
DEATHS DUE TO DRUGS & POISONS: 2005

In 2005, drugs and poisons caused 273 deaths (excluding 18 deaths due to carbon monoxide). This comprised approximately 14% of all deaths investigated (273/1,945). The total number of drug caused deaths has decreased slightly compared to 2004 figures when there were 278 drug deaths. In 2003 there were 220 drug caused deaths, in 2002, there were 216, and in 2001, there were 165. In 2005, deaths due to drugs and poisons comprised 31% (273/876) of all suicides, accidents, and undetermined deaths combined.

Of the drug/poison deaths in 2005, a single drug or poison caused 29% of the deaths (78/273), and drugs or poisons in combination caused 71% (195/273) of the deaths. Multiple drug intoxication continued to cause the majority of drug deaths in 2005 (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 2005. 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,” “suicide,” and “undetermined” are represented in the deaths due to drugs and poisons. In 2005, as in the past 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 2005, drugs and poisons caused 18 deaths of undetermined manner, compared to 26 in 2004, 32 in 2003, 20 in 2002, and 21 in 2001. Of the 18 undetermined drug related deaths in 2005, seven were fetal deaths. The seven fetal deaths include three associated with maternal cocaine use, two associated with maternal methamphetamine use, one associated with maternal methadone therapy, and one associated with maternal heroin use.

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

Drugs/poisons caused 216 accidental overdoses in 2005 compared to 211 in 2004, 159 in 2003, 173 in 2002, and 124 in 2001. In 2005, accidental drug deaths comprised 36% (216/602) of all accidental deaths.

¹ When 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 2005, five accidental deaths were attributed to acute ethanol intoxication where ethanol was the single substance used, and one undetermined death was attributed to acute ethanol intoxication where ethanol was the single substance used. There were 55 deaths where ethanol, in combination with other drugs, was the cause of death. Blood alcohol (ethanol) tests were performed in 77% (906/1,182) 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 35% (315/906) 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 is 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 / 2005

Test Results	ACCIDENT	TRAFFIC	HOMICIDE	NATURAL	SUICIDE	UNDETERMINED	TOTAL
Tested	403	174	74	496	225	30	1402
<i>Positive</i>	157	53	25	94	69	11	409
<i>Negative</i>	246	121	49	402	156	19	993
Not Tested	199	52	6	267	8	11	543
Totals	602	226	80	763	233	41	1945

Table 9-2 Blood Alcohol Testing / Percentage / Manner / KCME / 2005

Test Results	ACCIDENT	TRAFFIC	HOMICIDE	NATURAL	SUICIDE	UNDETERMINED	TOTAL
Tested	67%	77%	93%	65%	97%	73%	72%
<i>Positive</i>	39%	30%	34%	19%	31%	37%	29%
<i>Negative</i>	61%	70%	66%	81%	69%	63%	71%
Not Tested	33%	23%	7%	35%	3%	27%	28%
Totals	100%	100%	100%	100%	100%	100%	100%

Table 9-3

2005 Drug & Poison Caused Deaths¹

Drug Name	Total Deaths out of 1,945 Cases in which Drug was Present	Overdose Deaths (269) – Drug Present						Overdose Deaths (269) – 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	65	26	3	23	15	7	4	8	0	8	3	4	1
Alprazolam	23	13	0	13	9	4	0	12	0	12	8	4	0
Amitriptyline	35	22	0	22	10	10	2	21	0	21	10	10	1
Amobarbital	1	0	0	0	0	0	0	0	0	0	0	0	0
Amphetamine	39	19	10	9	18	0	1	0	0	0	0	0	0
Antipyrene	3	2	0	2	2	0	0	0	0	0	0	0	0
Benzocaine	1	0	0	0	0	0	0	0	0	0	0	0	0
Bupivacaine	7	1	0	1	1	0	0	1	0	1	1	0	0
Bupropion	15	9	1	8	4	4	1	8	0	8	3	4	1
Butalbital	3	2	0	2	2	0	0	2	0	2	2	0	0
Cannabinoids / THC ²	176	58	14	44	52	5	1	0	0	0	0	0	0
Carbamazepine	8	2	0	2	2	0	0	2	0	2	2	0	0
Carbon Monoxide ³	25	18	12	6	4	13	1	18	12	6	4	13	1
Carisoprodol	9	5	0	5	3	0	2	4	0	4	2	0	2
Chlordiazepoxide	5	2	0	2	2	0	0	2	0	2	2	0	0
Chloroform	1	1	0	1	1	0	0	1	0	1	1	0	0
Chlorpheniramine	11	7	2	5	5	2	0	3	1	0	2	1	0
Chlorpromazine	1	0	0	0	0	0	0	0	0	0	0	0	0
Citalopram	44	22	0	22	20	2	0	23	0	23	21	2	0
Clomipramine	3	2	1	1	1	1	0	2	1	1	1	1	0
Clonazepam	2	1	0	1	0	1	0	1	0	1	0	1	0
Clonidine	1	1	0	1	1	0	0	0	0	0	0	0	0
Clozapine	1	0	0	0	0	0	0	0	0	0	0	0	0
Cocaine ⁴	153	95	27	68	85	5	5	90	26	64	80	5	5
Codeine ⁵	61	45	5	40	39	5	1	2	0	2	2	0	0

