

Outcome 17: Ever had a heart attack

Internal variable name: outc17_heart_attack

Definition: (Ever told) you had a heart attack, also called a myocardial infarction?

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 17: Ever had a heart attack			
NH White	0.0000 (.)	0.0000 (.)	0.0000 (.)
NH Black vs. NH White	0.0031 (0.1519)	-0.0079 (0.1772)	-0.0079 (0.1532)
NH Asian vs. NH White	-0.8394 (0.7924)	-0.5266 (0.5983)	-0.5266 (0.8083)
NH Other vs. NH White	-0.2610 (0.2660)	-0.2175 (0.3109)	-0.2175 (0.2767)
Hispanic vs. NH White	-1.0810* (0.4728)	-0.8081 (0.4867)	-0.8081 (0.4685)
SEX OF RESPONDENT=1	0.0000 (.)	0.0000 (.)	0.0000 (.)
Female	-0.6061*** (0.1263)	-0.6181*** (0.1305)	- 0.6181*** (0.1281)
Age 18-34 vs. 65+	-2.5233*** (0.4273)	-2.4661*** (0.4490)	- 2.4661*** (0.4277)
Age 35-44 vs. 65+	-2.1459*** (0.3068)	-2.1147*** (0.3194)	- 2.1147*** (0.3143)
Age 45-54 vs. 65+	-1.4713*** (0.1855)	-1.4265*** (0.2499)	- 1.4265*** (0.1822)
Age 55-64 vs. 65+	-0.5079** (0.1588)	-0.4884** (0.1518)	-0.4884** (0.1630)
65+	0.0000 (.)	0.0000 (.)	0.0000 (.)
Percentage calculated by dividing College_ACS_15_19 by Pop_25yrs_Over_ACS_15_19		-0.7818	-0.7818

		(0.6729)	(0.5643)
VA BRFSS 2014 SAE outc14_diabetes_test		2.0066	2.0066
		(1.5805)	(1.4491)
VA BRFSS 2017 SAE outc17_heart_attack		3.0722	3.0722
		(2.3504)	(1.9004)
VA BRFSS 2017 SAE outc7_diabetes_diag		0.1607	0.1607
		(2.2765)	(1.6855)
% Population with Adequate Access to Locations for Physical Activity, County Ran		-0.0791	-0.0791
		(0.0737)	(0.0595)
_cons	-1.9534***	-2.8137*	-2.8137*
	(0.0990)	(1.2282)	(1.1031)
Area effect variance			
var(_cons[FIPS_county])	0.0000		0.0000
	(0.0319)		(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	6.2%	(2.9%, 13.0%)	6.7%	(5.7%, 8.0%)
Bath County	51017	7.2%	(1.9%, 43.1%)	6.3%	(3.7%, 10.6%)
Caroline County	51033	5.6%	(3.0%, 26.1%)	7.0%	(5.5%, 8.8%)
Clarke County	51043	8.4%	(1.3%, 39.0%)	5.7%	(4.5%, 7.1%)
Culpeper County	51047	3.6%	(1.4%, 17.3%)	6.7%	(5.6%, 8.1%)
Fauquier County	51061	2.0%	(1.1%, 9.9%)	5.5%	(4.5%, 6.7%)
Frederick County	51069	4.0%	(0.8%, 16.8%)	5.6%	(4.9%, 6.5%)
Highland County	51091	0.0%	(-0.0%, 49.0%)	7.3%	(4.6%, 11.5%)
King George County	51099	0.0%	(0.0%, 17.4%)	4.9%	(3.9%, 6.2%)
Madison County	51113	1.9%	(1.0%, 24.3%)	6.2%	(5.0%, 7.7%)
Orange County	51137	5.0%	(1.2%, 18.4%)	6.9%	(6.1%, 7.8%)
Page County	51139	7.6%	(1.2%, 35.6%)	7.3%	(5.0%, 10.4%)
Rappahannock County	51157	30.1%	(8.0%, 68.1%)	5.6%	(4.1%, 7.5%)
Rockbridge County	51163	12.7%	(4.4%, 31.7%)	7.8%	(6.2%, 9.8%)
Rockingham County	51165	2.9%	(2.0%, 11.6%)	4.7%	(4.0%, 5.6%)
Shenandoah County	51171	3.9%	(2.3%, 14.3%)	6.9%	(5.9%, 8.2%)
Spotsylvania County	51177	3.0%	(0.8%, 10.6%)	4.8%	(4.2%, 5.6%)
Stafford County	51179	4.0%	(1.7%, 9.2%)	4.1%	(3.3%, 5.1%)
Warren County	51187	1.2%	(0.7%, 13.4%)	6.0%	(5.0%, 7.2%)
Buena Vista City	51530	0.0%	(0.0%, 73.0%)	5.3%	(3.8%, 7.3%)
Fredericksburg City	51630	3.1%	(0.5%, 16.3%)	3.0%	(2.3%, 3.9%)
Harrisonburg City	51660	1.1%	(0.7%, 28.8%)	3.1%	(2.2%, 4.5%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	7.3%	(3.8%, 13.7%)
Staunton City	51790	0.0%	(0.0%, 35.7%)	5.5%	(4.1%, 7.4%)
Waynesboro	51820	0.0%	(0.0%, 68.9%)	6.9%	(5.3%, 8.8%)

City					
Winchester City	51840	0.0%	(0.0%, 33.9%)	3.8%	(2.7%, 5.2%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	2.9%	(1.8%, 9.0%)	4.6%	(3.6%, 6.0%)
Alleghany County	51005	5.4%	(3.0%, 20.3%)	6.5%	(5.0%, 8.2%)
Amherst County	51009	6.3%	(2.1%, 17.9%)	8.1%	(6.8%, 9.6%)
Appomattox County	51011	8.7%	(2.3%, 28.1%)	8.5%	(7.2%, 10.1%)
Arlington City	51013	2.1%	(1.3%, 6.4%)	2.2%	(1.6%, 2.9%)
Bedford County	51019	2.5%	(1.4%, 7.9%)	7.6%	(6.5%, 8.9%)
Botetourt County	51023	6.8%	(3.7%, 23.1%)	6.7%	(5.1%, 8.7%)
Campbell County	51031	4.8%	(2.7%, 12.3%)	5.1%	(3.8%, 6.7%)
Craig County	51045	0.0%	(-0.0%, 50.9%)	6.0%	(4.4%, 8.1%)
Fairfax County	51059	1.9%	(1.0%, 3.4%)	2.7%	(2.2%, 3.2%)
Fluvanna County	51065	0.0%	(0.0%, 20.6%)	6.2%	(5.1%, 7.6%)
Greene County	51079	2.5%	(1.2%, 39.4%)	5.2%	(3.7%, 7.3%)
Loudoun County	51107	1.8%	(0.7%, 4.3%)	2.8%	(2.2%, 3.4%)
Louisa County	51109	18.7%	(7.3%, 40.0%)	7.7%	(5.9%, 9.8%)
Nelson County	51125	0.0%	(0.0%, 46.0%)	7.1%	(5.4%, 9.4%)
Prince William County	51153	3.4%	(1.7%, 6.6%)	3.0%	(2.5%, 3.8%)
Roanoke County	51161	6.0%	(3.3%, 10.8%)	5.9%	(5.0%, 7.1%)
Alexandria City	51510	0.7%	(0.6%, 5.2%)	2.3%	(1.8%, 2.9%)
Charlottesville City	51540	0.0%	(0.0%, 14.0%)	3.2%	(2.5%, 4.0%)
Covington City	51580	0.0%	(0.0%, 81.2%)	8.0%	(5.0%, 12.4%)
Fairfax City	51600	1.6%	(1.0%, 11.5%)	2.5%	(1.9%, 3.3%)
Falls Church City	51610	0.0%	(0.0%, 30.8%)	2.9%	(2.0%, 4.2%)
Lynchburg City	51680	1.9%	(1.1%, 9.2%)	3.3%	(2.3%, 4.7%)
Manassas City	51683	4.8%	(0.8%, 24.5%)	2.5%	(1.6%, 3.9%)
Manassas Park City	51685	0.0%	(0.0%, 51.7%)	2.5%	(1.6%, 4.0%)
Salem City	51775	0.0%	(0.0%, 48.7%)	3.8%	(2.6%, 5.6%)

