



## Indicator 8: Diagnosed with coronary heart disease or angina

Internal variable name: outc8\_heart\_disease

### Section 1: Definition

Definition: (Ever told) you had angina or coronary heart disease?

### Section 2: Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 8: Diagnosed with coronary heart disease or angina			
Non-Hispanic Black vs. Non-Hispanic White	-0.1115 (0.1916)	-0.1366 (0.2034)	-0.1366 (0.2053)
Non-Hispanic Asian vs. Non-Hispanic White	-0.8799 (0.5876)	-0.6936 (0.7300)	-0.6936 (0.6247)
Non-Hispanic Other vs. Non-Hispanic White	0.3628 (0.3517)	0.3328 (0.3309)	0.3328 (0.3536)
Hispanic vs. Non-Hispanic White	-0.7650 (0.4245)	-0.6546 (0.4984)	-0.6546 (0.4021)
Female	-0.4837*** (0.1300)	-0.4887*** (0.1278)	-0.4887*** (0.1320)
Age 18-24 vs. 65+	-3.7569*** (1.0085)	-3.6930*** (1.0066)	-3.6930*** (1.0094)
Age 25-34 vs. 65+	-3.2632*** (0.5985)	-3.2142*** (0.6445)	-3.2142*** (0.5976)
Age 35-44 vs. 65+	-2.6486*** (0.4948)	-2.6341*** (0.4806)	-2.6341*** (0.5003)
Age 45-54 vs. 65+	-1.4485*** (0.2270)	-1.4208*** (0.2147)	-1.4208*** (0.2274)
Age 55-64 vs. 65+	-0.6398*** (0.1424)	-0.6221*** (0.1381)	-0.6221*** (0.1414)
Crude mortality rate of Chronic Lower Respiratory per 10,000		0.0500* (0.0232)	0.0500* (0.0201)
% rent >30% of income		0.0889*** (0.0246)	0.0889*** (0.0203)
% moved past year, population 1+ years old		-0.0255* (0.0129)	-0.0255* (0.0124)
Cervix Cancer Female Rate		0.0211**	0.0211**



Indicator 8: Diagnosed with Coronary Heart Disease or Angina



Non-stratified land domain index		(0.0082) -0.3454*	(0.0076) -0.3454*
{Cervix Cancer Female Rate}		(0.1490) -0.0060	(0.1594) -0.0060
interacted with {Non-stratified land domain index}		(0.0134)	(0.0142)
Diabetes Type II hospitalization rate per 1,000		1.6322** (0.5556)	1.6322*** (0.4287)
{% rent >30% of income}		-0.0342** (0.0110)	-0.0342*** (0.0088)
interacted with {Diabetes Type_II hospitalization rate per 1,000}			
Intercept	-1.7588*** (0.1162)	-6.0205*** (1.2209)	-6.0205*** (0.9584)
Area effect variance	0.0093 (0.0447)		0.0000 (0.0000)

Number of alternative models used to estimate model error = 4.



Indicator 8: Diagnosed with Coronary Heart Disease  
or Angina



Section 3: Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Augusta County	51015	4.7%	(2.7%, 9.9%)	4.2%	(3.3%, 5.2%)
Bath County	51017	12.0%	(3.7%, 46.9%)	9.3%	(4.0%, 20.4%)
Caroline County	51033	1.2%	(0.8%, 18.4%)	4.2%	(3.4%, 5.1%)
Clarke County	51043	19.5%	(7.0%, 43.7%)	3.4%	(2.6%, 4.5%)
Culpeper County	51047	2.2%	(1.1%, 11.0%)	3.9%	(2.6%, 5.9%)
Fauquier County	51061	7.5%	(3.5%, 15.7%)	3.0%	(2.2%, 4.1%)
Frederick County	51069	1.4%	(0.7%, 6.8%)	3.5%	(2.8%, 4.3%)
Highland County	51091	0.0%	(0.0%, 83.2%)	1.2%	(0.5%, 3.0%)
King George County	51099	0.0%	(-0.0%, 23.5%)	2.9%	(1.9%, 4.5%)
Madison County	51113	0.0%	(-0.0%, 20.0%)	3.8%	(2.7%, 5.4%)
Orange County	51137	12.2%	(4.2%, 30.5%)	4.9%	(3.6%, 6.8%)
Page County	51139	0.0%	(0.0%, 33.4%)	3.6%	(2.8%, 4.7%)
Rappahannock County	51157	15.7%	(3.9%, 46.1%)	3.3%	(2.4%, 4.5%)
Rockbridge County	51163	7.3%	(3.1%, 24.3%)	4.4%	(3.3%, 5.9%)
Rockingham County	51165	6.1%	(3.4%, 13.3%)	3.3%	(2.7%, 3.9%)
Shenandoah County	51171	9.0%	(2.2%, 30.9%)	4.0%	(3.1%, 5.2%)
Spotsylvania County	51177	2.5%	(0.6%, 10.0%)	3.7%	(3.1%, 4.4%)
Stafford County	51179	3.0%	(1.0%, 8.3%)	2.7%	(2.2%, 3.3%)
Warren County	51187	1.6%	(0.8%, 15.8%)	3.8%	(2.9%, 5.0%)
Buena Vista City	51530	0.0%	(-0.0%, 89.6%)	4.7%	(2.5%, 8.6%)
Fredericksburg City	51630	1.5%	(0.9%, 21.0%)	2.2%	(1.4%, 3.2%)
Harrisonburg City	51660	14.2%	(4.1%, 47.5%)	3.5%	(1.9%, 6.4%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	11.1%	(2.7%, 35.7%)
Staunton City	51790	0.0%	(0.0%, 42.2%)	6.4%	(4.9%, 8.3%)
Waynesboro City	51820	0.0%	(0.0%, 33.1%)	4.4%	(3.5%, 5.5%)
Winchester City	51840	3.0%	(1.3%, 26.8%)	3.8%	(2.0%, 7.1%)



