
DEATHS DUE TO DRUGS & POISONS: 2006

In 2006, drugs and poisons caused 313 deaths (excluding 19 deaths due to carbon monoxide). This comprised approximately 15% of all deaths investigated (313/2,055). The total number of drug caused deaths has increased compared to 2005 figures when there were 273 drug deaths. In 2004 there were 278 drug caused deaths, in 2003, there were 220, in 2002, there were 216, and in 2001, there were 165. In 2006, deaths due to drugs and poisons comprised 31% (313/1,001) of all suicides, accidents, homicides, and undetermined deaths combined.

Of the drug/poison deaths in 2006, a single drug or poison caused 32% of the deaths (99/313), and drugs or poisons in combination caused 68% (214/313) of the deaths. Multiple drug intoxication continued to cause the majority of drug deaths in 2006 (71% in 2005 and 2004, 72% in 2003, 65% in 2002, and 65% in 2001). Table 9-3 displays the specific drugs that caused death in 2006. Because of their prevalence, ethanol, cocaine (a stimulant), and opiates¹ (a narcotic) are identified as separate drug categories. Data on deaths involving methadone, oxycodone, and methamphetamine are also shown in detail.

The manners of “accident,” “homicide,” “suicide,” and “undetermined” are represented in the deaths due to drugs and poisons. In 2006, there was one homicidal death attributed to drugs/poisons. In the previous five years, there were no homicidal deaths in which drugs or poisons were the primary cause of the death, although the victim may have been under the influence of drugs at the time of the fatal incident.

The classification of undetermined manner is used when the circumstances surrounding the drug death does not allow clarification of whether the fatal intoxication was intentional, unintentional (“recreational”), or involved another person's actions. In the year 2006, drugs and poisons caused 14 deaths of undetermined manner, compared to 18 in 2005, 26 in 2004, 32 in 2003, 20 in 2002, and 21 in 2001. Of the 14 undetermined drug related deaths in 2006, one was a fetal death associated with maternal methamphetamine use.

In 2006, drugs/poisons caused 36 suicides, as compared to 39 in 2005, 41 in 2004, 29 in 2003, 23 in 2002, and 20 in 2001.

Drugs/poisons caused 262 accidental overdoses in 2006 compared to 216 in 2005, 211 in 2004, 159 in 2003, 173 in 2002, and 124 in 2001. In 2006, accidental drug deaths comprised 36% (262/721) of all accidental deaths.

¹When the term “opiate” is used in this section, the drug detected by analysis is a derivative of opium, usually morphine, the source of which is either pharmaceutical morphine or, much more likely, heroin.

Ethanol (alcohol) is also a drug to be critically examined for its contribution to the circumstances surrounding death. In 2006, eight accidental deaths were attributed to acute ethanol intoxication where ethanol was the single substance used. There were 53 deaths where ethanol, in combination with other drugs, was the cause of death. Blood alcohol (ethanol) tests were performed in 76% (992/1,303) of non-natural deaths. Blood alcohol tests are only performed when death occurs within 24 hours of the initial injury/event, or, in hospital deaths, when an admission blood sample is available for testing. Positive blood alcohol levels were detected in 28% (280/992) of non-natural deaths where tests were performed.

Blood alcohol tests are performed on most persons who die within 24 hours of the incident. It should be noted that in many cases of traffic and homicide deaths, persons responsible for the death other than the decedent were under the influence of alcohol. The blood alcohol data are presented to show the levels of alcohol among those that died, but does not reflect the presence of alcohol among all parties involved.

Table 9-1 Blood Alcohol Testing / Manner / King County Medical Examiner / 2006

Test Results	ACCIDENT	TRAFFIC	HOMICIDE	NATURAL	SUICIDE	UNDETERMINED	TOTAL
Tested	483	171	84	476	218	36	1468
<i>Positive</i>	102	63	26	69	72	17	349
<i>Negative</i>	381	108	58	407	146	19	1119
Not Tested	238	40	7	276	9	17	587
Totals	721	211	91	752	227	53	2,055

Table 9-2 Blood Alcohol Testing / Percentage / Manner / KCME / 2006

Test Results	ACCIDENT	TRAFFIC	HOMICIDE	NATURAL	SUICIDE	UNDETERMINED	TOTAL
Tested	67%	81%	92%	63%	96%	68%	71%
<i>Positive</i>	21%	37%	31%	14%	33%	47%	24%
<i>Negative</i>	79%	63%	69%	86%	67%	53%	76%
Not Tested	33%	19%	8%	37%	4%	32%	29%
Totals	100%	100%	100%	100%	100%	100%	100%