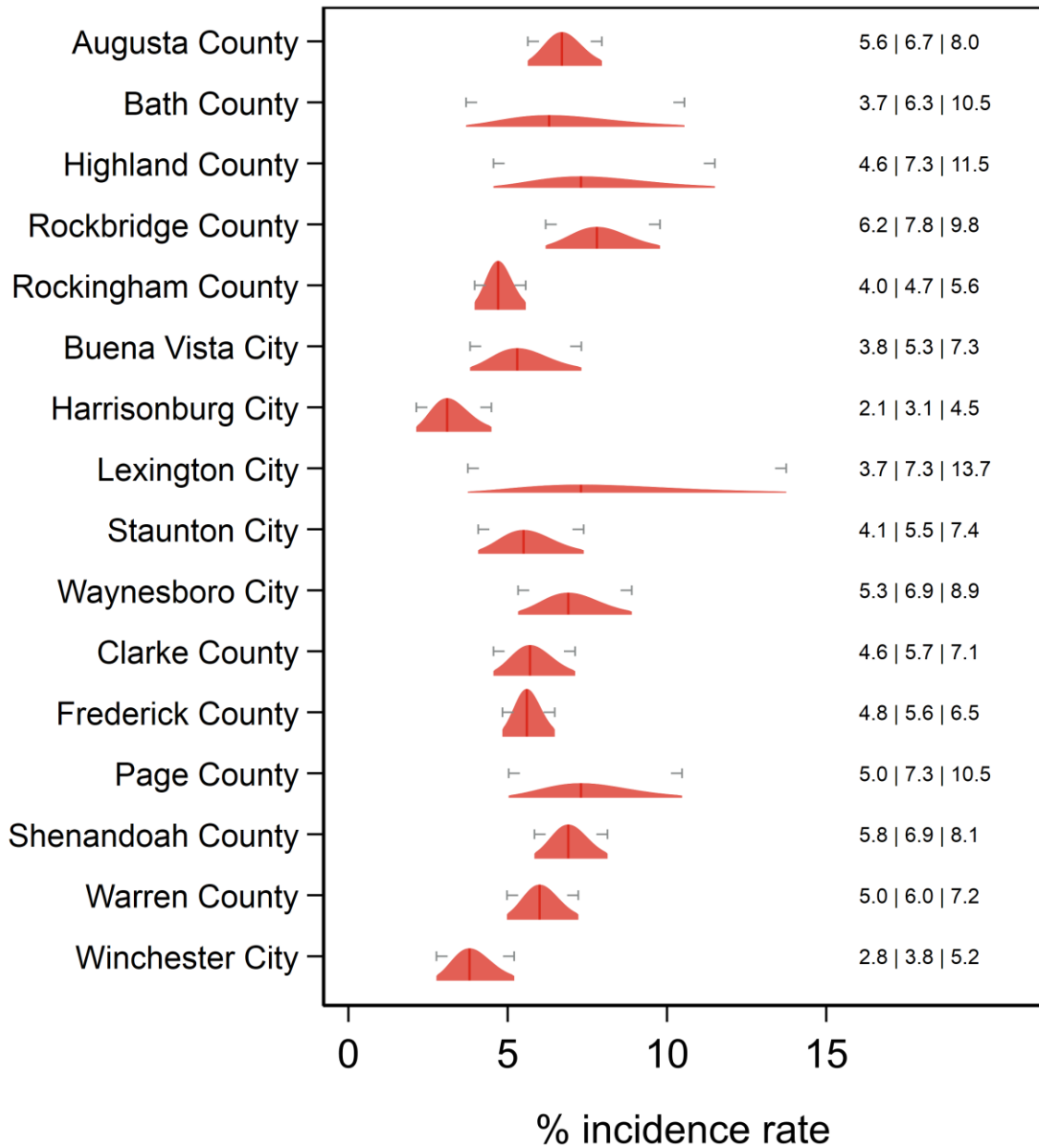
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	8.8%	(2.6%, 63.2%)	6.7%	(5.0%, 8.8%)
Buchanan County	51027	7.3%	(3.2%, 27.2%)	11.2%	(7.3%, 17.0%)
Carroll County	51035	12.8%	(1.9%, 52.0%)	8.6%	(7.1%, 10.4%)
Dickenson County	51051	2.1%	(1.1%, 24.0%)	12.4%	(7.5%, 19.9%)
Floyd County	51063	0.0%	(-0.0%, 21.7%)	4.7%	(3.2%, 6.9%)
Franklin County	51067	2.5%	(1.5%, 11.8%)	8.1%	(6.7%, 9.8%)
Giles County	51071	0.0%	(0.0%, 43.4%)	4.6%	(3.6%, 5.9%)
Grayson County	51077	5.3%	(2.3%, 28.2%)	6.0%	(4.3%, 8.4%)
Henry County	51089	8.3%	(4.6%, 18.2%)	8.9%	(7.5%, 10.6%)
Lee County	51105	21.0%	(7.1%, 48.0%)	9.4%	(7.0%, 12.5%)
Montgomery County	51121	3.0%	(1.7%, 9.4%)	3.7%	(2.9%, 4.8%)
Patrick County	51141	8.7%	(2.7%, 24.8%)	10.0%	(8.4%, 11.9%)
Pittsylvania County	51143	6.4%	(3.0%, 13.3%)	8.9%	(7.1%, 11.0%)
Pulaski County	51155	6.7%	(2.0%, 20.4%)	4.6%	(3.5%, 5.9%)
Russell County	51167	5.3%	(2.7%, 22.8%)	8.8%	(6.5%, 11.8%)
Scott County	51169	9.9%	(4.8%, 19.2%)	8.6%	(6.9%, 10.6%)
Smyth County	51173	3.8%	(0.8%, 16.3%)	6.5%	(5.1%, 8.3%)
Tazewell County	51185	2.2%	(0.5%, 10.1%)	7.8%	(6.2%, 9.8%)
Washington County	51191	5.3%	(1.9%, 13.9%)	7.7%	(6.4%, 9.3%)
Wise County	51195	8.1%	(3.7%, 16.6%)	10.2%	(7.4%, 13.7%)
Wythe County	51197	0.0%	(0.0%, 12.1%)	7.4%	(6.1%, 8.9%)
Bristol City	51520	0.0%	(0.0%, 55.1%)	5.4%	(3.6%, 8.0%)
Danville City	51590	8.0%	(1.8%, 29.3%)	7.0%	(5.4%, 9.2%)
Galax City	51640	0.0%	(-0.0%, 92.2%)	6.2%	(4.4%, 8.6%)
Martinsville City	51690	0.0%	(0.0%, 41.2%)	6.1%	(4.5%, 8.2%)
Norton City	51720	12.0%	(0.5%, 94.9%)	4.6%	(2.5%, 8.3%)
Radford City	51750	6.3%	(1.0%, 30.9%)	3.0%	(2.0%, 4.4%)
Roanoke City	51770	2.8%	(1.9%, 9.6%)	4.6%	(3.6%, 5.8%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	24.3%	(6.7%, 59.0%)	12.9%	(7.8%, 20.5%)
Brunswick County	51025	12.4%	(4.2%, 31.5%)	11.7%	(8.4%, 16.1%)
Buckingham County	51029	1.4%	(0.8%, 26.6%)	9.1%	(7.6%, 10.8%)
Charles City County	51036	0.0%	(0.0%, 78.6%)	8.1%	(5.6%, 11.5%)
Charlotte County	51037	4.7%	(2.6%, 27.0%)	9.5%	(7.0%, 12.7%)
Chesterfield County	51041	3.5%	(1.7%, 7.1%)	5.0%	(4.5%, 5.7%)
Cumberland County	51049	2.0%	(1.1%, 32.2%)	8.9%	(7.6%, 10.3%)
Dinwiddie County	51053	5.3%	(2.7%, 18.8%)	7.8%	(6.4%, 9.5%)
Goochland County	51075	5.0%	(2.4%, 38.3%)	5.7%	(4.2%, 7.8%)
Greensville County	51081	13.1%	(5.8%, 41.7%)	9.2%	(7.1%, 11.9%)
Halifax County	51083	8.5%	(3.1%, 21.2%)	9.1%	(6.9%, 11.8%)
Hanover County	51085	11.4%	(4.4%, 26.4%)	6.1%	(4.7%, 8.0%)
Henrico County	51087	2.9%	(1.3%, 6.4%)	4.3%	(3.6%, 5.0%)
Lunenburg County	51111	0.0%	(0.0%, 28.0%)	7.2%	(5.6%, 9.0%)
Mecklenburg County	51117	8.4%	(5.0%, 19.5%)	9.1%	(7.1%, 11.5%)
New Kent County	51127	4.6%	(0.8%, 23.7%)	6.3%	(4.9%, 8.1%)
Nottoway County	51135	11.2%	(3.5%, 30.8%)	8.0%	(6.7%, 9.5%)
Powhatan County	51145	7.7%	(1.6%, 30.1%)	7.1%	(5.1%, 9.7%)
Prince Edward County	51147	1.1%	(0.7%, 17.6%)	6.5%	(5.4%, 7.8%)
Prince George County	51149	6.7%	(3.5%, 22.7%)	7.6%	(6.2%, 9.2%)
Surry County	51181	12.2%	(3.8%, 57.5%)	8.8%	(6.6%, 11.5%)
Sussex County	51183	1.0%	(0.7%, 24.9%)	8.5%	(7.0%, 10.3%)
Colonial Heights City	51570	0.0%	(0.0%, 24.5%)	5.3%	(4.1%, 6.8%)
Emporia City	51595	0.0%	(0.0%, 74.9%)	5.8%	(4.4%, 7.6%)
Hopewell City	51670	4.4%	(2.4%, 31.2%)	5.6%	(4.3%, 7.3%)
Petersburg	51730	4.6%	(2.8%, 25.0%)	7.4%	(5.5%, 9.9%)