Table 9-3

2005 Drug & Poison Caused Deaths, page 2

Drug Name	Total Deaths out of 1,945 Cases in which Drug was Present	Overdose Deaths (269)						Overdose Deaths (269)					
		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	20	13	0	13	9	3	1	12	0	12	8	3	1
Desipramine	3	1	0	1	0	1	0	0	0	0	0	0	0
Dextromethorphan	23	13	0	13	10	2	1	11	0	11	8	2	1
Diazepam	90	29	2	27	25	3	1	26	0	26	22	3	1
Diltiazem	13	3	0	3	3	0	0	1	0	1	1	0	0
Diphenhydramine	68	38	3	35	23	12	3	33	1	32	21	10	2
Doxepin	8	4	0	4	2	1	1	4	0	4	2	1	1
Doxylamine	12	5	0	5	4	0	1	5	0	5	4	0	1
Ethanol (Ethyl Alcohol)	341	82	19	63	56	20	6	61	6	55	50	6	5
Ethylene Glycol	1	1	1	0	0	1	0	1	1	0	0	1	0
Fentanyl	14	4	0	4	4	0	0	4	0	4	4	0	0
Fluoxetine	29	19	1	17	14	2	3	18	0	18	13	2	3
Gabapentin	24	15	0	15	10	3	2	12	0	12	7	3	2
GHB	4	2	0	2	2	0	0	0	0	0	0	0	0
Glyphosate	1	1	1	0	0	1	0	1	1	0	0	1	0
Hydrocodone	46	20	0	20	16	3	1	18	0	18	15	3	0
Hydromorphone	23	14	0	14	12	2	0	11	0	11	9	2	0
Ibuprofen	13	8	1	7	5	3	0	4	0	4	1	3	0
Imipramine	5	2	1	1	1	1	0	1	0	1	0	1	0
Isopropanol	35	0	0	2	2	0	0	0	0	0	0	0	0
Lamotrigene	4	1	0	1	0	1	0	1	0	1	0	1	0
Levetiracetam	1	0	0	0	0	0	0	0	0	0	0	0	0
Lidocaine	2	0	0	0	0	0	0	0	0	0	0	0	0
Lorazepam	15	5	1	4	4	1	0	3	0	3	2	1	0
MDA	5	2	0	2	2	0	0	1	0	1	1	0	0

DRUGS AND POISONS

Table 9-3

2005 Drug & Poison Caused Deaths, page 3

Drug Name	Total Deaths out of 1,945 Cases in which Drug was Present	Overdose Deaths (269)						Overdose Deaths (269)					
		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
MDMA	10	4	0	4	4	0	0	4	0	4	4	0	0
Meclizine	1	0	0	0	0	0	0	0	0	0	0	0	0
Meperidine	2	1	0	1	0	1	0	1	0	1	0	1	0
Meprobamate	10	6	0	6	4	0	2	2	0	2	2	0	0
Mesoridazine	1	1	0	1	1	0	0	0	0	0	0	0	0
Methadone	123	84	12	72	76	5	3	86	13	73	78	5	3
Methamphetamine	50	27	12	15	25	0	2	29	13	16	26	0	3
Methanol	2	0	0	0	0	0	0	0	0	0	0	0	0
Metoclopramide	7	0	0	0	0	0	0	0	0	0	0	0	0
Methylphenidate	1	0	0	0	0	0	0	0	0	0	0	0	0
Metoprolol	2	1	0	1	1	0	0	1	0	1	1	0	0
Midazolam	15	1	0	1	1	0	0	1	0	1	1	0	0
Mirtazepine	9	2	0	2	2	0	0	2	0	2	2	0	0
Morphine ⁶	177	85	15	70	76	6	3	84	13	71	76	5	3
Monoacetylmorphine ⁷	28	26	4	22	24	1	1	26	4	22	24	1	1
Naproxen	2	1	0	1	1	0	0	0	0	0	0	0	0
Nefazodone	1	0	0	0	0	0	0	0	0	0	0	0	0
Nortriptyline ⁸	40	25	0	25	12	11	2	7	0	7	5	2	0
Olanzapine	5	3	0	3	3	0	0	3	0	3	3	0	0
Oxcarbazepine	1	0	0	0	0	0	0	0	0	0	0	0	0
Oxycodone	66	35	2	33	28	4	3	34	1	33	28	4	2
Paroxetine	9	5	0	5	3	2	0	5	0	5	3	2	0
Phencyclidine (PCP)	3	1	0	1	1	0	0	1	0	1	1	0	0
Phenobarbital	15	4	0	4	2	1	1	4	0	4	2	1	1
Phentermine	1	0	0	0	0	0	0	0	0	0	0	0	0