Indicator 8: Diagnosed with Coronary Heart Disease  
or Angina



County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Albemarle County	51003	0.6%	(0.4%, 4.9%)	2.6%	(2.0%, 3.5%)
Alleghany County	51005	1.1%	(0.8%, 14.5%)	5.5%	(3.7%, 8.0%)
Amherst County	51009	3.9%	(0.6%, 20.2%)	4.9%	(3.8%, 6.2%)
Appomattox County	51011	2.1%	(1.0%, 20.5%)	5.8%	(3.8%, 9.0%)
Arlington City	51013	1.5%	(1.0%, 5.6%)	1.1%	(0.8%, 1.7%)
Bedford County	51019	3.0%	(0.8%, 10.6%)	4.8%	(3.9%, 6.0%)
Botetourt County	51023	3.7%	(1.7%, 13.2%)	3.8%	(2.7%, 5.2%)
Campbell County	51031	3.0%	(1.3%, 13.7%)	3.5%	(2.7%, 4.5%)
Craig County	51045	0.0%	(0.0%, 73.6%)	3.2%	(1.7%, 6.0%)
Fairfax County	51059	1.7%	(0.8%, 3.6%)	2.1%	(1.7%, 2.5%)
Fluvanna County	51065	5.7%	(0.9%, 28.5%)	2.8%	(2.1%, 3.7%)
Greene County	51079	4.2%	(1.3%, 27.1%)	2.7%	(2.1%, 3.5%)
Loudoun County	51107	1.2%	(0.9%, 3.7%)	1.6%	(1.2%, 2.1%)
Louisa County	51109	3.2%	(0.5%, 16.7%)	4.3%	(3.5%, 5.4%)
Nelson County	51125	2.1%	(1.0%, 18.7%)	4.8%	(2.6%, 8.7%)
Prince William County	51153	2.4%	(1.7%, 5.3%)	2.4%	(1.9%, 3.1%)
Roanoke County	51161	2.7%	(1.9%, 6.7%)	3.2%	(2.5%, 4.1%)
Alexandria City	51510	1.9%	(1.3%, 7.9%)	2.1%	(1.6%, 2.9%)
Charlottesville City	51540	0.0%	(0.0%, 23.6%)	1.8%	(1.2%, 2.8%)
Covington City	51580	0.0%	(0.0%, 99.4%)	5.3%	(2.9%, 9.5%)
Fairfax City	51600	4.3%	(1.7%, 10.9%)	4.2%	(3.1%, 5.5%)
Falls Church City	51610	0.0%	(0.0%, 62.3%)	1.5%	(1.1%, 2.0%)
Lynchburg City	51680	0.3%	(0.2%, 10.4%)	2.3%	(1.5%, 3.6%)
Manassas City	51683	8.3%	(1.3%, 39.0%)	2.9%	(1.8%, 4.6%)
Manassas Park City	51685	0.0%	(-0.0%, 96.8%)	16.4%	(5.1%, 41.5%)
Salem City	51775	5.8%	(1.9%, 53.1%)	3.6%	(2.9%, 4.5%)



Indicator 8: Diagnosed with Coronary Heart Disease  
or Angina



County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Bland County	51021	6.7%	(2.0%, 48.0%)	7.5%	(5.2%, 10.6%)
Buchanan County	51027	20.2%	(10.5%, 35.3%)	15.7%	(11.2%, 21.4%)
Carroll County	51035	5.6%	(1.5%, 19.2%)	6.2%	(5.1%, 7.6%)
Dickenson County	51051	11.9%	(4.0%, 30.6%)	14.4%	(10.4%, 19.5%)
Floyd County	51063	2.9%	(1.7%, 19.5%)	1.7%	(1.1%, 2.6%)
Franklin County	51067	6.2%	(1.8%, 19.5%)	4.8%	(4.1%, 5.7%)
Giles County	51071	0.0%	(0.0%, 21.7%)	3.0%	(2.4%, 3.9%)
Grayson County	51077	0.0%	(0.0%, 21.5%)	4.4%	(3.3%, 5.8%)
Henry County	51089	3.6%	(2.3%, 11.0%)	5.0%	(4.2%, 5.9%)
Lee County	51105	0.0%	(0.0%, 14.4%)	5.4%	(4.0%, 7.3%)
Montgomery County	51121	4.6%	(2.7%, 11.6%)	3.6%	(2.1%, 6.1%)
Patrick County	51141	5.6%	(3.1%, 21.5%)	4.6%	(3.6%, 5.9%)
Pittsylvania County	51143	3.1%	(1.3%, 7.4%)	5.4%	(4.5%, 6.5%)
Pulaski County	51155	2.7%	(1.6%, 13.3%)	3.8%	(3.3%, 4.5%)
Russell County	51167	4.1%	(2.6%, 16.4%)	5.2%	(4.0%, 6.7%)
Scott County	51169	7.8%	(3.2%, 17.6%)	8.2%	(6.0%, 11.2%)
Smyth County	51173	1.2%	(0.7%, 13.8%)	4.9%	(3.8%, 6.2%)
Tazewell County	51185	4.8%	(2.5%, 13.6%)	7.2%	(6.1%, 8.6%)
Washington County	51191	8.2%	(3.3%, 18.6%)	4.5%	(3.7%, 5.5%)
Wise County	51195	7.6%	(3.1%, 17.1%)	6.6%	(4.8%, 8.8%)
Wythe County	51197	9.2%	(4.0%, 19.8%)	8.1%	(6.0%, 11.0%)
Bristol City	51520	0.0%	(0.0%, 40.4%)	6.0%	(3.7%, 9.5%)
Danville City	51590	3.4%	(1.7%, 22.1%)	6.0%	(4.3%, 8.2%)
Galax City	51640	35.6%	(5.2%, 86.4%)	10.6%	(4.6%, 22.5%)
Martinsville City	51690	0.0%	(0.0%, 47.8%)	3.5%	(1.7%, 7.2%)
Norton City	51720	0.0%	(0.0%, 69.6%)	16.3%	(8.8%, 28.4%)
Radford City	51750	0.0%	(0.0%, 56.8%)	2.9%	(1.4%, 6.2%)
Roanoke City	51770	7.6%	(3.2%, 17.3%)	5.7%	(4.2%, 7.6%)



Indicator 8: Diagnosed with Coronary Heart Disease  
or Angina



County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Amelia County	51007	1.7%	(0.9%, 24.9%)	5.5%	(3.9%, 7.7%)
Brunswick County	51025	0.8%	(0.5%, 22.0%)	1.7%	(0.5%, 5.6%)
Buckingham County	51029	5.9%	(3.6%, 26.1%)	3.7%	(2.9%, 4.6%)
Charles City County	51036	12.6%	(1.8%, 53.3%)	5.0%	(3.6%, 6.9%)
Charlotte County	51037	1.9%	(1.2%, 31.2%)	7.4%	(4.5%, 11.7%)
Chesterfield County	51041	5.6%	(3.4%, 9.0%)	4.6%	(3.9%, 5.3%)
Cumberland County	51049	6.9%	(3.3%, 33.5%)	4.4%	(2.9%, 6.6%)
Dinwiddie County	51053	13.1%	(3.4%, 39.5%)	4.0%	(2.9%, 5.6%)
Goochland County	51075	3.2%	(0.5%, 16.9%)	5.6%	(4.6%, 6.8%)
Greensville County	51081	0.0%	(0.0%, 37.4%)	4.0%	(2.8%, 5.8%)
Halifax County	51083	13.0%	(6.5%, 24.3%)	4.6%	(3.1%, 7.0%)
Hanover County	51085	4.4%	(2.6%, 9.8%)	5.8%	(4.6%, 7.3%)
Henrico County	51087	6.6%	(4.2%, 10.2%)	4.1%	(3.3%, 5.0%)
Lunenburg County	51111	10.8%	(1.9%, 42.6%)	5.7%	(4.3%, 7.4%)
Mecklenburg County	51117	8.2%	(3.2%, 19.4%)	6.1%	(4.4%, 8.3%)
New Kent County	51127	4.0%	(2.1%, 26.2%)	4.4%	(3.0%, 6.5%)
Nottoway County	51135	5.8%	(2.8%, 28.0%)	5.6%	(2.4%, 12.7%)
Powhatan County	51145	2.4%	(1.2%, 34.8%)	3.6%	(2.9%, 4.5%)
Prince Edward County	51147	2.6%	(1.4%, 21.0%)	3.8%	(2.6%, 5.4%)
Prince George County	51149	3.9%	(2.7%, 16.4%)	6.4%	(4.9%, 8.2%)
Surry County	51181	34.2%	(8.2%, 75.1%)	13.7%	(6.2%, 27.7%)
Sussex County	51183	0.7%	(0.5%, 26.4%)	4.7%	(3.7%, 5.9%)
Colonial Heights City	51570	9.9%	(1.9%, 49.5%)	7.0%	(4.8%, 10.2%)
Emporia City	51595	0.0%	(0.0%, 68.6%)	4.0%	(2.3%, 6.9%)
Hopewell City	51670	1.2%	(0.8%, 26.6%)	8.2%	(4.7%, 13.8%)
Petersburg City	51730	0.4%	(0.3%, 11.9%)	1.1%	(0.2%, 5.2%)
Richmond City	51760	2.7%	(1.1%, 6.3%)	3.0%	(2.3%, 3.9%)



