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Data from the Virginia Maternal Mortality Review Team (MMRT or Team) is provided in response to your request. The Team's mission is to identify and review all deaths of Virginia resident women that occur during a pregnancy or within one year of the termination of a pregnancy. These deaths are called "pregnancy-associated" deaths. In Virginia, pregnancy-associated deaths are identified by the Virginia Department of Health's Office of Health Statistics for review by the MMRT. Three methods are employed:

1. through examination of the *International Classification of Diseases, Ninth Revision (ICD)*, specifically those deaths identified with a cause code in the "pregnancy, childbirth and the puerperium" categories;
2. by matching birth or fetal death certificate with maternal death certificate information, regardless of cause of death; and
3. by selecting cases where a Commonwealth of Virginia death certificate indicates the decedent was pregnant within three months of the death. This is a check box on Virginia's death certificate.

It should be noted that not all states and/or cities use all methods and that the check box on death certificates is not yet standardized across the country. Thus, comparison of maternal mortality rates are unreliable and should be used only with caution and with a detailed understanding of the definitions used and the methods used to identify cases.

Thank you so much for your interest in this important issue. Additional information can be found on our website at: <http://www.vdh.virginia.gov/medExam/MaternalMortality.htm>. If I could be of any further assistance, please let me know.

Suggested citation for this report:

Virginia Pregnancy-Associated Mortality Surveillance System, Office of the Chief Medical Examiner, Virginia Department of Health.

<http://www.vdh.virginia.gov/medical-examiner/fatality-review-surveillance-programs-reports/virginia-pregnancy-associated-mortality-surveillance-system-pamss/>



Accredited by the National Association of Medical Examiners

Virginia Maternal Mortality Data by Interval between End of Pregnancy and Death

Table 1: Pregnancy-Associated Mortality in Virginia, 2009 - 2013: Rates and Racial Disparities												
Race	2009 (n=37)		2010 (n=42)		2011 (n=47)		2012 (n=47)		2013 (n=37)		All Years (n=210)	
	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*
Black	16	73.3	18	80.2	19	86.3	23	105.3	13	60.1	89	80.2
White	19	27.3	21	30.2	24	34.5	22	32.9	22	33.8	108	31.6
Other	2	18.2	3	27.4	4	36.3	2	14.2	2	13.0	13	20.9

Table 1a: Pregnancy-Associated Mortality in Virginia, 2009 - 2013: Rates and Racial Disparities for Deaths 42 Days or Less After the End of Pregnancy												
Race	2009 (n=20)		2010 (n=23)		2011 (n=22)		2012 (n=20)		2013 (n=19)		All Years (n=104)	
	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*
Black	7	30.4	7	31.2	10	45.4	12	54.9	6	27.7	42	37.9
White	11	15.5	13	18.7	10	14.4	7	10.5	11	15.8	52	15.2
Other	2	18.4	3	27.4	2	18.2	1	7.1	2	13.0	10	16.1

Table 1b: Pregnancy-Associated Mortality in Virginia, 2009 - 2013: Rates and Racial Disparities for Deaths 43 Days or More After the End of Pregnancy												
Race	2009 (n=17)		2010 (n=19)		2011 (n=24)		2012 (n=27)		2013 (n=18)		All Years (n=106)	
	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*	No.	Rate*
Black	9	39.1	11	49.0	9	40.9	11	50.4	7	32.3	47	42.4
White	8	11.2	8	11.5	13	18.7	15	22.4	11	16.9	55	16.1
Other	0	0.0	0	0.0	2	18.2	1	7.1	0	0	3	4.8

Table 2: Number of pregnancy-associated deaths by race and the interval between the end of pregnancy and death, 2004-2013 (N=459)