Table 9-3

2005 Drug & Poison Caused Deaths, page 4

Drug Name	Total Deaths out of 1,945 Cases in which Drug was Present	Overdose Deaths (269)						Overdose Deaths (269)					
		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
Phenytoin	17	3	1	2	1	2	0	2	0	2	0	2	0
Promethazine	12	8	1	7	7	0	1	7	0	7	6	0	1
Propoxyphene	7	5	0	5	2	1	2	5	0	5	2	1	2
Pseudoephedrine	9	2	0	2	2	0	0	1	0	1	1	0	0
Quetiapine	2	1	0	1	1	0	0	0	0	0	0	0	0
Salicylates	10	4	1	0	3	0	1	1	1	0	1	0	0
Sertraline	18	11	0	11	9	1	1	11	0	11	9	1	1
Sufentanil	1	1	0	1	1	0	0	1	0	1	0	0	1
Temazepam	9	3	0	3	3	0	0	1	0	1	1	0	0
Thioridazine	1	1	0	1	1	0	0	1	0	1	1	0	0
Topiramate	4	2	0	2	1	0	1	2	0	2	1	0	1
Tramadol	9	3	0	3	3	0	0	3	0	3	3	0	0
Trazodone	28	15	0	15	13	2	0	12	0	12	10	2	0
Valproic Acid	4	1	0	1	1	0	0	1	0	1	1	0	0
Venlafaxine	11	7	0	7	6	1	0	7	0	7	6	1	0
Zolpidem	9	1	0	1	1	0	0	1	0	1	1	0	0
Zonisamide	1	0	0	0	0	0	0	0	0	0	0	0	0

¹ Table 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 4 additional cases of drug overdose deaths in which no sample was available for analysis. Two 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 include one death certified as the ingestion of an unknown caustic substance, and three delayed overdose deaths of the following drugs: (1) amitriptyline and amlodipine; (2) cocaine; (3) opiate or methadone.

² Cannabinoids 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.

³ Carbon monoxide fatalities are listed if the level of carboxyhemoglobin was 10% or greater. Suicides due to intentional inhalation of carbon monoxide accounted for 13 of the carbon monoxide deaths. In 11 of the 13 carbon monoxide suicides, other drugs may have been present, but they did not contribute to the death. In two of the 13 carbon monoxide suicides, death was attributed to carbon monoxide in combination with other drugs ((1) amitriptyline, fluoxetine and diazepam, and (2) cocaine and diphenhydramine). Accidental deaths due to inhalation of carbon monoxide accounted for four of the carbon monoxide deaths. One of the accidental carbon monoxide deaths was attributed solely to inhalation of carbon monoxide and three were attributed to carbon monoxide in combination with drugs (one with cocaine and two with methamphetamine). There was one undetermined death due to carbon monoxide in combination with cocaine. Other sources of carbon monoxide involved fire fatalities.

⁴ Includes benzoylcegonine.

⁵ Out of the 45 overdose deaths involving codeine, in 43 cases, the source of the drug was likely small quantities of codeine present in heroin used by illicit drug users. In only 2 cases the source of the drug was pharmaceutical codeine.

⁶ There were 85 overdose deaths involving morphine. In 56 of these cases, the source of the drug was likely the morphine derived from heroin preparations used by illicit drug users. In 20 of these cases the source of the morphine was likely pharmaceutical morphine, and in 9 of these cases the source of the morphine was not known.

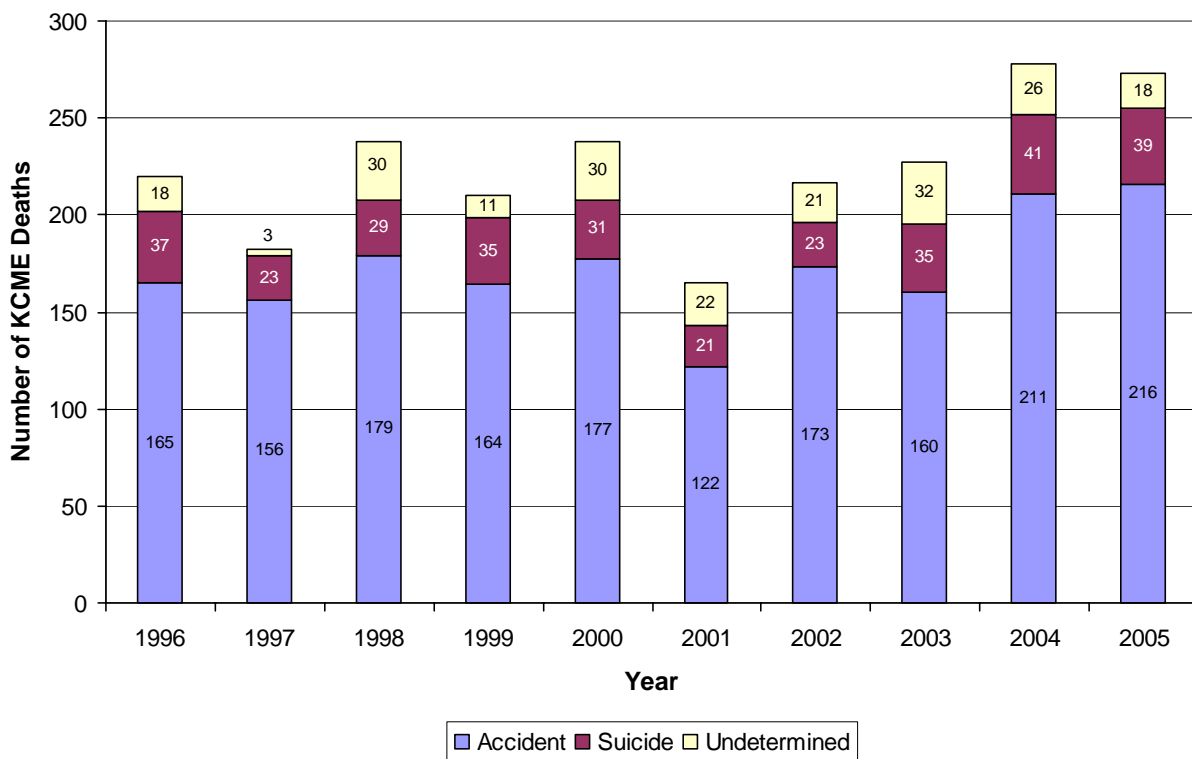
⁷ Monoacetylmorphine (MAM) is the first breakdown product of heroin, otherwise known as diacetylmorphine. The presence of MAM, therefore, proves the source of opiate to be heroin. However, the absence of MAM does not imply that the source of the opiate was not heroin.

