

Outcome 16: Ever had a stroke

Internal variable name: outc16_stroke

Definition: (Ever told) you had a stroke.

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 16: Ever had a stroke			
NH White	0.0000 (.)	0.0000 (.)	0.0000 (.)
NH Black vs. NH White	0.3342* (0.1568)	0.2655 (0.1772)	0.2655 (0.1479)
NH Asian vs. NH White	-0.8054 (0.7141)	-0.4993 (0.5752)	-0.4993 (0.7044)
NH Other vs. NH White	0.2648 (0.3788)	0.3424 (0.3800)	0.3424 (0.3774)
Hispanic vs. NH White	-0.3826 (0.4945)	-0.1183 (0.4660)	-0.1183 (0.4852)
SEX OF RESPONDENT=1	0.0000 (.)	0.0000 (.)	0.0000 (.)
Female	-0.1256 (0.1312)	-0.1502 (0.1440)	-0.1502 (0.1351)
Age 18-34 vs. 65+	-2.7681*** (0.4627)	-2.7185*** (0.4805)	- 2.7185*** (0.4629)
Age 35-44 vs. 65+	-1.6220*** (0.3272)	-1.5560*** (0.3029)	- 1.5560*** (0.3256)
Age 45-54 vs. 65+	-1.2202*** (0.2600)	-1.1472*** (0.2650)	- 1.1472*** (0.2536)
Age 55-64 vs. 65+	-0.3254 (0.1864)	-0.2956 (0.1653)	-0.2956 (0.1849)
65+	0.0000 (.)	0.0000 (.)	0.0000 (.)
Percentage calculated by dividing College_ACS_15_19 by Pop_25yrs_Over_ACS_15_19		-1.8274* (0.9110)	-1.8274* (0.7634)

Crude mortality rate of disease of the heart per 10K		-0.0245	-0.0245
		(0.0253)	(0.0291)
Crude mortality rate of malignant cancers per 10K		0.0245	0.0245
		(0.0216)	(0.0236)
Crude mortality rate of all other causes per 10K		0.0167	0.0167
		(0.0119)	(0.0117)
VA BRFSS 2014 SAE outc26_shingles_vacc		-3.0645	-3.0645
		(1.8735)	(1.8941)
_cons	-2.6235***	-1.7042*	-1.7042*
	(0.1287)	(0.7020)	(0.7371)
Area effect variance			
var(_cons[FIPS_county])	0.1374		0.0000
	(0.1197)		(0.0000)

Number of alternative models used to estimate model error = 6.

Results by health districts

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Augusta County	51015	5.3%	(2.2%, 12.5%)	4.7%	(3.8%, 5.7%)
Bath County	51017	13.8%	(2.0%, 56.2%)	7.2%	(3.7%, 13.4%)
Caroline County	51033	0.0%	(0.0%, 19.5%)	3.9%	(2.7%, 5.6%)
Clarke County	51043	8.4%	(1.3%, 39.0%)	3.8%	(2.8%, 5.1%)
Culpeper County	51047	1.1%	(0.7%, 13.8%)	4.3%	(3.4%, 5.3%)
Fauquier County	51061	3.2%	(1.0%, 10.4%)	4.1%	(3.3%, 5.2%)
Frederick County	51069	5.4%	(1.6%, 16.1%)	4.5%	(3.4%, 6.1%)
Highland County	51091	0.0%	(-0.0%, 49.0%)	10.1%	(5.0%, 19.2%)
King George County	51099	0.0%	(0.0%, 17.2%)	3.6%	(2.6%, 4.8%)
Madison County	51113	2.0%	(1.1%, 24.3%)	8.1%	(4.8%, 13.2%)
Orange County	51137	2.8%	(1.2%, 17.6%)	7.3%	(4.6%, 11.3%)
Page County	51139	13.6%	(3.9%, 38.0%)	6.6%	(5.0%, 8.8%)
Rappahannock County	51157	0.0%	(0.0%, 41.9%)	4.5%	(3.2%, 6.3%)
Rockbridge County	51163	7.5%	(3.8%, 23.1%)	4.6%	(3.6%, 5.8%)
Rockingham County	51165	3.1%	(2.1%, 11.9%)	3.5%	(2.8%, 4.4%)
Shenandoah County	51171	2.4%	(1.2%, 12.6%)	6.1%	(5.1%, 7.3%)
Spotsylvania County	51177	2.9%	(0.7%, 11.0%)	3.8%	(2.9%, 4.9%)
Stafford County	51179	2.0%	(1.3%, 6.7%)	2.3%	(1.7%, 2.9%)
Warren County	51187	0.0%	(0.0%, 12.0%)	4.8%	(3.5%, 6.6%)
Buena Vista City	51530	0.0%	(0.0%, 62.9%)	5.5%	(3.4%, 9.0%)
Fredericksburg City	51630	0.3%	(0.2%, 15.6%)	1.9%	(1.2%, 2.9%)
Harrisonburg City	51660	2.3%	(1.2%, 30.1%)	2.8%	(1.9%, 4.0%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	1.5%	(0.5%, 4.6%)
Staunton City	51790	0.0%	(0.0%, 35.7%)	5.2%	(3.1%, 8.6%)
Waynesboro	51820	0.0%	(0.0%, 68.9%)	4.1%	(2.3%, 7.0%)

City					
Winchester City	51840	3.5%	(1.5%, 36.9%)	5.6%	(3.5%, 9.0%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	1.8%	(0.5%, 6.0%)	2.0%	(1.4%, 2.9%)
Alleghany County	51005	8.1%	(2.6%, 22.1%)	7.7%	(4.7%, 12.5%)
Amherst County	51009	0.9%	(0.5%, 11.8%)	6.1%	(4.3%, 8.5%)
Appomattox County	51011	1.5%	(1.0%, 12.4%)	2.7%	(0.8%, 8.7%)
Arlington City	51013	0.4%	(0.3%, 4.1%)	0.7%	(0.4%, 1.2%)
Bedford County	51019	2.8%	(1.5%, 8.5%)	5.3%	(4.2%, 6.7%)
Botetourt County	51023	3.9%	(2.3%, 19.7%)	3.3%	(1.7%, 6.4%)
Campbell County	51031	3.3%	(1.9%, 10.2%)	4.2%	(3.4%, 5.1%)
Craig County	51045	6.2%	(2.2%, 54.7%)	6.0%	(3.8%, 9.3%)
Fairfax County	51059	0.9%	(0.6%, 2.1%)	1.4%	(1.0%, 1.9%)
Fluvanna County	51065	7.1%	(1.1%, 33.9%)	2.8%	(1.6%, 5.1%)
Greene County	51079	0.0%	(0.0%, 37.5%)	3.2%	(2.0%, 5.0%)
Loudoun County	51107	1.0%	(0.6%, 3.6%)	1.1%	(0.8%, 1.6%)
Louisa County	51109	3.0%	(1.6%, 19.2%)	5.2%	(3.5%, 7.8%)
Nelson County	51125	0.6%	(0.3%, 46.4%)	6.6%	(3.8%, 11.3%)
Prince William County	51153	0.8%	(0.5%, 2.9%)	2.4%	(1.7%, 3.3%)
Roanoke County	51161	8.5%	(4.2%, 16.4%)	4.6%	(3.5%, 6.1%)
Alexandria City	51510	1.8%	(0.6%, 5.6%)	1.2%	(0.8%, 1.8%)
Charlottesville City	51540	0.0%	(0.0%, 14.4%)	1.6%	(1.1%, 2.4%)
Covington City	51580	42.8%	(3.4%, 94.1%)	5.3%	(2.6%, 10.5%)
Fairfax City	51600	0.9%	(0.5%, 10.4%)	1.8%	(1.2%, 2.6%)
Falls Church City	51610	0.0%	(0.0%, 30.8%)	0.6%	(0.2%, 1.6%)
Lynchburg City	51680	5.8%	(2.0%, 15.5%)	3.7%	(2.5%, 5.4%)
Manassas City	51683	6.2%	(1.4%, 23.8%)	3.2%	(2.0%, 5.1%)
Manassas Park City	51685	0.0%	(0.0%, 51.7%)	2.6%	(1.4%, 4.7%)
Salem City	51775	2.7%	(1.1%, 50.4%)	5.1%	(4.1%, 6.4%)