By Race	Pregnant at time of death		0-7 Days after end of pregnancy		8-42 Days after end of pregnancy		43+ Days after end of pregnancy		Total	
	N(%)	Rate	N(%)	Rate	N(%)	Rate	N(%)	Rate	N(%)	Rate
White	35(14.2%)	5.0	41(16.6%)	5.8	29(11.7%)	4.1	142(57.5%)	20.1	247(100%)	35.0
Black	24(13.2%)	10.6	38(20.9%)	16.9	24(13.2%)	10.6	96(52.7%)	42.6	182(100%)	80.7
Other	8(26.7%)	7.0	5(16.7%)	4.4	5(16.7%)	4.4	12(40.0%)	10.5	30(100%)	26.3
Total	67(14.6%)	6.4	84(18.3%)	8.0	58(12.6%)	5.6	250(54.7%)	23.9	459(100%)	43.9

*Chi square analysis indicates no significant difference between black and white women in terms of the time period in which death occurred. "Other" race was excluded due to small counts in cells

Table 3: Pregnancy-associated deaths by manner and the interval between the end of pregnancy and death, 2004-2013 (N=459)

By Manner	Pregnant at time of death	0-7 Days after end of pregnancy	8-42 Days after end of pregnancy	43+ Days after end of pregnancy	Total
	N(%)	N(%)	N(%)	N(%)	N(%)
Natural	25(10.2)	70(28.7%)	41(16.8%)	108(44.3%)	244(100%)
Accidental	14(11.6%)	5(4.1%)	9(7.4%)	93(76.9%)	121(100%)
Homicide	17(32.1%)	6(11.3%)	4(7.5%)	26(49.1%)	53(100%)
Suicide	11(32.4%)	0(0.0%)	4(11.8%)	19(55.5%)	34(100%)
Undetermined	0(0.0%)	3(42.9%)	0(0.0%)	4(57.1%)	7(100%)

Table 4a: Manner of Death by Race Among Pregnancy-Associated Deaths in Virginia, 2009-2013

Manner of Death	White	Black	Other
Natural	49(45.8%)	59(66.3%)	7(53.8%)
Accidental	37(34.6%)	13(14.6%)	3(23.1%)
Homicide	9(8.4%)	11(12.4%)	3(23.1%)
Suicide	11(10.3%)	3(3.4%)	0(0.0%)
Undetermined	1(0.9%)	3(3.4%)	0(0.0%)
Total	107(100%)	89(100%)	13(100%)

Table 4b: Manner of Death by Race Among Pregnancy-Associated Deaths in Virginia, 2009-2013 (Deaths occurring 42 days or less after end of pregnancy)

Manner of Death	White	Black	Other
Natural	36(69.2%)	31(73.8%)	7(70.0%)
Accidental	8(15.4%)	3(7.1%)	1(10.0%)
Homicide	4(7.7%)	4(9.5%)	2(20.0%)
Suicide	4(7.7%)	2(4.8%)	0(0.0%)
Undetermined	0(0.0%)	2(4.8%)	0(0.0%)
Total	52(100%)	42(100%)	10(100%)

Table 4c: Manner of Death by Race Among Pregnancy-Associated Deaths in Virginia, 2009-2013 (Deaths occurring 43 days or more after end of pregnancy)

Manner of Death	White	Black	Other
Natural	13(23.6%)	28(59.6%)	0(0.0%)
Accidental	29(52.7%)	10(21.3%)	2(66.7%)
Homicide	5(9.1%)	7(14.9%)	1(33.3%)
Suicide	7(12.7%)	1(2.1%)	0(0.0%)
Undetermined	1(1.8%)	1(2.1%)	0(0.0%)
Total	55(100%)	47(100%)	3(100%)

Table 5a: Pregnancy-associated deaths by cause of death and the interval between the end of pregnancy and death, 2004-2013 (N=459)

