



Indicator 9: Ever had a stroke

Internal variable name: outc9_stroke

Section 1: Definition

Definition: (Ever told) you had a stroke.

Section 2: Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 9: Ever had a stroke			
Non-Hispanic Black vs. Non-Hispanic White	0.5915*** (0.1613)	0.6432** (0.2034)	0.6432*** (0.1788)
Non-Hispanic Asian vs. Non-Hispanic White	-0.3913 (0.7889)	-0.2734 (0.7974)	-0.2734 (0.7282)
Non-Hispanic Other vs. Non-Hispanic White	0.3532 (0.4065)	0.3861 (0.3581)	0.3861 (0.4086)
Hispanic vs. Non-Hispanic White	0.2029 (0.4491)	0.4268 (0.4487)	0.4268 (0.4503)
Female	-0.0328 (0.1275)	-0.0488 (0.1481)	-0.0488 (0.1255)
Age 18-24 vs. 65+	-3.5381*** (1.0265)	-3.5004*** (1.0210)	-3.5004*** (1.0323)
Age 25-34 vs. 65+	-2.1832*** (0.4264)	-2.1236*** (0.4006)	-2.1236*** (0.4363)
Age 35-44 vs. 65+	-2.4802*** (0.5221)	-2.4330*** (0.4540)	-2.4330*** (0.5231)
Age 45-54 vs. 65+	-1.2235*** (0.2731)	-1.1717*** (0.2347)	-1.1717*** (0.2780)
Age 55-64 vs. 65+	-0.2817 (0.1496)	-0.2742 (0.1648)	-0.2742 (0.1576)
% Non-Hispanic minority among adults 65+		-0.0703** (0.0214)	-0.0703*** (0.0137)
Stroke hospitalization rate per 1,000		0.1046 (0.1661)	0.1046 (0.0903)
% age <18		-4.4550* (2.0317)	-4.4550* (1.7609)
% moved past year, population 1+ years old		-0.0215 (0.0188)	-0.0215 (0.0156)

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Historic SAE: mammogram screening		-0.0597*** (0.0151)	-0.0597*** (0.0091)
% vacant housing units		-0.1458* (0.0592)	-0.1458*** (0.0362)
{% vacant housing units} interacted with {Stroke hospitalization rate per 1,000}		0.0167 (0.0111)	0.0167** (0.0064)
% Non-Hispanic minority among adults 18 to 64		0.0761 (0.0421)	0.0761* (0.0304)
% families with own children		-0.0441 (0.0379)	-0.0441 (0.0256)
{% Non-Hispanic minority among adults 18 to 64} interacted with {% families with own children}		-0.0004 (0.0010)	-0.0004 (0.0007)
Intercept	-2.7155*** (0.1378)	4.2578 (2.2113)	4.2578** (1.4467)
Area effect variance	0.0000* (0.0000)		0.0000 (0.0000)

Number of alternative models used to estimate model error = 5.



Section 3: Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Augusta County	51015	6.4%	(2.9%, 13.3%)	5.6%	(4.6%, 6.7%)
Bath County	51017	0.0%	(0.0%, 35.0%)	0.2%	(0.1%, 0.7%)
Caroline County	51033	5.2%	(2.0%, 23.8%)	2.3%	(1.5%, 3.4%)
Clarke County	51043	0.0%	(0.0%, 20.3%)	1.0%	(0.6%, 1.7%)
Culpeper County	51047	2.8%	(0.5%, 15.0%)	2.3%	(1.8%, 3.0%)
Fauquier County	51061	1.9%	(1.2%, 8.7%)	1.9%	(1.4%, 2.5%)
Frederick County	51069	1.7%	(0.9%, 7.1%)	2.5%	(1.9%, 3.2%)
Highland County	51091	0.0%	(0.0%, 83.2%)	0.1%	(0.0%, 0.9%)
King George County	51099	0.0%	(-0.0%, 23.5%)	0.8%	(0.5%, 1.4%)
Madison County	51113	0.0%	(-0.0%, 20.0%)	1.2%	(0.7%, 1.9%)
Orange County	51137	3.1%	(0.5%, 16.3%)	2.8%	(2.3%, 3.3%)
Page County	51139	4.5%	(1.7%, 36.4%)	3.7%	(2.8%, 4.9%)
Rappahannock County	51157	0.0%	(-0.0%, 26.1%)	0.9%	(0.4%, 1.9%)
Rockbridge County	51163	2.9%	(0.5%, 15.7%)	3.4%	(2.4%, 4.7%)
Rockingham County	51165	5.2%	(1.7%, 14.8%)	4.0%	(3.2%, 5.0%)
Shenandoah County	51171	4.1%	(1.0%, 14.8%)	2.3%	(1.7%, 3.1%)
Spotsylvania County	51177	2.7%	(1.7%, 9.3%)	1.8%	(1.5%, 2.3%)
Stafford County	51179	2.0%	(0.5%, 7.5%)	1.7%	(1.4%, 2.1%)
Warren County	51187	0.0%	(0.0%, 13.9%)	2.1%	(1.4%, 3.0%)
Buena Vista City	51530	0.0%	(-0.0%, 89.6%)	0.5%	(0.2%, 1.8%)
Fredericksburg City	51630	6.8%	(2.3%, 28.1%)	1.0%	(0.5%, 1.8%)
Harrisonburg City	51660	0.0%	(0.0%, 32.5%)	1.1%	(0.5%, 2.7%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	1.1%	(0.3%, 3.8%)
Staunton City	51790	0.0%	(0.0%, 42.2%)	5.5%	(4.0%, 7.5%)
Waynesboro City	51820	0.0%	(0.0%, 33.1%)	3.1%	(2.0%, 4.7%)
Winchester City	51840	0.0%	(0.0%, 23.5%)	1.5%	(1.0%, 2.4%)

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County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Albemarle County	51003	0.8%	(0.1%, 4.4%)	1.6%	(1.2%, 2.1%)
Alleghany County	51005	1.6%	(1.2%, 14.9%)	2.5%	(1.7%, 3.6%)
Amherst County	51009	4.3%	(0.9%, 18.0%)	5.9%	(4.6%, 7.4%)
Appomattox County	51011	17.0%	(4.8%, 45.8%)	3.4%	(2.2%, 5.2%)
Arlington City	51013	0.5%	(0.4%, 4.2%)	0.9%	(0.6%, 1.2%)
Bedford County	51019	4.7%	(2.5%, 12.4%)	3.2%	(2.6%, 4.0%)
Botetourt County	51023	2.8%	(1.2%, 12.2%)	3.3%	(2.4%, 4.4%)
Campbell County	51031	6.9%	(2.2%, 20.0%)	4.0%	(3.4%, 4.6%)
Craig County	51045	0.0%	(0.0%, 73.6%)	1.4%	(0.4%, 4.9%)
Fairfax County	51059	2.2%	(1.1%, 4.5%)	2.1%	(1.7%, 2.5%)
Fluvanna County	51065	2.3%	(1.1%, 22.9%)	3.7%	(2.9%, 4.8%)
Greene County	51079	0.0%	(0.0%, 21.7%)	1.3%	(0.9%, 2.0%)
Loudoun County	51107	0.7%	(0.3%, 3.4%)	0.9%	(0.6%, 1.3%)
Louisa County	51109	3.2%	(0.5%, 16.7%)	1.5%	(1.1%, 2.1%)
Nelson County	51125	0.0%	(0.0%, 16.1%)	0.8%	(0.5%, 1.6%)
Prince William County	51153	1.0%	(0.3%, 3.2%)	1.1%	(0.9%, 1.3%)
Roanoke County	51161	3.4%	(1.3%, 8.5%)	5.2%	(4.2%, 6.4%)
Alexandria City	51510	1.5%	(1.2%, 7.3%)	1.2%	(0.9%, 1.6%)
Charlottesville City	51540	0.0%	(0.0%, 23.6%)	0.8%	(0.5%, 1.3%)
Covington City	51580	0.0%	(0.0%, 99.4%)	0.8%	(0.2%, 2.4%)
Fairfax City	51600	4.2%	(1.7%, 10.3%)	4.2%	(2.9%, 6.1%)
Falls Church City	51610	0.0%	(0.0%, 62.3%)	0.4%	(0.2%, 0.9%)
Lynchburg City	51680	1.2%	(0.9%, 11.4%)	1.9%	(1.2%, 3.0%)
Manassas City	51683	0.0%	(0.0%, 31.6%)	0.7%	(0.5%, 1.1%)
Manassas Park City	51685	0.0%	(-0.0%, 96.8%)	0.1%	(0.0%, 0.1%)
Salem City	51775	7.9%	(1.1%, 39.1%)	3.7%	(2.4%, 5.6%)