Table 9-3

2006 Drug & Poison Caused Deaths¹

Drug Name	Total Deaths out of 2,055 Cases in which Drug was Present	Overdose Deaths (308) – Drug Present						Overdose Deaths (308) – Drug Causing					
		In which Listed Drug was Present	Single Drug OD in which Drug was Present	Multiple Drug OD in which Drug was Present	Accident	Suicide	Undetermined	In which Listed Drug Caused Death	In which a Single Drug Caused Death	In which Multiple Drugs Caused Death	Accident	Suicide	Undetermined
Acetaminophen	74	45	6	39	31	9	5	24	4	20	13	10	1
Alprazolam	30	23	1	22	19	4	0	21	0	21	17	4	0
Amantadine	1	0	0	0	0	0	0	0	0	0	0	0	0
Amitriptyline	37	21	1	20	15	5	1	20	0	20	15	4	1
Amphetamine	35	12	5	7	7	4	1	2	0	2	1	1	0
Atomoxetine	1	1	0	1	0	0	1	1	0	1	0	0	1
Bromodiphenhydramine	1	0	0	0	0	0	0	0	0	0	0	0	0
Brompheniramine	1	0	0	0	0	0	0	0	0	0	0	0	0
Bupivacaine	2	0	0	0	0	0	0	0	0	0	0	0	0
Bupropion	19	13	1	12	8	4	1	7	0	7	3	3	1
Butalbital	7	7	0	7	4	3	0	7	0	7	4	3	0
Cadmium	1	1	1	0	0	1	0	0	0	0	0	0	0
Caffeine	1	1	1	0	0	1	0	1	1	0	0	1	0
Cannabinoids / THC ²	167	55	15	40	49	5	1	0	0	0	0	0	0
Carbamazepine	9	7	3	4	5	1	1	4	0	4	3	1	0
Carbon Monoxide ³	28	16	16	0	6	10	0	19	19	0	8	11	0
Carisoprodol	14	11	0	11	8	2	1	8	0	8	6	1	1
Chlordiazepoxide	4	3	0	3	2	1	0	3	0	3	2	1	0
Chlorpheniramine	2	0	0	0	0	0	0	0	0	0	0	0	0
Citalopram	37	17	1	16	13	3	1	16	0	16	12	3	1
Clonazepam	4	2	0	2	0	2	0	0	0	0	0	0	0
Clozapine	2	0	0	0	0	0	0	0	0	0	0	0	0
Cocaine ⁴	159	106	36	70	101	4	1	115	44	71	110	4	1
Codeine ⁵	58	46	6	40	41	5	0	8	0	8	6	2	0
Cyanide	1	1	1	0	0	1	0	1	1	0	0	1	0

Table 9-3

2006 Drug & Poison Caused Deaths, page 2

Drug Name	Total Deaths out of 2,055 Cases in which Drug was Present	Overdose Deaths (308)						Overdose Deaths (308)					
		In which Listed Drug was Present	Single Drug OD in which Drug was Present	Multiple Drug OD in which Drug was Present	Accident	Suicide	Undetermined	In which Listed Drug Caused Death	In which a Single Drug Caused Death	In which Multiple Drugs Caused Death	Accident	Suicide	Undetermined
Cyclobenzaprine	14	8	0	8	7	1	0	5	0	5	4	1	0
Desipramine	4	2	0	2	2	0	0	0	0	0	0	0	0
Dextromethorphan	29	14	1	13	13	0	1	8	0	8	8	0	0
Diazepam	96	38	6	32	32	4	2	27	0	27	22	3	2
Diltiazem	13	8	2	6	5	3	0	3	1	2	1	2	0
Diphenhydramine	88	52	3	49	39	12	1	42	0	42	31	10	1
Doxepin	12	9	0	9	5	1	3	8	0	8	5	1	2
Doxylamine	12	6	1	5	4	1	1	3	0	3	3	0	0
Ethanol (Ethyl Alcohol)	350	81	12	69	64	14	3	61	8	53	51	9	1
Ethylene Glycol ⁶	1	1	1	0	0	1	0	2	2	0	0	1	1
Fentanyl	14	7	0	7	7	0	0	8	0	8	8	0	0
Fluoxetine	29	15	0	15	12	3	0	15	0	15	12	3	0
Flurazepam	2	2	1	1	0	2	0	1	0	1	0	1	0
Gabapentin	13	10	0	10	6	3	1	10	0	10	6	3	1
GHB	6	1	0	1	1	0	0	0	0	0	0	0	0
Guaifenesin	2	1	0	1	1	0	0	0	0	0	0	0	0
Hydrocodone	66	28	4	24	24	3	1	20	0	20	17	2	1
Hydromorphone	36	18	1	17	15	3	0	11	0	11	9	2	0
Hydroxyzine	1	0	0	0	0	0	0	1	0	1	1	0	0
Ibuprofen	22	14	3	11	7	5	2	3	0	3	1	2	0
Imipramine	5	2	0	2	2	0	0	2	0	2	2	0	0
Isopropanol	33	3	1	2	1	1	1	0	0	0	0	0	0
Ketamine	3	1	0	1	0	1	0	0	0	0	0	0	0
Lamotrigine	8	1	0	1	1	0	0	0	0	0	0	0	0
Lead	2	1	1	0	0	1	0	0	0	0	0	0	0

Table 9-3

2006 Drug & Poison Caused Deaths, page 3

Drug Name	Total Deaths out of 2,055 Cases in which Drug was Present	Overdose Deaths (308)						Overdose Deaths (308)					
		In which Listed Drug was Present	Single Drug OD in which Drug was Present	Multiple Drug OD in which Drug was Present	Accident	Suicide	Undetermined	In which Listed Drug Caused Death	In which a Single Drug Caused Death	In which Multiple Drugs Caused Death	Accident	Suicide	Undetermined
Levetriacetam	1	1	0	1	1	0	0	0	0	0	0	0	0
Lidocaine	4	1	1	0	1	0	0	0	0	0	0	0	0
Lorazepam	23	6	1	5	5	1	0	2	0	2	2	0	0
Loxapine	1	0	0	0	0	0	0	0	0	0	0	0	0
MDA	1	0	0	0	0	0	0	0	0	0	0	0	0
MDMA	11	3	0	3	0	2	1	1	0	1	0	0	1
Meclizine	2	1	0	1	1	0	0	1	0	1	1	0	0
Meperidine	3	2	0	2	1	1	0	2	0	2	1	1	0
Meprobamate	18	14	0	14	11	2	1	5	0	5	5	0	0
Methadone	125	100	15	85	95	2	3	96	13	83	92	1	3
Methamphetamine	44	19	9	10	15	3	1	21	8	13	16	3	2
Methanol	6	2	2	0	1	1	0	1	1	0	0	1	0
Methocarbamol	2	1	0	1	1	0	0	0	0	0	0	0	0
Methylphenidate	1	1	0	1	1	0	0	1	0	1	1	0	0
Metoclopramide	5	2	0	2	2	0	0	2	0	2	2	0	0
Midazolam	17	2	0	2	1	0	1	0	0	0	0	0	0
Mirtazepine	14	7	0	7	6	1	0	6	0	6	5	1	0
Morphine ⁷	160	79	16	63	73	5	1	76	12	64	70	4	2
Monoacetylmorphine ⁸	20	19	3	16	18	1	0	19	3	16	18	1	0
Nortriptyline ⁹	38	22	0	22	18	3	1	5	0	5	5	0	0
Olanzapine	8	4	0	4	3	1	0	5	0	5	4	1	0
Oxazepam	4	2	0	2	1	0	1	1	0	1	1	0	0
Oxycodone	98	45	1	44	38	7	0	47	1	46	40	7	0
Paroxetine	3	2	0	2	2	0	0	2	0	2	2	0	0
Phencyclidine (PCP)	3	0	0	0	0	0	0	3	0	3	3	0	0