	Pregnant at time of death	0-7 Days after end of pregnancy	8-42 Days after end of pregnancy	43+ Days after end of pregnancy	Total
By Cause of Death Category	N(%)	N(%)	N(%)	N(%)	N(%)
Accidental Overdose	5(8.5%)	3(5.1%)	5(8.5%)	46(78.0%)	59(12.9%)
AIDS	0(0.0%)	1(50.0%)	0(0.0%)	1(50.0%)	2(0.4%)
Amniotic Fetal Embolism	0(0.0%)	8(100.0%)	0(0.0%)	0(0.0%)	8(1.7%)
Cancer	2(6.9%)	1(3.4%)	6(20.7%)	20(69.0%)	29(6.3%)
Cardiac	5(8.5%)	12(20.3%)	14(23.7%)	28(47.5%)	59(12.9%)
Cardiomyopathy	2(18.2%)	0(0.0%)	1(9.1%)	8(72.7%)	11(2.4%)
Disorders of the Central Nervous System	2(11.8%)	4(23.5%)	3(17.6%)	8(47.1%)	17(3.7%)
Ectopic Pregnancy	1(50.0%)	1(50.0%)	0(0.0%)	0(0.0%)	2(0.4%)
Exacerbation of Chronic Disease	3(15.8%)	0(0.0%)	0(0.0%)	16(84.2%)	19(4.1%)
Hemorrhage	2(11.8%)	12(70.6%)	2(11.8%)	1(5.9%)	17(3.7%)
Homicide	17(32.1%)	6(11.3%)	4(7.5%)	26(49.1%)	53(11.5%)
Infection	3(10.3%)	8(27.6%)	5(17.2%)	13(44.8%)	29(6.3%)
Motor Vehicle Accident	9(16.7%)	1(1.9%)	3(5.6%)	41(75.9%)	54(11.8%)
Other Accident	0(0.0%)	1(12.5%)	1(12.5%)	6(75.0%)	8(1.7%)
Other Cause of Death	1(6.3%)	4(25.0%)	3(18.8%)	8(50.0%)	16(3.5%)
Pregnancy-Induced Hypertension	0(0.0%)	13(92.9%)	1(7.1%)	0(0.0%)	14(3.1%)
Pulmonary Embolism	4(19.0%)	6(28.6%)	6(28.6%)	5(23.8%)	21(4.6%)
Suicide	11(32.4%)	0(0.0%)	4(11.8%)	19(55.9%)	34(7.4%)
Undetermined	0(0.0%)	3(42.9%)	0(0.0%)	4(1.6%)	7(1.5%)
Total	67(14.6%)	84(18.3%)	58(12.6%)	250(54.5%)	459(100.0%)

Table 5b: Pregnancy-associated deaths by cause of death and the interval between the end of pregnancy and death among all races, 2004-2013 (N=459)

	42 Days or Less after end of pregnancy	43+ Days after end of pregnancy	Total
By Cause of Death Category	N(%)	N(%)	N(%)
Cancer	9(4.3%)	20(8.0%)	29(6.3%)
Cardiac	31(14.8%)	28(11.2%)	59(12.9%)
Exacerbation of Chronic Disease	3(1.4%)	16(6.4%)	19(4.1%)
Ectopic Pregnancy	2(1.0%)	0(0.0%)	2(0.4%)
Disorders of the Central Nervous System	9(4.3%)	8(3.2%)	17(3.7%)
Accidental Overdose	12(5.7%)	47(18.8)	59(12.9%)
Cardiomyopathy	3(1.4%)	8(3.2%)	11(2.4%)
Homicide	27(12.9%)	26(10.4%)	53(11.5%)
Suicide	17(8.1%)	17(6.8%)	34(7.4%)
Motor Vehicle Accident	13(6.2%)	41(16.4%)	54(11.8%)
Other Accident	2(1.0%)	6(2.4%)	8(1.7%)
Hemorrhage	16(7.7%)	1(5.9%)	17(3.7%)
Pulmonary Embolism	16(7.7%)	5(23.8%)	21(4.6%)
Amniotic Fetal Embolism	8(3.8%)	0(0.0%)	8(1.7%)
Infection	16(7.7%)	13(44.8%)	29(6.3%)
Pregnancy-Induced Hypertension	14(6.7%)	0(0.0%)	14(3.1%)
AIDS	1(0.5%)	1(0.4%)	2(0.4%)
Other Cause of Death	7(3.3%)	9(3.6%)	16(3.5%)
Undetermined	3(1.4%)	4(1.6%)	7(1.5%)
Total	209(100%)	250(100%)	459(100.0%)