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County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Bland County	51021	0.0%	(0.0%, 42.3%)	1.3%	(0.6%, 2.7%)
Buchanan County	51027	6.3%	(2.2%, 17.1%)	4.5%	(3.1%, 6.6%)
Carroll County	51035	6.0%	(1.6%, 20.2%)	1.2%	(0.7%, 2.2%)
Dickenson County	51051	5.1%	(1.1%, 21.0%)	3.1%	(1.9%, 4.8%)
Floyd County	51063	1.5%	(0.8%, 17.9%)	2.0%	(1.3%, 3.1%)
Franklin County	51067	3.4%	(0.6%, 17.7%)	3.3%	(2.5%, 4.3%)
Giles County	51071	2.3%	(1.1%, 23.9%)	2.8%	(2.0%, 3.8%)
Grayson County	51077	0.0%	(0.0%, 21.1%)	0.8%	(0.4%, 1.7%)
Henry County	51089	7.5%	(3.6%, 15.0%)	6.5%	(5.5%, 7.7%)
Lee County	51105	1.4%	(1.0%, 16.1%)	4.1%	(3.0%, 5.7%)
Montgomery County	51121	1.7%	(1.1%, 7.7%)	1.9%	(1.1%, 3.4%)
Patrick County	51141	1.2%	(0.7%, 16.3%)	1.6%	(1.0%, 2.6%)
Pittsylvania County	51143	2.0%	(1.3%, 6.6%)	4.0%	(3.2%, 5.0%)
Pulaski County	51155	4.5%	(1.4%, 13.3%)	5.9%	(4.3%, 8.0%)
Russell County	51167	2.4%	(1.5%, 14.6%)	3.6%	(2.6%, 5.0%)
Scott County	51169	1.1%	(0.7%, 9.7%)	1.0%	(0.5%, 1.9%)
Smyth County	51173	1.2%	(0.7%, 13.7%)	3.8%	(2.9%, 5.0%)
Tazewell County	51185	8.4%	(3.1%, 20.7%)	5.3%	(4.2%, 6.6%)
Washington County	51191	5.7%	(2.2%, 13.8%)	3.1%	(2.5%, 3.8%)
Wise County	51195	4.4%	(0.8%, 20.6%)	5.4%	(4.2%, 6.9%)
Wythe County	51197	8.0%	(3.3%, 18.3%)	6.0%	(4.5%, 7.9%)
Bristol City	51520	0.0%	(0.0%, 40.4%)	0.7%	(0.4%, 1.4%)
Danville City	51590	14.1%	(3.3%, 43.8%)	9.5%	(6.8%, 13.0%)
Galax City	51640	17.9%	(2.3%, 79.0%)	4.6%	(1.2%, 15.9%)
Martinsville City	51690	0.0%	(0.0%, 47.8%)	7.3%	(4.9%, 10.9%)
Norton City	51720	0.0%	(0.0%, 69.6%)	0.4%	(0.1%, 2.0%)
Radford City	51750	0.0%	(0.0%, 56.8%)	0.5%	(0.2%, 1.6%)
Roanoke City	51770	5.0%	(2.4%, 10.3%)	4.9%	(3.9%, 6.1%)

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County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Amelia County	51007	1.7%	(0.9%, 24.9%)	2.7%	(1.5%, 4.8%)
Brunswick County	51025	6.4%	(1.4%, 25.1%)	9.5%	(6.0%, 14.6%)
Buckingham County	51029	2.2%	(1.3%, 22.4%)	2.8%	(2.0%, 4.0%)
Charles City County	51036	12.6%	(1.8%, 53.3%)	1.3%	(0.4%, 4.7%)
Charlotte County	51037	0.0%	(0.0%, 29.6%)	2.9%	(1.9%, 4.4%)
Chesterfield County	51041	3.3%	(1.7%, 6.3%)	2.9%	(2.4%, 3.5%)
Cumberland County	51049	0.0%	(0.0%, 26.6%)	3.6%	(1.8%, 7.3%)
Dinwiddie County	51053	1.6%	(1.1%, 17.5%)	2.2%	(1.5%, 3.1%)
Goochland County	51075	1.4%	(0.9%, 20.8%)	2.7%	(1.7%, 4.3%)
Greensville County	51081	0.0%	(0.0%, 37.4%)	4.6%	(2.8%, 7.6%)
Halifax County	51083	9.1%	(3.9%, 19.5%)	4.2%	(3.4%, 5.2%)
Hanover County	51085	1.7%	(0.8%, 6.4%)	3.4%	(2.6%, 4.5%)
Henrico County	51087	3.7%	(2.0%, 6.8%)	3.7%	(3.1%, 4.4%)
Lunenburg County	51111	0.0%	(-0.0%, 29.3%)	2.9%	(1.9%, 4.3%)
Mecklenburg County	51117	4.2%	(2.9%, 14.5%)	3.8%	(2.7%, 5.4%)
New Kent County	51127	0.0%	(0.0%, 22.0%)	1.8%	(1.2%, 2.8%)
Nottoway County	51135	0.0%	(0.0%, 21.8%)	3.6%	(2.4%, 5.3%)
Powhatan County	51145	2.3%	(1.2%, 34.7%)	2.7%	(1.9%, 3.8%)
Prince Edward County	51147	3.1%	(1.5%, 21.9%)	1.3%	(0.9%, 2.1%)
Prince George County	51149	0.0%	(0.0%, 12.2%)	2.7%	(2.1%, 3.6%)
Surry County	51181	0.0%	(-0.0%, 47.9%)	0.5%	(0.2%, 1.2%)
Sussex County	51183	0.5%	(0.4%, 26.2%)	5.6%	(3.3%, 9.6%)
Colonial Heights City	51570	15.6%	(4.2%, 54.1%)	5.7%	(3.6%, 8.9%)
Emporia City	51595	0.0%	(0.0%, 68.6%)	2.6%	(0.8%, 8.3%)
Hopewell City	51670	3.9%	(0.6%, 20.5%)	6.2%	(4.1%, 9.2%)
Petersburg City	51730	3.4%	(2.0%, 15.5%)	2.7%	(1.6%, 4.7%)
Richmond City	51760	0.6%	(0.4%, 3.7%)	0.7%	(0.5%, 1.2%)