Table 9-3

2006 Drug & Poison Caused Deaths, page 4

Drug Name	Total Deaths out of 2,055 Cases in which Drug was Present	Overdose Deaths (308)						Overdose Deaths (308)					
		In which Listed Drug was Present	Single Drug OD in which Drug was Present	Multiple Drug OD in which Drug was Present	Accident	Suicide	Undetermined	In which Listed Drug Caused Death	In which a Single Drug Caused Death	In which Multiple Drugs Caused Death	Accident	Suicide	Undetermined
Phenobarbital	10	4	1	3	4	0	0	3	0	3	3	0	0
Phentermine	1	1	0	1	1	0	0	1	0	1	1	0	0
Phenytoin	21	3	2	1	1	0	2	1	0	1	1	0	0
Primadone	1	0	0	0	0	0	0	0	0	0	0	0	0
Promethazine	4	3	0	3	3	0	0	10	0	10	8	2	0
Propofol	1	0	0	0	0	0	0	1	1	0	1	0	0
Propoxyphene	10	6	0	6	4	1	1	5	0	5	4	0	1
Pseudoephedrine	7	0	0	0	0	0	0	0	0	0	0	0	0
Quetiapine	5	3	0	3	2	1	0	3	0	3	2	1	0
Quinine/Quinidine	3	1	0	1	1	0	0	0	0	0	0	0	0
Salicylates	3	3	0	3	1	2	0	0	0	0	0	0	0
Sertraline	21	9	1	8	7	2	0	2	0	2	0	2	0
Temazepam	16	7	0	7	5	1	1	3	0	3	1	1	1
Topiramate	9	4	0	4	4	0	0	4	0	4	4	0	0
Tramadol	11	8	0	8	5	2	1	7	0	7	4	2	1
Trazodone	38	20	3	17	17	2	1	14	0	14	12	2	0
Valproic Acid	8	2	0	2	1	1	0	2	0	2	1	1	0
Venlafaxine	20	12	11	1	11	1	0	11	0	11	10	1	0
Verapamil	6	3	0	3	3	0	0	1	0	1	1	0	0
Zolpidem	16	5	0	5	4	1	0	4	0	4	3	1	0
ZZP	1	1	1	0	0	1	0	0	0	0	0	0	0

¹Table 9-3 is constructed on the basis of finding each of the listed drugs by laboratory analysis of the decedent's blood. The first column represents the total number of cases in which the specific drug was detected, regardless of cause and manner of death. The rest of the columns represent only drug overdose deaths and are divided into two parts. The part that lists "Drug Present" represents the number of cases in drug overdose deaths in which the drug was present in quantifiable amounts. The other part that lists "Drug Causing" represents the number of drug overdose deaths in which the specific drug caused or contributed to death in the opinion of the certifying Medical Examiner. In many cases, the numbers in the first part are more than those in the second part

because the drug, although present, was not considered to contribute significantly to death. In a few cases, the column that lists “In which Listed Drug Caused Death” is greater than the column that lists “In which Listed Drug was Present,” because the drug was detected but not in quantifiable levels, and the certifying Medical Examiner considered the drug to have contributed to death. Furthermore, there were 5 additional cases of drug overdose deaths in which no sample was available for analysis. All of these cases represent deaths due to anoxic brain injury that occurred in a hospital after the admission blood sample had been discarded, precluding a confirmatory laboratory analysis. These cases were certified on the basis of the medical records rather than laboratory analysis. These cases included three delayed overdose deaths of the following drugs: (1) acetaminophen; (2) cocaine and ethanol; (3) methadone and methamphetamine; and two delayed overdose deaths of cocaine alone (4) and (5).

²Cannabinoids are listed if they were found at any level in blood or urine, not necessarily in quantified levels. Cannabinoids in levels typically found are not considered lethal agents and, therefore, there are no instances of single drug overdose deaths involving cannabinoids or THC. Although cannabinoids/THC were not considered contributory to death, they were detected in overdose deaths as listed.

³Carbon monoxide fatalities are listed if the level of carboxyhemoglobin was 10% or greater. Suicides due to intentional inhalation of carbon monoxide accounted for 11 of the carbon monoxide deaths. In seven of the 11 carbon monoxide suicides, other drugs may have been present, but they did not contribute to the death. Accidental deaths due to inhalation of carbon monoxide accounted for eight of the carbon monoxide deaths. All of the accidental carbon monoxide deaths were attributed solely to inhalation of carbon monoxide; other drugs may have been present, but they did not contribute to the death. There were no undetermined deaths due to carbon monoxide in 2006. In three of the overdose deaths in 2006, carbon monoxide was listed as causing death, but CO levels were <10%; these deaths were certified on the basis of scene and circumstances, autopsy examination, and toxicology results. Other sources of carbon monoxide involved fire fatalities.

⁴Includes benzoylcegonine.

⁵Out of the 46 overdose deaths involving codeine, in 35 cases, the source of the drug was likely small quantities of codeine present in heroin used by illicit drug users. In ten (10) cases the source of the drug was pharmaceutical codeine. The source of the codeine in one (1) case was unknown.