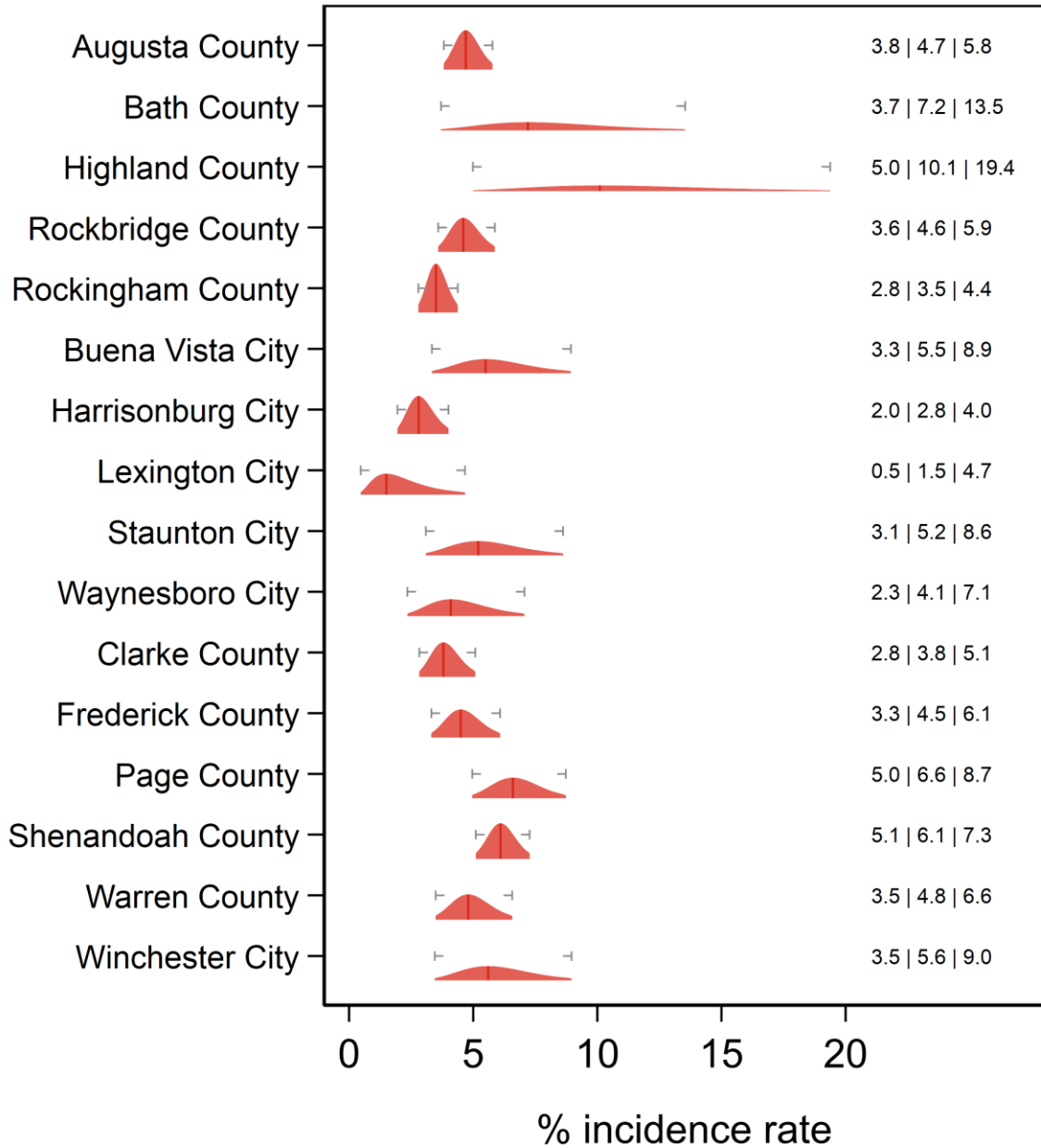
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	6.1%	(1.7%, 61.8%)	5.8%	(3.9%, 8.5%)
Buchanan County	51027	0.0%	(0.0%, 18.6%)	7.2%	(4.8%, 10.6%)
Carroll County	51035	15.5%	(3.2%, 50.6%)	9.2%	(6.0%, 14.0%)
Dickenson County	51051	0.0%	(0.0%, 20.7%)	5.7%	(3.0%, 10.6%)
Floyd County	51063	0.0%	(-0.0%, 21.7%)	5.6%	(3.8%, 8.3%)
Franklin County	51067	5.5%	(2.6%, 16.2%)	6.2%	(4.5%, 8.3%)
Giles County	51071	3.2%	(1.6%, 45.5%)	4.0%	(2.1%, 7.8%)
Grayson County	51077	0.0%	(0.0%, 22.3%)	7.0%	(4.8%, 10.2%)
Henry County	51089	2.8%	(0.7%, 9.9%)	9.1%	(7.2%, 11.6%)
Lee County	51105	5.3%	(0.9%, 25.2%)	8.8%	(6.5%, 11.9%)
Montgomery County	51121	2.4%	(0.6%, 8.8%)	1.5%	(1.0%, 2.3%)
Patrick County	51141	8.0%	(2.0%, 27.5%)	8.6%	(6.0%, 12.2%)
Pittsylvania County	51143	7.2%	(3.2%, 15.6%)	7.4%	(6.0%, 9.1%)
Pulaski County	51155	10.7%	(3.4%, 28.9%)	5.8%	(4.4%, 7.8%)
Russell County	51167	6.0%	(3.6%, 23.1%)	6.5%	(4.6%, 9.2%)
Scott County	51169	4.5%	(2.6%, 13.4%)	8.3%	(6.3%, 10.9%)
Smyth County	51173	9.3%	(2.8%, 26.8%)	6.7%	(4.9%, 9.0%)
Tazewell County	51185	7.3%	(2.9%, 17.3%)	6.3%	(4.7%, 8.5%)
Washington County	51191	6.1%	(1.9%, 17.8%)	5.5%	(4.6%, 6.6%)
Wise County	51195	2.7%	(1.3%, 10.5%)	7.4%	(5.9%, 9.3%)
Wythe County	51197	0.0%	(0.0%, 12.1%)	6.4%	(5.4%, 7.6%)
Bristol City	51520	0.0%	(0.0%, 55.1%)	6.9%	(4.6%, 10.2%)
Danville City	51590	0.6%	(0.4%, 24.5%)	7.9%	(5.2%, 11.9%)
Galax City	51640	35.3%	(1.3%, 96.4%)	7.2%	(3.3%, 15.2%)
Martinsville City	51690	16.5%	(2.3%, 62.9%)	10.6%	(5.7%, 18.8%)
Norton City	51720	12.0%	(0.5%, 94.9%)	5.1%	(2.6%, 9.5%)
Radford City	51750	0.7%	(0.5%, 20.7%)	2.6%	(2.0%, 3.3%)
Roanoke City	51770	2.0%	(1.2%, 8.7%)	4.9%	(3.9%, 6.3%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	41.8%	(14.8%, 74.8%)	9.8%	(4.6%, 19.7%)
Brunswick County	51025	4.7%	(0.8%, 24.3%)	9.3%	(6.6%, 12.9%)
Buckingham County	51029	8.6%	(4.2%, 34.0%)	8.5%	(5.5%, 12.9%)
Charles City County	51036	2.1%	(0.4%, 79.1%)	3.6%	(1.7%, 7.8%)
Charlotte County	51037	5.1%	(2.7%, 27.4%)	9.3%	(6.4%, 13.3%)
Chesterfield County	51041	2.1%	(1.1%, 4.1%)	2.8%	(2.4%, 3.3%)
Cumberland County	51049	20.0%	(4.2%, 58.6%)	5.7%	(3.9%, 8.3%)
Dinwiddie County	51053	2.3%	(1.4%, 14.8%)	6.0%	(4.5%, 8.1%)
Goochland County	51075	2.8%	(1.6%, 36.2%)	3.1%	(2.4%, 4.0%)
Greensville County	51081	0.0%	(0.0%, 28.8%)	6.9%	(4.4%, 10.7%)
Halifax County	51083	13.5%	(5.6%, 28.8%)	7.8%	(4.8%, 12.3%)
Hanover County	51085	1.8%	(1.0%, 9.7%)	3.1%	(2.5%, 3.9%)
Henrico County	51087	1.6%	(0.6%, 4.5%)	2.9%	(2.5%, 3.5%)
Lunenburg County	51111	9.1%	(1.9%, 33.8%)	8.2%	(6.2%, 10.9%)
Mecklenburg County	51117	1.3%	(0.9%, 10.4%)	5.9%	(3.4%, 10.2%)
New Kent County	51127	0.0%	(0.0%, 19.1%)	4.0%	(2.8%, 5.5%)
Nottoway County	51135	6.9%	(3.2%, 27.3%)	6.7%	(4.9%, 9.1%)
Powhatan County	51145	3.4%	(1.7%, 29.6%)	4.1%	(2.9%, 5.9%)
Prince Edward County	51147	5.3%	(1.1%, 21.2%)	5.0%	(3.7%, 6.8%)
Prince George County	51149	0.0%	(-0.0%, 14.7%)	4.3%	(2.9%, 6.3%)
Surry County	51181	3.3%	(1.3%, 50.9%)	5.9%	(4.2%, 8.2%)
Sussex County	51183	1.2%	(0.8%, 25.1%)	8.5%	(6.0%, 12.0%)
Colonial Heights City	51570	6.0%	(1.4%, 22.6%)	7.9%	(5.3%, 11.6%)
Emporia City	51595	71.0%	(14.2%, 96.3%)	7.6%	(4.7%, 11.9%)
Hopewell City	51670	5.2%	(2.9%, 31.9%)	6.1%	(4.0%, 9.1%)
Petersburg	51730	3.5%	(2.1%, 24.0%)	8.0%	(5.6%, 11.4%)