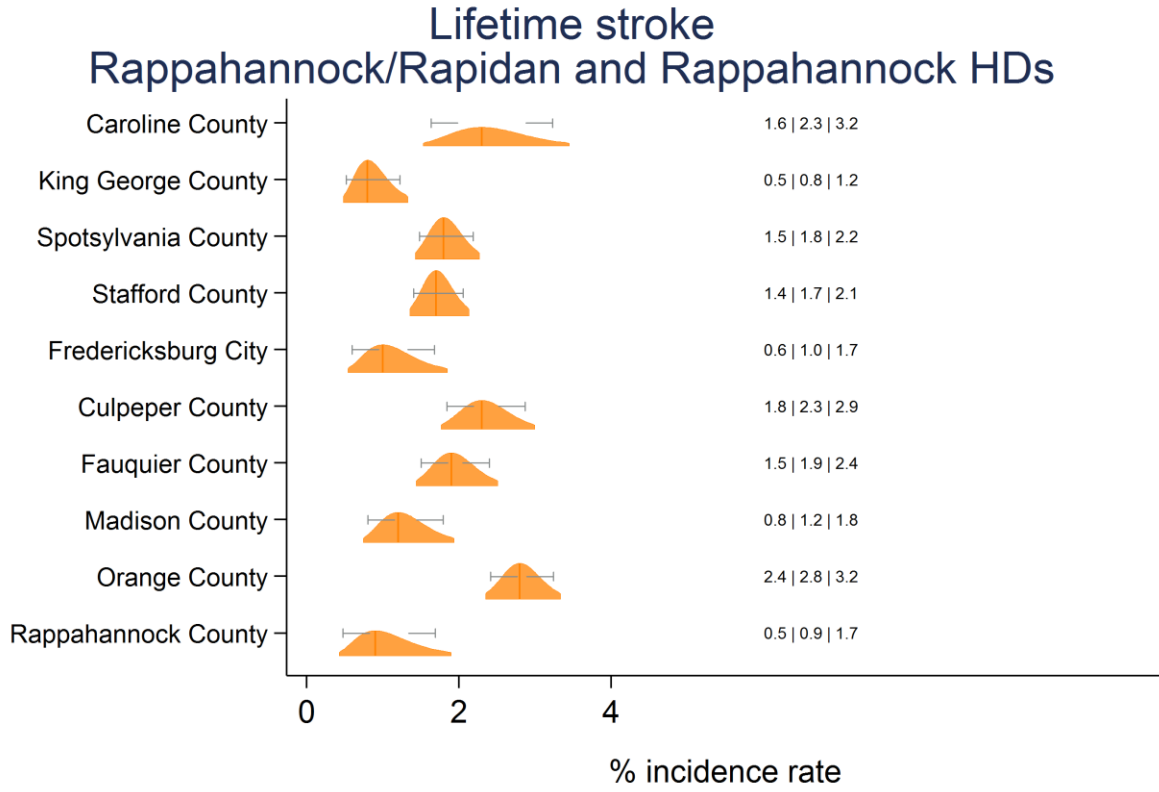
Indicator 9: Ever had a Stroke



County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Accomack County	51001	1.3%	(0.9%, 14.9%)	1.6%	(0.7%, 3.3%)
Essex County	51057	2.7%	(1.3%, 30.7%)	2.5%	(1.5%, 4.3%)
Gloucester County	51073	4.7%	(1.4%, 14.7%)	3.5%	(2.8%, 4.3%)
Isle of Wight County	51093	9.0%	(3.4%, 22.0%)	4.0%	(2.9%, 5.5%)
James City County	51095	3.4%	(1.8%, 11.2%)	3.5%	(2.7%, 4.6%)
King and Queen County	51097	21.8%	(2.6%, 74.8%)	1.8%	(0.8%, 4.1%)
King William County	51101	0.0%	(0.0%, 22.5%)	1.4%	(0.7%, 2.5%)
Lancaster County	51103	25.1%	(5.7%, 64.8%)	14.5%	(9.4%, 21.5%)
Mathews County	51115	3.5%	(1.1%, 22.5%)	2.3%	(1.3%, 4.0%)
Middlesex County	51119	0.0%	(-0.0%, 48.1%)	1.2%	(0.7%, 2.1%)
Northampton County	51131	4.8%	(3.1%, 20.8%)	3.9%	(2.7%, 5.5%)
Northumberland County	51133	6.5%	(1.0%, 31.9%)	6.4%	(4.0%, 10.0%)
Richmond County	51159	0.8%	(0.6%, 14.0%)	2.4%	(1.4%, 4.2%)
Southampton County	51175	2.2%	(1.3%, 30.4%)	5.5%	(3.6%, 8.5%)
Westmoreland County	51193	1.9%	(1.0%, 27.9%)	3.1%	(2.2%, 4.5%)
York County	51199	0.1%	(0.1%, 7.5%)	1.8%	(1.4%, 2.3%)
Chesapeake City	51550	1.8%	(1.0%, 4.8%)	2.2%	(1.8%, 2.6%)
Franklin City	51620	1.5%	(0.8%, 16.4%)	5.3%	(2.1%, 12.9%)
Hampton City	51650	2.5%	(0.9%, 6.7%)	2.3%	(1.7%, 3.0%)
Newport News City	51700	2.8%	(1.5%, 8.2%)	2.4%	(1.8%, 3.2%)
Norfolk City	51710	1.2%	(1.0%, 4.3%)	1.8%	(1.3%, 2.6%)
Poquoson City	51735	0.0%	(0.0%, 54.0%)	2.6%	(1.4%, 4.7%)
Portsmouth City	51740	8.0%	(3.8%, 15.8%)	4.8%	(3.7%, 6.3%)
Suffolk City	51800	2.3%	(0.6%, 8.9%)	3.1%	(2.5%, 3.8%)
Virginia Beach City	51810	3.2%	(1.7%, 6.1%)	2.5%	(2.1%, 2.9%)
Williamsburg City	51830	5.5%	(1.7%, 58.9%)	0.6%	(0.2%, 2.4%)