⁶The second ethylene glycol poisoning death was delayed, and the cause of death was based on finding oxalate crystals in the kidneys, not by toxicology.

⁷There were 79 overdose deaths involving morphine. In 55 of these cases, the source of the drug was likely the morphine derived from heroin preparations used by illicit drug users. In 17 of these cases the source of the morphine was likely pharmaceutical morphine, and in seven (7) of these cases the source of the morphine was not known.

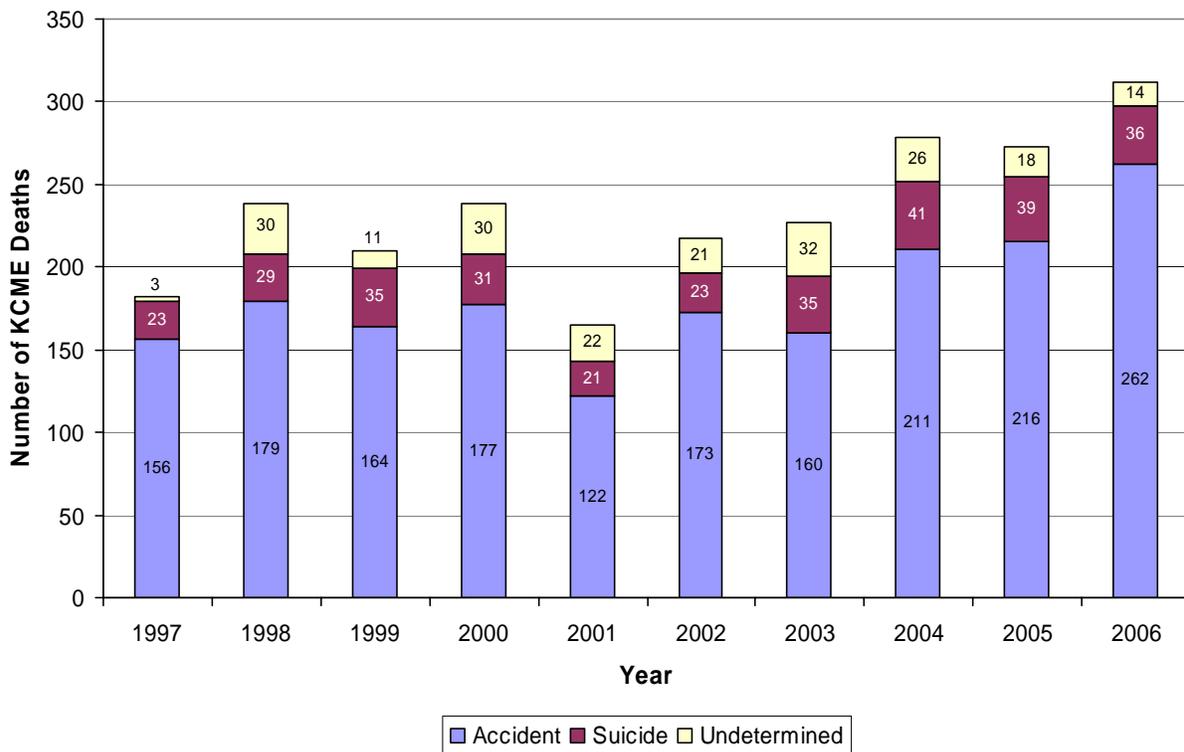
⁸Monoacetylmorphine (MAM) is the first breakdown product of heroin, otherwise known as diacetylmorphine. The presence of MAM, therefore, proves the source of opiate to be heroin. However, the absence of MAM does not imply that the source of the opiate was not heroin.

⁹In five (5) of the 22 total cases, nortriptyline was present without the presence of amitriptyline, indicating that the source of the drug was, in fact, nortriptyline. In the other 17 cases, amitriptyline was also present, indicating that the nortriptyline was present due to the breakdown of amitriptyline. There were a total of five nortriptyline overdose deaths; all accidental multiple drug overdoses.

Table 9-4 Total Overdose Deaths / Accident / Homicide / Suicide / Undetermined / King County Medical Examiner / 1997 - 2006⁹

OVERDOSE DEATHS	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Totals	182	231	210	235	165	216	226	278	273	313

Graph 9-1 Drug & Poison Caused Deaths / Accident / Suicide / Undetermined / King County Medical Examiner / 1997 - 2006¹⁰