Table 5c: Pregnancy-associated deaths by cause of death and the interval between the end of pregnancy and death among White Women, 2004-2013 (N=247)

	42 Days or Less after end of pregnancy	43+ Days after end of pregnancy	Total
By Cause of Death Category	N(%)	N(%)	N(%)
Cancer	9(8.6%)	14(9.9%)	23(9.3%)
Cardiac	13(12.4%)	13(9.2%)	26(10.5%)
Exacerbation of Chronic Disease	0(0.0%)	2(1.4%)	2(0.8%)
Ectopic Pregnancy	0(0.0%)	0(0.0%)	0(0.0%)
Disorders of the Central Nervous System	4(.8%)	4(2.8%)	8(3.2%)
Accidental Overdose	11(10.5%)	37(26.1%)	48(19.4%)
Cardiomyopathy	2(1.9%)	1(0.7%)	3(1.2%)
Homicide	11(10.5%)	9(6.3%)	20(8.1%)
Suicide	12(11.4%)	15(10.6%)	27(10.9%)
Motor Vehicle Accident	7(6.7%)	27(19.0%)	34(13.8%)
Other Accident	1(1.0%)	4(2.8%)	5(2.0%)
Hemorrhage	6(5.7%)	0(0.0%)	6(2.4%)
Pulmonary Embolism	5(4.8%)	1(0.7%)	6(2.4%)
Amniotic Fetal Embolism	4(3.8%)	0(0.0%)	4(1.6%)
Infection	10(9.5%)	8(5.6%)	18(7.3%)
Pregnancy-Induced Hypertension	7(6.7%)	0(0.0%)	7(2.8%)
AIDS	0(0.0%)	1(0.7%)	1(0.4%)
Other Cause of Death	3(2.9%)	4(2.8%)	7(2.8%)
Undetermined	0(0.0%)	2(1.4%)	2(0.8%)
Total	105(100%)	142(100%)	247(100%)

Table 5d: Pregnancy-associated deaths by cause of death and the interval between the end of pregnancy and death among Black Women, 2004-2013 (N=182)

	42 Days or Less after end of pregnancy	43+ Days after end of pregnancy	Total
By Cause of Death Category	N(%)	N(%)	N(%)
Cancer	0(0.0%)	5(5.2%)	5(2.7%)
Cardiac	17(19.8%)	15(15.6%)	32(17.6%)
Exacerbation of Chronic Disease	2(2.3%)	13(13.5%)	15(8.2%)
Ectopic Pregnancy	0(2.3%)	0(0.0%)	2(1.1%)
Disorders of the Central Nervous System	2(2.3%)	3(3.1%)	5(2.7%)
Accidental Overdose	1(1.2%)	7(7.3%)	8(4.4%)
Cardiomyopathy	1(1.2%)	7(7.3%)	8(4.4%)
Homicide	13(15.1%)	16(16.7%)	29(15.9%)
Suicide	4(4.7%)	1(1.0%)	5(2.7%)
Motor Vehicle Accident	5(5.8%)	12(12.5%)	17(9.3%)
Other Accident	1(1.2%)	2(2.1%)	3(1.6%)
Hemorrhage	5(5.8%)	0(0.0%)	5(2.7%)
Pulmonary Embolism	9(10.5%)	4(4.2%)	13(7.1%)
Amniotic Fetal Embolism	4(4.7%)	0(0.0%)	4(2.2%)
Infection	5(5.8%)	4(4.2%)	9(4.9%)
Pregnancy-Induced Hypertension	7(8.1%)	0(0.0%)	7(3.8%)
AIDS	1(1.2%)	0(0.0%)	1(0.5%)
Other Cause of Death	4(4.7%)	5(5.2%)	9(4.9%)
Undetermined	3(3.5%)	2(2.1%)	5(2.7%)
Total	86(100%)	96(100%)	182(100%)

Table 6a: Leading Causes of Death among White Women who died 42 Days or Less After End of Pregnancy (n=105)

