

## Trends in Pregnancy-Associated Maternal Death in Virginia, 1999-2008

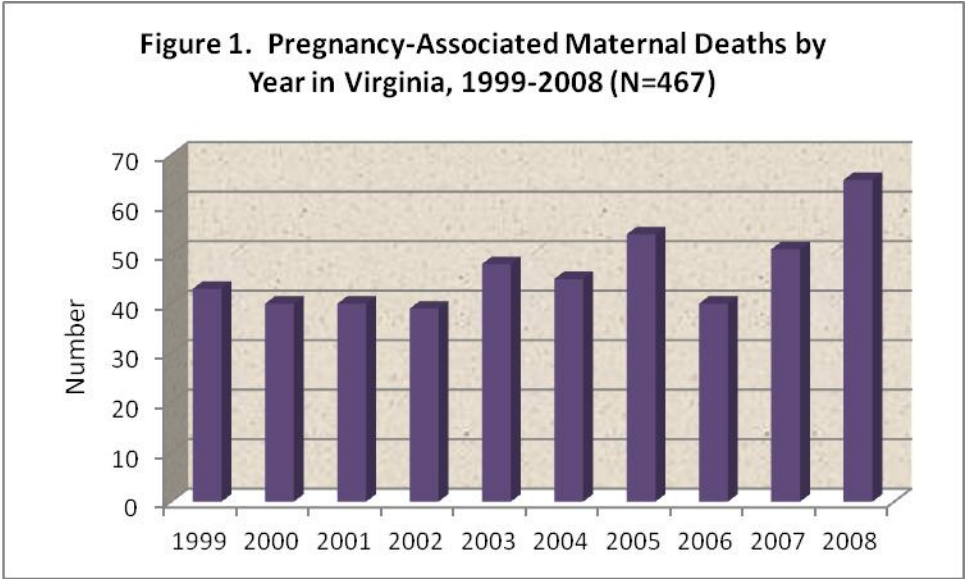
Major public health efforts during the last century led to significant reductions in the number of women dying during pregnancy and childbirth. Reductions in these deaths, along with reductions in the infant mortality rate, were considered to be among the top ten public health achievements of the period. Continued surveillance, however, indicates that the numbers of women dying have remained relatively constant over the past 30 to 40 years and have shown a tendency to be increasing within the United States.

In response to this trend, the Virginia Department of Health's Offices of the Chief Medical Examiner and Family Health Services formed a partnership to identify and study these deaths in Virginia so that public health prevention and intervention strategies could be developed to reduce these deaths. The Pregnancy-Associated Mortality Surveillance System (PAMSS) collects information on all Virginia residents who died while pregnant or within one year of pregnancy, termed "pregnancy-associated death." This surveillance system allows for the epidemiologic study of patterns and trends related to these deaths and helps inform policy decisions of public health importance.