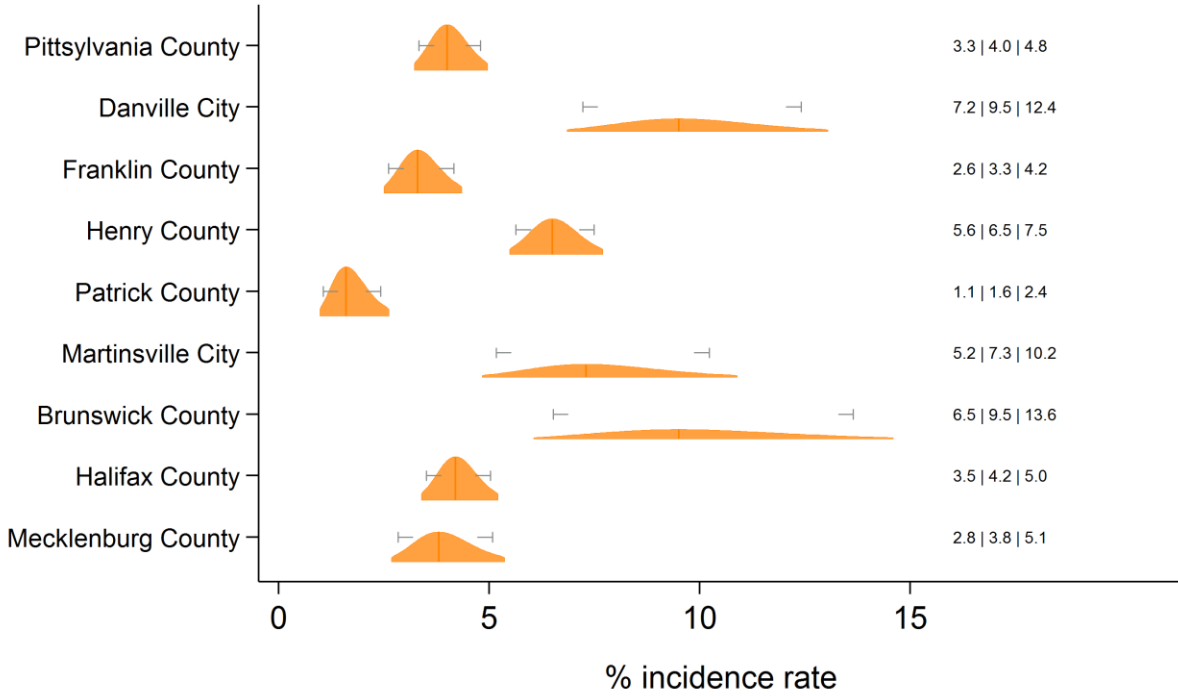
Section 4: Graphical representation



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



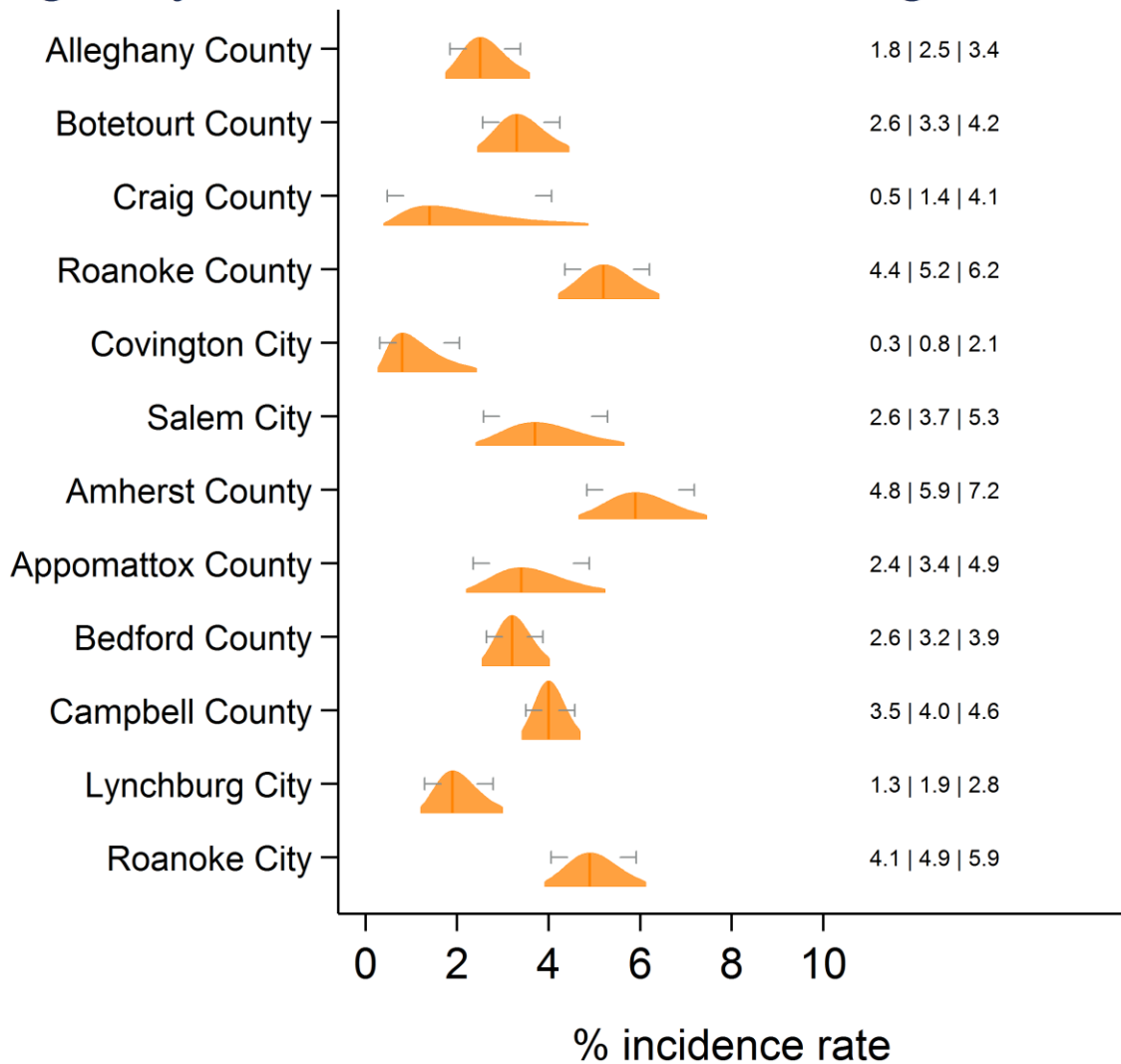
Lifetime stroke Pittsylvania/Danville, Southside and West Piedmont HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



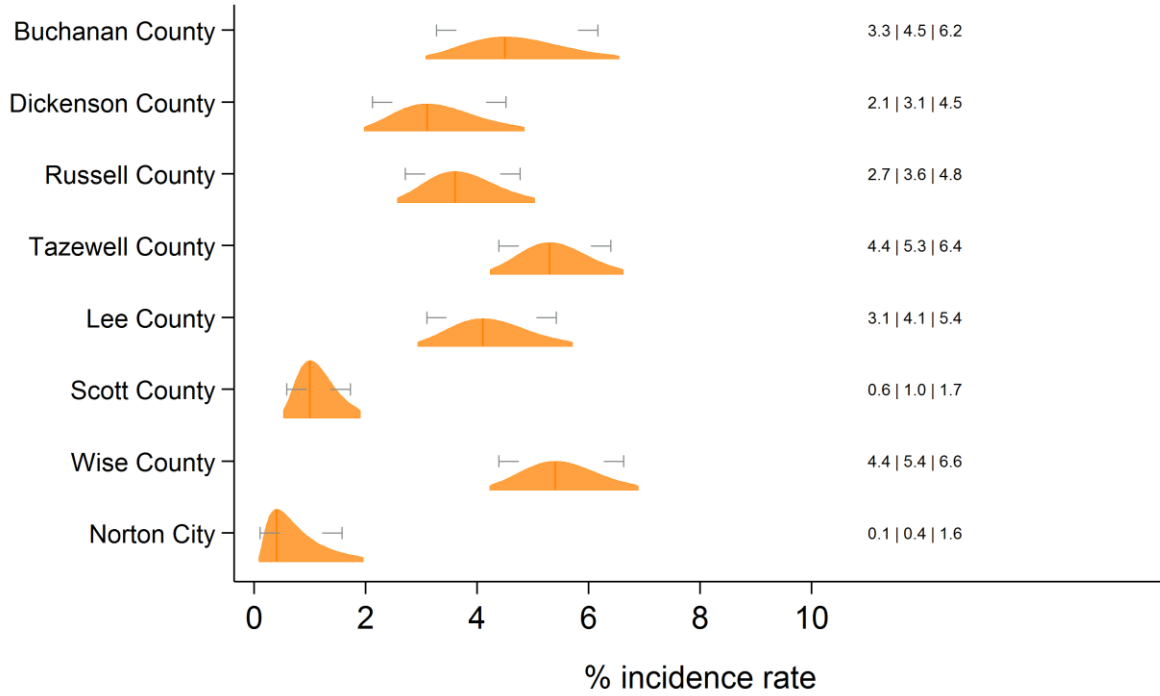
Lifetime stroke Alleghany, Roanoke and Central Virginia HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