City					
Richmond City	51760	2.0%	(1.4%, 6.8%)	3.9%	(2.9%, 5.1%)

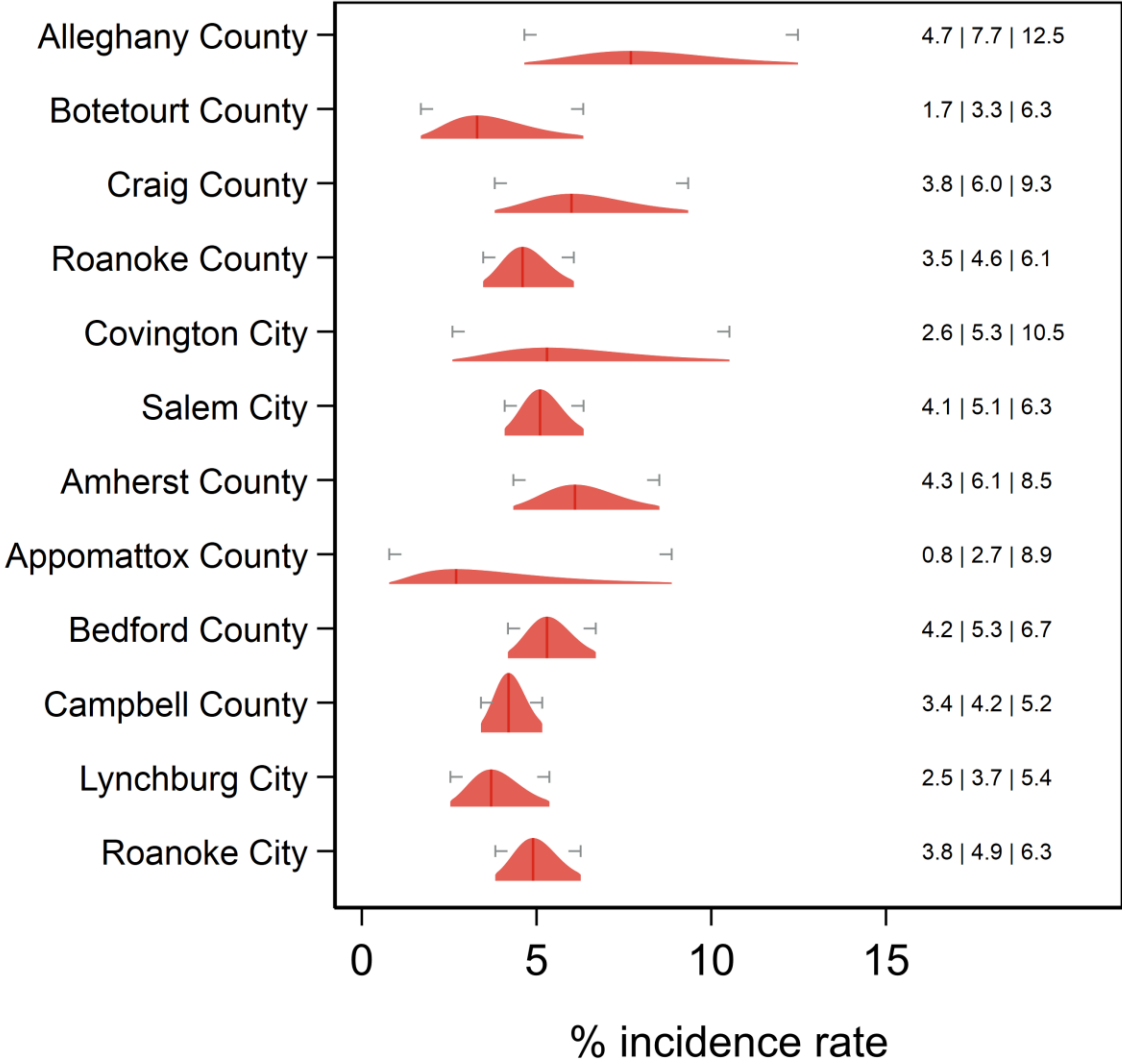
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	7.8%	(3.3%, 17.5%)	8.1%	(6.2%, 10.5%)
Essex County	51057	6.9%	(1.4%, 28.3%)	7.9%	(4.6%, 13.2%)
Gloucester County	51073	1.9%	(1.3%, 12.3%)	6.4%	(4.8%, 8.5%)
Isle of Wight County	51093	4.2%	(0.7%, 21.4%)	4.7%	(3.9%, 5.8%)
James City County	51095	2.8%	(0.7%, 10.9%)	3.1%	(2.2%, 4.4%)
King and Queen County	51097	0.0%	(0.0%, 47.4%)	6.5%	(4.5%, 9.4%)
King William County	51101	1.9%	(1.0%, 37.5%)	4.9%	(3.8%, 6.3%)
Lancaster County	51103	2.5%	(1.5%, 22.2%)	8.0%	(4.4%, 14.2%)
Mathews County	51115	3.5%	(2.2%, 20.3%)	6.7%	(4.4%, 9.9%)
Middlesex County	51119	2.8%	(1.3%, 29.5%)	8.6%	(4.9%, 14.5%)
Northampton County	51131	14.6%	(4.8%, 37.0%)	12.0%	(6.6%, 20.7%)
Northumberland County	51133	7.9%	(1.6%, 31.6%)	8.8%	(4.7%, 15.9%)
Richmond County	51159	0.5%	(0.4%, 12.3%)	8.0%	(5.0%, 12.6%)
Southampton County	51175	1.8%	(1.0%, 21.7%)	6.9%	(5.4%, 8.8%)
Westmoreland County	51193	7.5%	(1.2%, 35.0%)	9.9%	(6.1%, 15.5%)
York County	51199	0.9%	(0.5%, 9.4%)	2.0%	(1.4%, 2.8%)
Chesapeake City	51550	3.3%	(1.6%, 6.8%)	3.6%	(3.0%, 4.2%)
Franklin City	51620	8.8%	(3.3%, 48.8%)	11.8%	(6.5%, 20.3%)
Hampton City	51650	4.5%	(2.6%, 9.7%)	5.8%	(4.4%, 7.6%)
Newport News City	51700	3.2%	(1.3%, 7.9%)	4.7%	(3.4%, 6.3%)
Norfolk City	51710	3.0%	(1.5%, 5.9%)	3.8%	(3.0%, 4.7%)
Poquoson City	51735	0.0%	(0.0%, 40.5%)	2.4%	(1.8%, 3.3%)
Portsmouth City	51740	5.0%	(2.4%, 10.2%)	6.4%	(5.0%, 8.1%)
Suffolk City	51800	0.6%	(0.4%, 7.3%)	4.7%	(3.8%, 5.7%)
Virginia Beach City	51810	2.9%	(1.7%, 5.0%)	2.9%	(2.4%, 3.5%)
Williamsburg City	51830	0.0%	(0.0%, 36.8%)	0.9%	(0.3%, 3.0%)