City					
Richmond City	51760	4.7%	(2.1%, 10.3%)	3.1%	(2.3%, 4.2%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	4.3%	(1.7%, 10.9%)	9.4%	(7.9%, 11.2%)
Essex County	51057	3.0%	(1.3%, 25.9%)	10.6%	(7.7%, 14.5%)
Gloucester County	51073	2.6%	(1.5%, 13.2%)	7.7%	(6.4%, 9.3%)
Isle of Wight County	51093	8.6%	(2.1%, 28.8%)	7.1%	(5.2%, 9.6%)
James City County	51095	1.2%	(0.9%, 7.1%)	5.1%	(4.0%, 6.5%)
King and Queen County	51097	0.0%	(0.0%, 47.4%)	7.6%	(5.2%, 11.1%)
King William County	51101	3.4%	(1.8%, 38.7%)	7.4%	(6.2%, 8.7%)
Lancaster County	51103	4.1%	(2.4%, 24.0%)	7.6%	(5.5%, 10.2%)
Mathews County	51115	12.4%	(5.5%, 31.8%)	6.8%	(5.4%, 8.5%)
Middlesex County	51119	3.6%	(1.5%, 31.5%)	8.6%	(6.5%, 11.3%)
Northampton County	51131	17.2%	(6.3%, 39.1%)	12.2%	(8.3%, 17.6%)
Northumberland County	51133	6.6%	(1.6%, 23.2%)	9.8%	(7.3%, 13.1%)
Richmond County	51159	0.3%	(0.3%, 12.0%)	7.8%	(6.5%, 9.2%)
Southampton County	51175	0.0%	(-0.0%, 19.8%)	9.2%	(7.1%, 12.0%)
Westmoreland County	51193	7.8%	(3.8%, 24.5%)	7.6%	(5.8%, 10.0%)
York County	51199	1.8%	(1.0%, 10.6%)	5.3%	(4.2%, 6.6%)
Chesapeake City	51550	3.7%	(1.8%, 7.2%)	4.8%	(4.1%, 5.6%)
Franklin City	51620	5.1%	(1.8%, 46.0%)	7.8%	(5.9%, 10.4%)
Hampton City	51650	4.8%	(2.4%, 9.3%)	5.1%	(4.3%, 6.2%)
Newport News City	51700	4.1%	(2.4%, 9.1%)	3.8%	(3.0%, 5.0%)
Norfolk City	51710	1.8%	(1.3%, 4.9%)	3.3%	(2.5%, 4.3%)
Poquoson City	51735	0.0%	(0.0%, 40.5%)	5.2%	(3.2%, 8.5%)
Portsmouth City	51740	4.8%	(2.0%, 10.8%)	5.2%	(4.0%, 6.9%)
Suffolk City	51800	4.8%	(1.6%, 13.3%)	6.2%	(5.2%, 7.4%)
Virginia Beach City	51810	2.3%	(1.7%, 4.7%)	3.9%	(3.3%, 4.5%)
Williamsburg City	51830	0.0%	(0.0%, 36.8%)	3.5%	(2.7%, 4.5%)