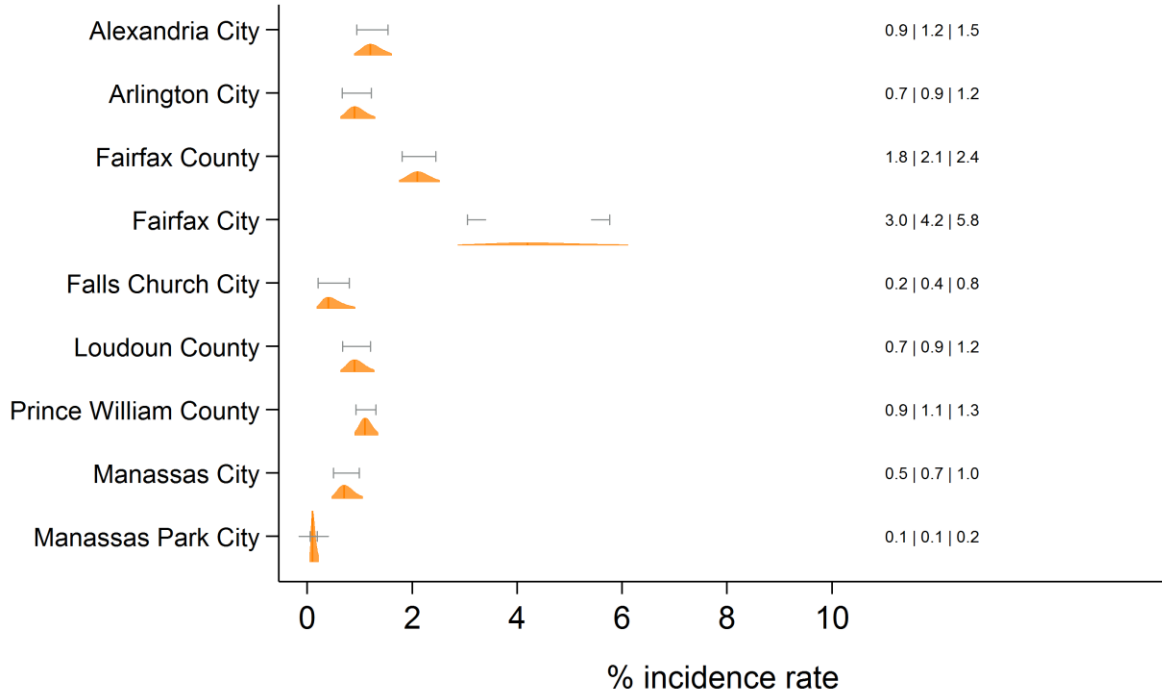
Lifetime stroke Cumberland Plateau and Lenowisco HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



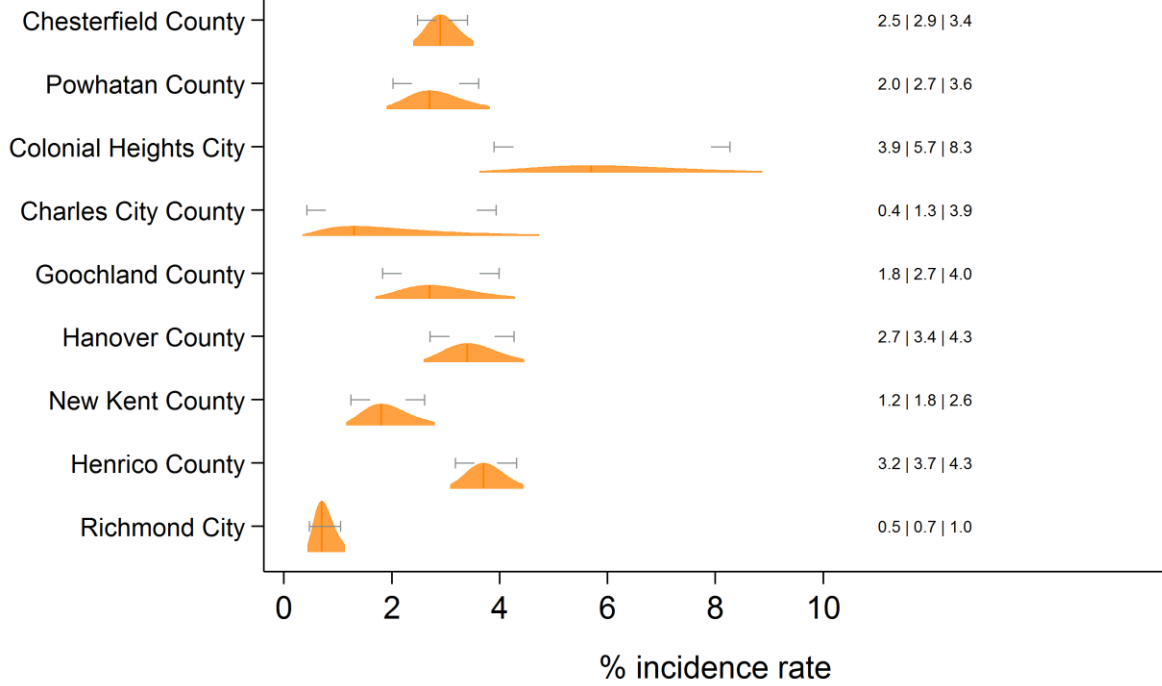
Lifetime stroke Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