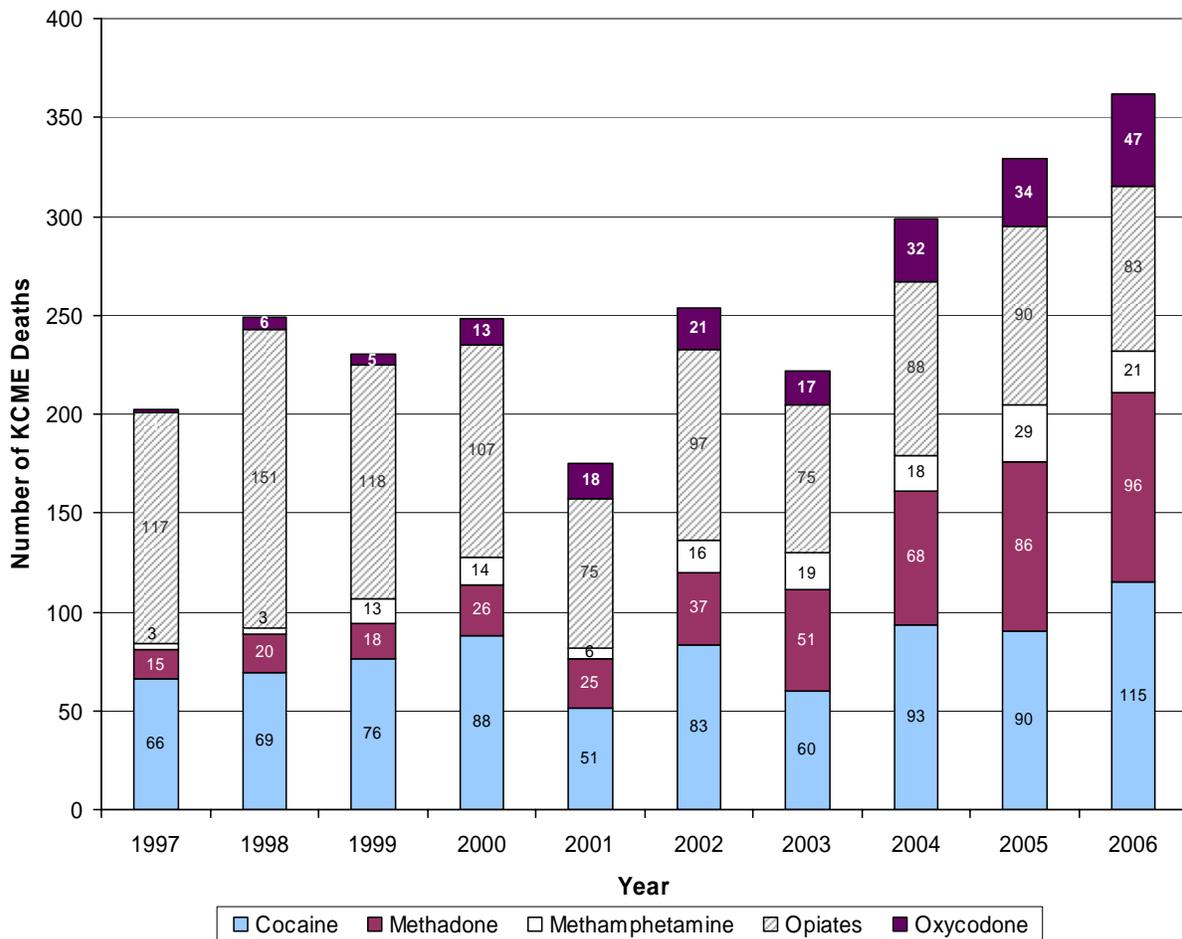
⁹ Includes all deaths classified as overdose, regardless of whether lab samples were available for analysis.

¹⁰ Does not include one drug/poison related homicide for 2006.

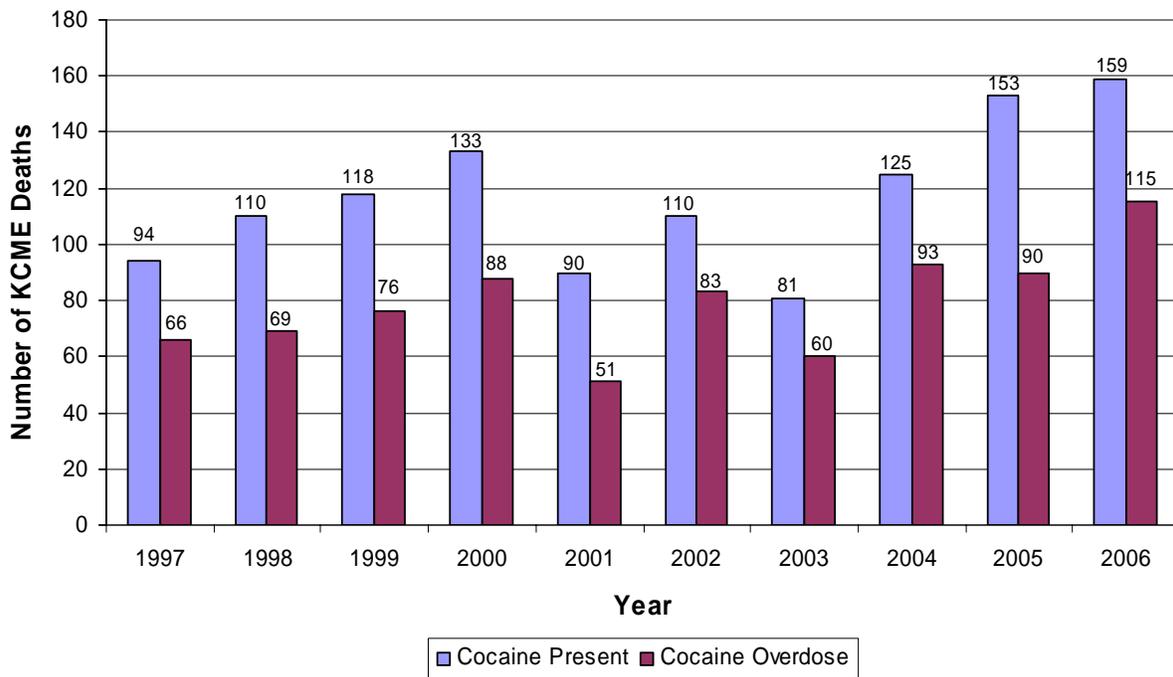
Table 9-5 Overdose Deaths Involving Cocaine, Methadone, Opiates, Methamphetamine, or Oxycodone / KCME / 1997 - 2006

DRUG	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Cocaine	66	69	76	88	51	83	60	93	90	115
Methadone	15	20	18	26	25	37	51	68	86	96
Methamphetamine	3	3	13	14	6	16	19	18	29	21
Opiates	117	151	118	107	75	97	75	88	90	83
Oxycodone	1	6	5	13	18	21	17	32	34	47