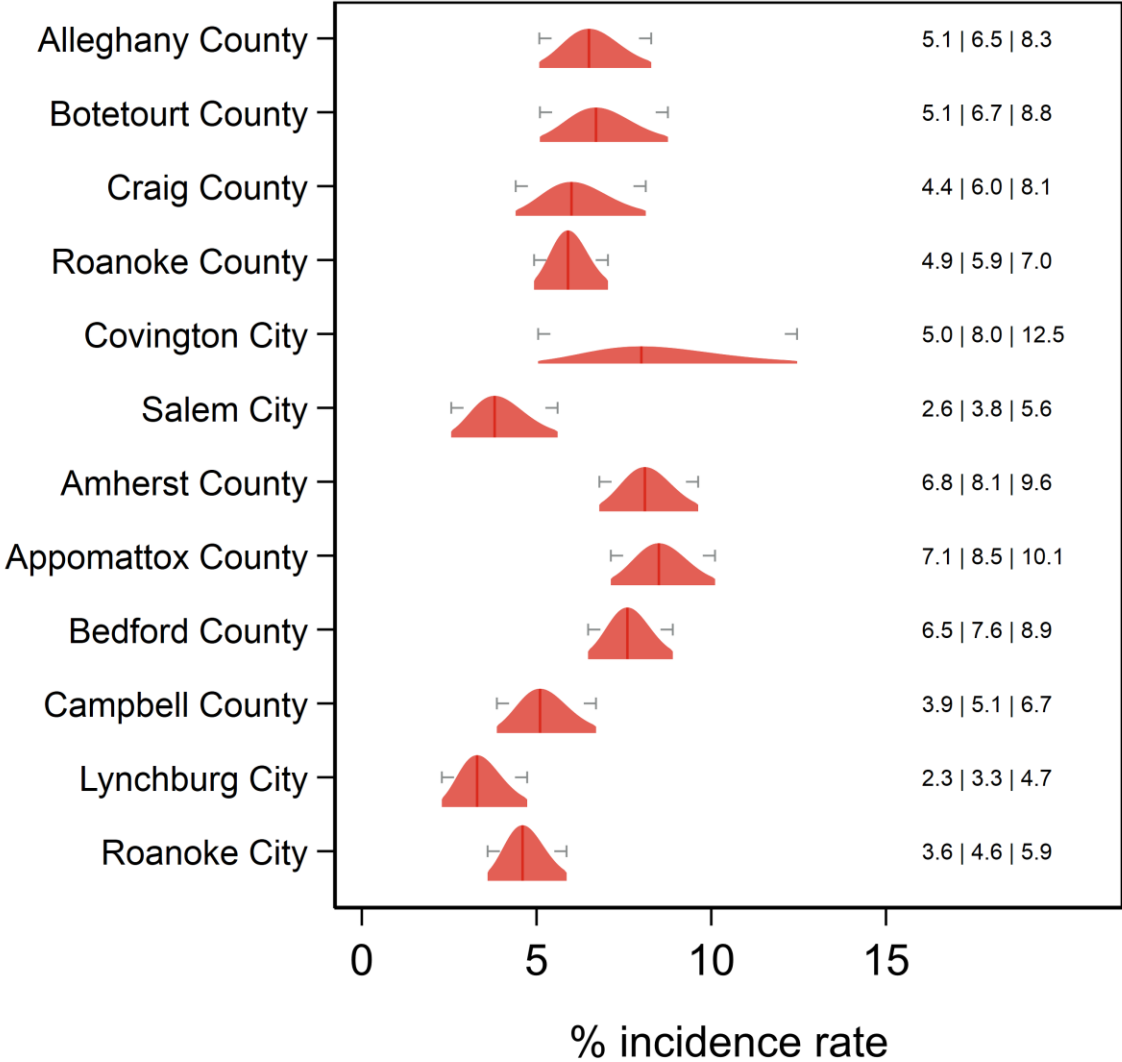
Ever had a heart attack Central Shenandoah and Lord Fairfax HDs