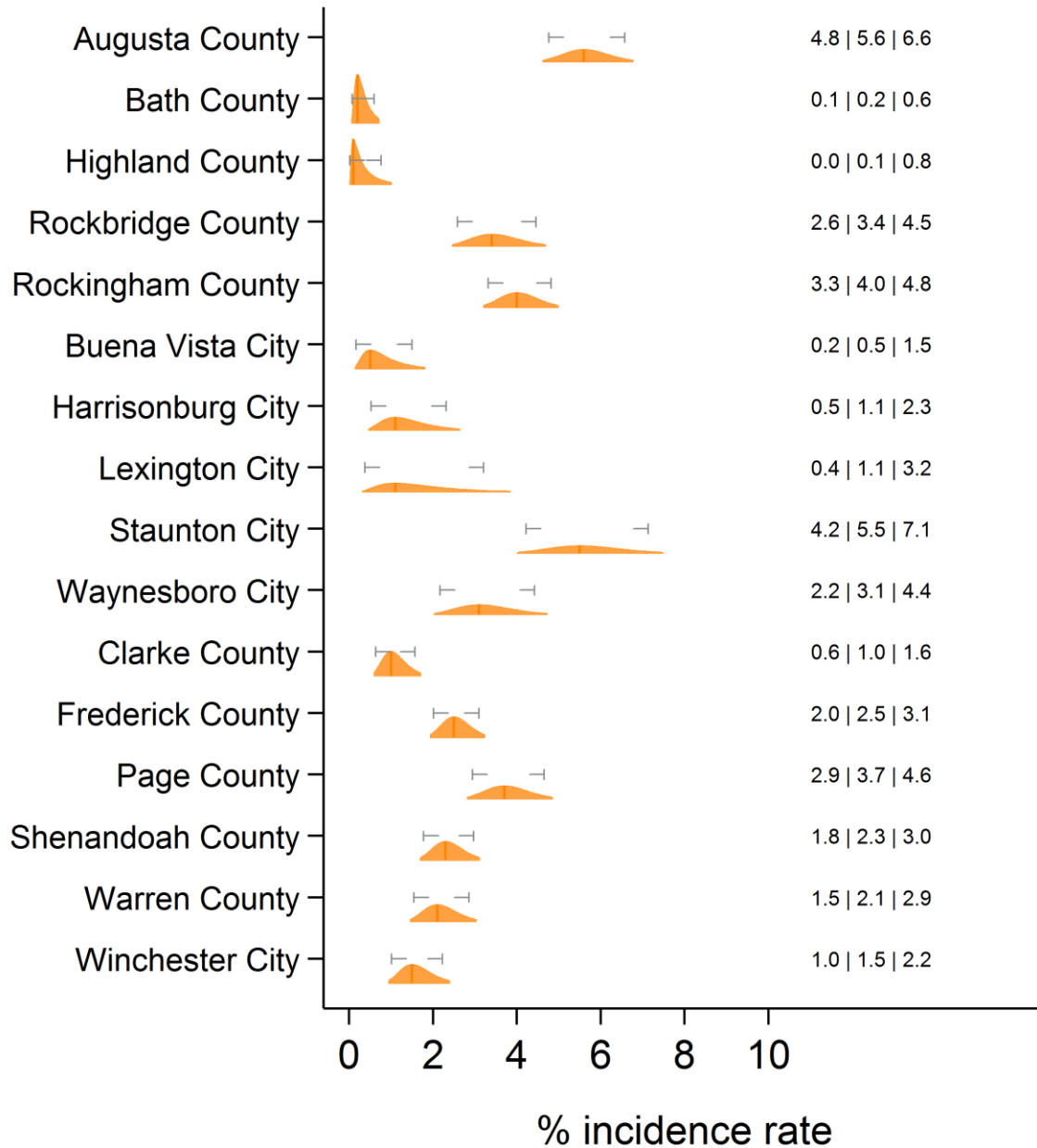
Lifetime stroke Chesterfield, Chickahominy, Henrico and Richmond HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



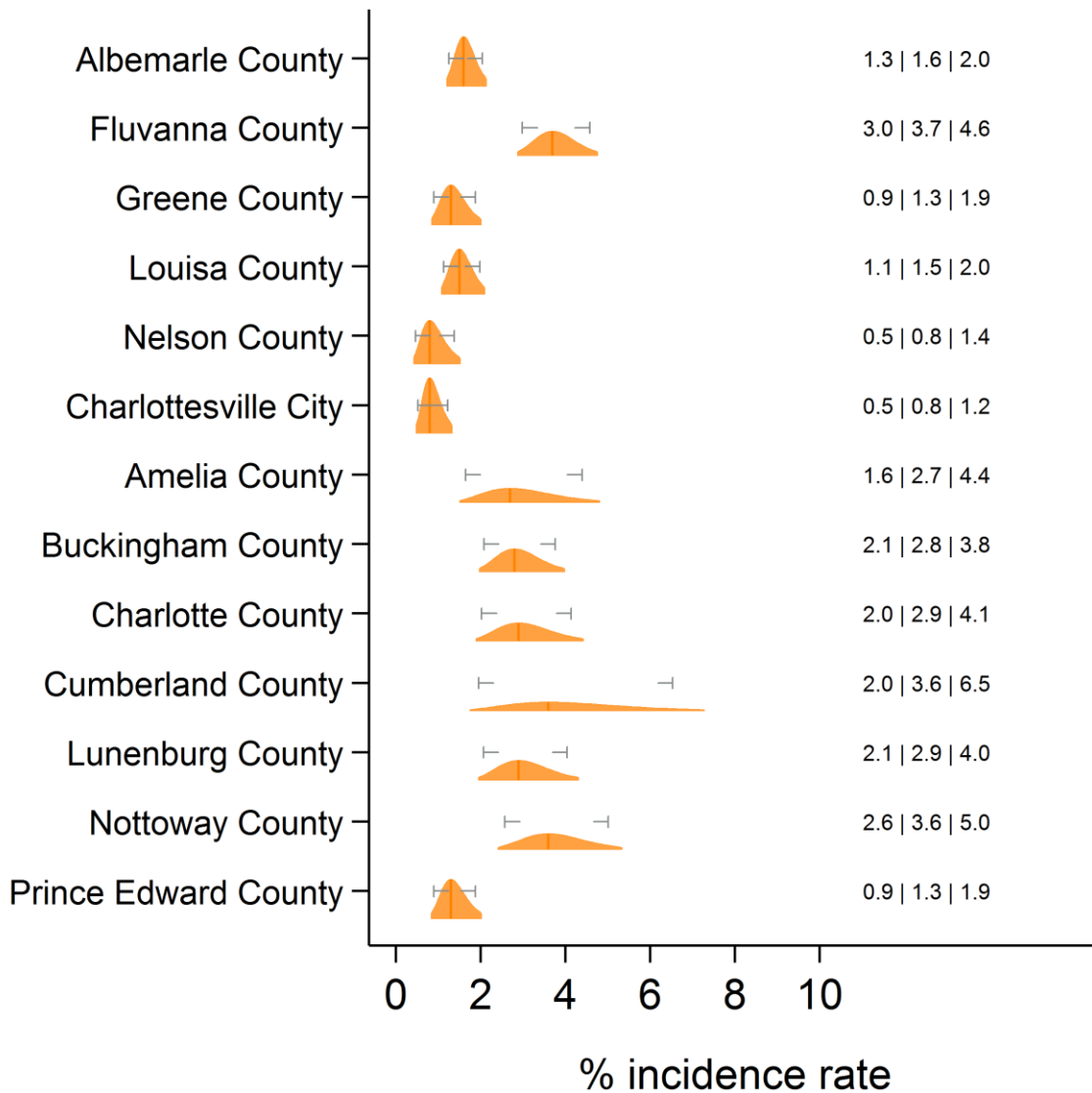
Lifetime stroke Central Shenandoah and Lord Fairfax HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