Leading Cause of Death	N	%
Infection	8	15.4
Cancer	7	13.5
Cardiac	5	9.6
Accidental Overdose	5	9.6
Suicide	4	7.7

Table 6b: Leading Causes of Death among White Women who died 43 Days or More After End of Pregnancy

Leading Cause of Death	N	%
Accidental Overdose	15	27.3
Motor Vehicle Accident	12	21.8
Suicide	7	12.7
Homicide	5	9.1
Cancer	4	7.3

Table 6c: Leading Causes of Death among Black Women who died 42 Days or Less After End of Pregnancy

Leading Cause of Death	N	%
Cardiac	8	19.0
Pulmonary Embolism	6	14.3
Pregnancy-Induced Hypertention	4	9.5
Homicide	4	9.5
Hemorrhage	3	7.1

Table 6d: Leading Causes of Death among Black Women who died 43 Days or More After End of Pregnancy

Leading Cause of Death	N	%
Exacerbation of Chronic Disease	9	19.1
Cardiac	8	17.0
Homicide	7	14.9
Motor Vehicle Accident	5	10.6
Accidental Overdose	4	8.5

Table 6e: Leading Causes of Death among Other Race Women who died 42 Days or Less After End of Pregnancy (n=10)

Leading Cause of Death	N	%
Disorders of the Central Nervous System	3	30.0
Homicide	2	20.0
Motor Vehicle Accident	1	10.0
Hemorrhage	1	10.0
Pulmonary Embolism	1	10.0

Table 6f: Leading Causes of Death among Other Race Women who died 43 Days or More After End of Pregnancy (n=3)

Leading Cause of Death	N	%
Accidental Overdose	2	66.7
Homicide	1	33.3

Table 7a: Pregnancy-associated deaths by local health district and the interval between the end of pregnancy and death, 2004-2013 (N=459)

	Pregnant at time of death	0-7 Days after end of pregnancy	8-42 Days after end of pregnancy	43+ Days after end of pregnancy	Total
By Local Health District	N(%)	N(%)	N(%)	N(%)	N(%)
Alexandria HD	1(16.7%)	2(33.3%)	1(16.7%)	2(33.3%)	6(1.3%)
Alleghany HD	0(0.0%)	0(0.0%)	2(25.0%)	6(75.0%)	8(1.7%)
Arlington HD	1(25.0%)	1(25.0%)	2(50.0%)	0(0.0%)	4(0.9%)
Central Shenandoah HD	0(0.0%)	3(23.1%)	0(0.0%)	10(76.9%)	13(2.8%)
Central Virginia HD	0(0.0%)	2(16.7%)	3(25.0%)	7(58.3%)	12(2.6%)
Chesapeake HD	4(30.8%)	1(7.7%)	2(15.4%)	6(46.2%)	13(2.8%)
Chesterfield HD	0(0.0%)	1(6.3%)	5(31.3%)	10(62.5%)	16(3.5%)
Chickominy HD	1(9.1%)	2(18.2%)	1(9.1%)	7(63.6%)	11(2.4%)
Crater HD	0(0.0%)	3(25.0%)	3(25.0%)	6(50.0%)	12(2.6%)
Cumberland Plateau HD	1(11.1%)	3(33.3%)	1(11.1%)	4(44.4%)	9(2.0%)
Danville HD	2(28.6%)	1(14.3%)	0(0.0%)	4(57.1%)	7(1.5%)
Eastern Shore HD	1(20.0%)	0(0.0%)	0(0.0%)	4(80.0%)	5(1.1%)
Fairfax HD	9(26.5%)	10(29.4%)	3(8.8%)	12(35.3%)	34(7.4%)
Hampton HD	2(11.1%)	4(22.2%)	4(22.2%)	8(44.4%)	18(3.9%)
Henrico HD	4(20.0%)	2(10.0%)	3(15.0%)	11(55.0%)	20(4.4%)
Lenowisco HD	0(0.0%)	3(33.3%)	1(11.1%)	5(55.6%)	9(2.0%)
Lord Fairfax HD	0(0.0%)	2(28.6%)	1(14.3%)	4(57.1%)	7(1.5%)
Loudoun HD	0(0.0%)	1(25.0%)	0(0.0%)	3(75.0%)	4(0.9%)
Mount Rogers HD	1(11.1%)	2(22.2%)	0(0.0%)	6(66.7%)	9(2.0%)
New River HD	2(25.0%)	0(0.0%)	0(0.0%)	6(75.0%)	8(1.7%)
Norfolk HD	3(11.5%)	6(23.1%)	3(11.5%)	14(53.8%)	26(5.7%)
Peninsula HD	5(20.0%)	5(20.0%)	2(8.0%)	13(52.0%)	25(5.4%)
Piedmont HD	2(28.6%)	2(28.6%)	1(14.3%)	2(28.6%)	7(1.5%)
Portsmouth HD	1(9.1%)	3(27.3%)	0(0.0%)	7(63.6%)	11(2.4%)
Prince William HD	5(22.7%)	3(13.6%)	3(13.6%)	11(50.0%)	22(4.8%)
Rappahannock HD	4(21.1%)	2(10.5%)	1(5.3%)	12(63.2%)	19(4.1%)
Rappahannock Rapidan HD	2(20.0%)	1(10.0%)	0(0.0%)	7(70.0%)	10(2.2%)