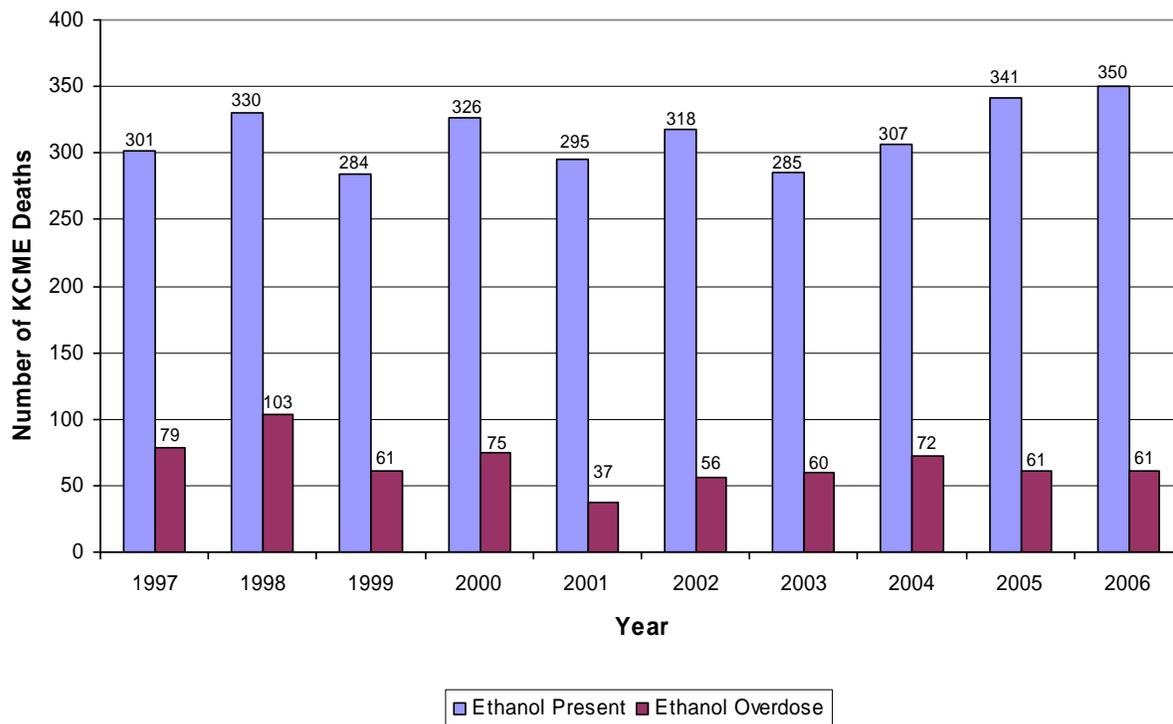
Graph 9-2 Overdose Deaths Involving Cocaine, Methadone, Opiates, Methamphetamine, or Oxycodone / KCME / 1997 – 2006



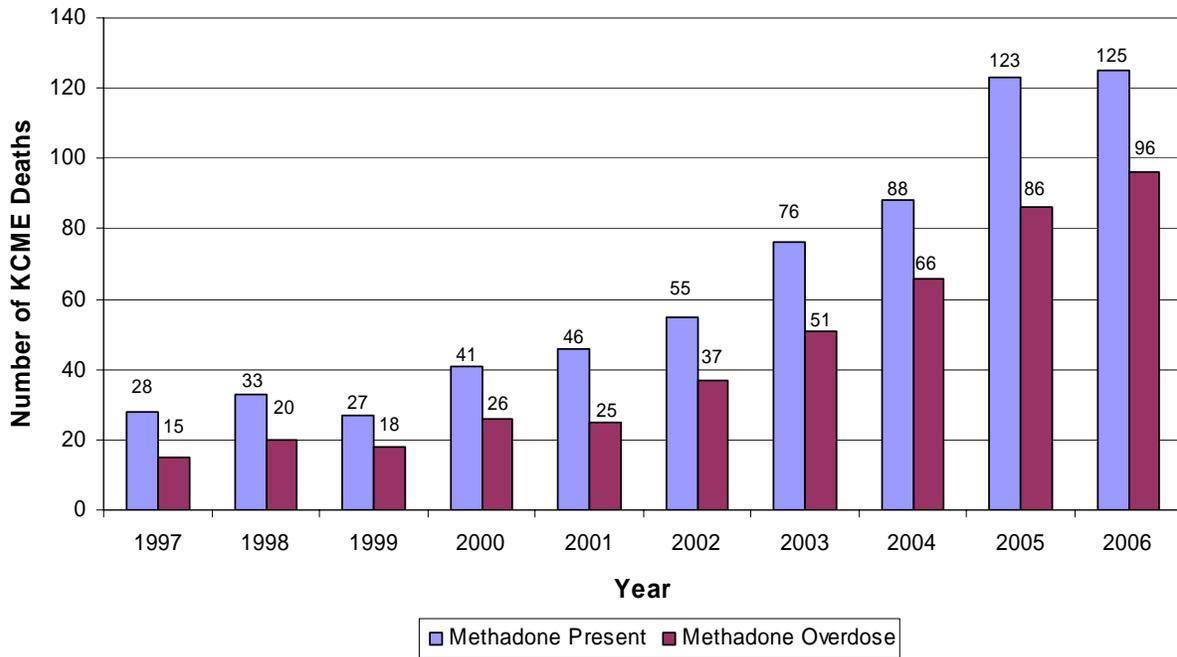
Graph 9-3 Cocaine Involved Deaths / King County Medical Examiner / 1997 - 2006