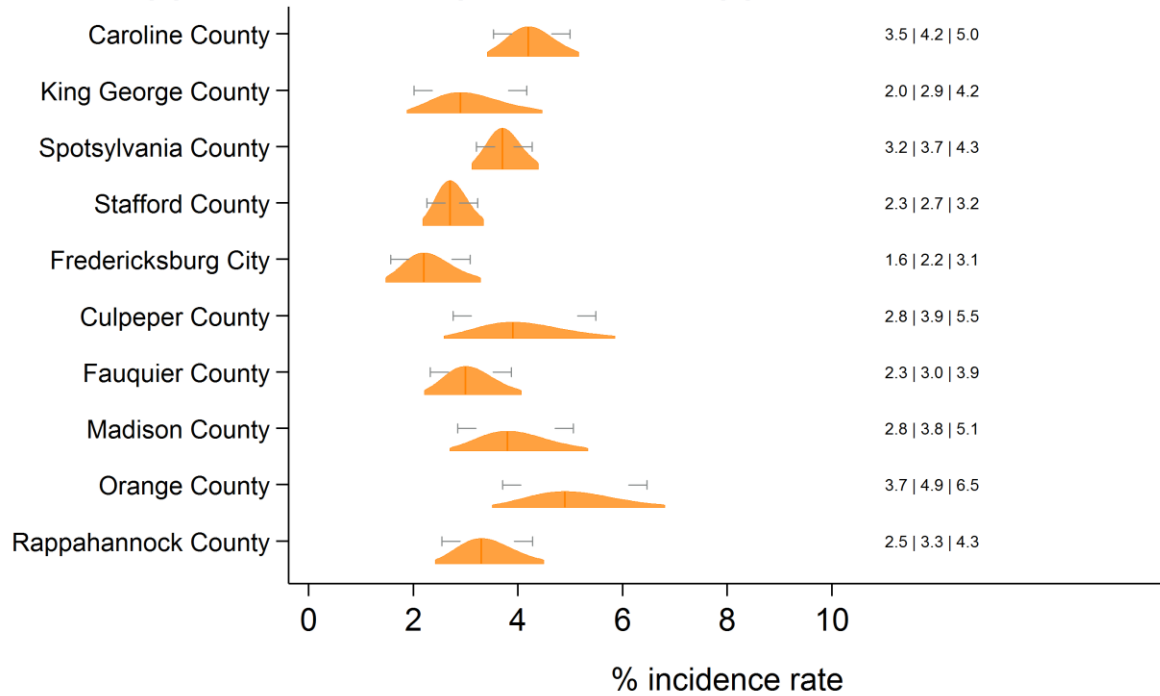
Indicator 8: Diagnosed with Coronary Heart Disease  
or Angina



County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Accomack County	51001	3.5%	(2.6%, 17.2%)	7.6%	(4.6%, 12.3%)
Essex County	51057	9.2%	(4.2%, 37.2%)	7.0%	(5.1%, 9.6%)
Gloucester County	51073	1.6%	(1.1%, 13.9%)	4.3%	(3.2%, 5.8%)
Isle of Wight County	51093	6.6%	(2.3%, 17.3%)	6.9%	(5.3%, 8.9%)
James City County	51095	2.6%	(1.4%, 10.1%)	7.0%	(5.4%, 9.1%)
King and Queen County	51097	21.8%	(2.6%, 74.8%)	8.3%	(5.8%, 11.8%)
King William County	51101	14.4%	(4.6%, 37.0%)	6.2%	(4.6%, 8.4%)
Lancaster County	51103	6.8%	(1.5%, 25.3%)	6.8%	(5.3%, 8.6%)
Mathews County	51115	14.0%	(5.7%, 35.2%)	8.3%	(6.3%, 10.8%)
Middlesex County	51119	9.4%	(1.3%, 44.4%)	4.8%	(3.6%, 6.3%)
Northampton County	51131	4.8%	(2.8%, 21.8%)	4.8%	(3.1%, 7.4%)
Northumberland County	51133	0.0%	(0.0%, 21.8%)	5.5%	(3.4%, 9.0%)
Richmond County	51159	7.0%	(2.2%, 20.3%)	5.7%	(4.3%, 7.7%)
Southampton County	51175	1.8%	(1.1%, 30.0%)	5.1%	(3.8%, 7.0%)
Westmoreland County	51193	23.7%	(4.6%, 66.8%)	6.9%	(5.4%, 8.8%)
York County	51199	4.4%	(1.4%, 12.9%)	6.3%	(4.7%, 8.2%)
Chesapeake City	51550	3.3%	(1.6%, 6.6%)	3.1%	(2.6%, 3.6%)
Franklin City	51620	11.5%	(2.8%, 37.5%)	3.5%	(1.7%, 7.1%)
Hampton City	51650	5.0%	(2.5%, 9.5%)	5.1%	(3.9%, 6.6%)
Newport News City	51700	3.7%	(1.9%, 9.4%)	4.2%	(3.2%, 5.5%)
Norfolk City	51710	3.1%	(2.1%, 6.9%)	2.6%	(2.1%, 3.2%)
Poquoson City	51735	0.0%	(-0.0%, 61.6%)	6.0%	(3.6%, 9.7%)
Portsmouth City	51740	4.4%	(1.9%, 9.7%)	3.2%	(2.4%, 4.1%)
Suffolk City	51800	3.3%	(1.9%, 10.2%)	4.3%	(3.5%, 5.3%)
Virginia Beach City	51810	4.5%	(2.9%, 7.8%)	2.9%	(2.3%, 3.5%)
Williamsburg City	51830	0.0%	(0.0%, 55.7%)	6.6%	(2.2%, 18.0%)

