

## Cocaine, Heroin, Morphine & MDMA Deaths, 2004-2006

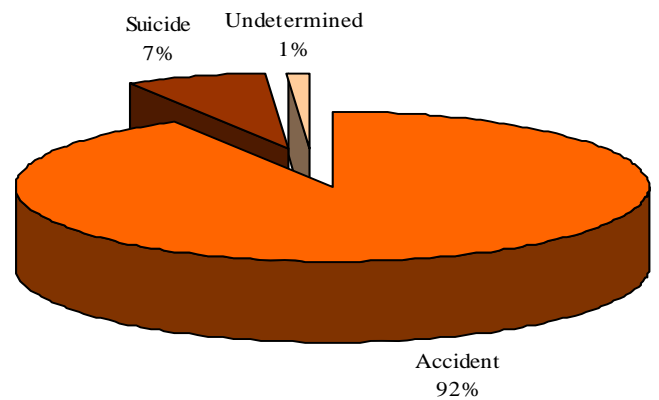
During the years of 2004 through 2006, there were 1,828 drug deaths (excluding alcohol-only deaths) in Virginia; the majority were Virginia residents (94.7%) resulting in a residential rate of 7.6 drug deaths per 100,000. A range of drugs was responsible for these deaths including prescription, illegal, and over-the-counter drugs. The majority of these cases were whites (82%), males (63%), and accidents (78%). This review will focus on 3 illegal drugs: cocaine, heroin and methylenedioxyamphetamine (MDMA) and one potentially illegal drug metabolite, morphine. Morphine is included in this review because while it can be legally prescribed by a physician it is also a metabolite of heroin. The presence of morphine and additional heroin metabolites often allows differentiation between heroin use and prescription morphine, but this is not always the case.

Cocaine, heroin, morphine and MDMA (CHMM) were completely responsible for or combined with other drugs to be responsible for 779 deaths (Table 1). The vast majority were accidental deaths (Figure 1), male (Figure 2), and white (Figure 3). Resident males died from CHMM at a rate over 2.6 times that of resident females (4.7 versus 1.8 per 100,000 VA population). A racial difference was seen in that blacks had the highest rate of illegal drug deaths (4.3 per 100,000), which was 1.4 times that of whites, 3.4 times that of Hispanics and over 12 times for Asians.

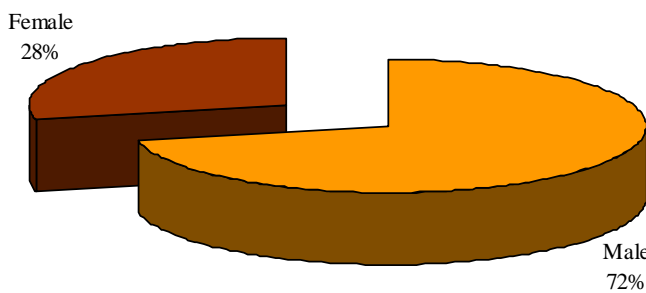
**Table 1. Combination of Drugs Causing Death**

Drug Combination	Deaths
Cocaine	404
Heroin	127
Morphine	129
MDMA	4
Cocaine & Heroin	91
Cocaine & Morphine	23
Cocaine & MDMA	1
<b>Total</b>	<b>779</b>

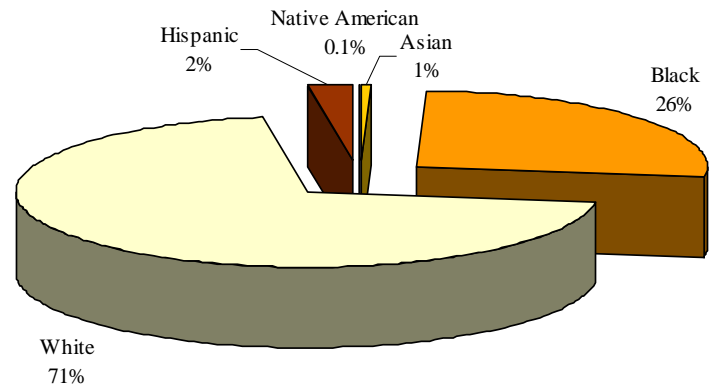
**Figure 1. CHMM-Related Deaths by Manner, 2004-2006**