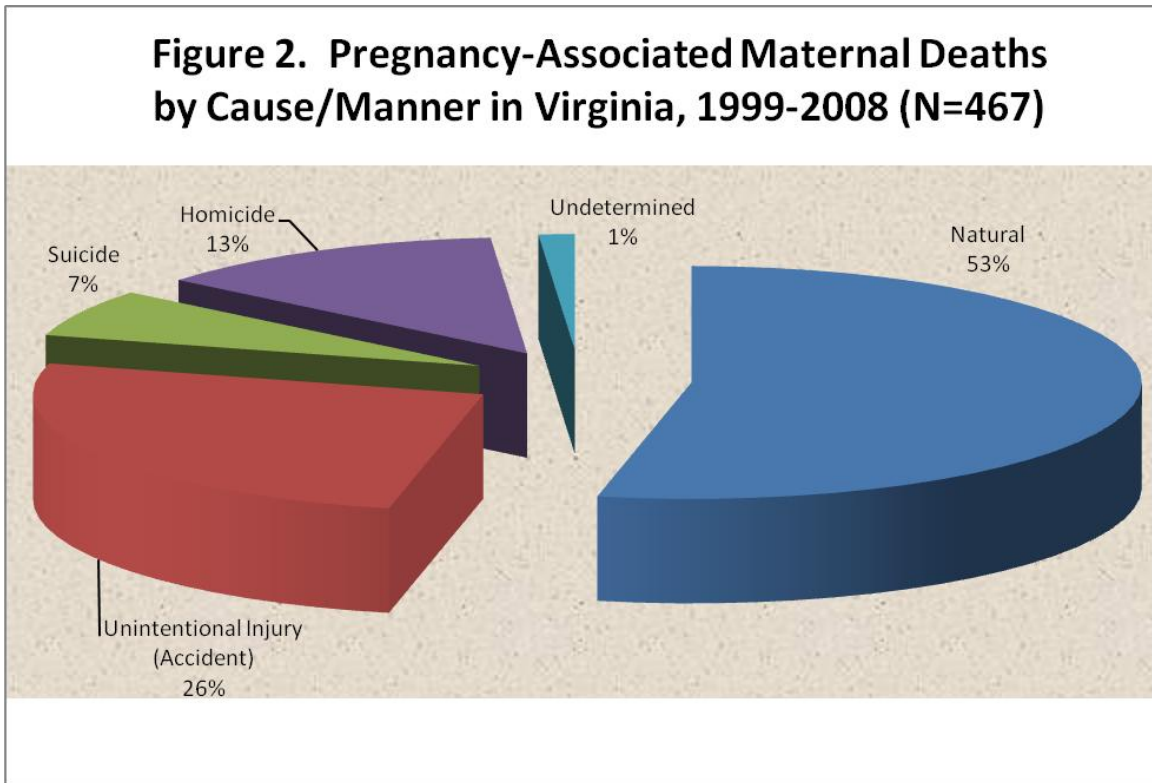
When a woman dies within a year of pregnancy, it represents a personal tragedy for her family and especially her surviving children. These deaths represent tragedies of public health importance at the community and national level as well. Many of these deaths are thought to be preventable. Surveillance data provides a snapshot of how, when and to whom these deaths occur. It allows us to better identify deaths that are directly related to pregnancy to improve our understanding of the incidence of maternal mortality. It draws our attention to the nature of homicidal violence and its relationship to pregnancy. It allows us to monitor trends in suicides and accidental overdose deaths. Surveillance tells us which problems are abating and which are increasing in importance.

This report describes the manner of death for all Virginia residents who died while pregnant or within one year of pregnancy over the ten year period from 1999 through 2008.

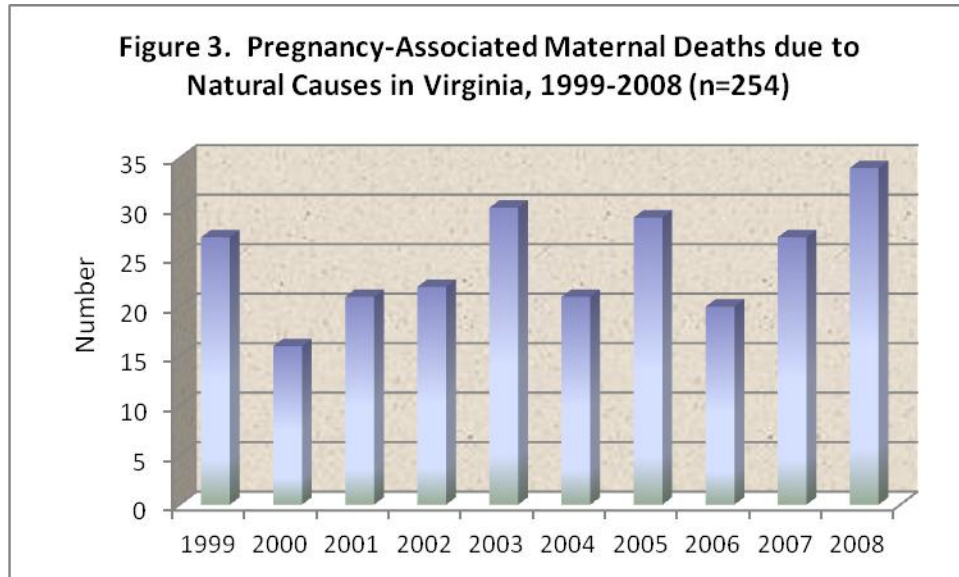
A total of 467 cases of pregnancy-associated death were identified from 1999 to 2008 in Virginia. Figure 1 portrays the total number of pregnancy-associated cases identified for each of the ten years.



