

Pregnancy-Associated Deaths of Women Aged 35 and Older in Virginia, 1999-2010

The average age of first time mothers in Virginia rose 4.4 years from 1970-2006 with the average age now being 25.8 years old.¹ Births to women aged 35 and older increased from 5% to 13% of all live births in the U.S. between 1970 and 2000. Women who deliver at and beyond 35 years old, also called “advanced maternal age,” are at higher risk for complications during pregnancy and delivery. Rising maternal death rates in the United States are thought to be partly attributed to delayed childbearing. Older women are more likely to have chronic illnesses or a pre-existing condition when they become pregnant. Pregnancy can worsen pre-existing high blood pressure and heart disease. Older women also have a higher risk of miscarriage and stillbirth.

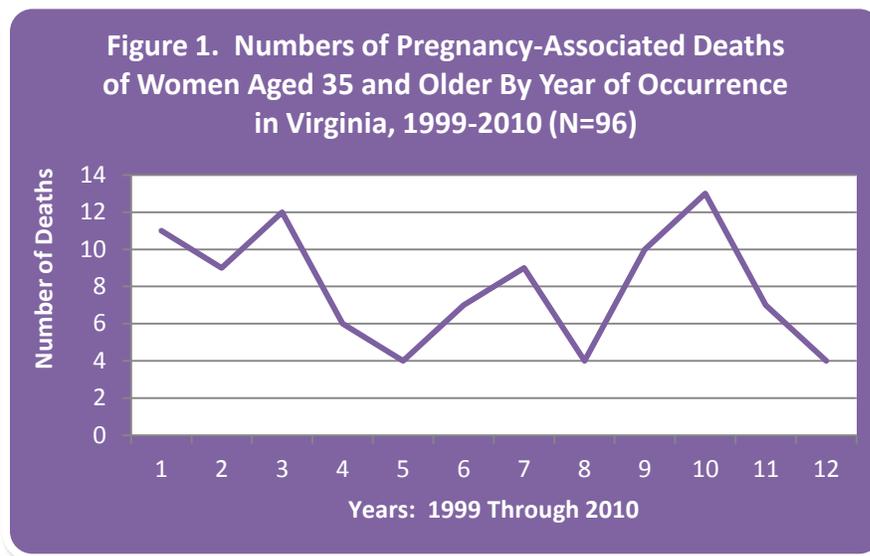
In Virginia, from 1999-2010, births to women over 34 years old accounted for 15.6% of all live births. During that period, the pregnancy-associated death rate (deaths occurring during or within one year of pregnancy) for women 35 and older in Virginia was 54.9/100,000 live births to women of the same age. A comparison of women aged 35-39 and women aged 40 and above reveals that the oldest group of women had a mortality rate of 75.0/100,000 live births compared to 50.6/100,000 live births for women in the 35-39 group. This report will focus on the 96 women over 34 years old who died within one year of pregnancy in Virginia between 1999 and 2010.

There is a widely recognized racial disparity in maternal mortality ratios with Black women found to die at approximately 3-4 times the rate of White women. This disparity is confirmed by examination of the ratio of pregnancy-associated deaths of Black women and White women in Virginia who were 35 years old and older. Overall, for every 100,000 live

¹ Mathews TJ, Hamilton BE. Delayed childbearing: More women are having their first child later in life. NCHS data brief, no 21. Hyattsville, MD: National Center for Health Statistics. 2009.

births to Black women aged 35 and older, 102.8 women died. For White women, the ratio was 41.2 deaths per 100,000 live births – 2.5 times lower than the ratio for Black women.

Figure 1 below shows trends over time in pregnancy-associated deaths of Virginia’s women who were 35 years old or older. The fewest deaths occurred in 2003, 2006, and 2010 (n=4 each year). The years with the highest number of deaths were 2008 (n=13), 2001 (n=12), and 1999 (n=11). In terms of pregnancy-associated mortality ratios, comparison of the first half of the reporting period (1999-2004) to the second half of the reporting period (2005-2010) showed little difference with the ratios being 57.4 for the earlier period and slightly lower at 54.9 for the latter period.



The leading causes and/or manners of death are shown in Table 1 below. Cardiac disorders were the leading cause of death among these women. Suicide and cancer were the second and third leading cause/manner of death and accounted for 10 deaths each. Hemorrhage accounted for nine deaths and was the leading cause of death associated with childbirth. There were seven deaths caused by pulmonary embolism, four caused by cardiomyopathy, three amniotic fluid embolisms, and five other causes considered to be direct maternal deaths.

There were few differences between the group of women under 40 and women 40 and over in terms of percentage of deaths that were directly due to the pregnancy. Overall, 29.2%

of the women died from causes directly associated with the pregnancy with 13.7% of the younger women dying from pregnancy-related causes and 17.4% of the older women dying from pregnancy-related causes. Overall, one-quarter of the deaths resulted from violence (suicide, homicide, motor vehicle accidents, and overdoses), with the remaining 75% due to natural causes.

Table 1. Leading Causes/Manners of Pregnancy-Associated Deaths of Women 35 and Older in Virginia, 1999-2010		
	Number	Percent
Cardiac Disorders	15	15.6
Cancer	10	10.4
Suicide	10	10.4
Hemorrhage	9	9.4
Accidental Overdoses	8	8.3

In conclusion, older childbearing women in Virginia have a high pregnancy-associated mortality ratio. No consistent increase was detected in the 12 year period, however. Women 40 and over had a higher mortality ratio than women between 35 and 39. Black women had a higher mortality ratio than White women. The leading causes of death among these women were cardiac disorders and cancer which are known to have increased incidences with age. Not surprisingly, a larger percentage of women died from natural causes than from violence. Close to 30% of the deaths overall were from causes associated with the pregnancy itself which did not vary from the oldest group (40 and over) to the younger group of women aged 35-39. These results reinforce the importance of women entering pregnancy with optimum levels of health.

Prepared by: Victoria M. Kavanaugh, PhD
 Coordinator, Maternal Mortality Review
 Virginia Department of Health
 Office of the Chief Medical Examiner
 400 East Jackson Street
 Richmond, VA 23219
 E-Mail: Victoria.kavanaugh@vdh.virginia.gov