

INJURY UPDATE

*A Report to Oklahoma Injury Surveillance Participants**

August 30, 2002

Unintentional Drug/Poison-Related Deaths, Oklahoma, 1987-1999

In the United States, unintentional drug or poison exposure is the third leading cause of unintentional injury deaths behind motor vehicle accidents and falls, accounting for over 7,000 deaths each year. Unintentional drug or poisoning deaths are the seventh leading cause of unintentional injury deaths in Oklahoma.

According to the Oklahoma Office of the Chief Medical Examiner, there were 1166 (average annual rate 2.8 per 100,000 population) Oklahomans who died from 1987-1999 as a result of a drug or poison exposure. The number of drug/poison deaths remained relatively stable from 1987-1992, and began to increase in 1993.

Comparing deaths from 1987-1989 and 1997-1999, the number of deaths increased over 150%. While prescription and non-prescription medications and illicit drugs both increased considerably over this time, the number of carbon monoxide (CO) deaths dropped considerably from 1994-1998 (Table 1).

Medication-related and illicit drug-related deaths accounted for nearly 2/3 of unintentional drug/poisoning deaths. The annual average number of medication-related deaths from 1997-1999 (57) was more than 4 times higher than the annual average number of deaths from 1987-1989 (14). The leading types of medications found in the decedent bloodstreams were: narcotic analgesics (248), antianxiety (76), tricyclic antidepressants (TCA) (64), muscle relaxants (40), hypnotic/sedatives (38), and non-narcotic analgesics (28) (Figure 1). The most common narcotics found in the decedents' bloodstreams were: methadone, propoxyphene, and hydrocodone.

The annual average number of illicit drug-related deaths from 1997-1999 (50) was 7 times higher than the years from 1987-1989 (7).

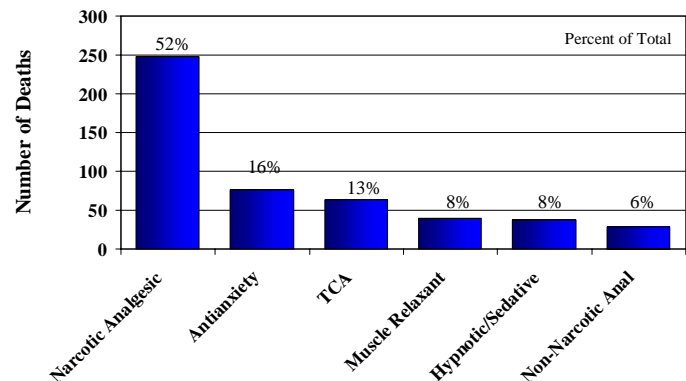
Table 1: Unintentional Drug/Poison-Related Deaths by Type and Year, Oklahoma, 1987-1999

| Drug Type | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | Total | % |
|------------|----|----|----|----|----|----|-----|----|----|-----|-----|-----|-----|-------|-----|
| MEDICATION | 12 | 20 | 9 | 9 | 21 | 15 | 38 | 21 | 24 | 48 | 33 | 58 | 80 | 388 | 33 |
| ILLICIT | 5 | 5 | 10 | 10 | 12 | 16 | 23 | 25 | 40 | 38 | 51 | 52 | 48 | 335 | 29 |
| ALCOHOL | 11 | 21 | 12 | 10 | 11 | 11 | 21 | 17 | 20 | 15 | 13 | 16 | 14 | 192 | 16 |
| CO | 14 | 11 | 15 | 2 | 10 | 13 | 22 | 7 | 7 | 8 | 5 | 5 | 13 | 132 | 11 |
| INHALANTS | 2 | 4 | 2 | 5 | 0 | 5 | 4 | 3 | 3 | 6 | 3 | 3 | 3 | 43 | 4 |
| ILL/MED* | 1 | 1 | 5 | 2 | 4 | 0 | 3 | 3 | 3 | 5 | 4 | 6 | 6 | 43 | 4 |
| POISONS | 1 | 1 | 3 | 4 | 7 | 4 | 1 | 1 | 1 | 0 | 3 | 2 | 1 | 29 | 2 |
| OTH/UNSP** | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | <1 |
| TOTAL | 47 | 63 | 56 | 42 | 65 | 64 | 113 | 77 | 98 | 120 | 113 | 143 | 165 | 1166 | 100 |

*Illicit drug and medication combination.