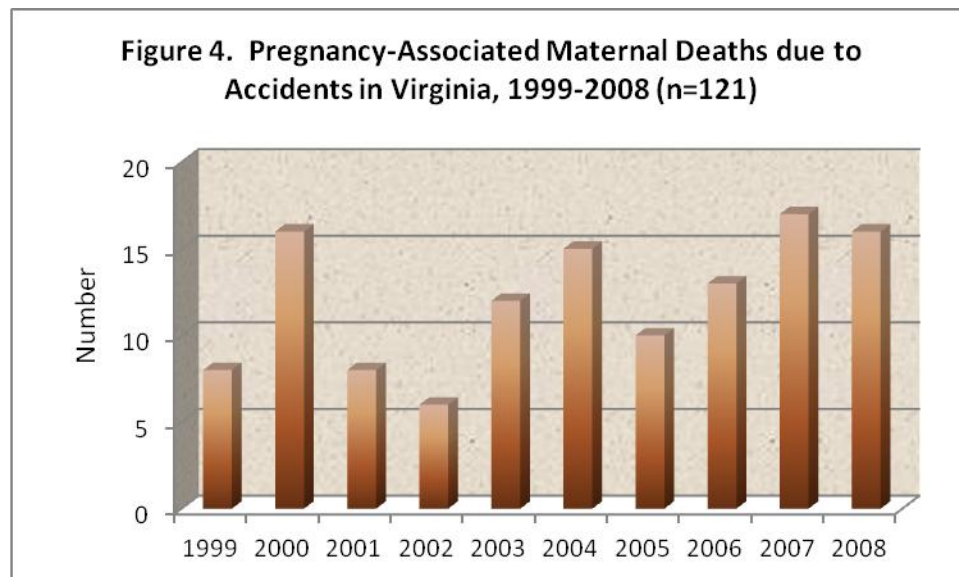
Overall, pregnancy-associated deaths were more frequently due to natural causes such as cardiovascular disorders and cancer, as well as causes directly related to the pregnancy such as hemorrhage and amniotic fluid embolism. See Figure 2. Unintentional injury (accident) was the next leading manner of death.



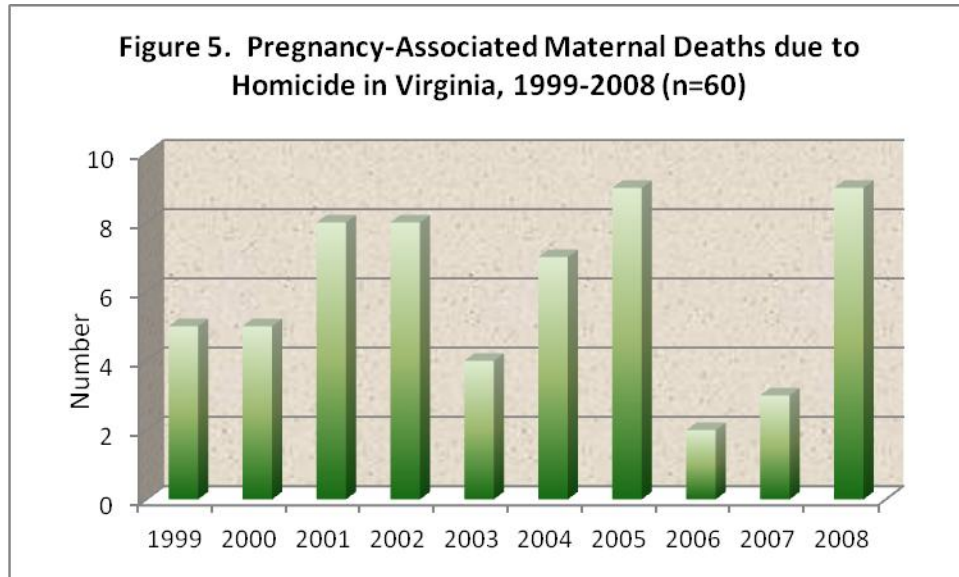
Trends in pregnancy-associated deaths due to natural causes show a varied pattern over the years. The highest number of natural pregnancy-associated deaths occurred in 2008. The fewest occurred in 2000. See Figure 3.