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

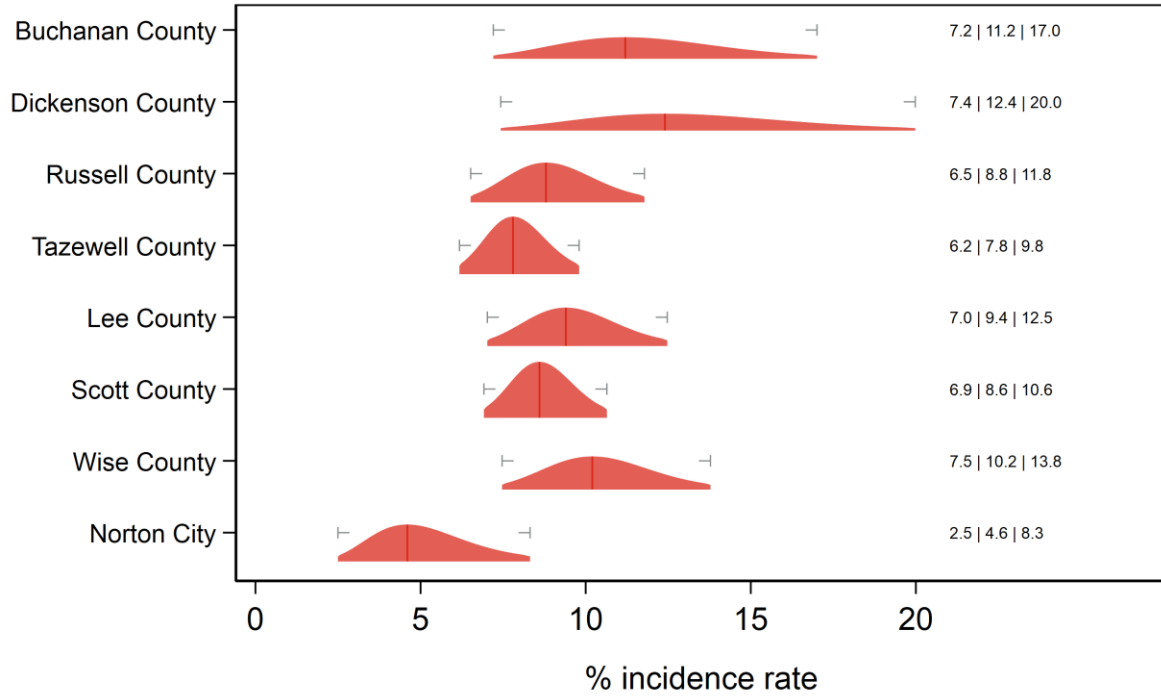
Ever had a heart attack

Alleghany, Roanoke and Central Virginia HDs



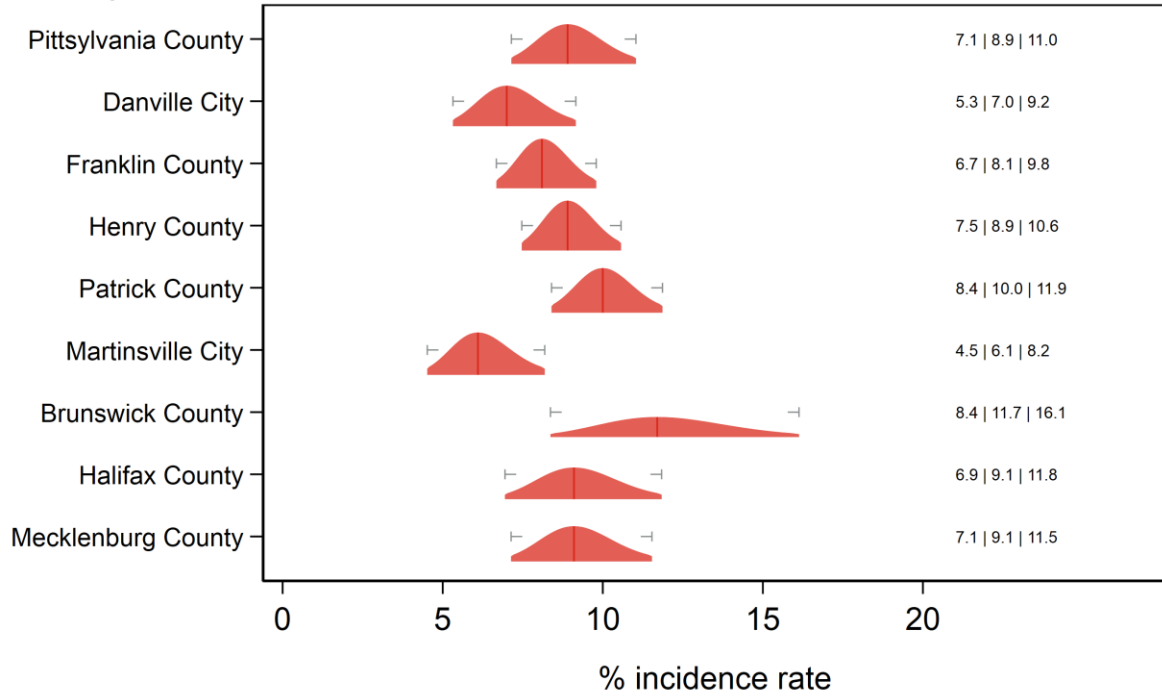
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a heart attack Cumberland Plateau and Lenowisco HDs



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

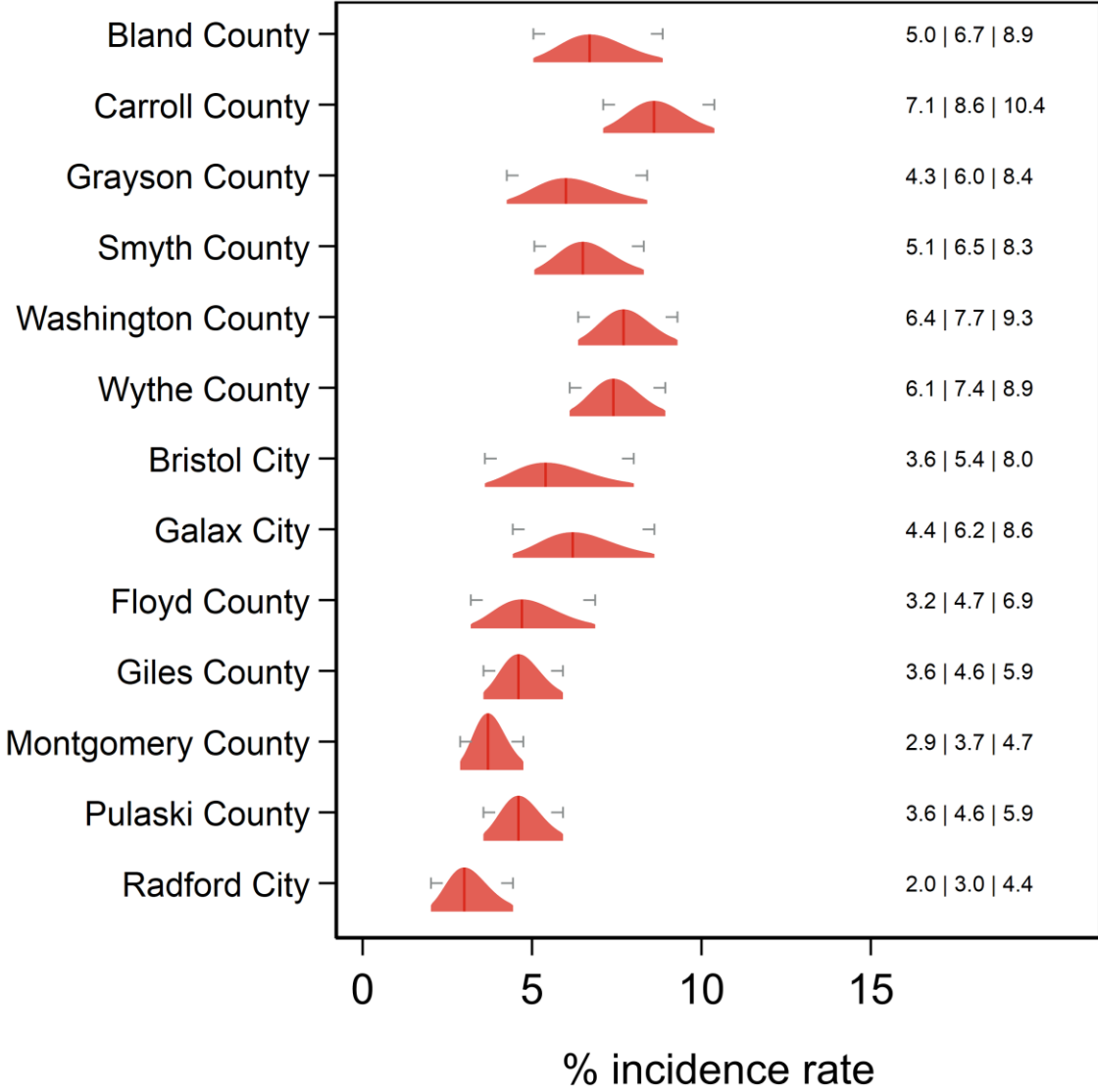
Ever had a heart attack Pittsylvania/Danville, Southside and West Piedmont HDs