## Section 4: Graphical representation

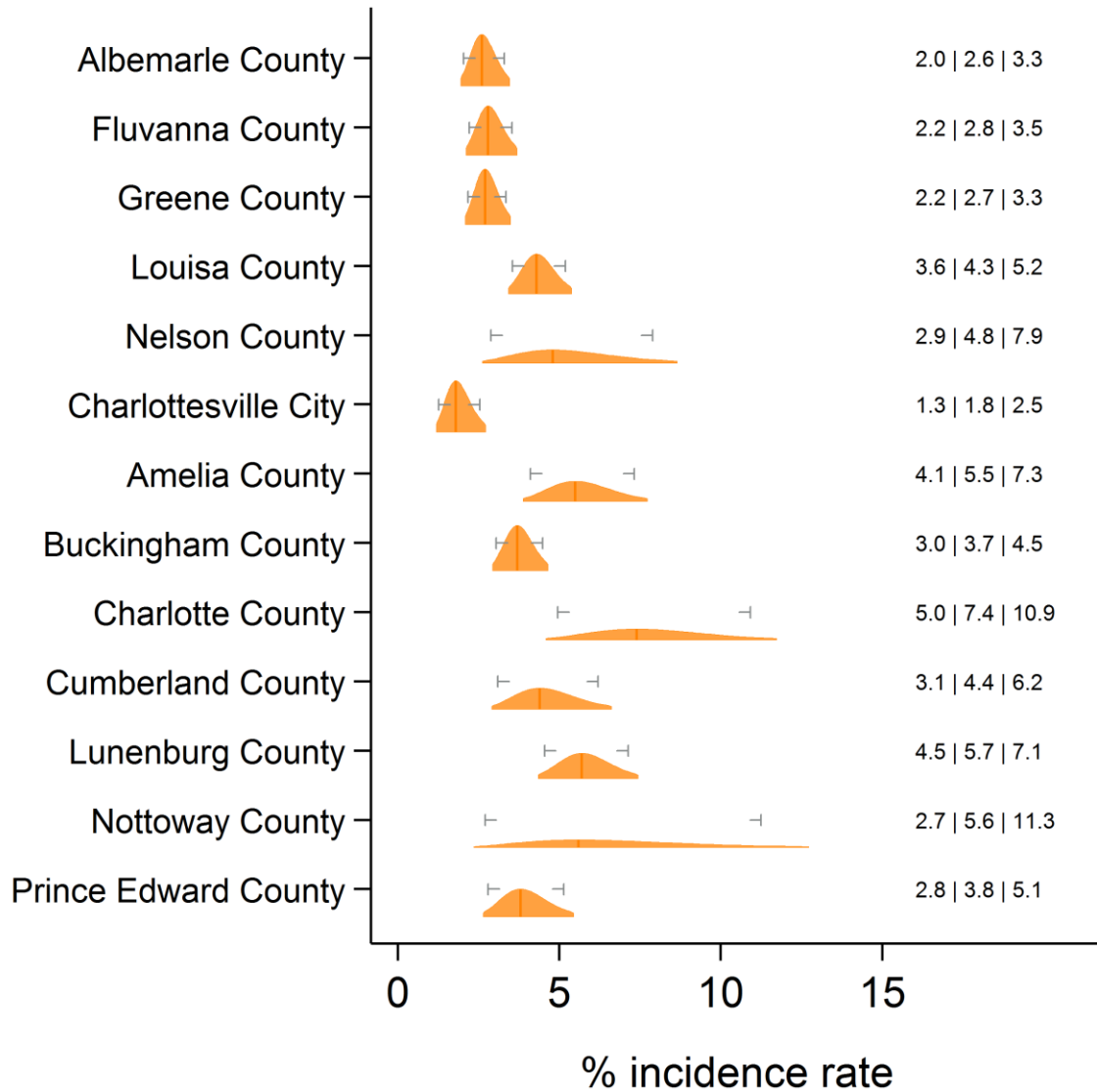
### Lifetime coronary heart disease Rappahannock/Rapidan and Rappahannock HDs



