7
2006: 88	2.3	2.3	2.3	5.7	1.1	40.9	23.9	21.6

Table 5: Vehicular Deaths by Gender, 2002-2006

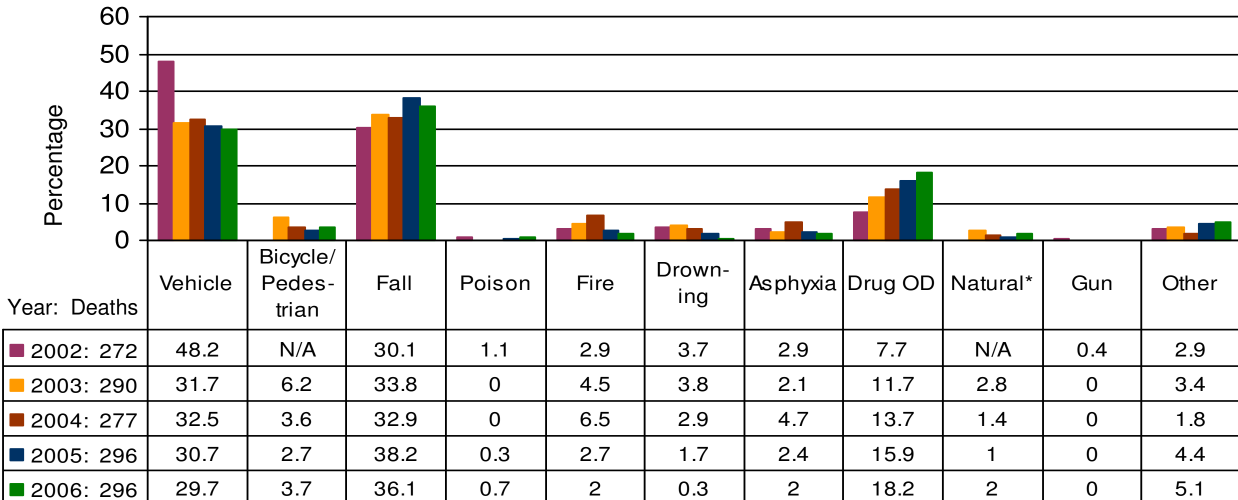
	Female	Male
2002: 132	31.1% (41)	68.9% (91)
2003: 92	42.4% (39)	57.6% (53)
2004: 92	34.8% (32)	65.2% (60)
2005: 93	31.2% (29)	68.8% (64)
2006: 88	28.4% (25)	71.6% (63)

Table 6: Bicycle/Pedestrian Deaths by Age, 2003-2006

	<20 yrs	21-44 yrs	45-64 yrs	65+ yrs
2003: 18	4	8	3	3
2004: 11	2	5	2	2
2005: 8	3	3	0	2
2006: 11	0	4	5	2

Cause of Death

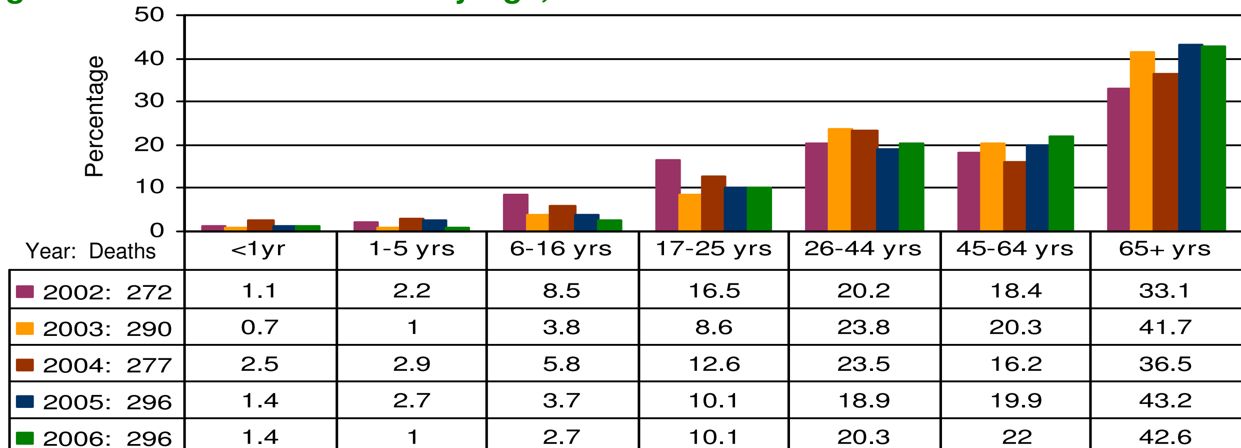
Figure 20: Accidental Deaths by Cause, 2002-2006