**Figure 2. CHMM-Related Deaths by Gender, 2004-2006**

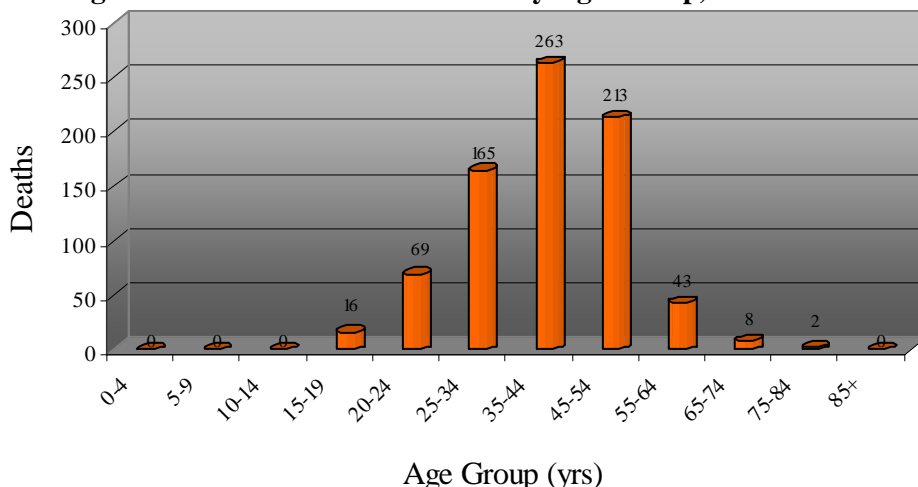


**Figure 3. CHMM-Related Deaths by Race/Ethnicity**



The age group with the highest CHMM deaths was the 35-44 age group (Figure 4). Residential rates followed the same pattern seen in Figure 4 in that the 35-44 age group had the highest rate with 7.1 per 100,000 VA population. An age bias was seen after the 35-44 age group was removed from the analysis. The older age groups tended to lethally use cocaine and morphine more than the younger groups while the younger groups lethally used heroin. MDMA was lethally involved in just a few cases but all were found in the younger age groups.

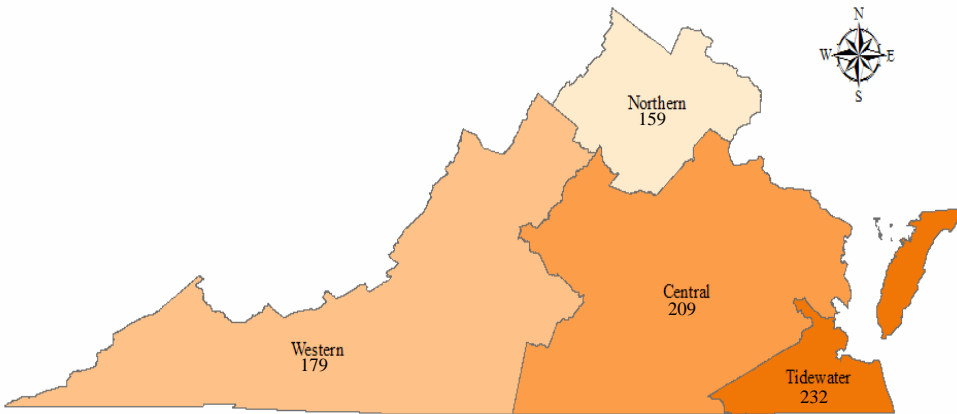
**Figure 4. CHMM-Related Deaths by Age Group, 2004-2006**



The geographical distribution of illegal drug deaths showed that more occurred in the Office of the Chief Medical Examiner’s (OCME) Tidewater district (Figure 5). This differed greatly from the geographical disparity seen in the prescription drug deaths of fentanyl, hydrocodone, methadone, and oxycodone (FHMO) in which the Western OCME district overwhelming had the burden of these types of deaths. [NOTE: For more information, refer to the previous OCME public health corner on these FHMO-related deaths.] However, the top 10 rates of CHMM-related deaths were found in cities/counties across the Commonwealth of Virginia (Table 2).