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

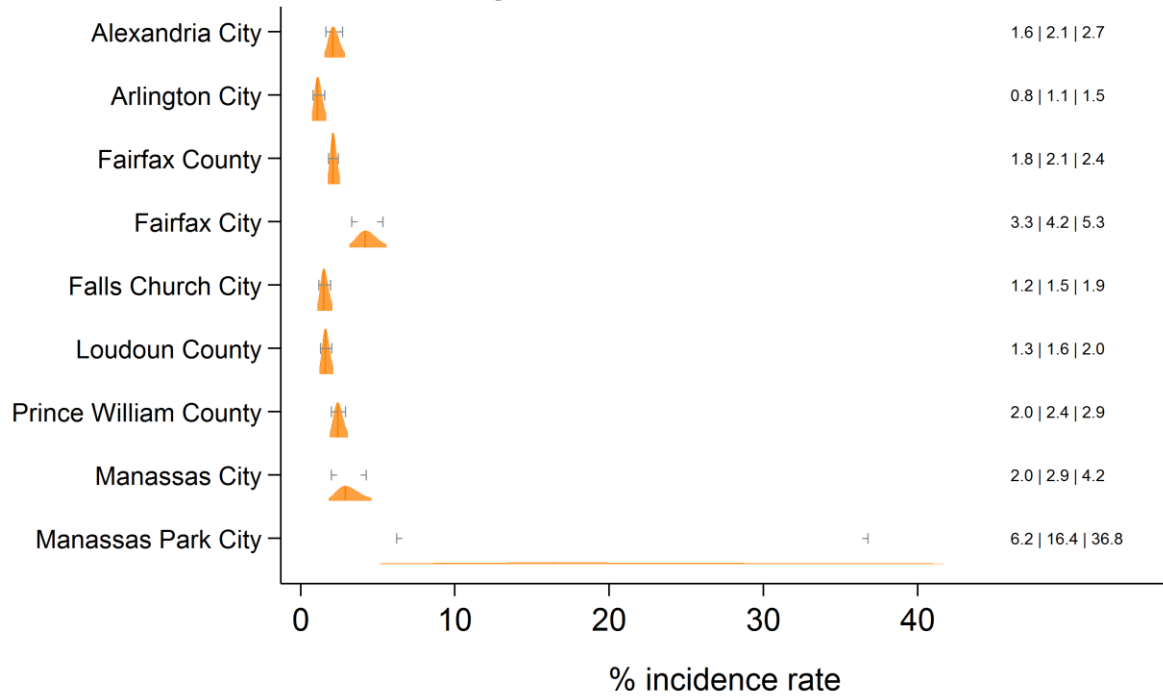


## Lifetime coronary heart disease Thomas Jefferson and Piedmont HDs



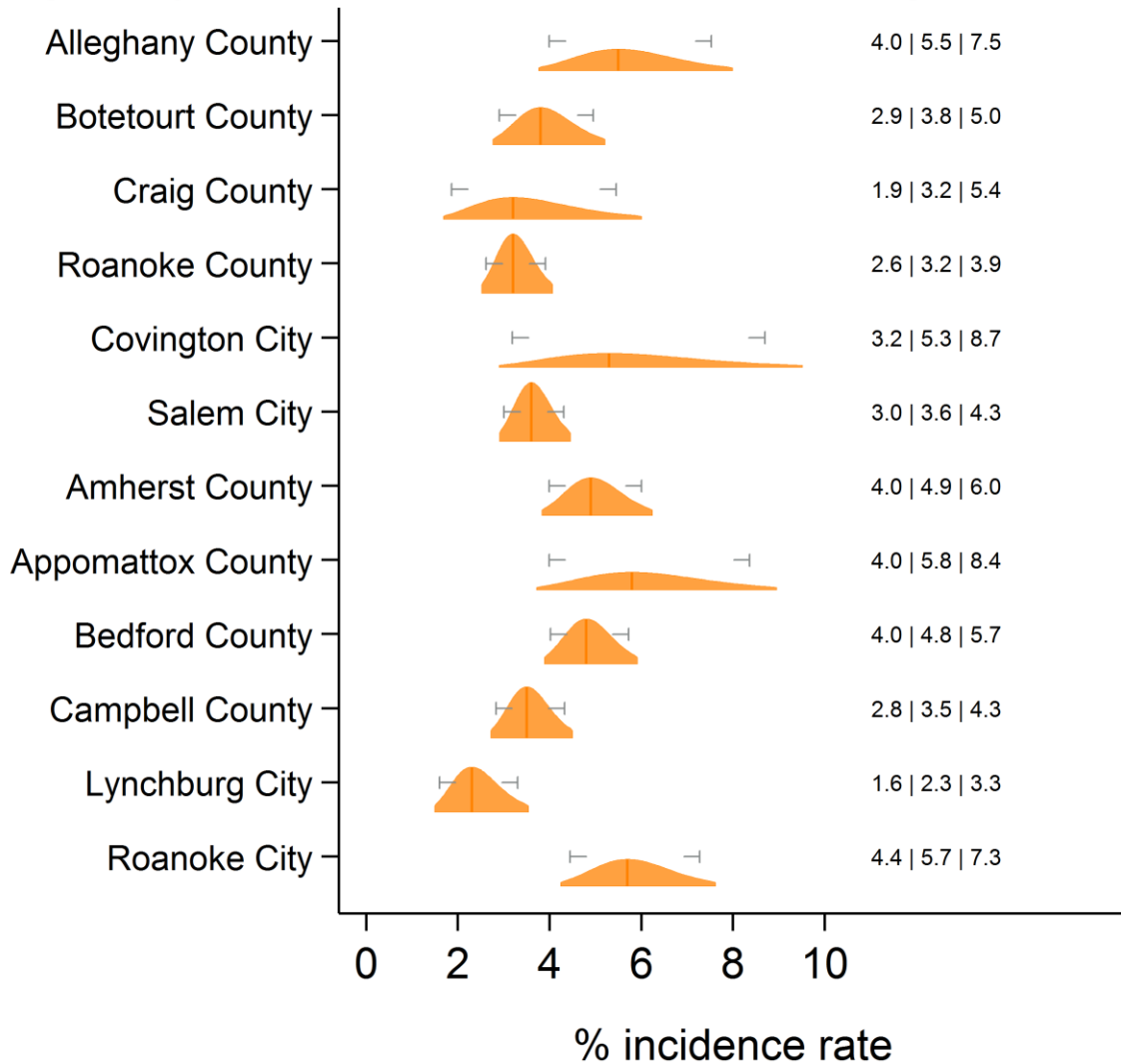
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval

### Lifetime coronary heart disease Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



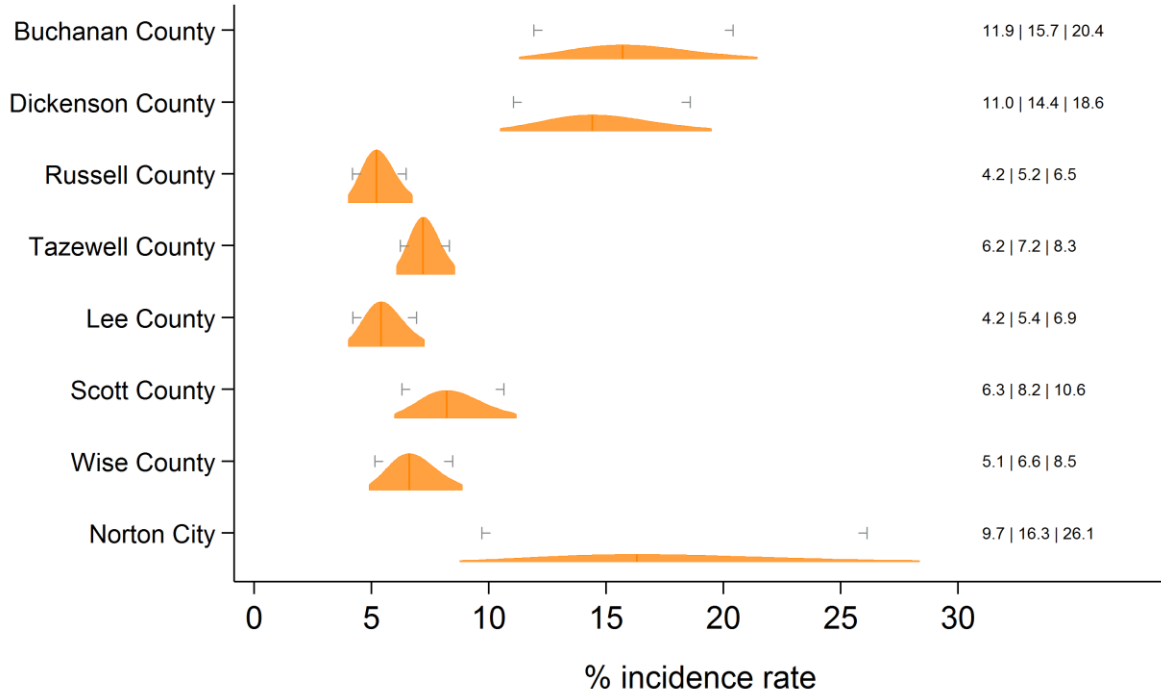
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval

## Lifetime coronary heart disease Alleghany, Roanoke and Central Virginia HDs



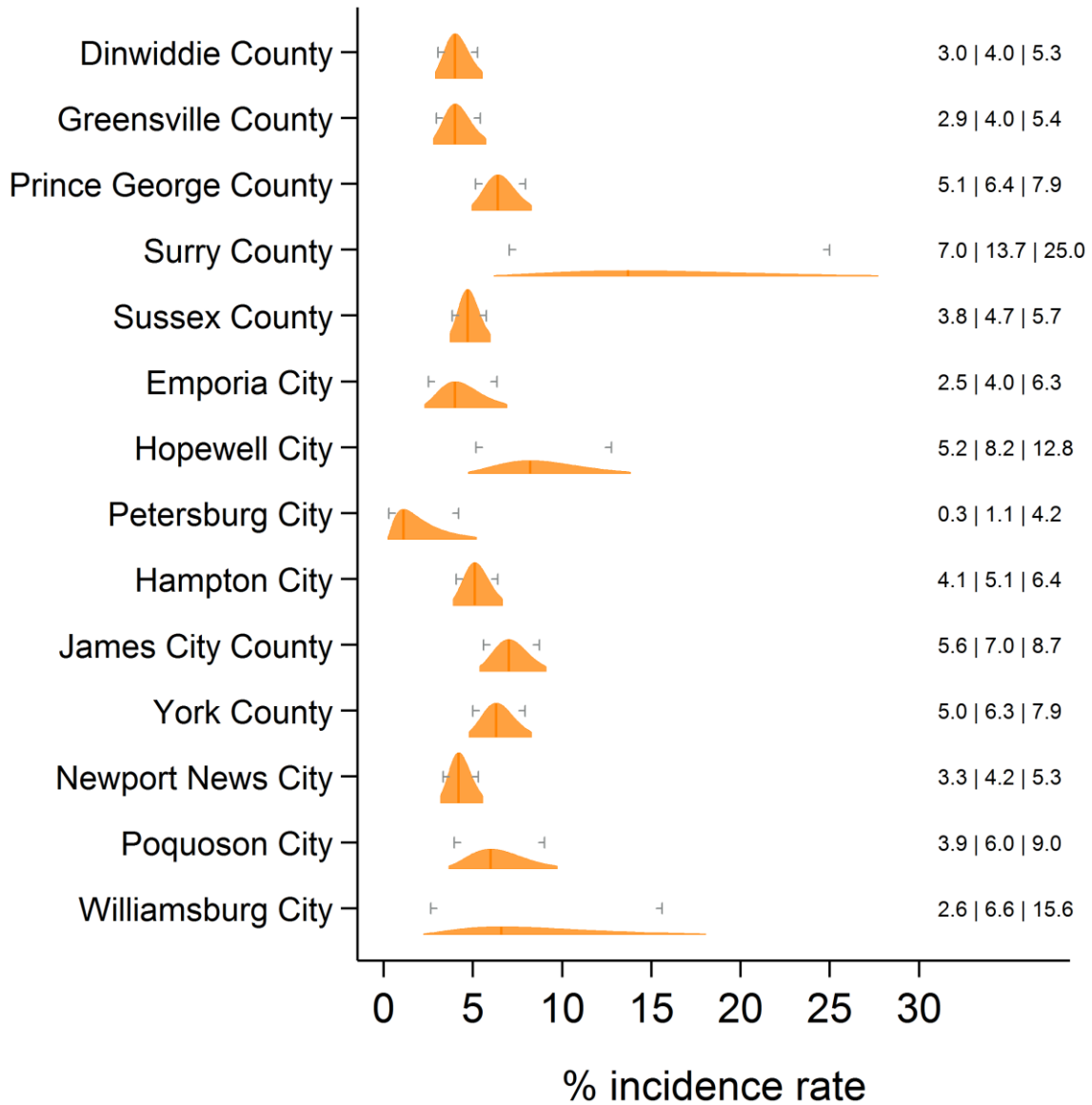
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
Gray markers: 90% confidence interval