Ever had a stroke Central Shenandoah and Lord Fairfax HDs



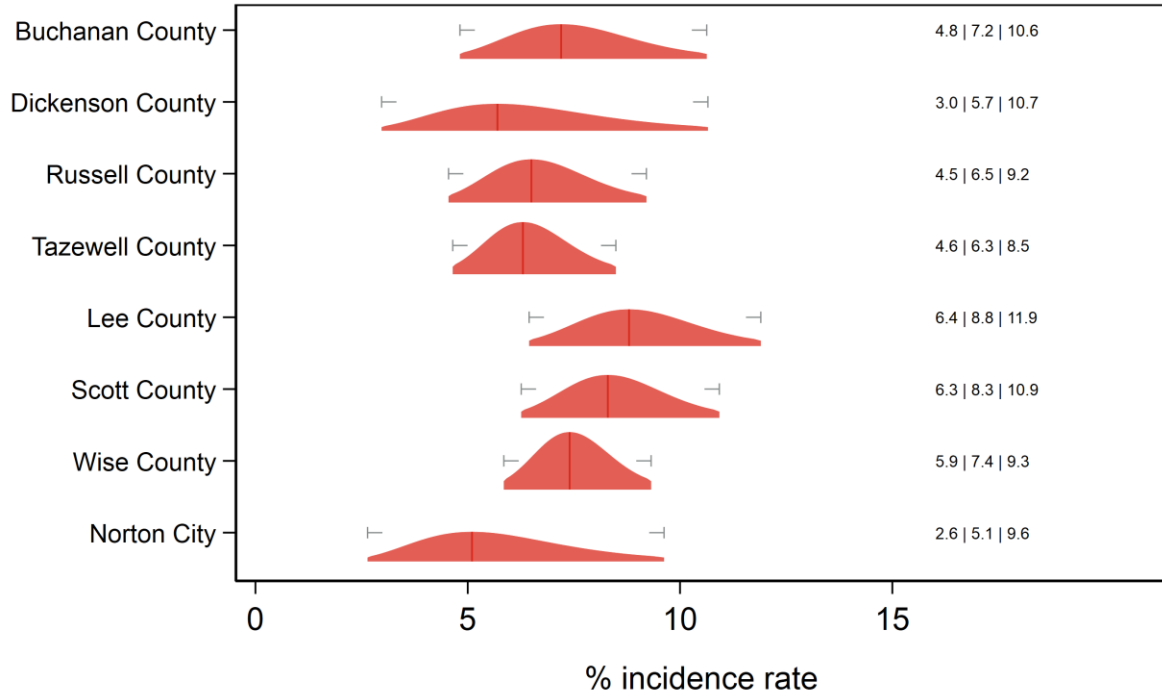
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
Gray markers: 95% confidence interval