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Source: Virginia Pregnancy-Associated Mortality Surveillance System, Office of the Chief Medical Examiner, Virginia Department of Health

Table 7a: Pregnancy-associated deaths by local health district and the interval between the end of pregnancy and death, 2004-2013 (N=459)

	Pregnant at time of death	0-7 Days after end of pregnancy	8-42 Days after end of pregnancy	43+ Days after end of pregnancy	Total
By Local Health District	N(%)	N(%)	N(%)	N(%)	N(%)
Richmond HD	1(5.0%)	3(15.0%)	1(5.0%)	15(75.0%)	20(4.4%)
Roanoke HD	2(16.7%)	1(8.3%)	5(41.7%)	4(33.3%)	12(2.6%)
Southside HD	1(9.1%)	2(18.2%)	1(9.1%)	7(63.6%)	11(2.4%)
Thomas Jefferson HD	2(12.5%)	3(18.8%)	2(12.5%)	9(56.3%)	16(3.5%)
Three River HD	1(14.3%)	0(0.0%)	1(14.3%)	5(71.4%)	7(1.5%)
Virginia Beach HD	4(20.0%)	5(25.0%)	1(5.0%)	10(50.0%)	20(4.4%)
West Piedmont HD	2(14.3%)	1(7.1%)	2(14.3%)	9(64.3%)	14(3.1%)
Western Tidewater HD	3(21.4%)	4(28.6%)	3(21.4%)	4(28.6%)	14(3.1%)
Total	67(14.6%)	84(18.3%)	58(12.6%)	250(54.5%)	459(100.0%)

Table 7b: Pregnancy-associated deaths by local health district and the interval between the end of pregnancy and death, 2004-2013 (N=459)