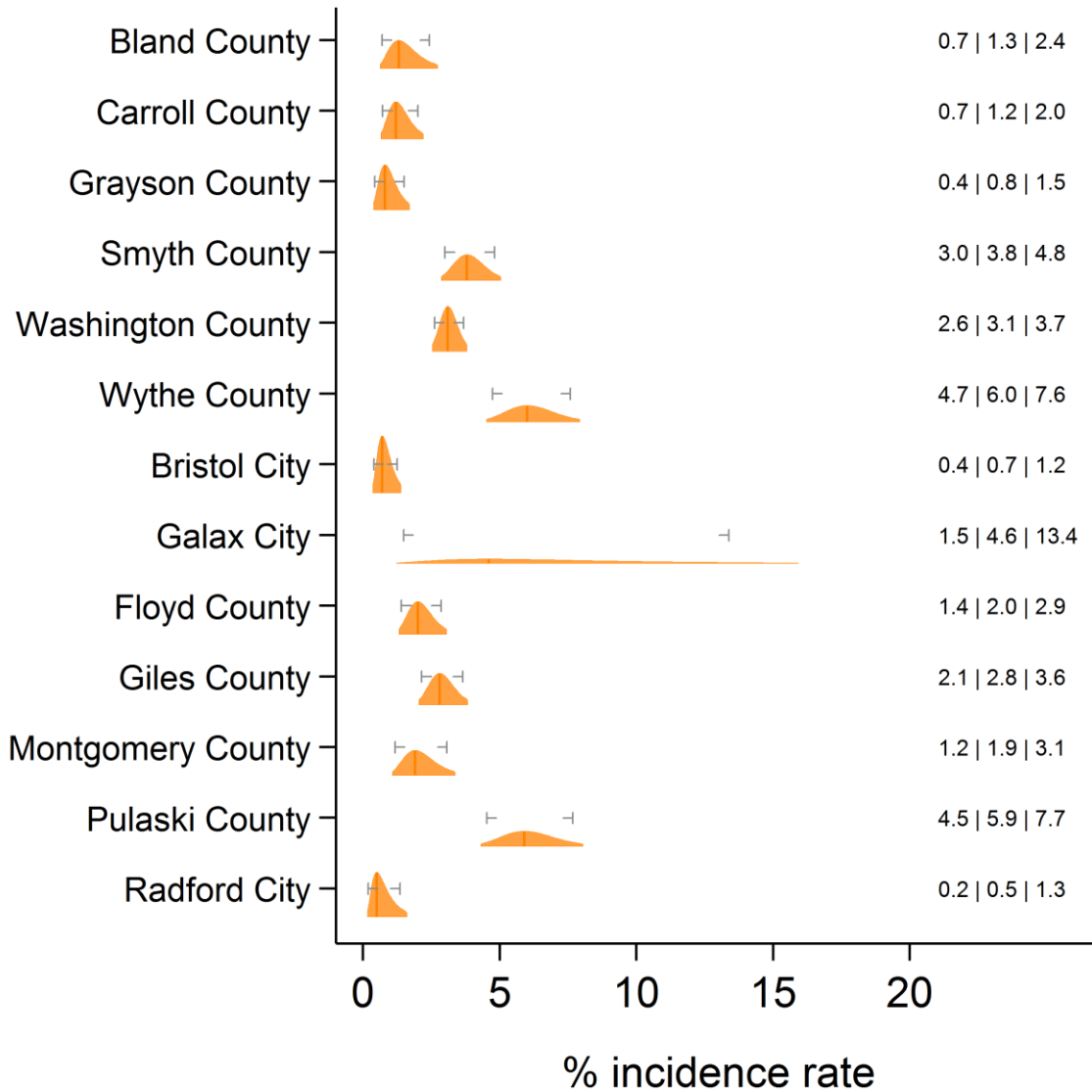
Lifetime stroke Thomas Jefferson and Piedmont HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



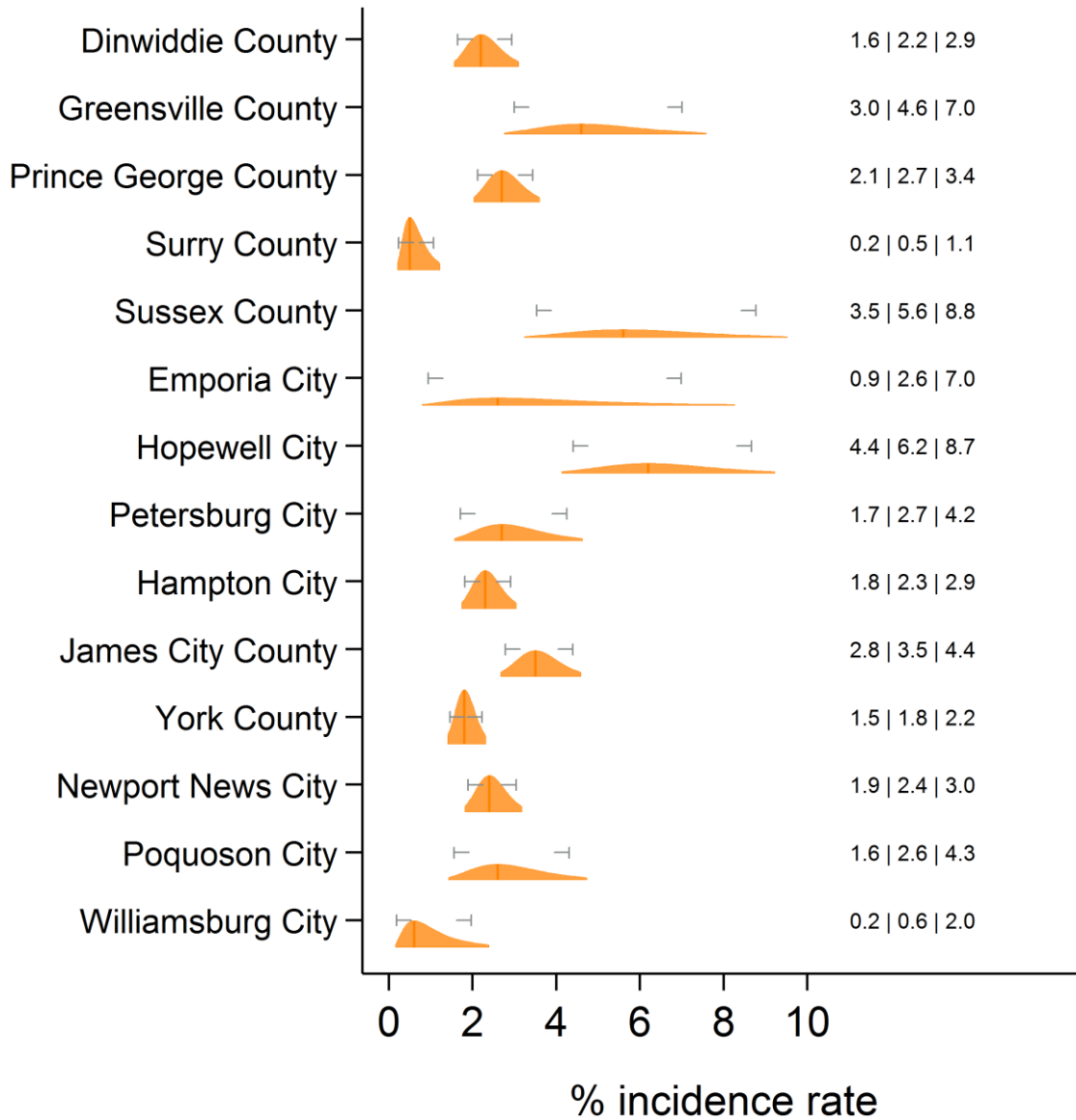
Lifetime stroke New River and Mount Rogers HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