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

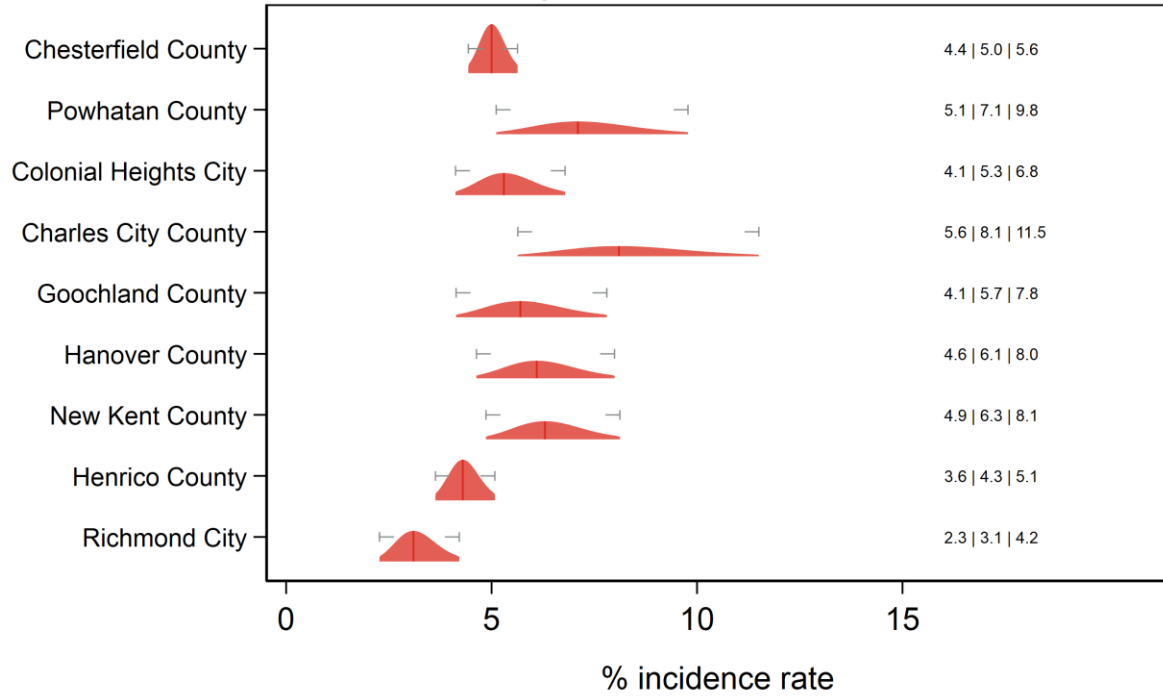
Ever had a heart attack

New River and Mount Rogers HDs



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

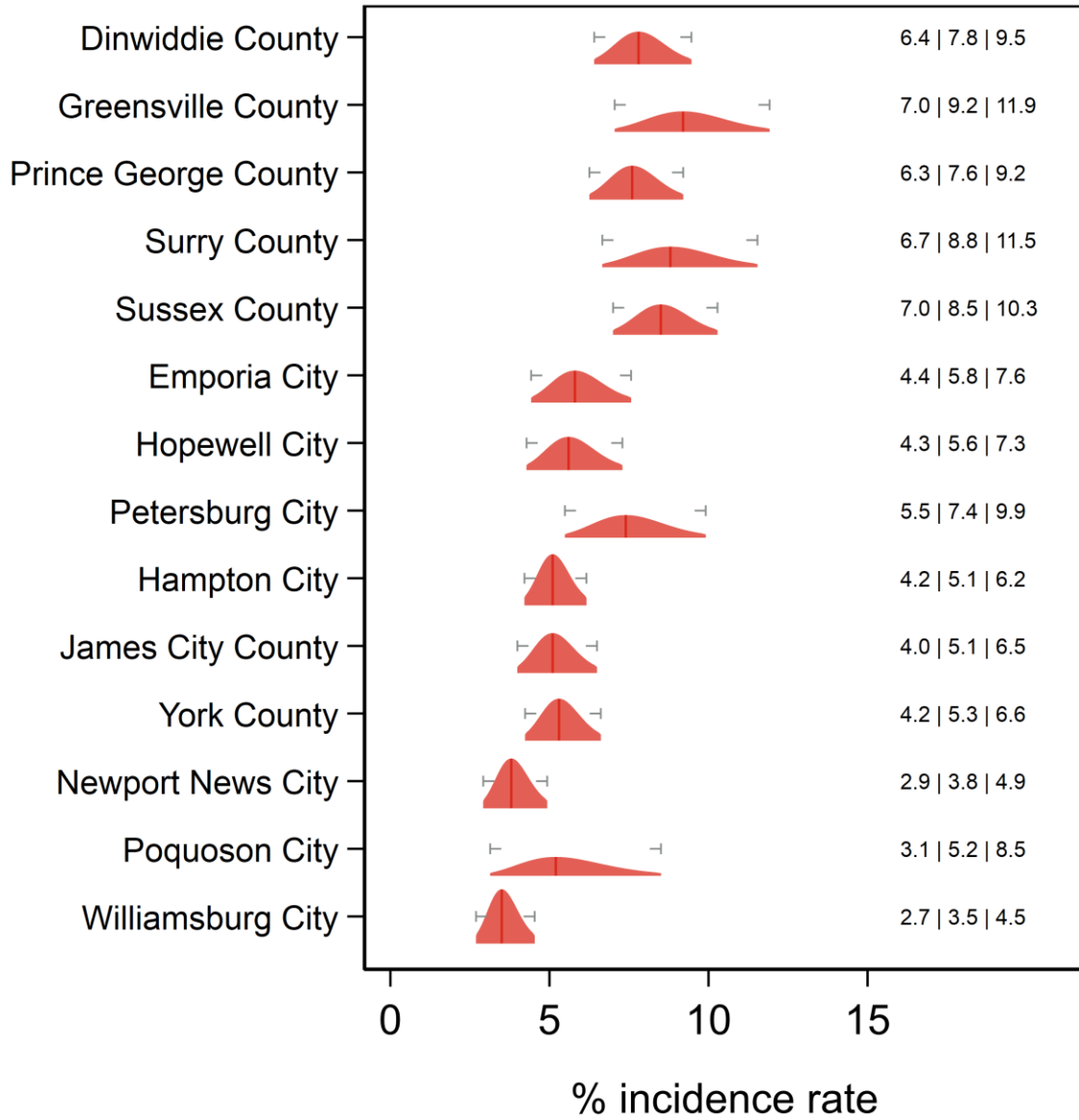
Ever had a heart attack Chesterfield, Chickahominy, Henrico and Richmond HDs