⁸ In 6 of the 25 total cases, nortriptyline was present without the presence of amitriptyline, indicating that the source of the drug was, in fact, nortriptyline. In the other 19 cases, amitriptyline was also present, indicating that the nortriptyline was present due to the breakdown of amitriptyline. There were six nortriptyline overdose deaths, five accidental multiple drug overdoses and one suicidal multiple drug overdose.

Table 9-4 Total Overdose Deaths / Accident / Suicide / Undetermined / King County Medical Examiner / 1996 - 2005⁹

OVERDOSE DEATHS	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Totals	219	182	231	210	235	165	216	226	278	273

Graph 9-1 Drug & Poison Caused Deaths / Accident / Suicide / Undetermined / King County Medical Examiner / 1996 - 2005

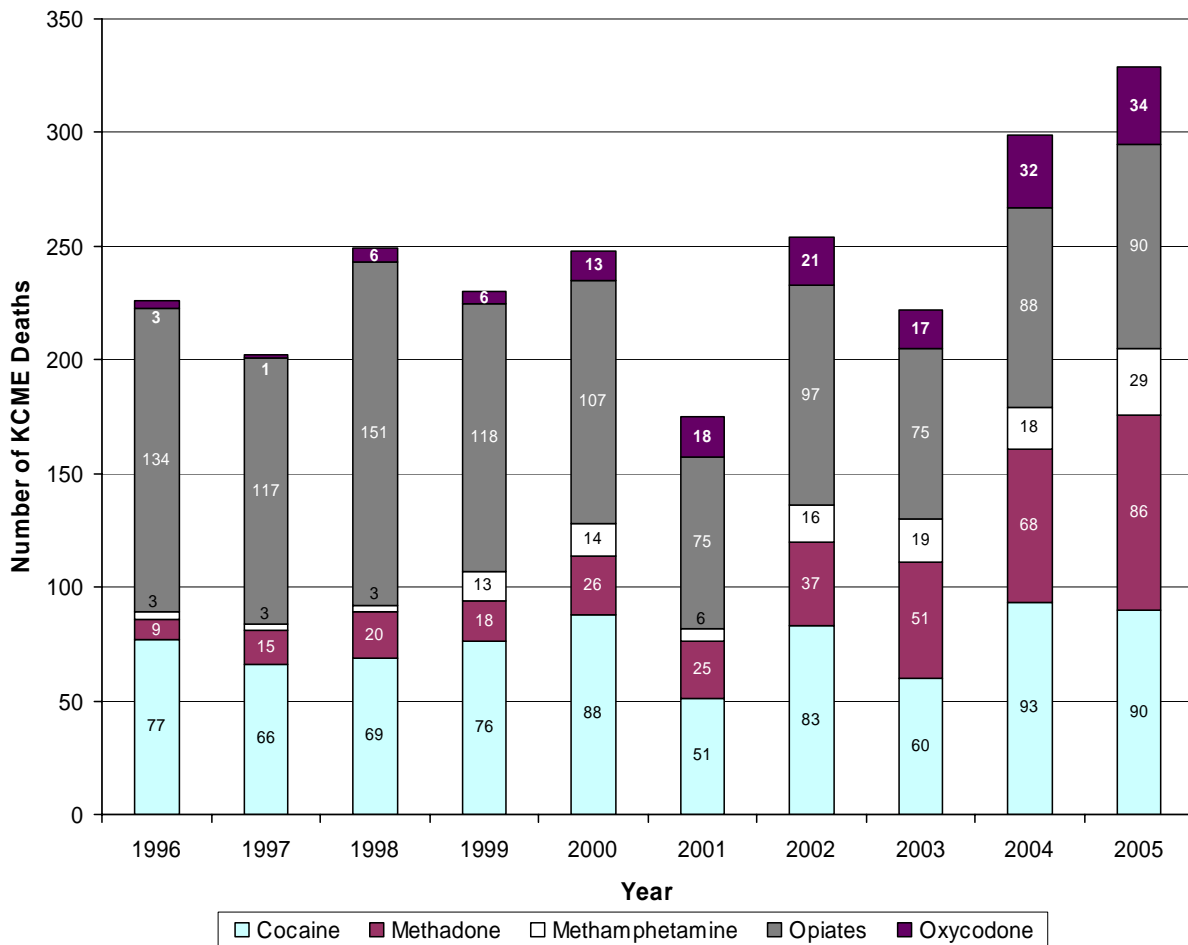


⁹ Includes all deaths classified as overdose, regardless of whether lab samples were available for analysis.