Ever had a stroke Alleghany, Roanoke and Central Virginia HDs



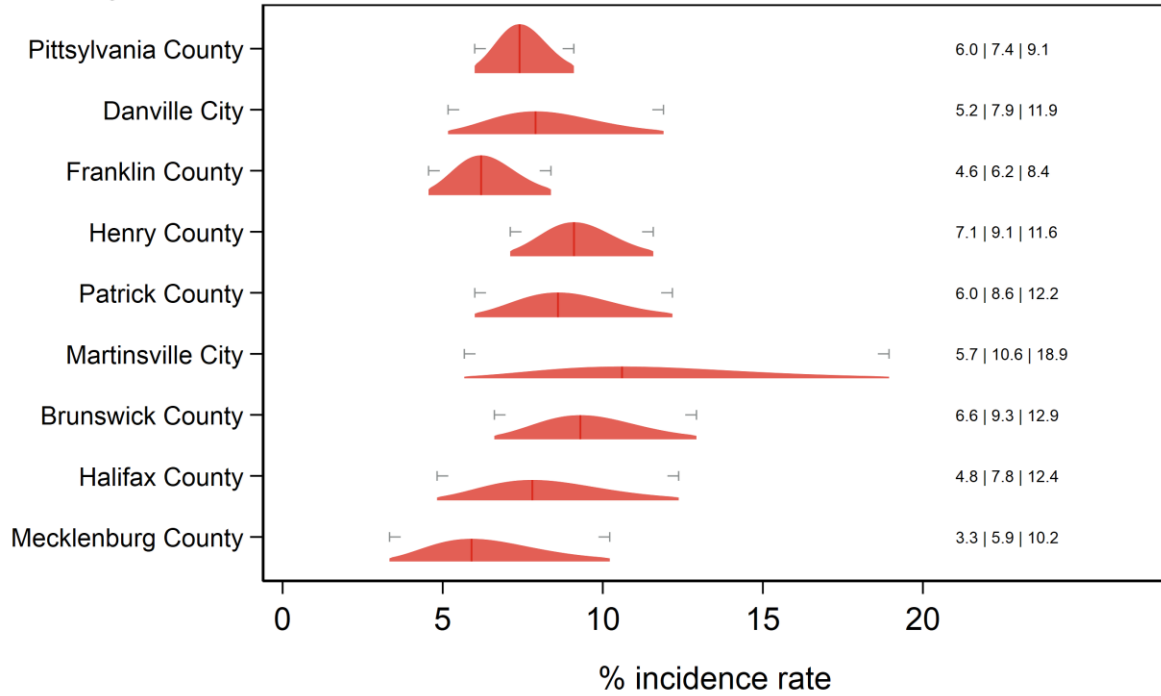
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a stroke Cumberland Plateau and Lenowisco HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

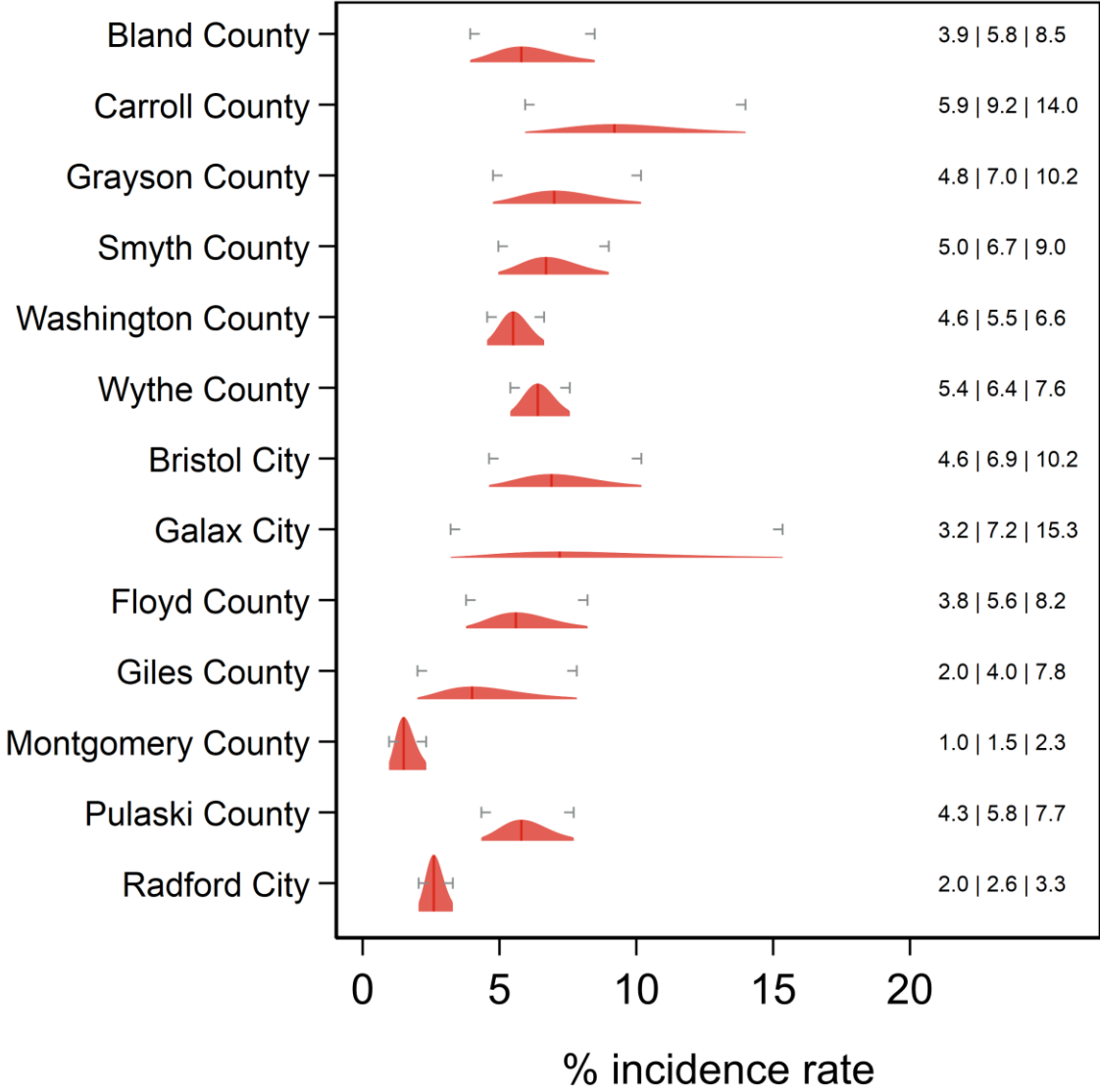
Ever had a stroke Pittsylvania/Danville, Southside and West Piedmont HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

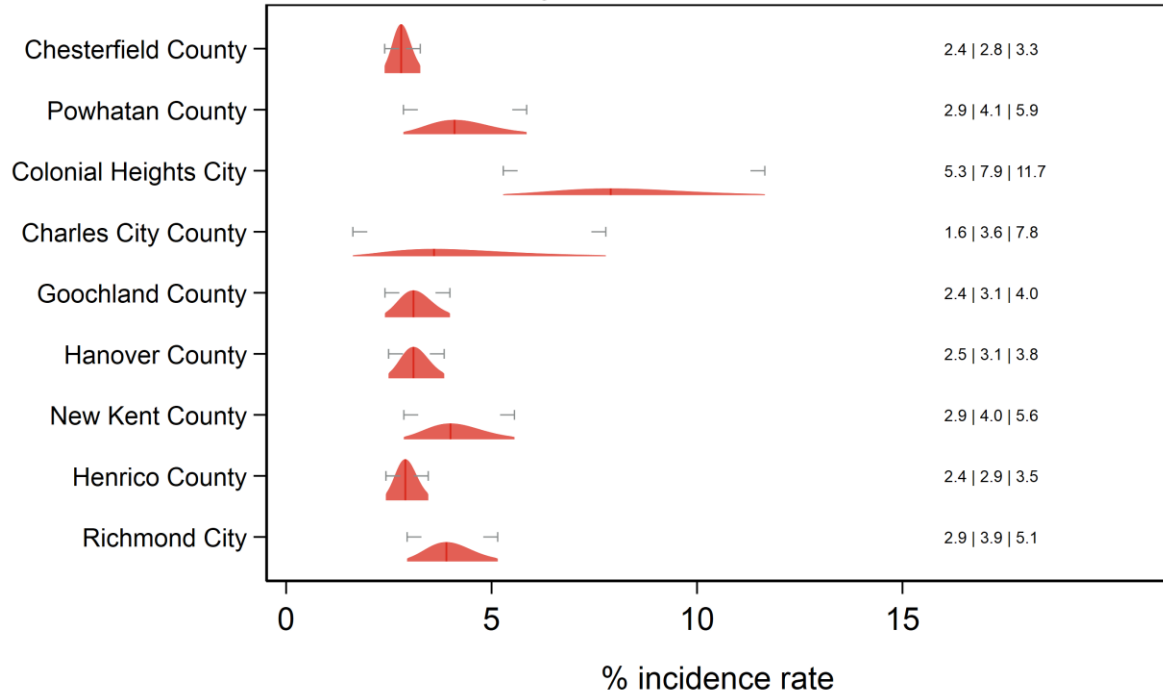
Ever had a stroke

New River and Mount Rogers HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

