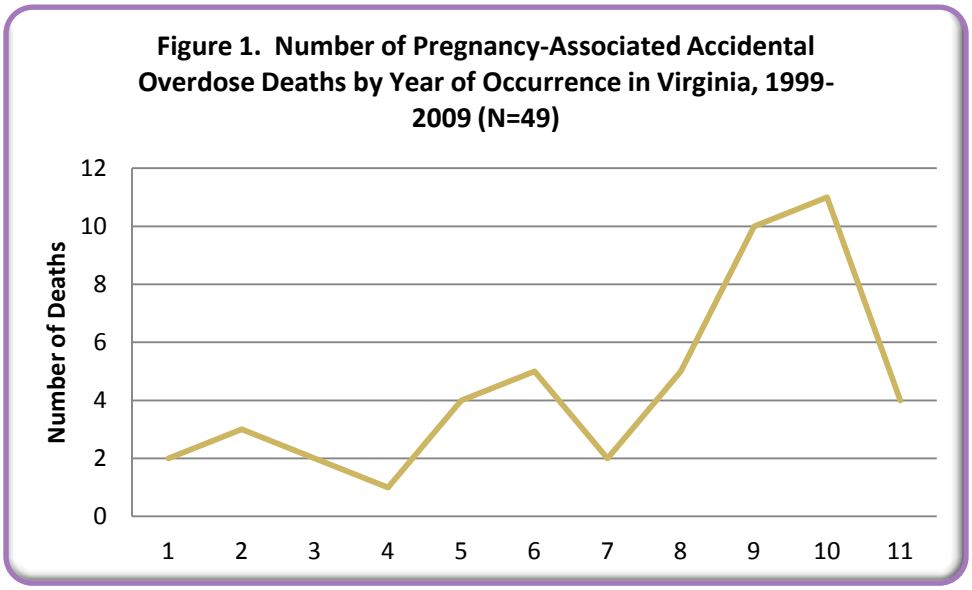
PREGNANCY-ASSOCIATED DEATHS DUE TO ACCIDENTAL OVERDOSES IN VIRGINIA, 1999-2009 (N=49)

Between 1999 and 2009, 503 Virginia resident women died who were pregnant at the time of death or had been pregnant within the last year of their lives. Nearly 10% of these women died from an accidental overdose of drugs. Some of these drugs were prescribed medications for pain while some were illegally obtained. This report will describe patterns and trends related to accidental overdoses among Virginia's pregnant and recently pregnant women over an 11 year period.

Numbers of pregnancy-associated accidental overdose deaths were stable at 2 to 5 deaths per year between 1999 and 2006. In 2007 and 2008, deaths totaled 10 and 11 per year respectively. 2009 showed a decline in accidental overdose deaths to 4 cases. Figure 1 portrays the 11 year trend.

Figure 1. Number of Pregnancy-Associated Accidental Overdose Deaths by Year of Occurrence in Virginia, 1999-2009 (N=49)



The largest group of women dying from accidental overdoses was between the ages of 25 and 29. The average age was 28.2. Nearly half of the women were married when they died. A large majority of women were White (87.7%). Table 1 provides characteristics of the women who died.

Table 1. Characteristics of Women Dying Pregnancy-Associated Deaths Due to Accidental Overdoses in Virginia, 1999-2009, N=49

	Number	Percent
Age		
Less than 20	2	4.1
20-24	11	22.4
25-29	18	36.7
30-34	11	22.4
35-39	5	10.2
40 and above	2	4.1
Race		
White	43	87.7
Black	5	10.2
Other	1	2.0
Marital Status		
Single	15	30.6
Married	24	48.9
Divorced	10	20.4

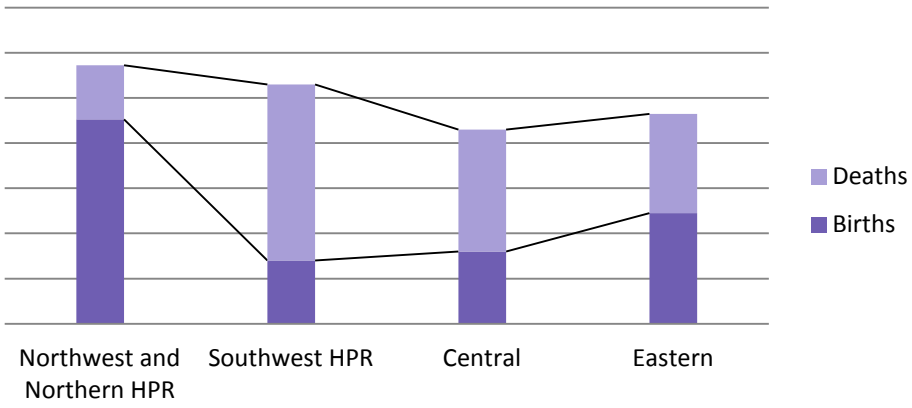
The majority of women (81.6%) who died had delivered a live infant while 14.3% had experienced a pregnancy loss in the year prior to death. Two deaths occurred to women who were pregnant when they died. Numbers of days between the end of the pregnancy and death ranged from 2 days to 359 days with an average of 162 days – 5.4 months.