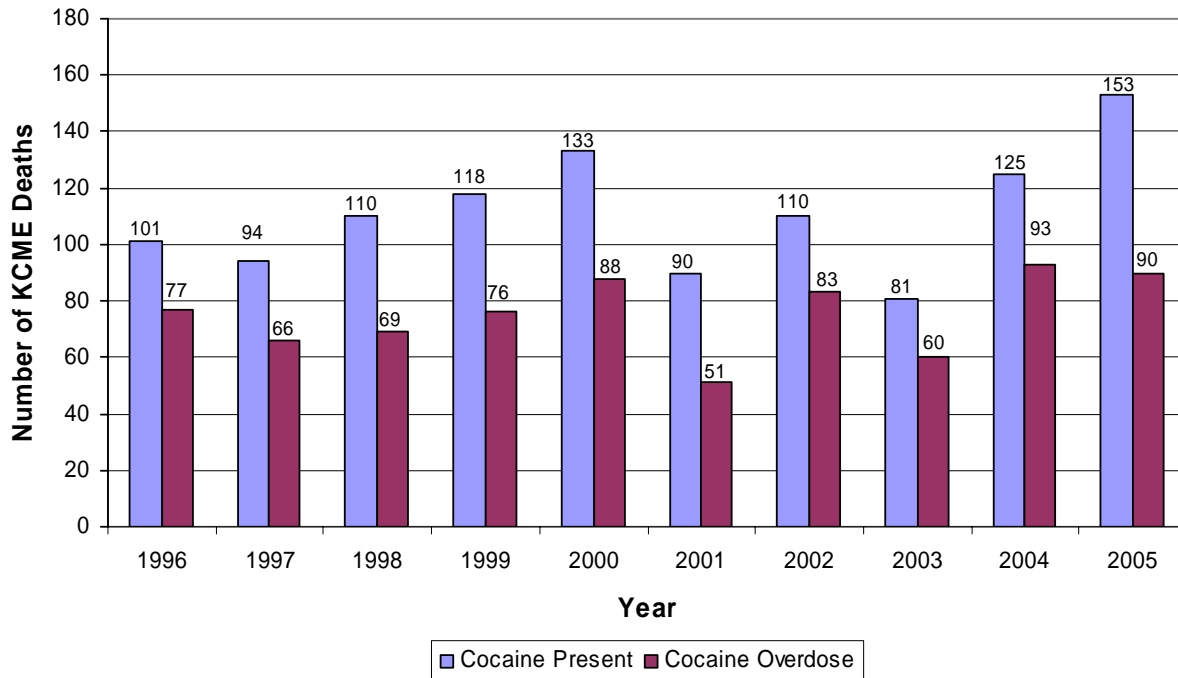
Table 9-5 Overdose Deaths Involving Cocaine, Methadone, Opiates, Methamphetamine, or Oxycodone / KCME / 1996 - 2005

DRUG	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cocaine	77	66	69	76	88	51	83	60	93	90
Methadone	9	15	20	18	26	25	37	51	68	86
Methamphetamine	3	3	3	13	14	6	16	19	18	29
Opiates	134	117	151	118	107	75	97	75	88	90
Oxycodone	3	1	6	5	13	18	21	17	32	34

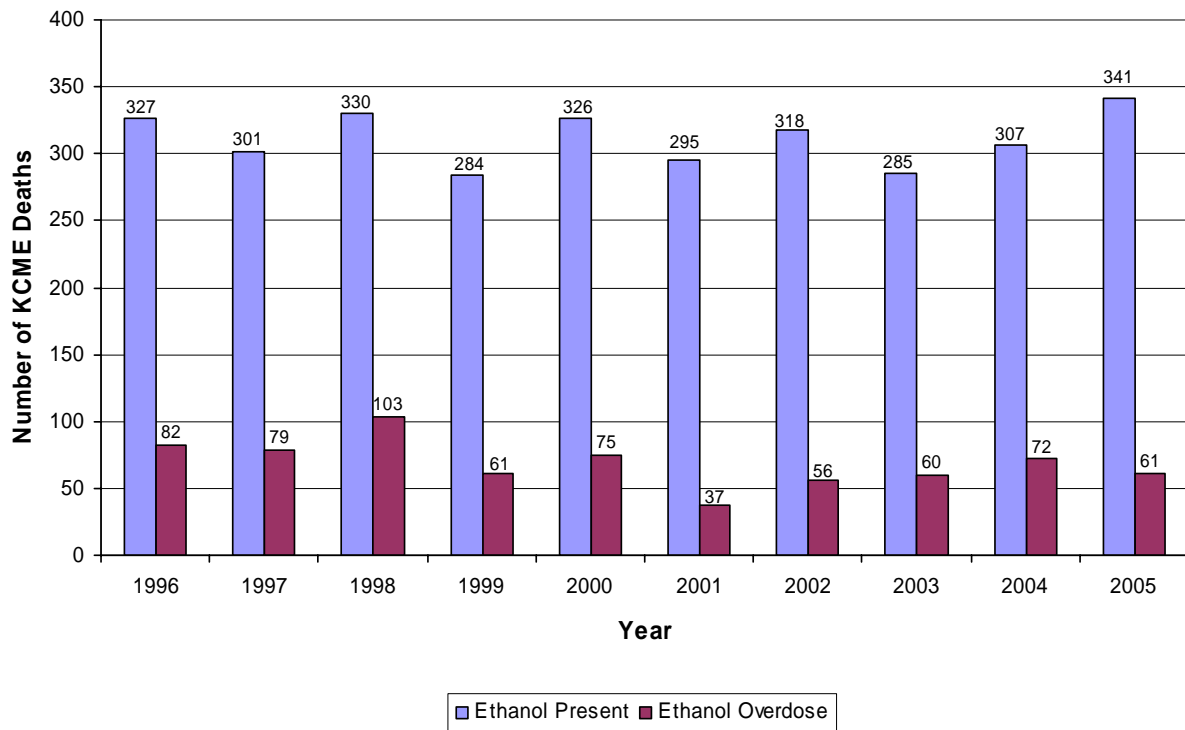
Graph 9-2 Overdose Deaths Involving Cocaine, Methadone, Opiates, Methamphetamine, or Oxycodone / KCME / 1996 – 2005