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

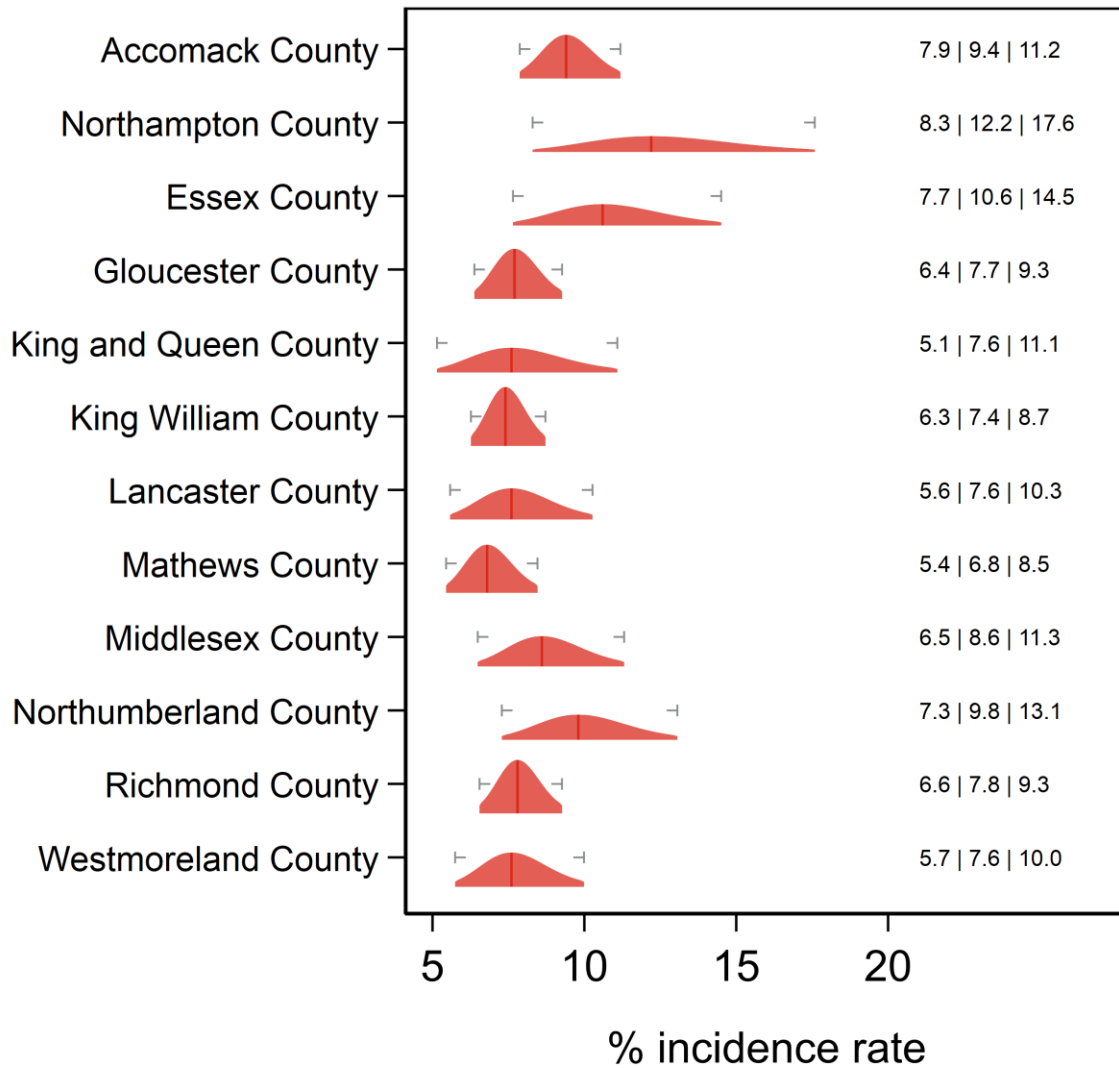
Ever had a heart attack

Crater, Peninsula and Hampton HDs



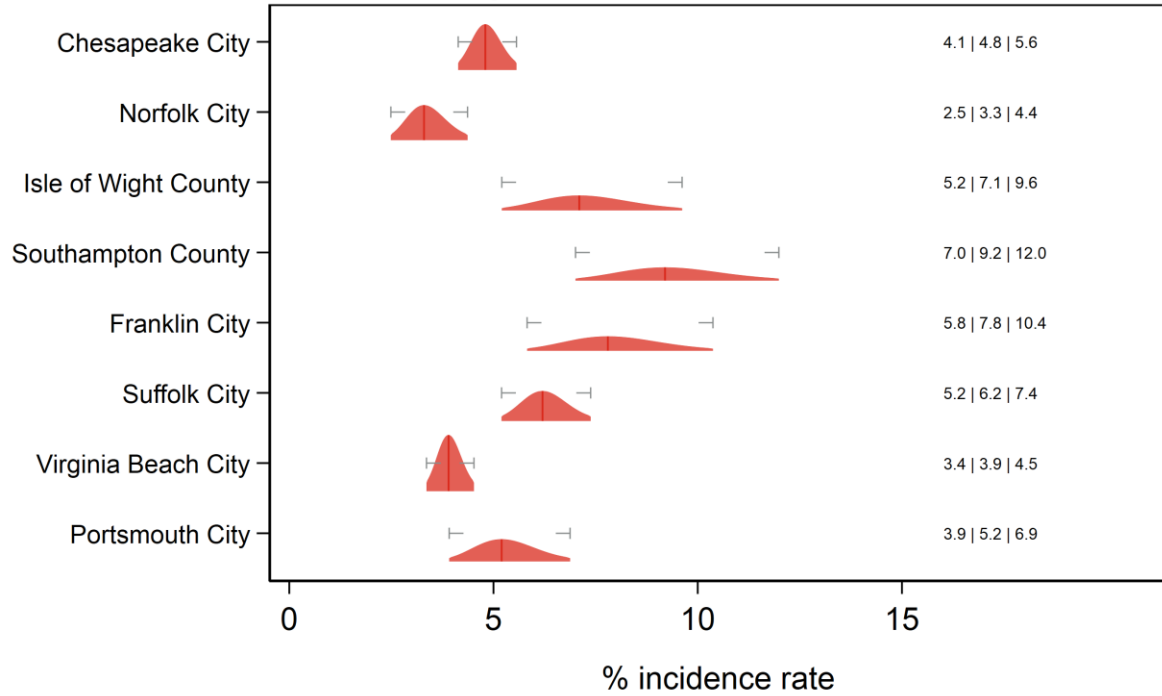
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a heart attack Eastern Shore and Three Rivers HDs



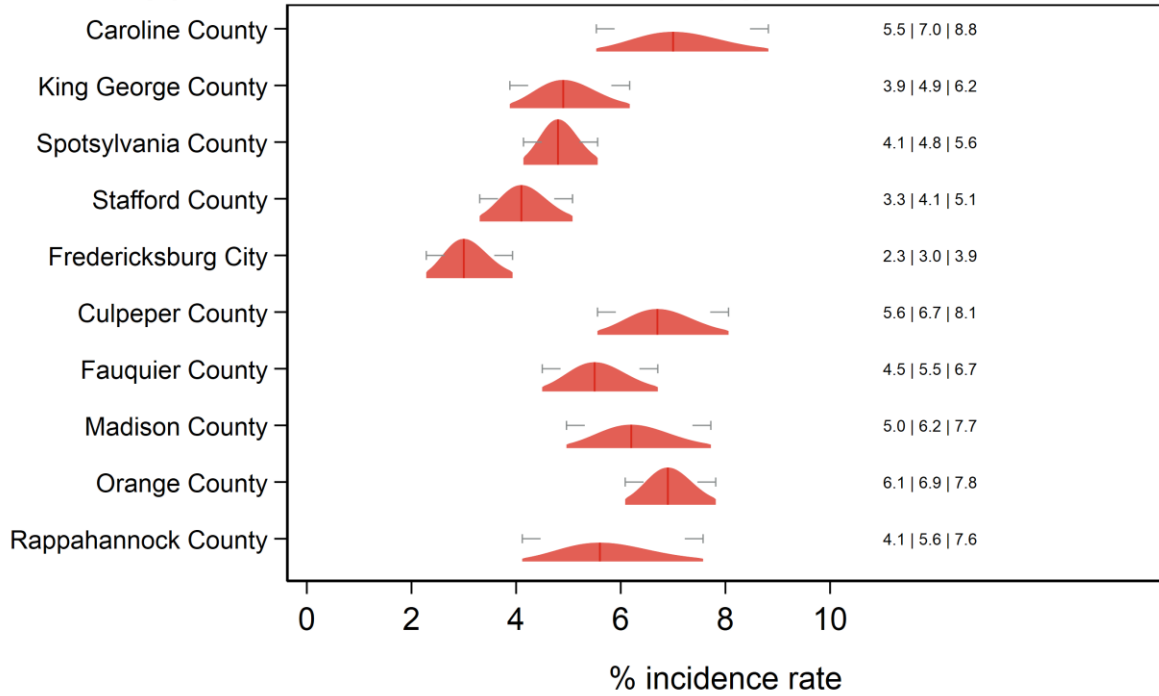
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Ever had a heart attack 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