Figure 5. Cocaine, Heroin, Morphine, & MDMA-Related Drug Deaths by OCME District, 2004-2006

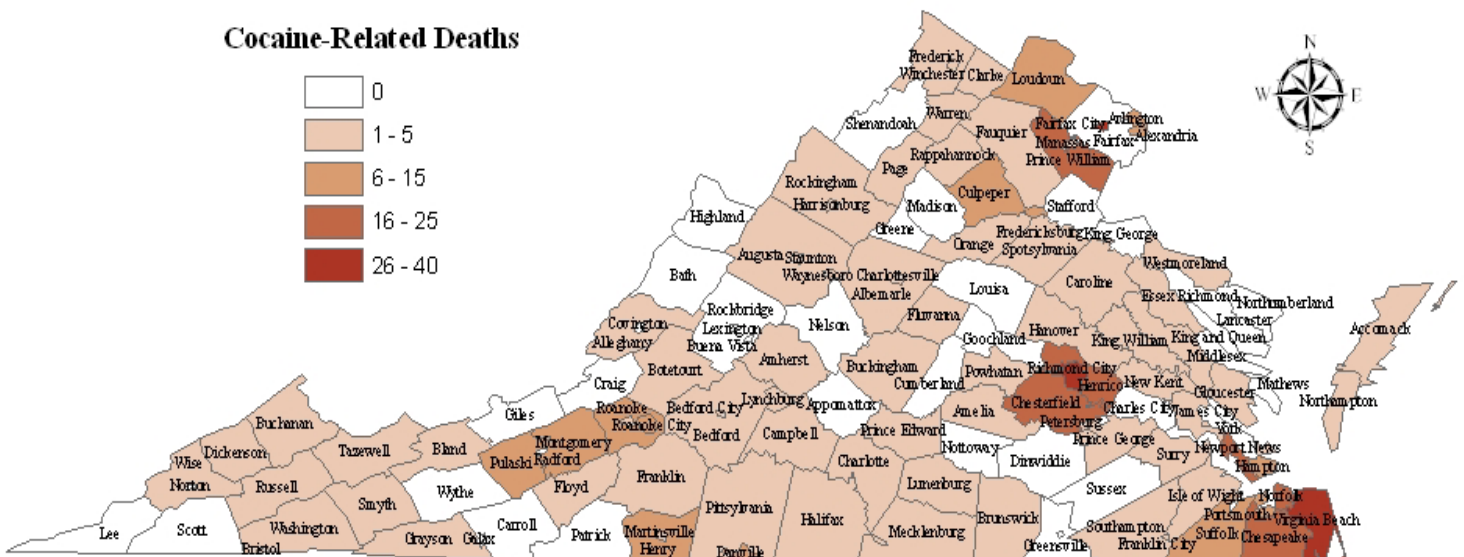
Table 2. Top 10 Rates for Counties/Cities by Residence for CHMM Deaths, 2004-2006



City/County of Residence	Rate per 100,000
Pulaski County	12.3
Richmond City	12.3
Franklin City	11.6
Norton City	9.0
Dickenson County	8.2
Winchester City	8.0
Roanoke City	8.0
Waynesboro City	7.9
Portsmouth City	7.6
Southampton County	7.5

Cocaine caused the most deaths by illegal drugs in Virginia. The highest number of cocaine-related deaths was found in the central and eastern parts of the state (Figure 6). This map included cases in which cocaine and another illegal drug caused death. [NOTE: Other drugs may have also contributed to the death of an individual.]

Figure 6. Cocaine-Related Deaths in Virginia, 2004-2006



Heroin was the second greatest cause of numbers of deaths by an illegal drug when cases in which heroin alone or heroin combined with another illegal drug were counted (Figure 7). [NOTE: Other drugs may have also contributed to the death of an individual.]