**Oth/Unspe includes both (2 Inhalant/Poison, 1 Medication/Inhalant and 1 Drug N/S).

Figure 1: Unintentional Medication-Related Deaths by Drug Type, Oklahoma, 1987-1999

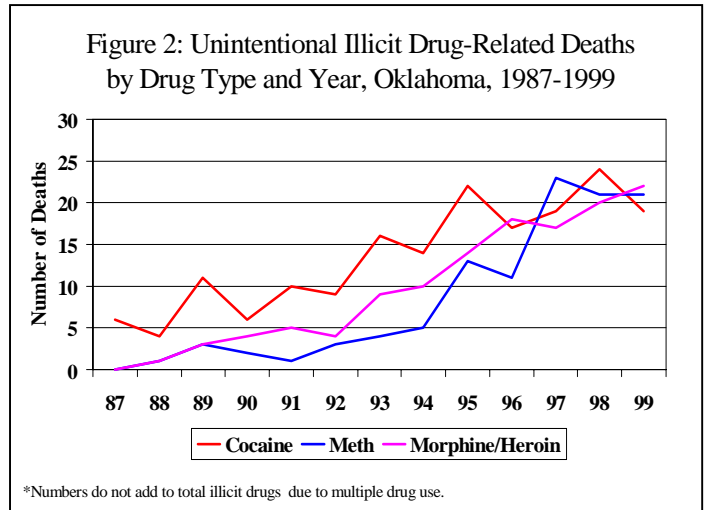


*Numbers do not add to medication total due to multiple medication use.

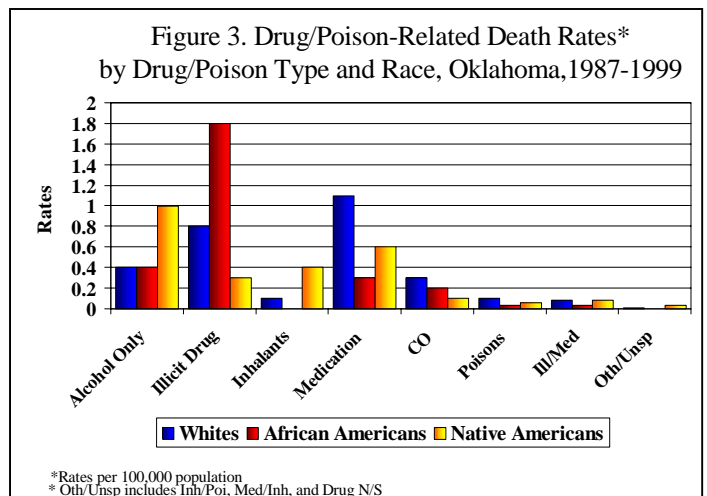
*The INJURY UPDATE is a report produced by the Injury Prevention Service, Oklahoma State Department of Health. Other issues of the INJURY UPDATE may be obtained from the Injury Prevention Service, Oklahoma State Department of Health, 1000 N.E. 10th Street, Oklahoma City, Oklahoma 73117-1299, 405/271-3430 or 1-800-522-0204 (in Oklahoma). INJURY UPDATES and other IPS information is also available at www.health.state.ok.us/program/injury.

The leading causes of illicit drug-related deaths from 1987-1999 were: cocaine (177), morphine/heroin (127), and methamphetamines (108). Deaths associated with these drugs have risen since 1993 and have remained consistently high (Figure 2).

Overall, males accounted for 826 (71%) of drug/poison-related deaths (avg. annual rate 4 per 100,000 population). Males had more deaths in all drug/poison categories. The average annual rates varied slightly among racial groups, whites (2.8 per 100,000 population) had the highest rates compared to African Americans (2.7 per 100,000) and Native Americans (2.6 per 100,000). The types of drugs/poison used by race varied as well. Whites had the highest rates for all drug/poison categories except for alcohol, inhalants, and illicit drugs (Figure 3). The rates of alcohol intoxication (no other drug involved) and inhalants were 2.5 and 4 times higher, respectively, in Native Americans than other races. The death rate for illicit drugs in African Americans was over 2 times higher than for whites and 6 times higher than in Native Americans.



Persons 35-44 years of age accounted for 35% (403/1166) of all deaths, with an average annual rate of 6.3 per 100,000 population (Table 2). There were 24 drug/poison-related deaths among children <15 years of age. Six (25%) deaths were from medications, 5 (21%) carbon monoxide, 4 (17%) inhalants, 4 (17%) poisons, 1 (4%) alcohol, 1 (4%) illicit drugs, and 3 (13%) unknown drug/poison.