### Lifetime coronary heart disease Cumberland Plateau and Lenowisco HDs



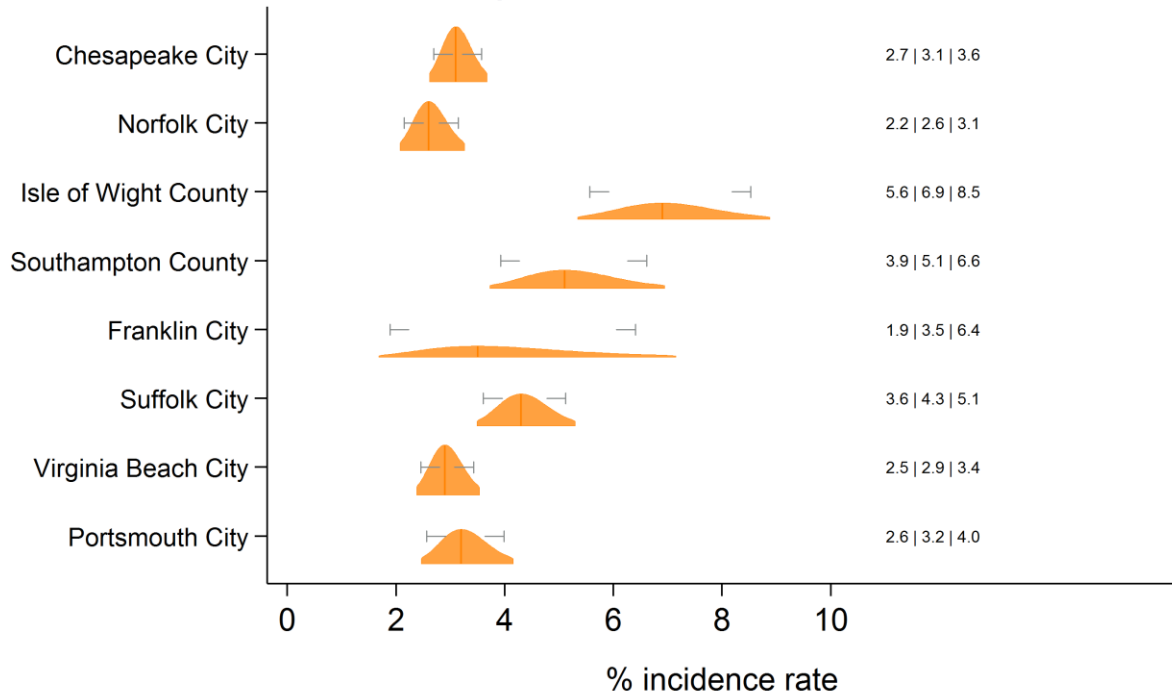
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval

## Lifetime coronary heart disease Crater, Peninsula and Hampton HDs



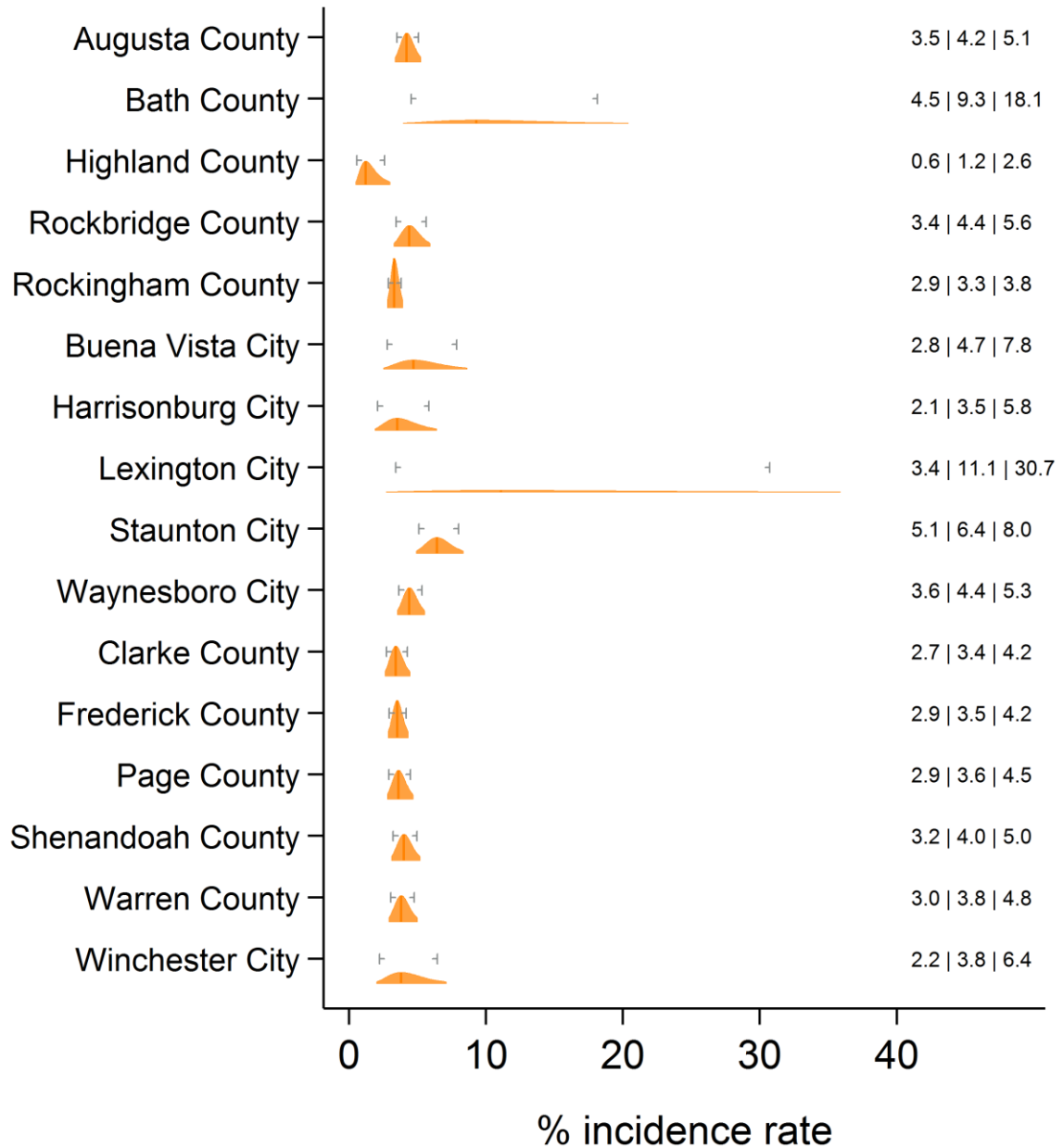
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval

## Lifetime coronary heart disease Norfolk, Portsmouth, Chesapeake, VA Beach, W. Tidewater HDs



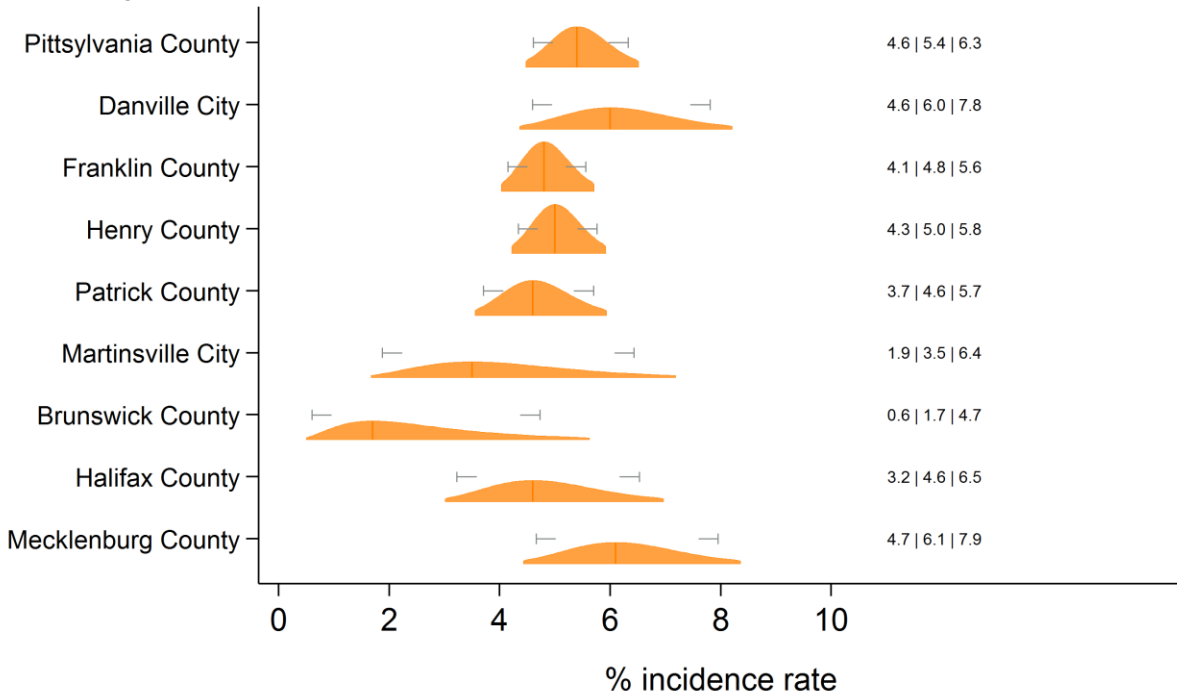
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval

## Lifetime coronary heart disease Central Shenandoah and Lord Fairfax HDs



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

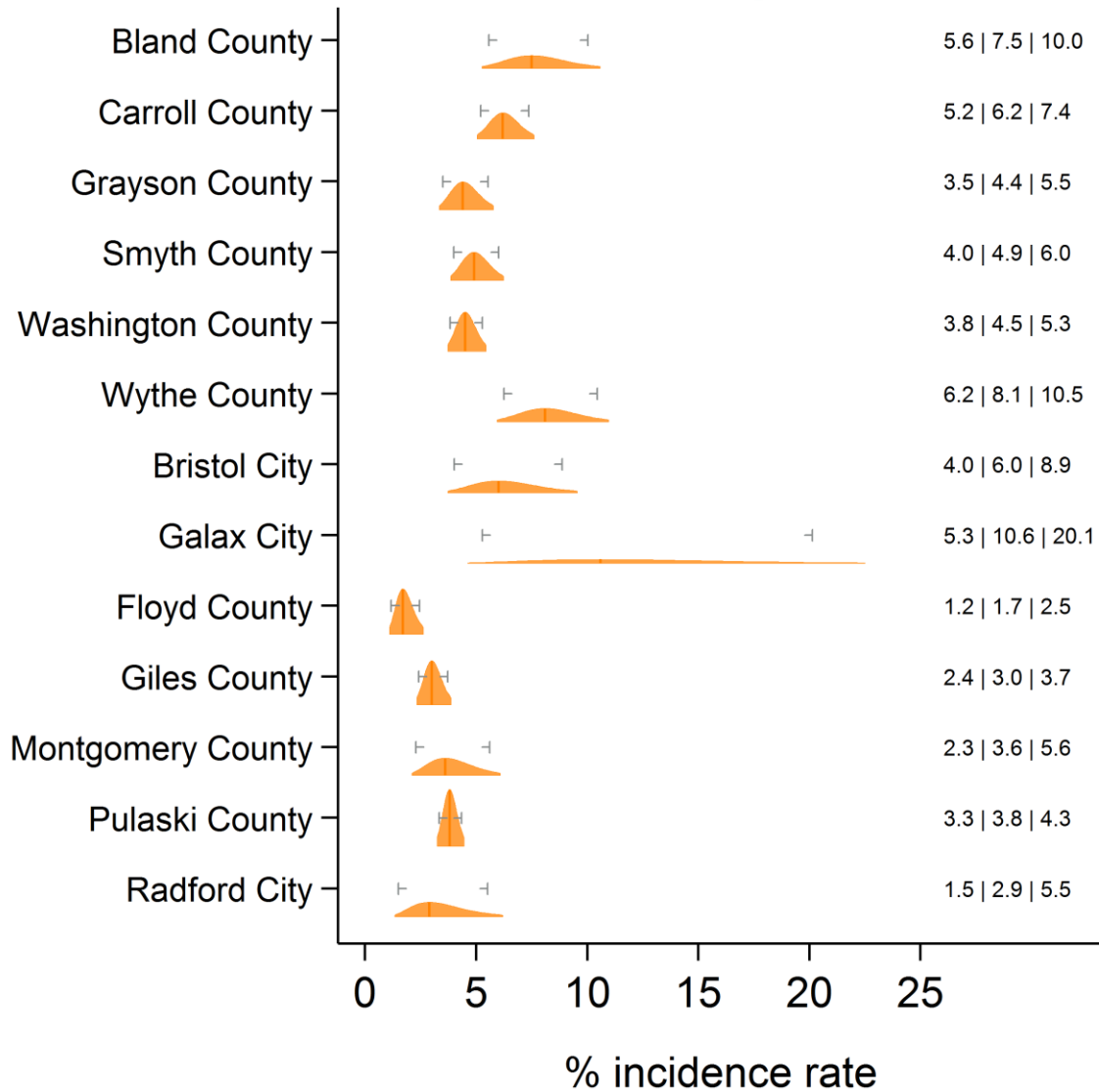
### Lifetime coronary heart disease Pittsylvania/Danville, Southside and West Piedmont HDs