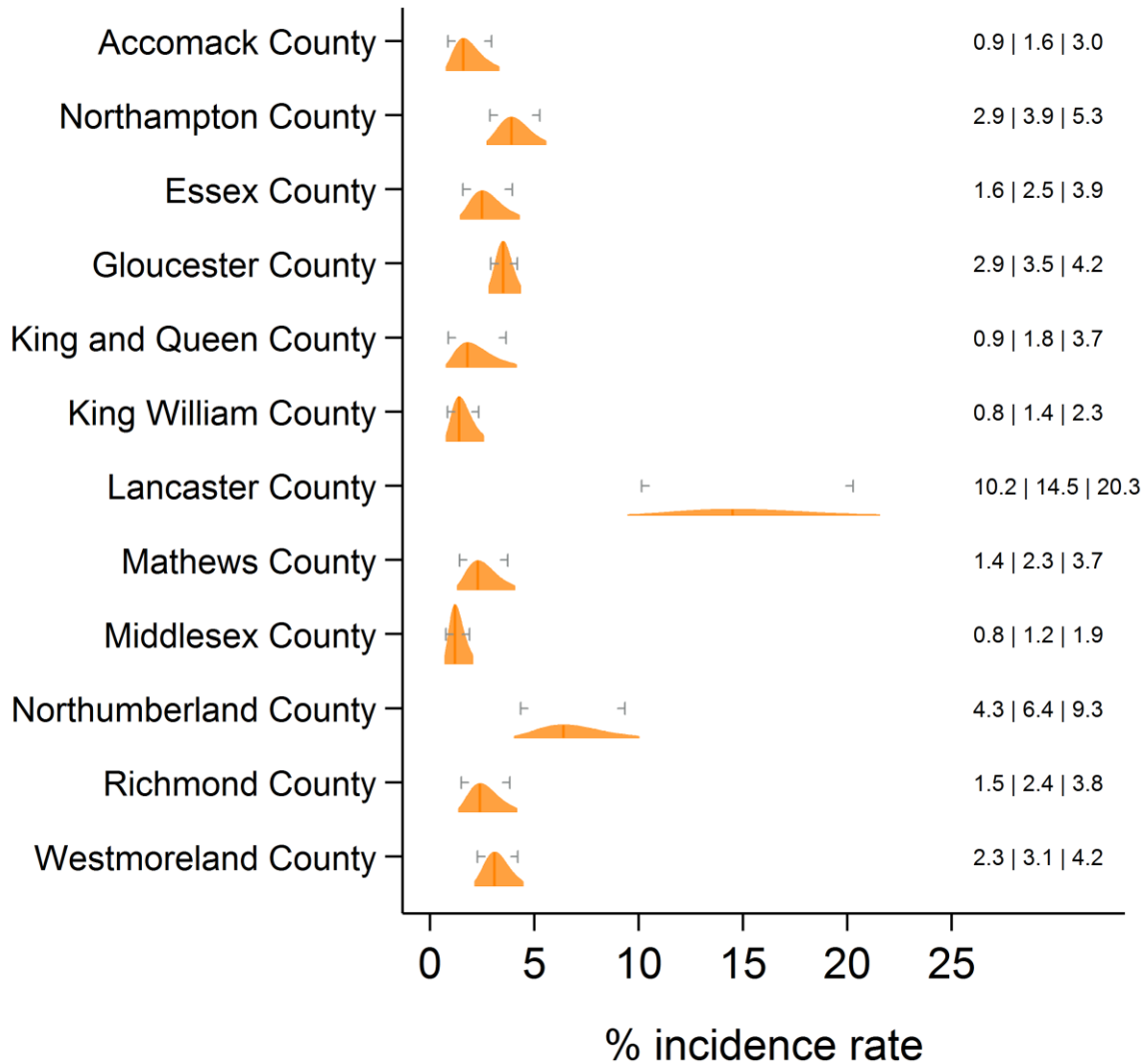
Lifetime stroke Crater, Peninsula and Hampton HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



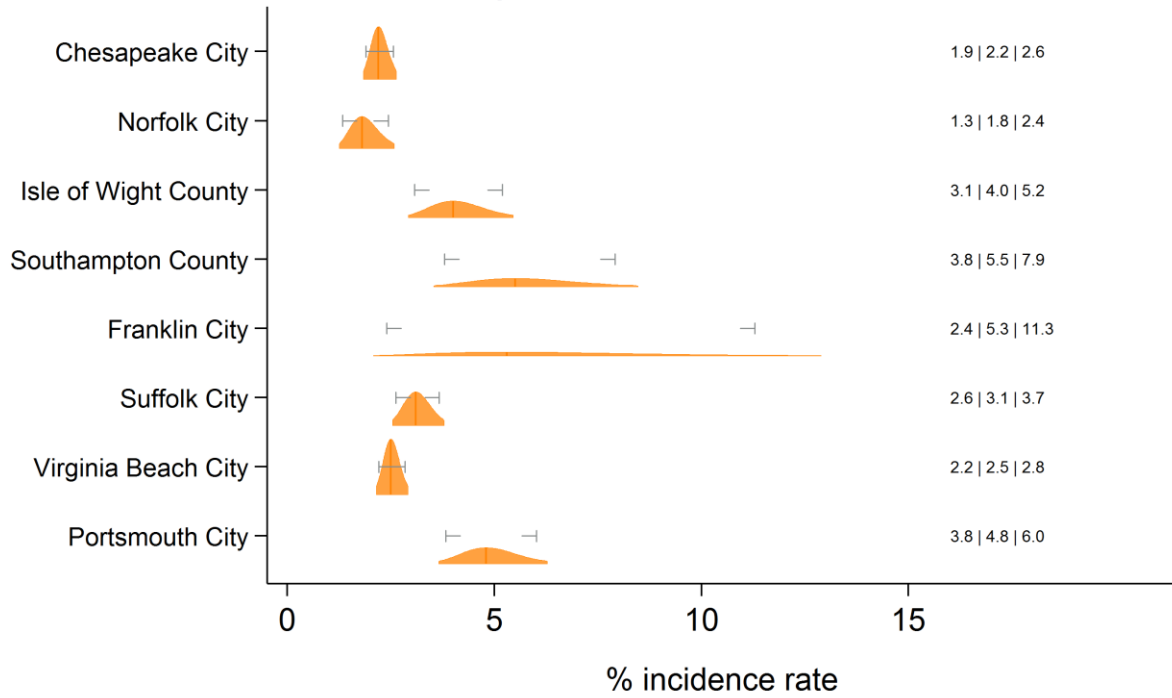
Lifetime stroke Eastern Shore and Three Rivers HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



Lifetime stroke Norfolk, Portsmouth, Chesapeake, VA Beach, W. Tidewater HDs



Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
 Gray markers: 90% confidence interval



Section 5: Additional diagnostics

Direct estimate is inside the 95% SAE Wilson CI: 42 areas.

Direct estimate is outside the 95% SAE Wilson CI: 91 areas.

SAE estimate is inside the 95% direct Wilson CI: 125 areas.

SAE estimate is outside the 95% direct Wilson CI: 8 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 112 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 21 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: 91 areas.

SAE standard error is greater than the (nonzero) direct standard error: 3 areas.

Direct standard error is zero: 39 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.03%; med = 0.86%; max = 6.40%.

Proportion of SAE variance to sampling error in regression coefficient estimates: min = 40.40%; med = 94.44%; max = 99.51%.

Proportion of SAE variance due to model selection: min = 0.16%; med = 3.78%; max = 59.54%.