Among persons 14 years and older, alcohol was a contributing factor in 38% (438/1142) of unintentional drug/poison-related deaths. Among Native Americans, alcohol was a contributing factor in 61% (52/85) of unintentional drug/poison-related death cases, compared to 36% (344/946) among whites, and 30% (26/87) among African Americans.

Table 2. Drug/Poison Death Rates by Age Group, Oklahoma, 1987-1999

| Age Group | Drug/Poison Deaths (Percents) | *Rates per 100,000 |
|-------------|-------------------------------|--------------------|
| 0-4 years | 12 (1%) | .4 |
| 5-14 years | 12 (1%) | .2 |
| 15-24 years | 110 (9%) | 1.8 |
| 25-34 years | 263 (22%) | 4.4 |
| 35-44 years | 403 (35%) | 6.3 |
| 45-54 years | 224 (19%) | 4.6 |
| 55-64 years | 65 (6%) | 1.8 |
| 65+ years | 77 (7%) | 1.3 |
| Total | 1166 (100%) | 2.8 |

CASE BRIEFS

- A 42-year-old male with a long history of alcohol and drug abuse was found dead by his roommate. He was reportedly drinking and using illicit drugs all week and was very drunk the night prior to death. There was evidence of crack, methamphetamine and marijuana use found at the scene. Autopsy showed the cause of death to be olanzapine and alcohol toxicity.
- A 31-year-old female was found dead by her husband the following morning, after “huffing” the prior evening. The scene revealed they were probably huffing carburetor cleaner. The cause of death was felt to be toluene intoxication with potentially fatal levels found in the blood.
- A 37-year-old female and her husband were found dead by their brother-in-law. The couple were reportedly alcoholics and had not been seen in three days. The brother-in-law installed a floor gas furnace, but did not install a vent pipe. The gas company came to read the meter; it read 850 PPM of carbon monoxide (20 PPM is the maximum acceptable range). Probable cause of death was carbon monoxide poisoning.
- A 47-year-old male and his wife were both drug abusers, including prescription medications and illicit drugs. The evening prior to death they had a “big party” in their home. The couple consumed soma, lortab, valium, methadone, and cocaine. After the party ended, the couple went to bed. Both were found dead with a white chalky froth in their mouth. The probable cause of death was methadone intoxication.
- A 21-year-old female had reportedly used 20-35 cc’s of methamphetamine. The deceased reportedly ran through the residence screaming and removing her clothing. A friend at the scene placed her in a hot bath to “help her sweat it out”. The deceased was then taken to the bedroom and placed on a pile of bedding located on the floor. The friend left for approximately 20 minutes, upon returning the patient was unresponsive. The probable cause of death was toxic effects of methamphetamine.

PREVENTION

Unintentional drug/poison-related deaths can be prevented, though educational efforts among substance abusers are likely very challenging. Understanding how drugs interact with one another and improvements in managing poison exposure can help reduce the number of deaths from unintentional drug/poison exposure. The following prevention methods can be used to reduce the number of unintentional drug/poison-related deaths:

- Have patients provide complete medical records. Medical history records should contain surgeries, immunizations, allergies, and family health history.
- Conduct a complete physical examination with the appropriate diagnostic/blood test before prescribing medications. Check for signs of nervousness, irritability, tremors, poor personal hygiene, and other signs that may indicate drug abuse.
- Maintain an up-to-date listing of all drugs that patients are currently taking to prevent potential adverse drug interactions.
- Patients with a history of heavy alcohol consumption should be counseled extensively about the dangers of combining alcohol and medication.
- If prescribing medications that can be addictive or abused, limit the amount prescribed and limit the amount of prescription refills.

- Randomly have patients bring prescriptions to the office. Count all medications to make sure patients are taking medications properly.
- Conduct widespread public education of the new national number for Poison Control (1-800-222-1222) if there is a suspected drug overdose or adverse reaction. This number will connect you with your area poison control center.
- Educate children, adolescents, and adults regarding the dangers of alcohol, drugs, poisons, and inhalants. Abuse of these substances can be fatal.
- Parents should be advised to keep a bottle of ipecac syrup (vomiting agent) in the home. All patients should be advised to contact their physician or Poison Control center for professional advice before consuming ipecac syrup.

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