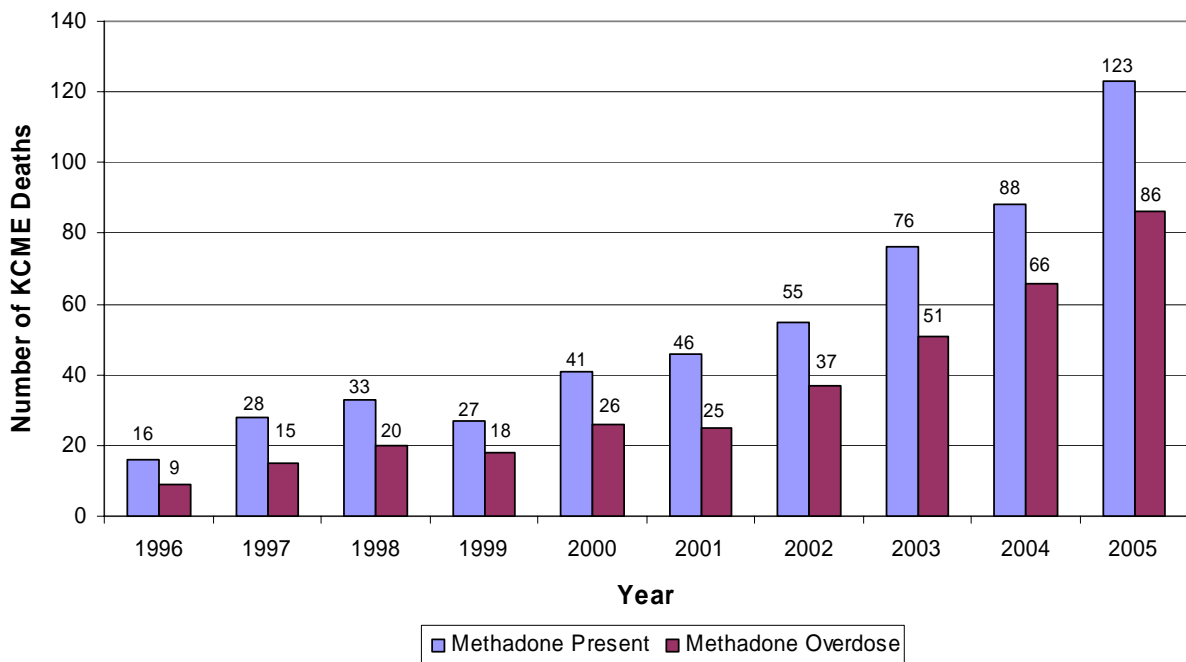
Graph 9-3 Cocaine Involved Deaths / King County Medical Examiner / 1996 - 2005