	42 Days or Less after end of pregnancy	43+ Days after end of pregnancy	Total
By Local Health District	N(%)	N(%)	N(%)
Alexandria HD	4(66.7%)	2(33.3%)	6(1.3%)
Alleghany HD	2(25.0%)	6(75.0%)	8(1.7%)
Arlington HD	4(100.0%)	0(0.0%)	4(0.9%)
Central Shenandoah HD	3(23.1%)	10(76.9%)	13(2.8%)
Central Virginia HD	5(41.2%)	7(58.3%)	12(2.6%)
Chesapeake HD	7(53.8%)	6(46.2%)	13(2.8%)
Chesterfield HD	6(37.5%)	10(62.5%)	16(3.5%)
Chickominy HD	4(36.4%)	7(63.6%)	11(2.4%)
Crater HD	6(50.0%)	6(50.0%)	12(2.6%)
Cumberland Plateau HD	5(55.6%)	4(44.4%)	9(2.0%)
Danville HD	3(42.9%)	4(57.1%)	7(1.5%)
Eastern Shore HD	1(20.0%)	4(80.0%)	5(1.1%)
Fairfax HD	22(64.7%)	12(35.3%)	34(7.4%)
Hampton HD	10(55.6%)	8(44.4%)	18(3.9%)
Henrico HD	9(45.0%)	11(55.0%)	20(4.4%)
Lenowisco HD	4(44.4%)	5(55.6%)	9(2.0%)
Lord Fairfax HD	3(42.9%)	4(57.1%)	7(1.5%)
Loudoun HD	1(25.0%)	3(75.0%)	4(0.9%)
Mount Rogers HD	3(33.3%)	6(66.7%)	9(2.0%)
New River HD	2(25.0%)	6(75.0%)	8(1.7%)
Norfolk HD	12(46.2%)	14(53.8%)	26(5.7%)
Peninsula HD	12(48.0%)	13(52.0%)	25(5.4%)
Piedmont HD	5(71.4%)	2(28.6%)	7(1.5%)
Portsmouth HD	4(36.4%)	7(63.6%)	11(2.4%)
Prince William HD	11(50.0%)	11(50.0%)	22(4.8%)
Rappahannock HD	7(36.8%)	12(63.2%)	19(4.1%)
Rappahannock Rapidan HD	3(30.0%)	7(70.0%)	10(2.2%)
Richmond HD	5(25.0%)	15(75.0%)	20(4.4%)
Roanoke HD	8(66.7%)	4(33.3%)	12(2.6%)
Southside HD	4(36.4%)	7(63.6%)	11(2.4%)
Thomas Jefferson HD	7(45.7%)	9(56.3%)	16(3.5%)
Three River HD	2(28.6%)	5(71.4%)	7(1.5%)
Virginia Beach HD	10(50.0%)	10(50.0%)	20(4.4%)
West Piedmont HD	5(35.7%)	9(64.3%)	14(3.1%)
Western Tidewater HD	10(71.4%)	4(28.6%)	14(3.1%)
Total	67(14.6%)	250(54.5%)	459(100.0%)

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Source: Virginia Pregnancy-Associated Mortality Surveillance System, Office of the Chief Medical Examiner, Virginia Department of Health

Nearly 49% of all pregnancy-associated deaths in Virginia occurred among the residents of twelve counties and cities. These localities are listed below:

- Fairfax (n=30)
- Norfolk (n=25)
- Newport News (n=20)
- Richmond (n=20)
- Virginia Beach (n=20)
- Henrico (n=20)
- Hampton (n=18)
- Pulaski (n=18)
- Chesterfield (n=15)
- Chesapeake (n=13)
- Roanoke (n=12)
- Portsmouth (n=11)

Table 8: Distance (in miles) to the nearest hospital providing women’s care services among pregnancy-associated deaths in Virginia by Local Health District, N=317

Local Health District	Mean(in miles)	Std. Dev.	Minimum	Maximum
Alexandria HD	6.2	3.3	1.5	8.6
Alleghany HD	10.3	2.3	8.7	11.9
Arlington HD	2.2	1.3	1.4	3.7
Central Shenandoah HD	13.1	6.0	6.5	24.7
Central Virginia HD	13.3	8.6	4.8	27.8
Chesapeake HD	8.8	4.0	4.1	14.4
Chesterfield HD	11.9	9.9	1.2	26.3
Chickominy HD	15.4	6.5	3.6	23.8
Crater HD	20.6	13.1	1.3	49.2
Cumberland Plateau HD	20.7	12.2	5.3	35.1
Danville HD	3.4	1.9	2.2	5.5
Eastern Shore HD	205.0	6.9	13.6	30.0
Fairfax HD	10.4	9.8	1.2	35.8
Hampton HD	12.7	5.8	5.5	25.8
Henrico HD	10.6	5.4	1.9	20.3
Lenowisco HD	5.2	7.8	0.9	21.0
Lord Fairfax HD	16.1	17.7	6.3	51.7
Loudoun HD	11.5	5.2	5.5	14.5
Mount Rogers HD	19.6	10.2	5.4	27.4
New River HD	11.4	10.3	0.1	25.8
Norfolk HD	5.4	5.3	1.2	21.4
Peninsula HD	11.0	8.3	4.5	30.3
Piedmont HD	41.1	0.6	40.4	41.8
Portsmouth HD	6.9	2.5	2.5	10.2
Prince William HD	5.7	4.6	0.6	17.1
Rappahannock HD	13.3	8.6	2.1	24.1
Rappahannock Rapidan HD	36.3	29.4	8.6	61.7
Richmond HD	5.0	3.3	0.4	9.8
Roanoke HD	4.4	3.5	0.6	10.3
Southside HD	8.0	5.4	2.7	15.3
Thomas Jefferson HD	17.8	13.2	2.5	40.2
Three River HD	41.3	26.5	6.9	71.9
Virginia Beach HD	9.5	5.4	0.7	17.9
West Piedmont HD	7.1	3.9	1.7	11.8
Western Tidewater HD	13.3	10.9	0.7	28.4
Overall	12.5	11.8	0.1	71.9