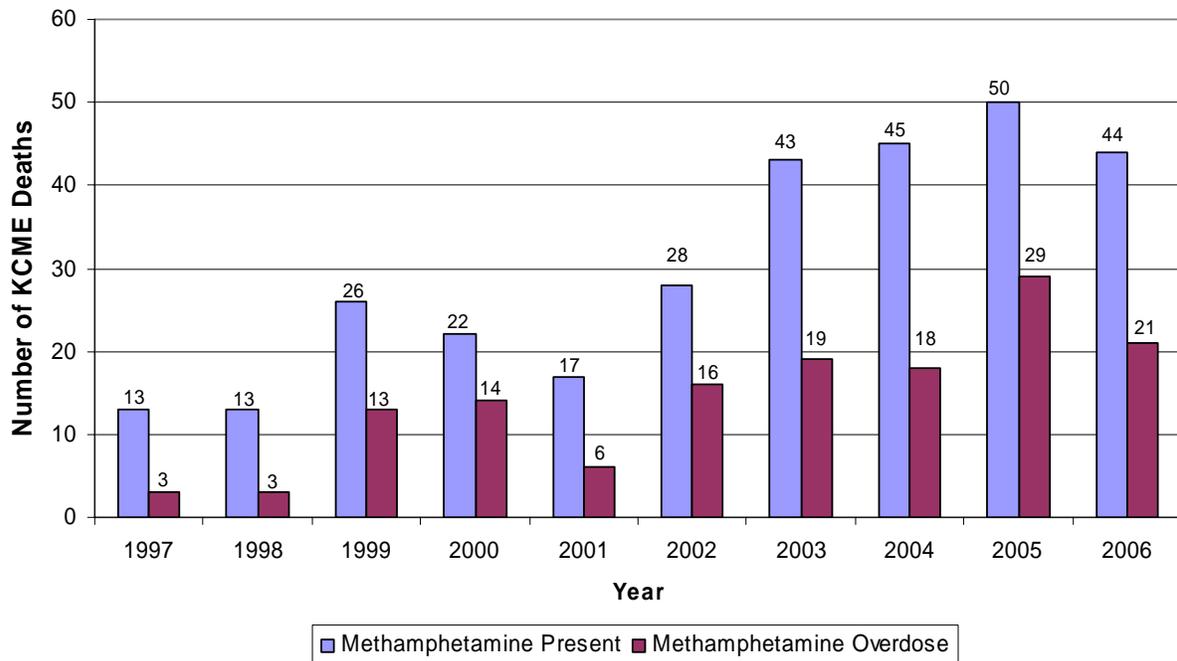
Graph 9-4 Ethanol Involved Deaths / King County Medical Examiner / 1997 - 2006



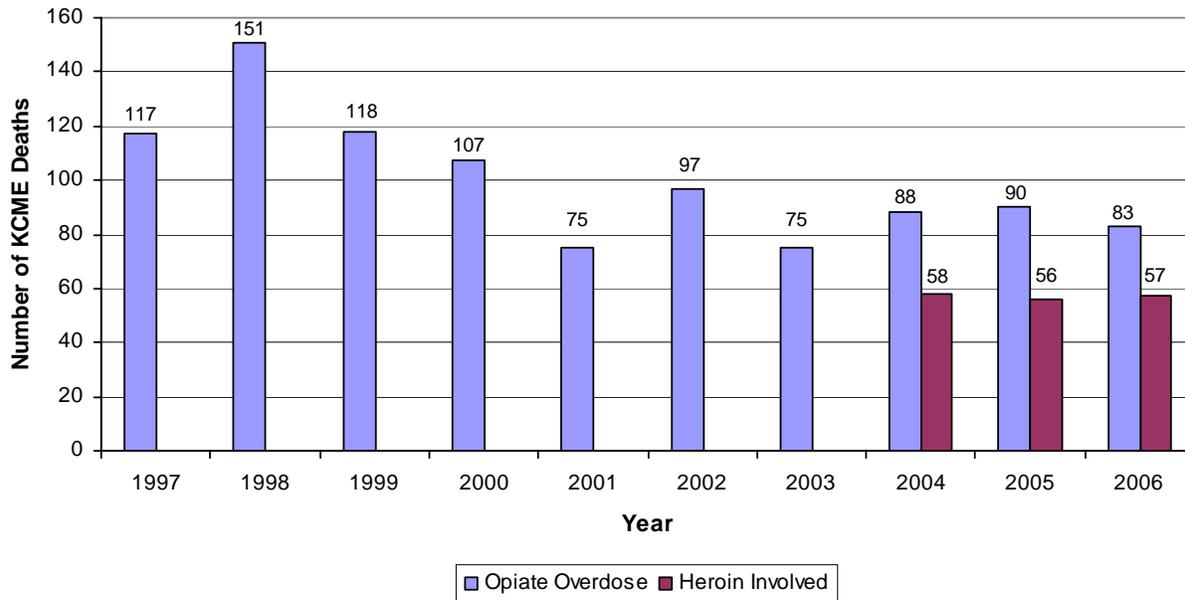
Graph 9-5 Methadone Involved Deaths / King County Medical Examiner / 1997 - 2006



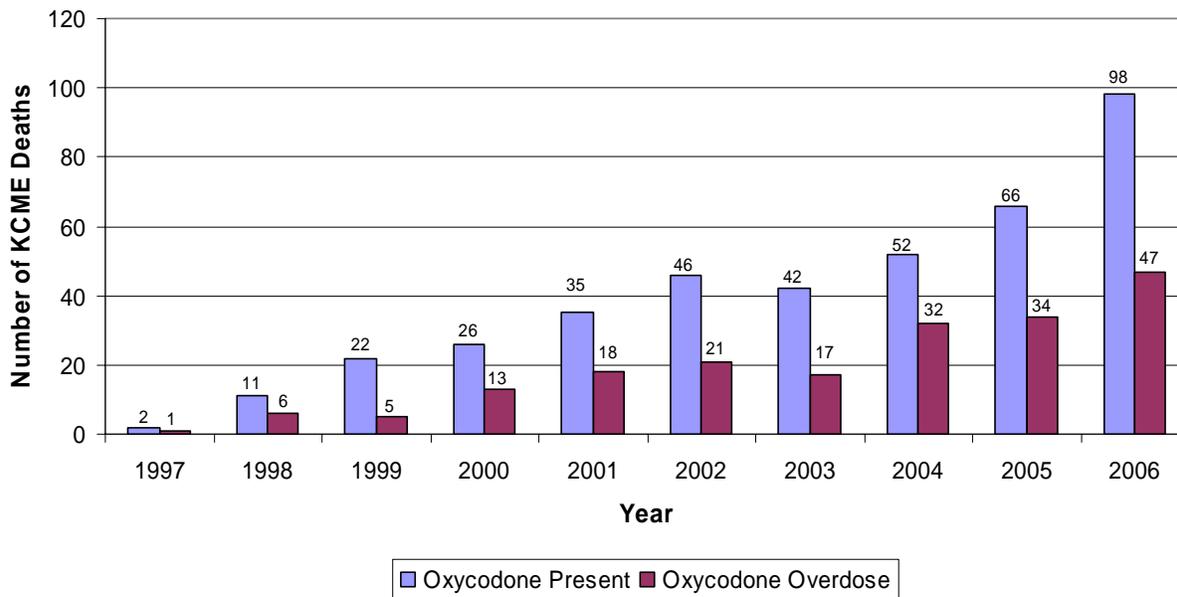
Graph 9-6 Methamphetamine Involved Deaths / KCME / 1997 – 2006