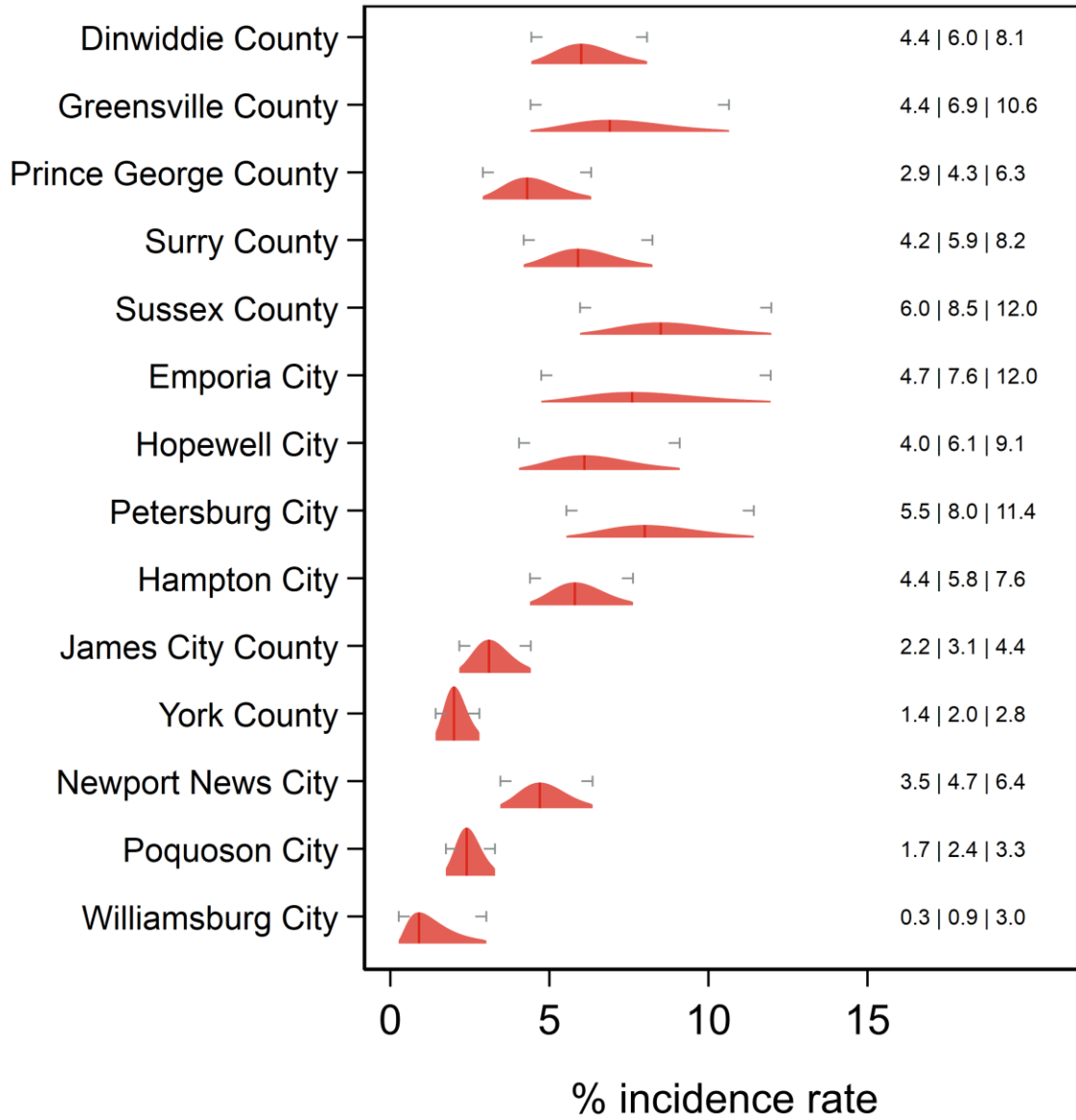
Ever had a stroke Chesterfield, Chickahominy, Henrico and Richmond HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a stroke

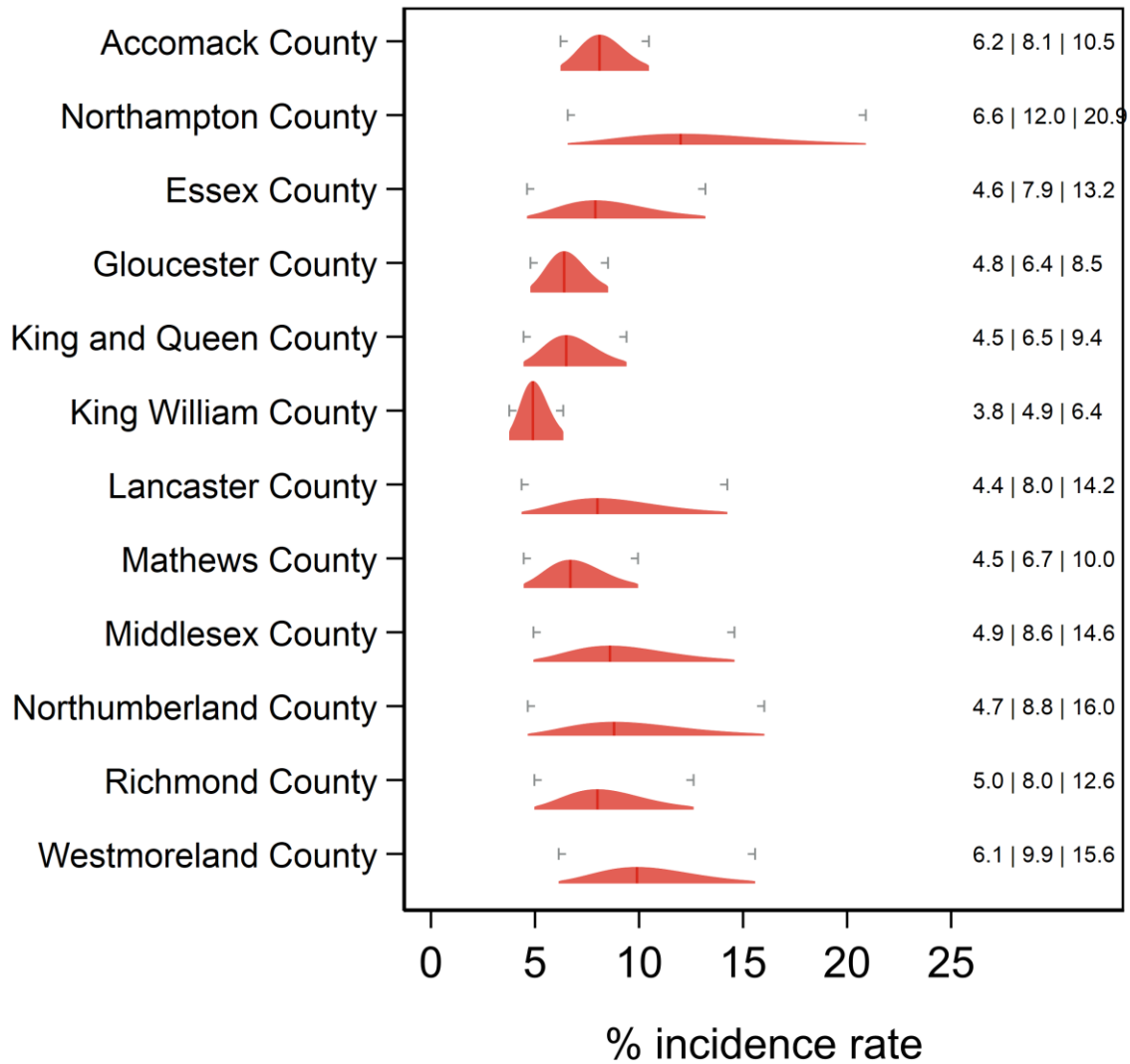
Crater, Peninsula and Hampton HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