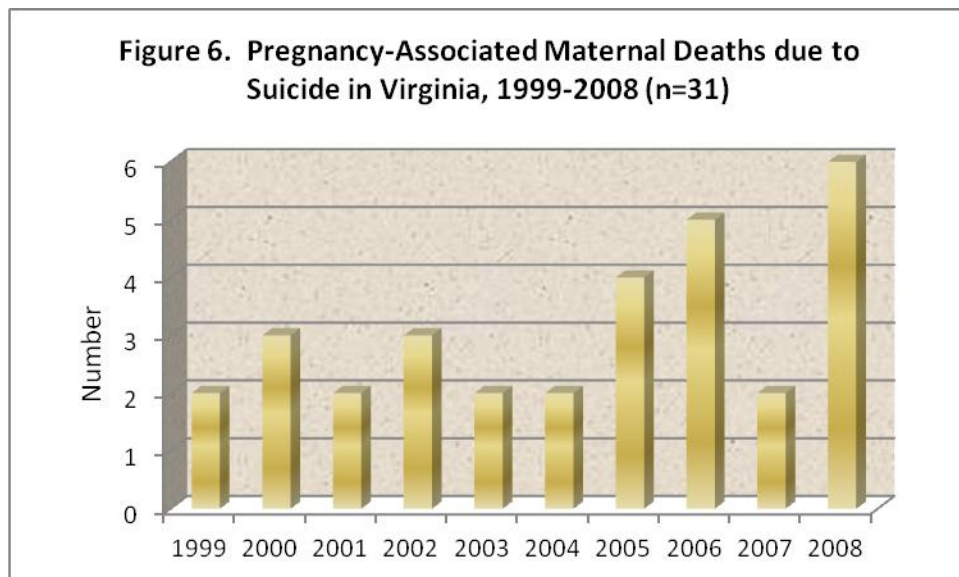
Deaths attributable to accidents are portrayed in Figure 4. Motor vehicle accident deaths have declined in recent years while accidental overdose deaths climbed in 2007 and 2008.



Homicides among pregnant or recently pregnant women were lowest in 2006 and 2007. In 2008, however, deaths due to homicide were equal to those from 2005 which were the highest over the ten year period. See Figure 5.



Deaths due to suicide among pregnant or recently pregnant women were highest in 2008 with six suicides. See Figure 6.



In conclusion, pregnancy-associated maternal death in Virginia remains a significant public health problem. Deaths due to motor vehicle accidents and other accidents such as fire and falls have shown consistent reductions across ten years. Deaths due to natural causes, accidental overdoses, homicides, and suicides have fluctuated across time but are currently at their highest levels.

#### Additional Information

- Virginia Maternal Mortality Review  
<http://www.vdh.virginia.gov/medExam/MaternalMortality.htm>
- Centers for Disease Control and Prevention, Maternal and Infant Health Research:  
<http://www.cdc.gov/reproductivehealth/maternalinfanthealth/PregComplications.htm>

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