Year: Deaths	Vehicle	Bicycle/ Pedes-trian	Fall	Poison	Fire	Drown-ing	Asphyxia	Drug OD	Natural*	Gun	Other
2002: 272	48.2	N/A	30.1	1.1	2.9	3.7	2.9	7.7	N/A	0.4	2.9
2003: 290	31.7	6.2	33.8	0	4.5	3.8	2.1	11.7	2.8	0	3.4
2004: 277	32.5	3.6	32.9	0	6.5	2.9	4.7	13.7	1.4	0	1.8
2005: 296	30.7	2.7	38.2	0.3	2.7	1.7	2.4	15.9	1	0	4.4
2006: 296	29.7	3.7	36.1	0.7	2	0.3	2	18.2	2	0	5.1

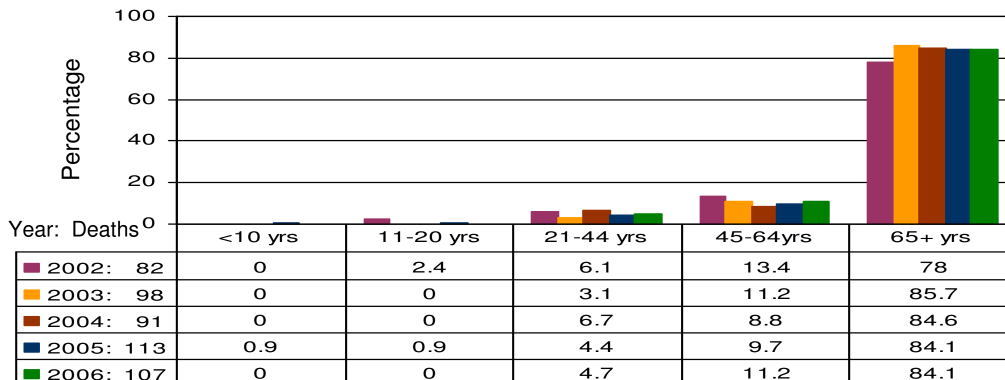
*A natural cause of death can have a contributing factor that determines the death to be accidental. There were 6 deaths that fell into this category in 2006, 5 from drug toxicity and 1 from a vehicle accident.

Figure 21: Accidental Deaths by Age, 2002-2006



Year: Deaths	<1yr	1-5 yrs	6-16 yrs	17-25 yrs	26-44 yrs	45-64 yrs	65+ yrs
2002: 272	1.1	2.2	8.5	16.5	20.2	18.4	33.1
2003: 290	0.7	1	3.8	8.6	23.8	20.3	41.7
2004: 277	2.5	2.9	5.8	12.6	23.5	16.2	36.5
2005: 296	1.4	2.7	3.7	10.1	18.9	19.9	43.2
2006: 296	1.4	1	2.7	10.1	20.3	22	42.6

Figure 22: Deaths Resulting from Falls by Age, 2002-2006



Year: Deaths	<10 yrs	11-20 yrs	21-44 yrs	45-64yrs	65+ yrs
2002: 82	0	2.4	6.1	13.4	78
2003: 98	0	0	3.1	11.2	85.7
2004: 91	0	0	6.7	8.8	84.6
2005: 113	0.9	0.9	4.4	9.7	84.1
2006: 107	0	0	4.7	11.2	84.1

2006 Child Death Review Meetings

The Child Death Review Team reviews the deaths of those in Kent County who are 18 and younger. In 2006, there were 25 child death cases reviewed. Of these cases, 3 were deaths from 2005, and 22 were deaths from 2006.

Natural Deaths - 9

- SIDS - 5
  - Black – 1
  - Hispanic - 1
  - White - 3
- Other - 4
  - Acute bronchopneumonia
  - Complications of cerebral palsy
  - Dehydration
  - On-going rejection of transplanted heart

Accidental Deaths – 8

- Vehicular Accidents - 4
  - Driver – 2
  - Passenger – 2
- Drowning – 1
  - Pool – 1
- Suffocations – 3
  - Co-sleeping -2
  - Couch cushion - 1

Suicides - 3

- Gunshot - 1
- Hanging - 2

Homicides – 2

- Asphyxia by strangulation and stabbing of head
- Unspecified means

Indeterminate – 3

- Dehydration due to gastroenteritis – 1
- Drowning – 1
- Indeterminate - 1

Child Death Cases Reviewed by Year

	2002	2003	2004	2005	2006
Natural	16	13	16	11	9
Vehicular Accidents	20	4	8	11	4
Accidental	7	4	16	10	4
Suicides	1	3	1	2	3
Homicides	1	3	1	6	2
Indeterminate	2	2	1	1	3
Total Cases	47	29	43	41	25

Kent County Medical Examiner 2006 Annual Report

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