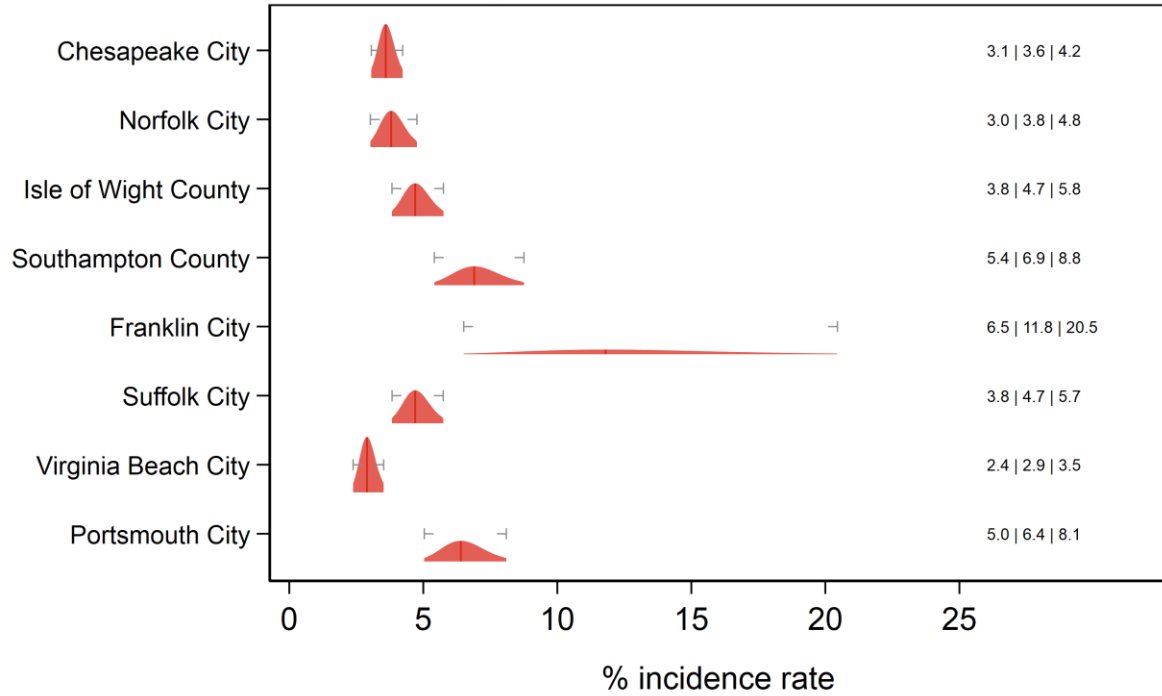
Ever had a stroke

Eastern Shore and Three Rivers HDs



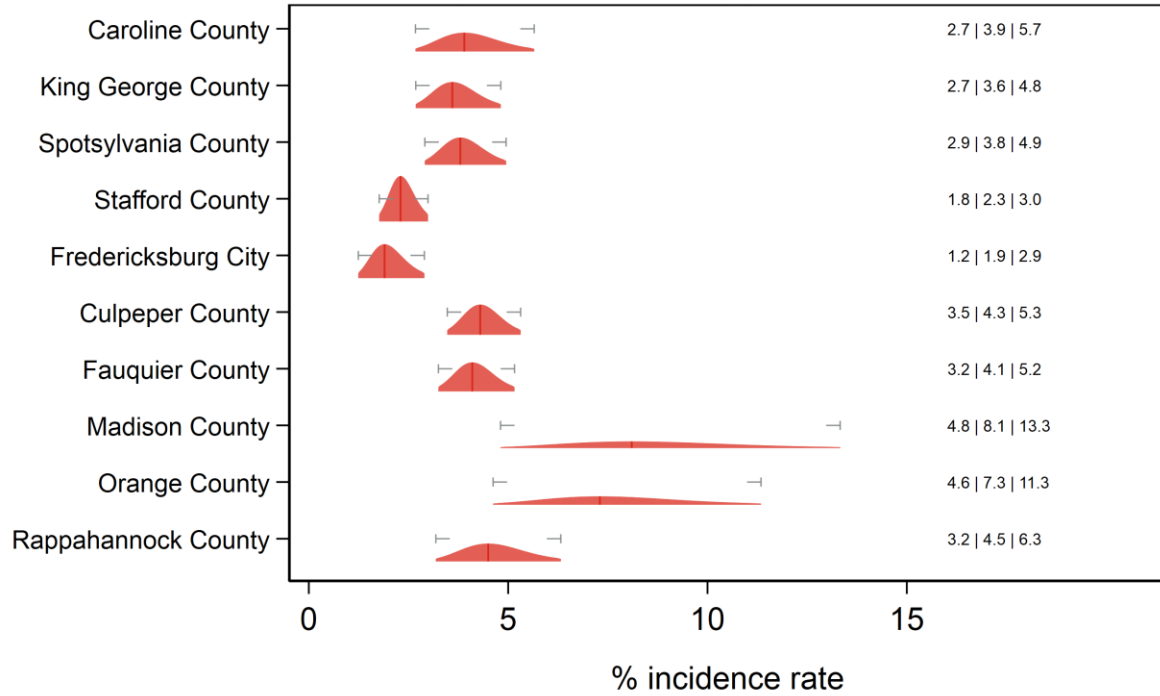
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a stroke Norfolk, Portsmouth, Chesapeake, VA Beach, W. Tidewater HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