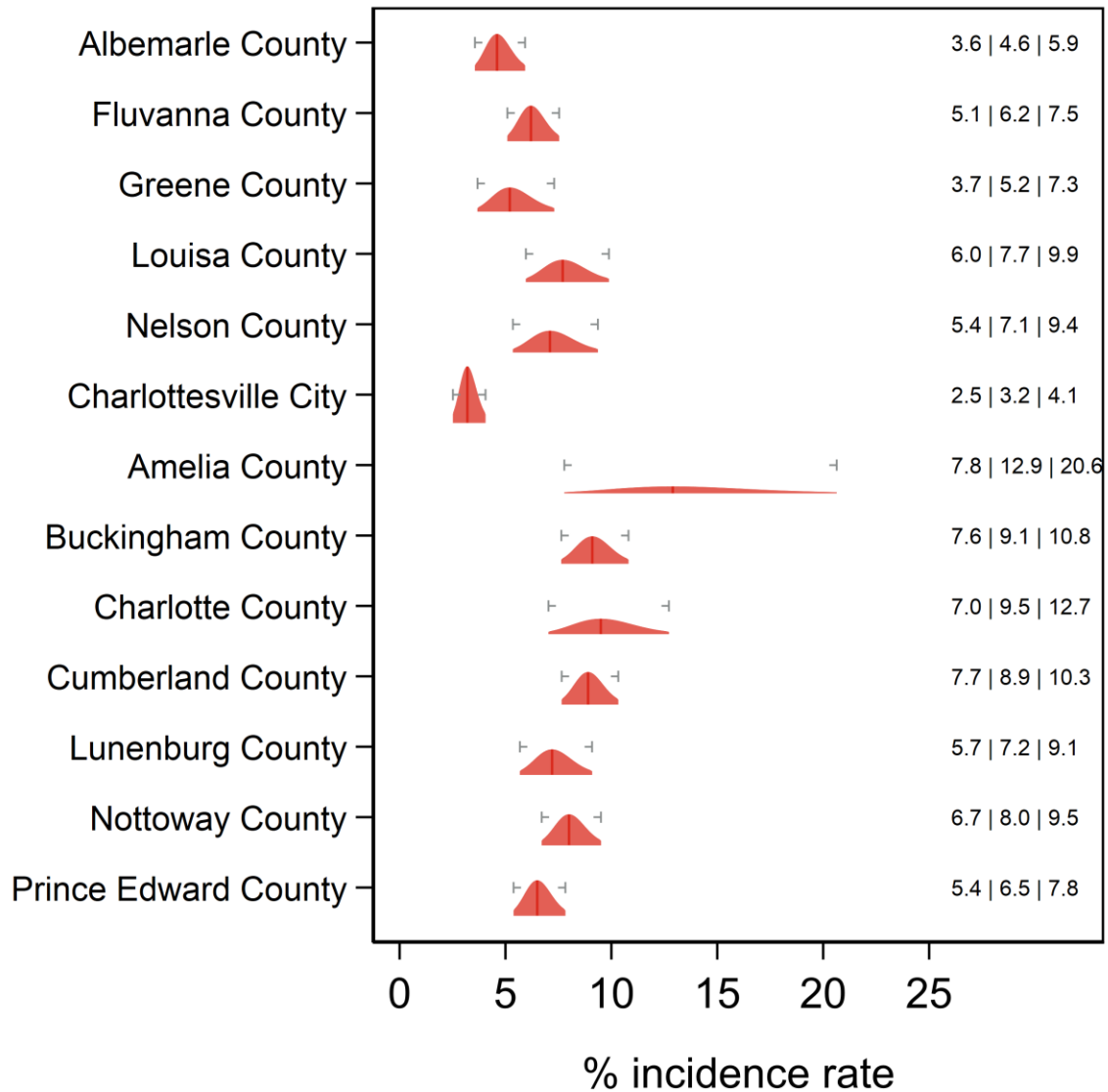
Ever had a heart attack Rappahannock/Rapidan and Rappahannock HDs



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

Ever had a heart attack

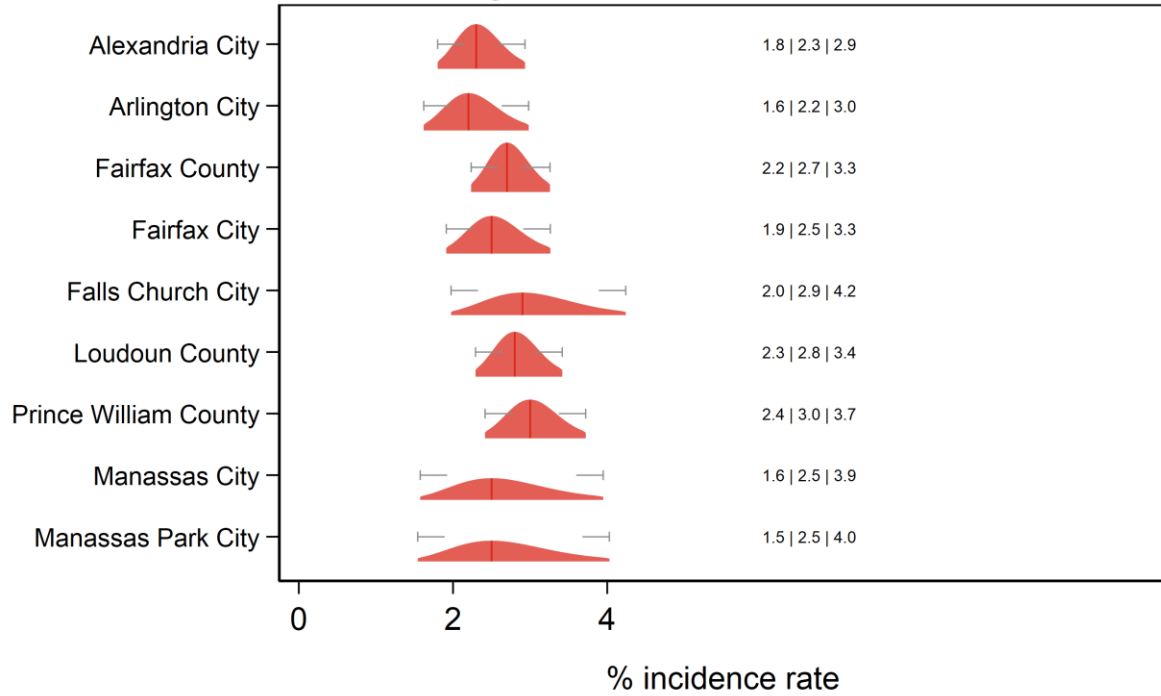
Thomas Jefferson and Piedmont HDs



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

Ever had a heart attack

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: 34 areas.

Direct estimate is outside the 95% SAE Wilson CI: 99 areas.

SAE estimate is inside the 95% direct Wilson CI: 132 areas.

SAE estimate is outside the 95% direct Wilson CI: 1 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 127 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 6 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: 101 areas.

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

Direct standard error is zero: 29 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.27%; med = 1.59%; max = 7.75%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 38.22%; med = 94.36%; max = 99.50%.

Proportion of SAE variance due to model selection: min = 0.10%; med = 4.11%; max = 61.51%.

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