



### K8 Pattern of Drug Abuse Fatalities in Teenagers

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After attending this presentation, the participants will learn the trend and pattern of drug abuse deaths among teens and will understand the urgent need to develop an effective prevention and treatment programs for teenager addicts.

Drug abuse deaths represent one of the most serious public health problems in children. These study findings show a significant increase of drug abuse deaths among teens in the State of Maryland over the past 16 years. This presentation will impact the forensic community and humanity as it suggests that additional steps are required to reduce drug abuse in teenagers.

In the United States, there is growing concern about an increase in illicit drug use and associated fatalities among young people, especially teenagers. The Office of the Chief Medical Examiner (OCME) has recorded a significant increase of drug abuse deaths among teenagers in Maryland since 1999. This study focuses on the trend and pattern of fatal drug abuse among teenagers in the State of Maryland investigated by the OCME.

A retrospective study of Maryland OCME cases, over a 16-year period between 1991 and 2006, yielded a total of 149 deaths caused by drugs of abuse among teenagers age 13 –19 years in Maryland. Ninety-six deaths (65%) were the result of narcotic drug use, such as heroin/morphine (N=59), methadone (N=18), methadone and heroin/morphine (N=3), oxycodone (N= 9), fentanyl (N = 5), tramadol (N= 1), and propoxyphene (N= 1). Twenty-nine deaths (19%) involved both narcotics and cocaine use; 4 deaths (3%) involved both narcotics and methylenedioxymethamphetamine (MDMA), and 6 deaths (4%) were due to cocaine use exclusively. Volatile substances accounted for 14 deaths (9%), including butane (N= 6), freon (N=4), nitrous oxide (N= 3), and propane (N= 1).

Over the sixteen-year study period, the number of drug abuse deaths among teenagers increased sharply in Maryland from six cases in 1991 to 15 cases in 2006, a 150% increase. Narcotic drugs, especially heroin/morphine and methadone played a major role in the rising number of teenager drug abuse deaths. From 1991 to 1998, 22 teenagers died of narcotic drug intoxication. Of the 22 narcotic drug abuse deaths, 18 deaths were due to heroin/morphine use, 1 death was from methadone and heroin/morphine use, 2 deaths involved fentanyl use, and 1 death was caused by tramadol use. From 1999 to 2006, 74 teenagers died of narcotic drug use, with 40 deaths due to heroin/morphine use, followed by methadone use (N = 18), oxycodone use (N =9), fentanyl use (N =3), methadone and heroin/morphine (N =2), and propoxyphene (N =2).

Maryland is made up of 23 counties and Baltimore City. The majority (77.9%) of teenager drug abuse deaths occurred among county residents. Teenager drug deaths in the counties increased sharply from 30 cases during 1991 through 1998 to 86 cases during 2000 through 2006. The number of teenager drug abuse deaths in Baltimore City stayed relatively constant over the 16-year period with a slight decrease (19 cases between 1991 and 1999; 16 cases between 2000 and 2006).

In Maryland, drug abuse deaths in teenagers occurred more frequently in March, October, and November. Fewer deaths occurred in April, June, and December than in the other months.

White teenagers (86%) were much more frequently involved in drug abuse deaths than black teenagers. More male teenagers (81%) died of drug abuse than female teenagers. During 2005 and 2006, 17 of 166 teen homicide victims (10%) showed evidence of some form of illicit drug activity.

#### **Drug Abuse Deaths, Epidemiology, Forensic Toxicology**