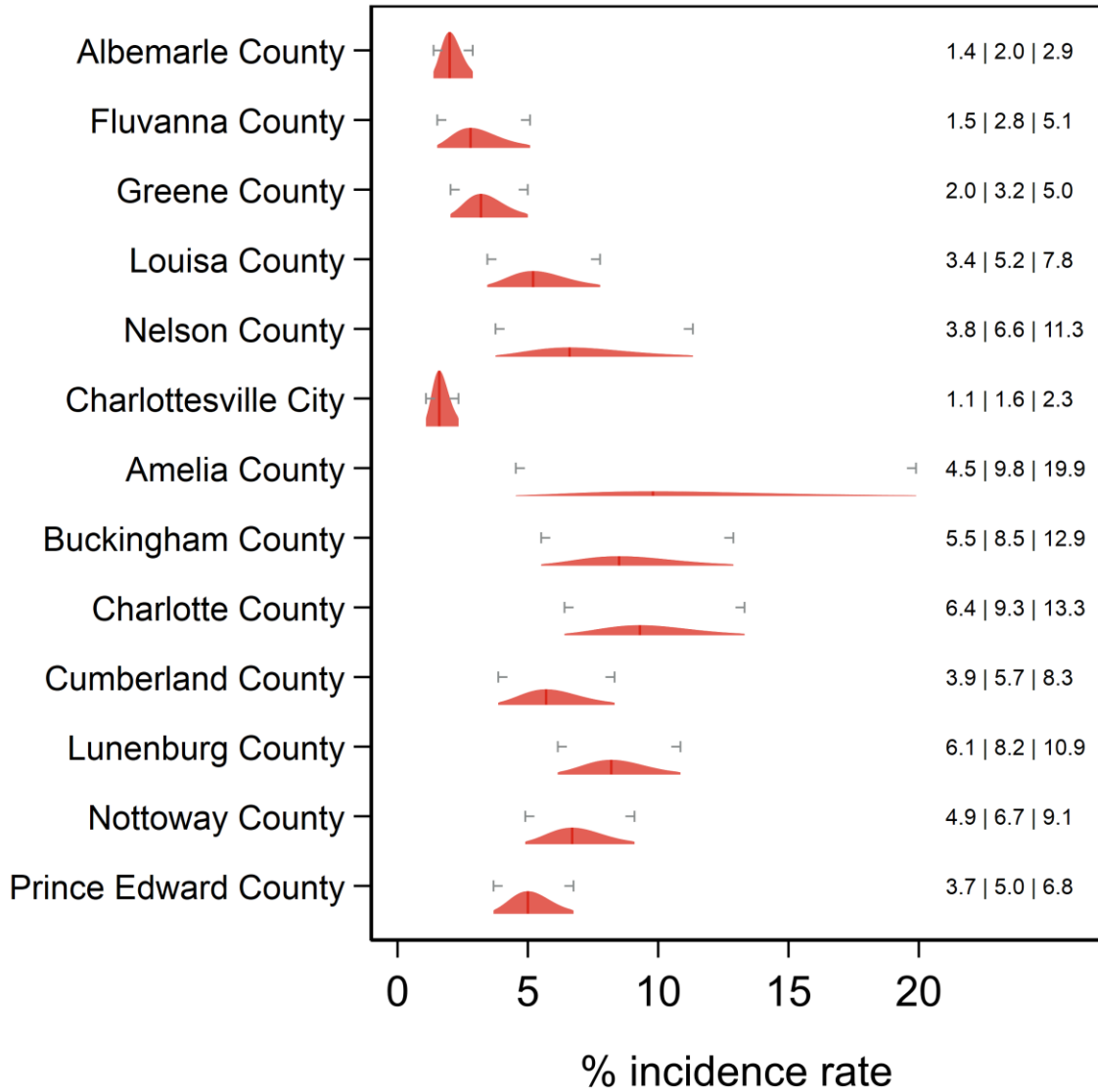
Ever had a stroke Rappahannock/Rapidan and Rappahannock HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

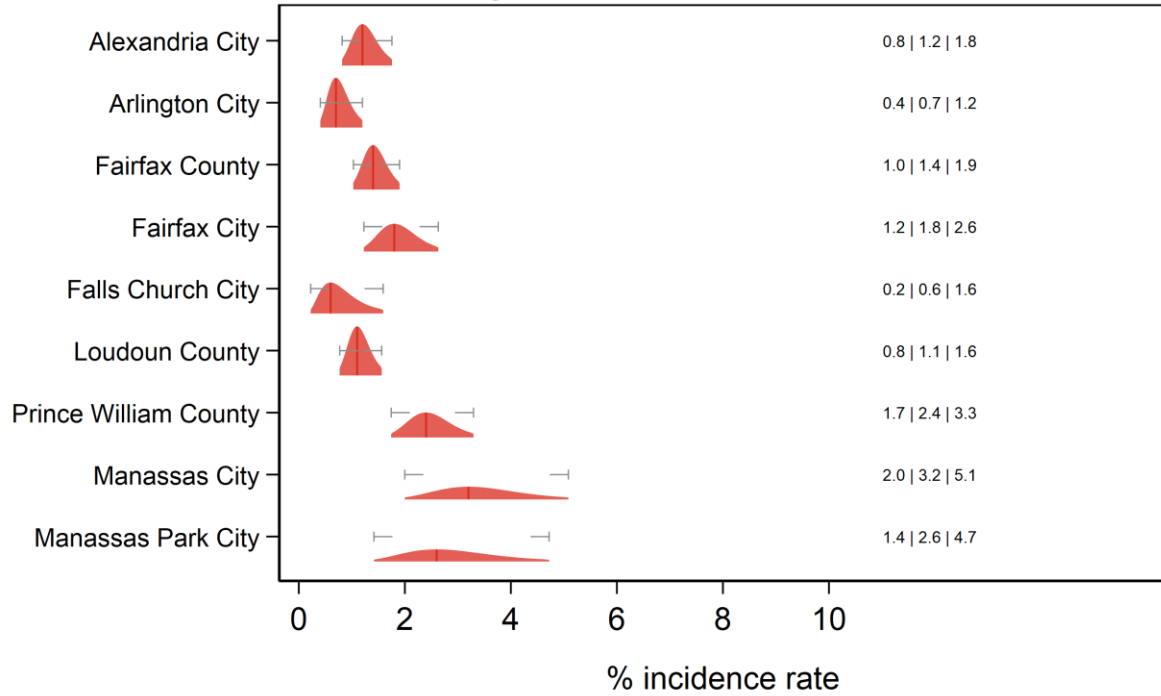
Ever had a stroke

Thomas Jefferson and Piedmont HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a stroke Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Additional diagnostics

Direct estimate is inside the 95% SAE Wilson CI: 41 areas.

Direct estimate is outside the 95% SAE Wilson CI: 92 areas.

SAE estimate is inside the 95% direct Wilson CI: 131 areas.

SAE estimate is outside the 95% direct Wilson CI: 2 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 121 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 12 areas.

SAE Wilson 95% CI and the 95% direct Wilson CI do not overlap: 0 areas.

SAE standard error is less than the direct standard error: 97 areas.

SAE standard error is greater than the (nonzero) direct standard error: 11 areas.

Direct standard error is zero: 25 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.07%; med = 0.80%; max = 4.33%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 14.36%; med = 92.46%; max = 99.67%.

Proportion of SAE variance due to model selection: min = 0.07%; med = 6.41%; max = 85.43%.

Proportion of SAE variance due to area random effects: <identically zero>