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

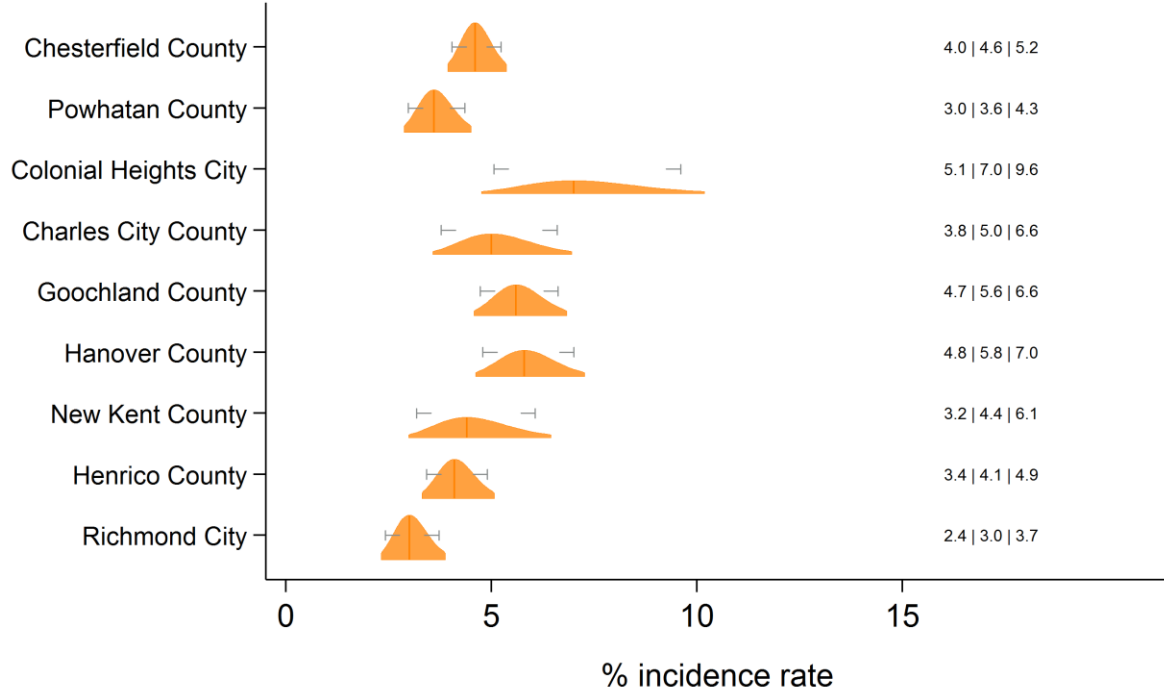


## Lifetime coronary heart disease New River and Mount Rogers HDs



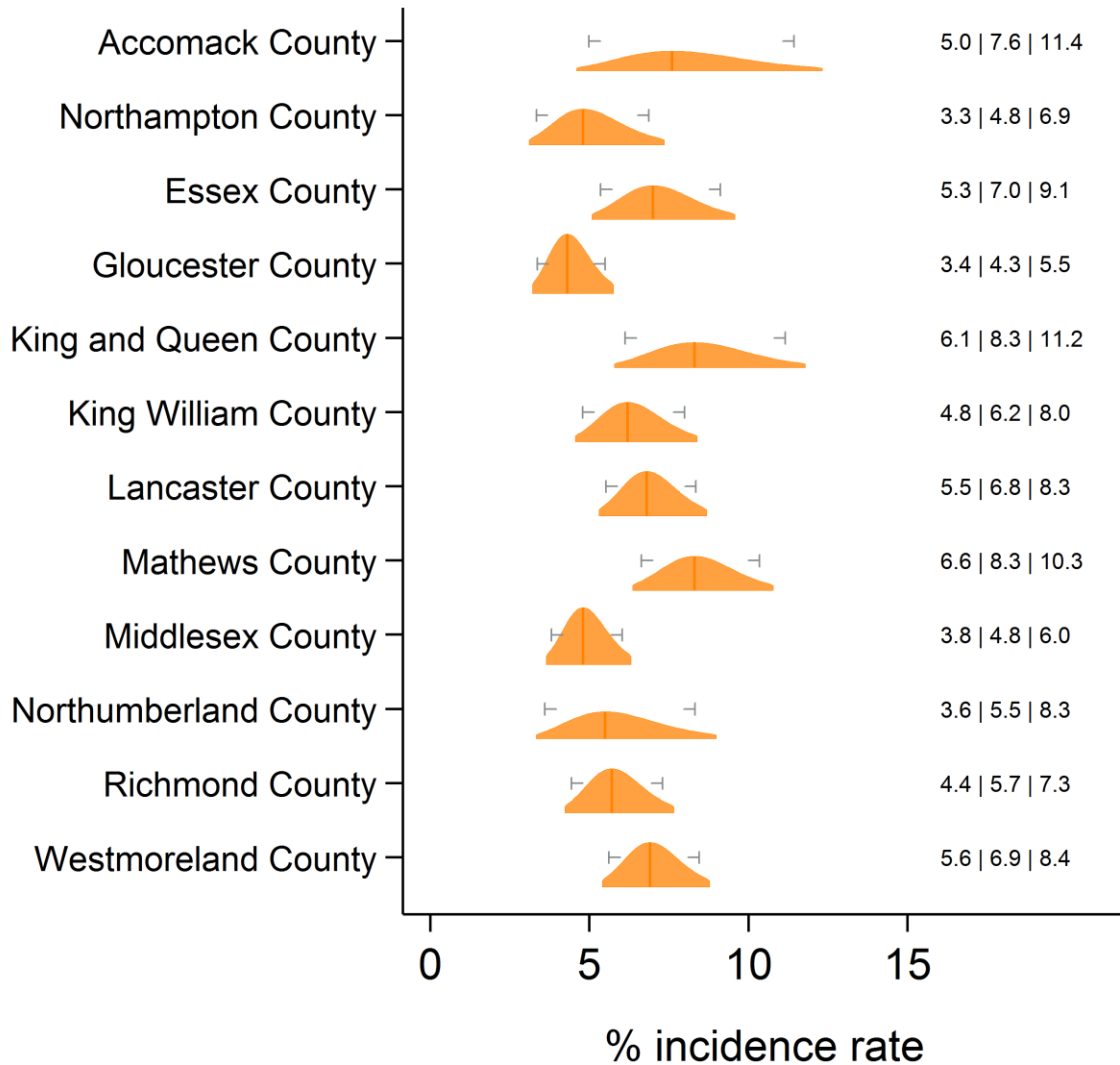
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval

### Lifetime coronary heart disease 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 coronary heart disease Eastern Shore and Three Rivers 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: 39 areas.

Direct estimate is outside the 95% SAE Wilson CI: 94 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: 110 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 23 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: 7 areas.

Direct standard error is zero: 25 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.05%; med = 1.42%; max = 9.22%.

Proportion of SAE variance to sampling error in regression coefficient estimates: min = 24.57%; med = 85.01%; max = 96.90%.

Proportion of SAE variance due to model selection: min = 0.99%; med = 12.78%; max = 74.96%.