Graph 9-7 Opiate Overdose Deaths & Heroin-Related Deaths / KCME / 1997 - 2006¹¹

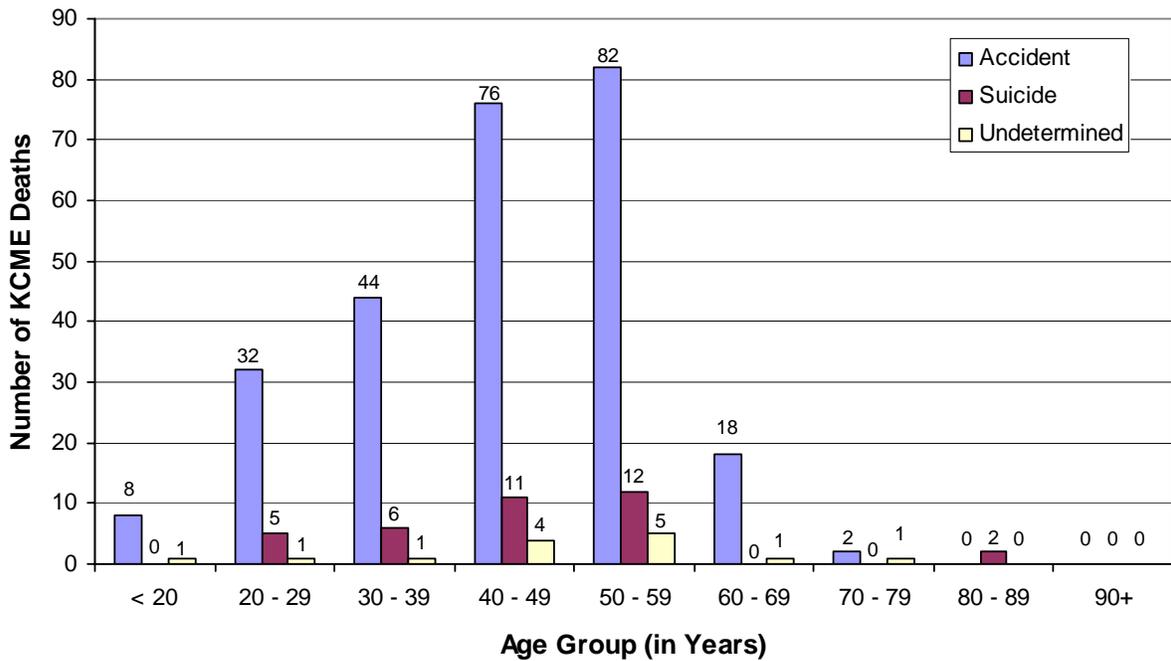


Graph 9-8 Oxycodone Involved Deaths / King County Medical Examiner / 1997 - 2006



¹¹ In 2004, the King County Medical Examiner's Office began collecting data on probable heroin overdoses based on a combination of scene, circumstances, and toxicology results.

Graph 9-9 Drug / Poison Deaths / Age / King County Medical Examiner / 1997 – 2006¹²



¹² Does not include one drug/poison related homicide in the 50-59 year age group for 2006.

Table 9-6 Drug / Poison Deaths / Age / King County Medical Examiner / 2006

AGE GROUP (YEARS) / SEX	MANNER OF DEATH				TOTAL	TOTAL
	ACCIDENT	HOMICIDE	SUICIDE	UNDETERMINE D		
<20	8	0	0	1		9
<i>Male</i>	7	0	0	1	8	
<i>Female</i>	1	0	0	0	1	
20-29	32	0	5	1		38
<i>Male</i>	25	0	2	1	28	
<i>Female</i>	7	0	3	0	10	
30-39	44	0	6	1		51
<i>Male</i>	29	0	2	0	31	
<i>Female</i>	15	0	4	1	20	
40-49	76	0	11	4		91
<i>Male</i>	51	0	6	2	59	
<i>Female</i>	25	0	5	2	32	
50-59	82	1	12	5		100
<i>Male</i>	54	1	5	2	62	
<i>Female</i>	28	0	7	3	38	
60-69	18	0	0	1		19
<i>Male</i>	13	0	0	0	13	
<i>Female</i>	5	0	0	1	6	
70-79	2	0	0	1		3
<i>Male</i>	1	0	0	1	2	
<i>Female</i>	1	0	0	0	1	
80-89	0	0	2	0		2
<i>Male</i>	0	0	0	0	0	
<i>Female</i>	0	0	2	0	2	
90+	0	0	0	0		0
<i>Male</i>	0	0	0	0	0	
<i>Female</i>	0	0	0	0	0	
Totals	262	1	36	14		313