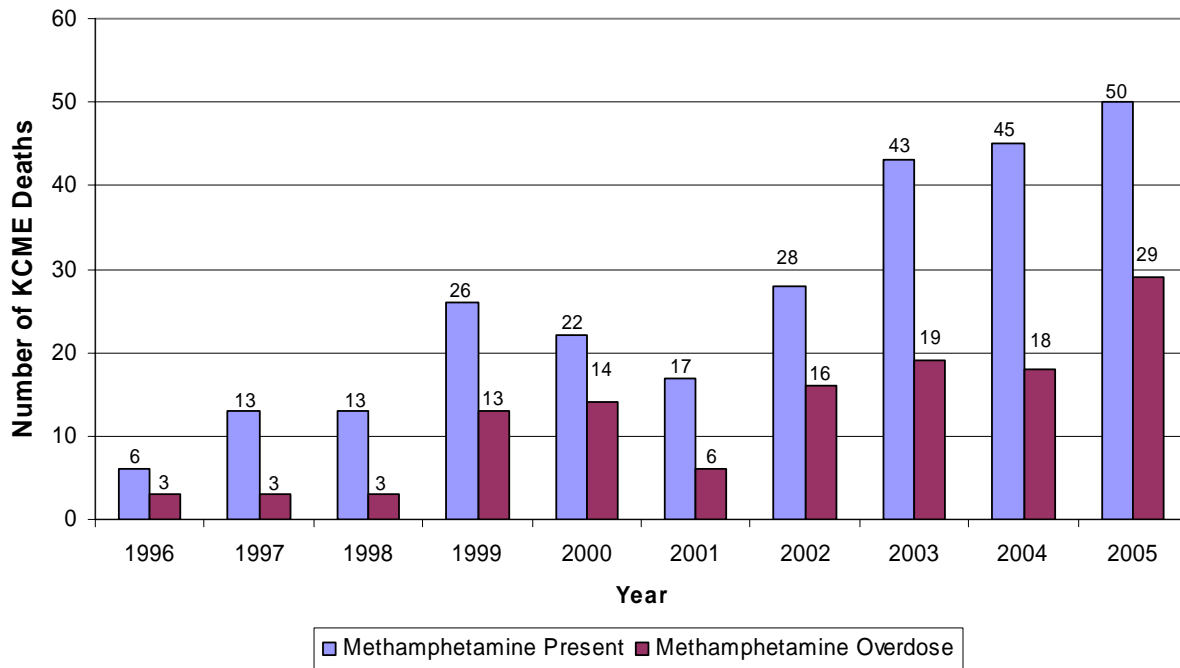
Graph 9-4 Ethanol Involved Deaths / King County Medical Examiner / 1996 - 2005



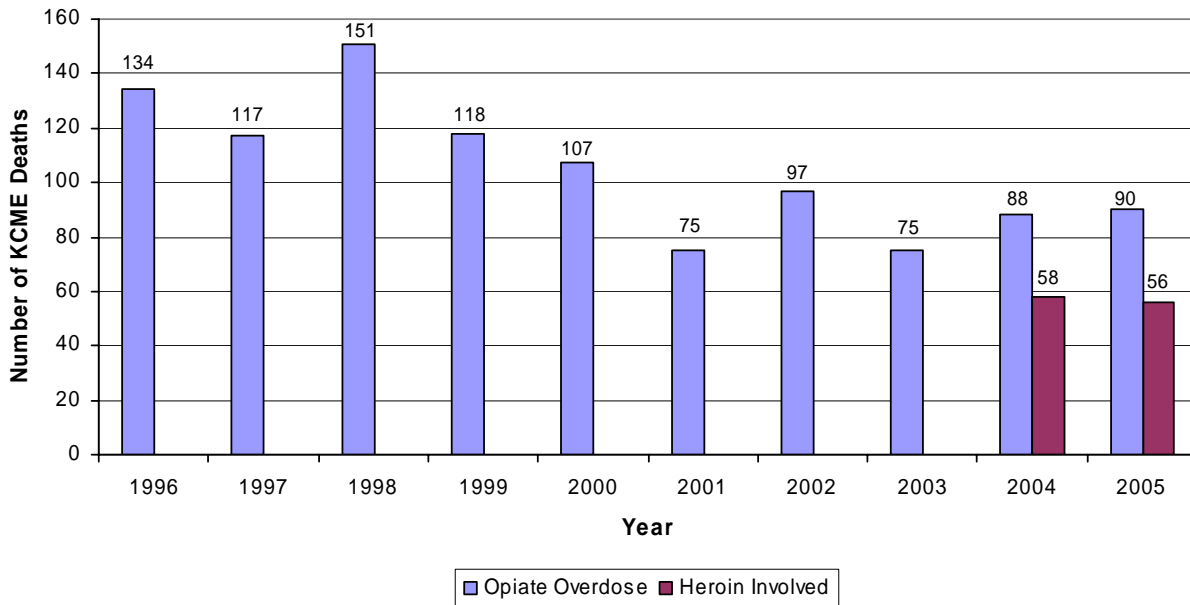
Graph 9-5 Methadone Involved Deaths / King County Medical Examiner / 1996 - 2005



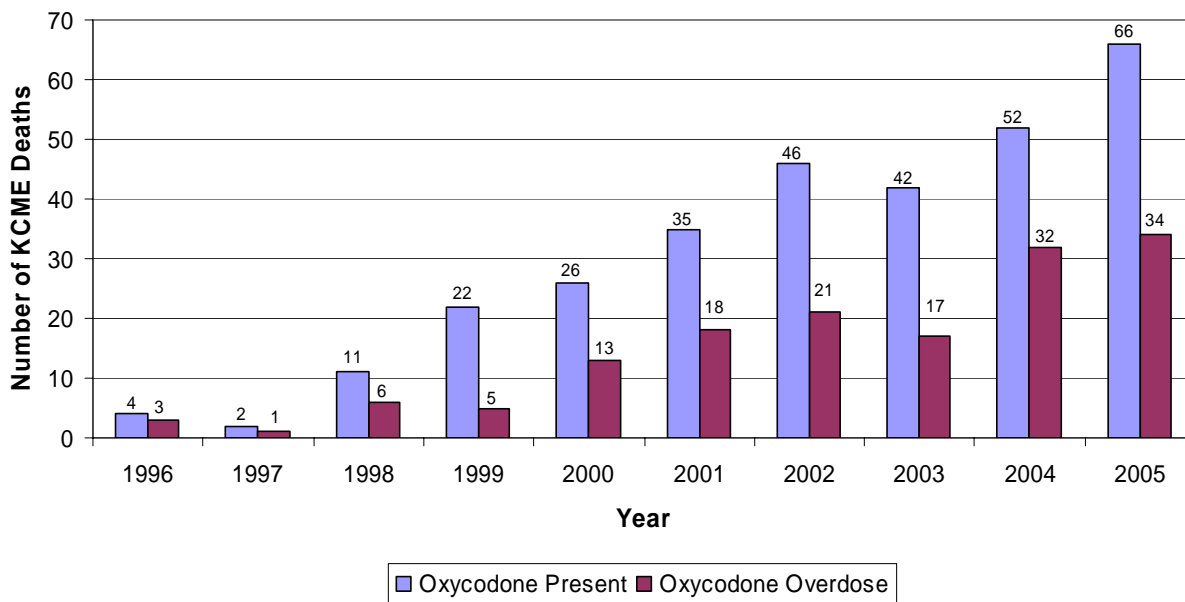
Graph 9-6 Methamphetamine Involved Deaths / KCME / 1996 – 2005