More accidental overdose deaths occurred in the Office of the Chief Medical Examiner's Western District than any other OCME District. The Central District had the second highest number of deaths due to overdoses. Efforts to determine population based risk include examination of numbers of deaths to numbers of births in each region. Numbers of live births by OCME district are not readily available; however, a rough comparison can be made by examining births by Health Planning Regions (HPR).[1] There are 5 designated Health Planning Regions in the State: Northwest, Northern, Southwest, Central, and Eastern. Combining live births in the Northwest HPR with Northern HPR provides a rough parallel to the Medical Examiner's Northern District; the OCME Western District is roughly similar to the Southwest HPR, etc. The Northwest and Northern HPR account for 45.3% of all live births. The Southwest HPR had 14.0% of all live births, Central HPR had 16.0%, and the Eastern HPR had 24.5% of all live births. If accidental overdose deaths were distributed proportionately to live births, then we would expect most deaths to occur in the Northern/Northwestern portion of the state and the fewest to occur in the Southwest. Examination of the data, however, indicates the opposite is true – the fewest deaths occurred in the Northern/Northwestern HPR and the most deaths occurred in the Southwest. Thus, accidental overdose deaths among recently pregnant

[1] Maps delineating these districts and regions can be found in Appendix A and Appendix B.

women occur disproportionately more often in the Southwestern portion of Virginia than in the Northern/Northwestern portion of the state.

Figure 2. Percent of Births and Percent of Pregnancy-Associated Deaths Due to Accidental Overdoses in Virginia, 1999-2009



In more than half of the cases (53.1%), postmortem toxicology results were positive for more than one substance. Opioids were present in 37 deaths (75.5%), either alone or in combination with other drugs. Seven women died from an overdose of heroin, a nonprescribed opioid. Thirty women died from hydrocodone, methadone, oxycodone, or fentanyl overdoses. These drugs are metabolites of prescribed opioids such as Vicodin, Oxycontin, Lortab, Percocet. Alprazolam, generally prescribed to treat anxiety disorders, was present in 1 in 5 deaths. In nine of the 10 cases where Alprazolam was used, one or more of the prescription opioids was also used. Selective Serotonin Reuptake Inhibitors (SSRI) were present in five deaths. They were used in combination with other drugs in four of the five cases.

Data in this report was obtained from the Virginia Pregnancy-Associated Mortality Surveillance System (PAMSS) which monitors trends in pregnancy-associated deaths utilizing current death certificate data. More detailed information on pregnancy-associated deaths is available through Virginia's Maternal Mortality Review process. The Maternal Mortality Review Team (MMRT) has reviewed all pregnancy-associated deaths that occurred between 1999 and 2004. Findings from this review reveal that in more than half (57.9%) of the cases of death due to accidental overdoses, the decedent died from overdoses of their own prescription medications.

Accidental overdose deaths among recently pregnant women represent a public health challenge: numbers have not declined over the eleven year period between 1999 and 2009. A recent upward trend in 2007 and 2008 may represent an increasing problem. Women at greatest risk are White women in their mid to late 20's living in the Southwestern Region of the

state. Prescription opioids alone and in combination with other drugs appear to create the most risk for accidental overdoses in this population of recently pregnant women. Prescribers are encouraged to educate their patients about the dangers of overusing these medications and of combining them with other medications. Providers are also encouraged to utilize Virginia's Prescription Monitoring Program to determine if their patients are obtaining medications from other sources such as emergency departments or other physicians.

For additional information on maternal death in Virginia, visit the Virginia Maternal Mortality Review webpage at: http://www.vdh.virginia.gov/medExam/MaternalMortality.htm.

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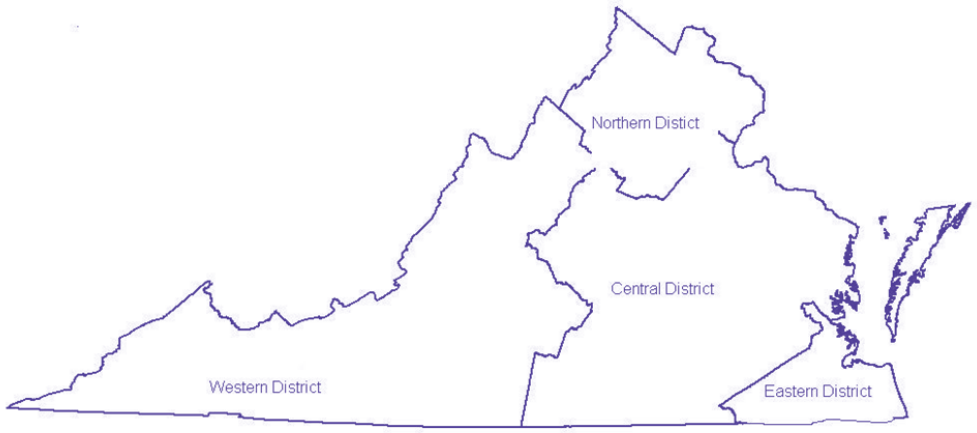
Appendix A: Commonwealth of Virginia, Office of the Chief Medical Examiner Districts



Appendix B: Commonwealth of Virginia, Health Planning Regions