***This table only contains data for those cases in which this variable was tracked (n=317).

Table 9: Distance (in miles) to a known prenatal care provider among pregnancy-associated deaths in Virginia by Local Health District, N=266

Local Health District	Mean(in miles)	Std. Dev.	Minimum	Maximum
Alexandria HD	7.6	0.9	7.0	8.3
Alleghany HD	8.5	1.1	7.7	9.3
Arlington HD	3.3	1.1	1.2	4.5
Central Shenandoah HD	14.1	7.0	8.4	24.7
Central Virginia HD	10.2	9.2	4.3	28.0
Chesapeake HD	10.3	3.7	4.2	14.4
Chesterfield HD	12.5	10.8	1.2	30.4
Chickominy HD	17.4	10.5	3.6	31.9
Crater HD	20.5	14.2	1.4	34.7
Cumberland Plateau HD	49.5	1.6	48.3	50.6
Danville HD	54.4	65.2	3.8	128.0
Eastern Shore HD	20.3	7.0	13.6	30.0
Fairfax HD	5.8	4.9	1.9	19.9
Hampton HD	12.4	6.4	4.9	25.8
Henrico HD	11.9	6.3	1.9	20.3
Lenowisco HD	5.1	8.9	0.9	21.0
Lord Fairfax HD	21.1	20.5	7.8	51.7
Loudoun HD	23.0	5.6	13.0	32.3
Mount Rogers HD	19.2	11.9	4.5	26.8
New River HD	22.8	19.4	6.8	48.2
Norfolk HD	6.0	5.8	1.2	21.4
Peninsula HD	11.9	9.4	2.1	30.3
Piedmont HD	34.0	11.5	20.7	40.9
Portsmouth HD	8.6	1.8	6.7	11.8
Prince William HD	9.9	7.1	0.6	24.1
Rappahannock HD	11.8	9.5	2.1	24.4
Rappahannock Rapidan HD	37.5	30.8	8.6	64.1
Richmond HD	5.5	3.1	1.2	9.8
Roanoke HD	4.3	2.7	0.6	7.2
Southside HD	11.0	13.9	1.2	31.3
Thomas Jefferson HD	22.0	20.1	2.5	57.3
Three River HD	41.9	27.9	14.8	71.9
Virginia Beach HD	10.4	5.4	1.0	17.9
West Piedmont HD	9.4	3.5	5.0	12.7
Western Tidewater HD	14.9	14.2	1.0	41.0
Overall	14.1	15.1	0.6	128.0

***This table only contains data for those cases in which this variable was tracked and there was a known prenatal care provier (n=267).

Definitions

Pregnancy-Associated Rate: Calculated by dividing the number of pregnancy-associated deaths by the number of live births for the same time period and multiplying by 100,000. The rate provides the number of deaths for every 100,000 live births to women who were residents of the state at the time of their deaths. Ratio for the city of Richmond is location specific.

Pregnancy-Associated Death: Death of a woman while pregnant or within one year of pregnancy regardless of the outcome of the pregnancy or the cause of death.