Graph 9-7 Opiate Overdose Deaths & Heroin-Related Deaths / KCME / 1996 - 2005¹⁰



Graph 9-8 Oxycodone Involved Deaths / King County Medical Examiner / 1996 - 2005



¹⁰ 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 / 1996 – 2005

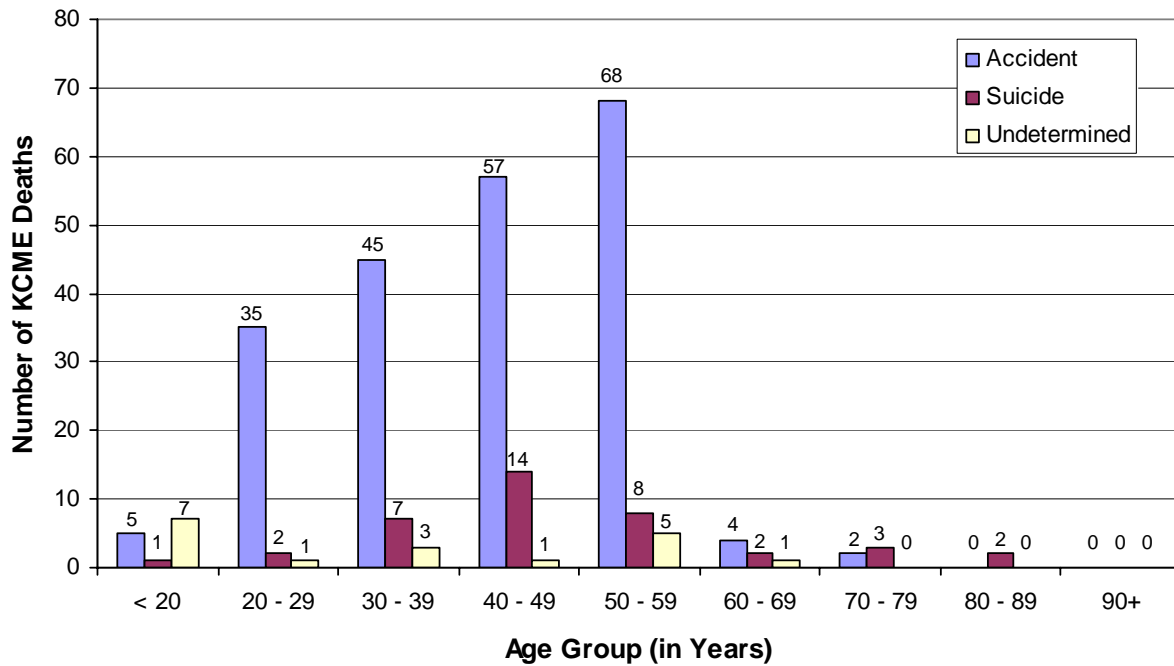


Table 9-6 Drug / Poison Deaths / Age / King County Medical Examiner / 2005

AGE GROUP (YEARS) / SEX	MANNER OF DEATH			SUB	
	ACCIDENT	SUICIDE	UNDETERMINE D	TOTAL	TOTAL
<20	5	1	7		13
<i>Male</i>	3	1	3	7	
<i>Female</i>	2	0	4	6	
20-29	35	2	1		38
<i>Male</i>	29	2	1	32	
<i>Female</i>	6	0	0	6	
30-39	45	7	3		55
<i>Male</i>	31	5	2	38	
<i>Female</i>	14	2	1	17	
40-49	57	14	1		72
<i>Male</i>	38	9	0	47	
<i>Female</i>	19	5	1	25	
50-59	68	8	5		81
<i>Male</i>	48	4	1	53	
<i>Female</i>	20	4	4	28	
60-69	4	2	1		7
<i>Male</i>	3	1	0	4	
<i>Female</i>	1	1	1	3	
70-79	2	3	0		5
<i>Male</i>	1	2	0	3	
<i>Female</i>	1	1	0	2	
80-89	0	2	0		2
<i>Male</i>	0	0	0	0	
<i>Female</i>	0	2	0	2	
90+	0	0	0		0
<i>Male</i>	0	0	0	0	
<i>Female</i>	0	0	0	0	
Totals	216	39	18		273

