

Indicator 8: Hypertension

Internal variable name: outc8_highbp

Definition: Have you EVER been told by a doctor, nurse or other health professional that you have high blood pressure?

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 8: Hypertension			
NH Black vs. NH White	-0.7424*** (0.0752)	-0.7511*** (0.0898)	-0.7511*** (0.0804)
NH Asian vs. NH White	0.3346 (0.2682)	0.2033 (0.2231)	0.2034 (0.2795)
NH Other vs. NH White	-0.0683 (0.1512)	-0.1000 (0.1717)	-0.1000 (0.1499)
Hispanic vs. NH White	0.0771 (0.1487)	-0.0222 (0.1876)	-0.0222 (0.1541)
Female	0.3986*** (0.0850)	0.4012*** (0.0656)	0.4012*** (0.0838)
Age 18-34 vs. 65+	2.6905*** (0.1068)	2.6570*** (0.1200)	2.6570*** (0.1083)
Age 35-44 vs. 65+	1.7289*** (0.1105)	1.6968*** (0.1112)	1.6968*** (0.1120)
Age 45-54 vs. 65+	1.3385*** (0.1140)	1.3251*** (0.0859)	1.3251*** (0.1152)
Age 55-64 vs. 65+	0.6566*** (0.0839)	0.6467*** (0.0764)	0.6467*** (0.0851)
Average aggregate household income per occupied housing unit in the ACS		0.0028 (0.0029)	0.0028 (0.0023)
% black HH head receiving SNAP		0.0010 (0.0029)	0.0010 (0.0023)
City on 4-cat urban/rural scale		0.2152 (0.1119)	0.2153* (0.1001)
Suburb on 4-cat urban/rural scale		0.0679 (0.1048)	0.0680 (0.1053)
VA BRFSS 2014 SAE outc3_depression		-2.2082 (1.1369)	-2.2085* (0.9306)
% Hispanic among adults 18 to 64		0.0173 (0.0247)	0.0173 (0.0173)
o.% black HH head receiving SNAP		0.0000 (.)	

c.ACS_pct_Hisp_18to64#c.ACS_pct_black_snap		-0.0004 (0.0005)	-0.0004 (0.0004)
Primary care physicians rate, County Rankings/AMA		0.0422 (0.1342)	0.0422 (0.1814)
Melanoma Female Rate		0.0012 (0.0045)	0.0012 (0.0041)
c.CHR_physicians_pc#c.MelanomaFemaleRate		0.0034 (0.0056)	0.0034 (0.0068)
Intercept	-0.6718*** (0.0835)	-0.6922 (0.3652)	-0.6920* (0.3123)
Area effect variance	0.0441** (0.0163)		0.0000 (0.0000)

Number of alternative models used to estimate model error = 7.

Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Augusta County	51015	65.4%	(54.7%, 74.8%)	53.0%	(49.9%, 56.1%)
Bath County	51017	42.2%	(14.1%, 76.5%)	52.7%	(47.9%, 57.4%)
Caroline County	51033	69.4%	(38.3%, 89.2%)	54.1%	(51.0%, 57.3%)
Clarke County	51043	67.5%	(41.3%, 86.0%)	57.1%	(53.3%, 60.9%)
Culpeper County	51047	61.5%	(44.8%, 75.8%)	55.0%	(52.0%, 58.0%)
Fauquier County	51061	68.3%	(50.5%, 82.0%)	58.5%	(54.2%, 62.7%)
Frederick County	51069	65.5%	(51.6%, 77.1%)	58.8%	(54.8%, 62.7%)
Highland County	51091	36.5%	(8.5%, 78.0%)	56.2%	(48.7%, 63.4%)
King George County	51099	77.0%	(53.3%, 90.8%)	59.5%	(55.2%, 63.7%)
Madison County	51113	54.0%	(29.5%, 76.7%)	52.1%	(49.1%, 55.1%)
Orange County	51137	64.7%	(46.3%, 79.6%)	53.6%	(50.1%, 57.1%)
Page County	51139	53.9%	(30.7%, 75.5%)	54.0%	(49.6%, 58.3%)
Rappahannock County	51157	65.2%	(34.6%, 86.9%)	57.6%	(53.1%, 62.0%)
Rockbridge County	51163	68.1%	(48.4%, 82.9%)	53.1%	(48.8%, 57.4%)
Rockingham County	51165	71.2%	(60.3%, 80.1%)	61.9%	(57.8%, 65.9%)
Shenandoah County	51171	70.1%	(52.6%, 83.1%)	54.7%	(49.2%, 60.0%)
Spotsylvania County	51177	62.6%	(50.1%, 73.6%)	58.3%	(55.2%, 61.4%)
Stafford County	51179	73.1%	(63.9%, 80.7%)	64.0%	(59.9%, 68.0%)
Warren County	51187	58.3%	(38.8%, 75.5%)	55.1%	(50.6%, 59.4%)
Buena Vista City	51530	40.9%	(11.8%, 78.2%)	52.2%	(44.9%, 59.4%)
Fredericksburg City	51630	84.7%	(62.7%, 92.2%)	62.7%	(57.1%, 68.0%)
Harrisonburg City	51660	96.5%	(53.2%, 98.4%)	71.5%	(62.9%, 78.8%)
Lexington City	51678	100.0%	(3.7%, 100.0%)	55.5%	(16.6%, 88.7%)
Staunton City	51790	63.0%	(26.8%, 88.8%)	59.2%	(54.1%, 64.2%)
Waynesboro City	51820	66.2%	(31.6%, 89.3%)	58.5%	(52.4%, 64.4%)
Winchester City	51840	82.0%	(50.2%, 95.4%)	64.8%	(48.2%, 78.5%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	63.7%	(52.6%, 73.6%)	62.7%	(57.0%, 68.0%)
Alleghany County	51005	25.9%	(11.6%, 48.2%)	48.6%	(44.9%, 52.2%)
Amherst County	51009	64.6%	(44.0%, 81.0%)	51.3%	(47.7%, 54.8%)
Appomattox County	51011	46.7%	(26.1%, 68.4%)	51.4%	(47.1%, 55.7%)
Arlington City	51013	73.3%	(64.4%, 80.6%)	71.9%	(67.9%, 75.6%)
Bedford County	51019	56.9%	(45.8%, 67.4%)	52.3%	(48.9%, 55.6%)
Botetourt County	51023	65.6%	(45.7%, 81.2%)	54.7%	(50.4%, 58.8%)
Campbell County	51031	72.6%	(60.5%, 82.2%)	57.4%	(52.1%, 62.6%)
Craig County	51045	18.1%	(2.0%, 70.4%)	47.4%	(42.9%, 52.0%)
Fairfax County	51059	77.6%	(74.3%, 80.5%)	28.9%	(26.8%, 31.1%)
Fluvanna County	51065	46.9%	(27.7%, 67.0%)	52.2%	(48.6%, 55.7%)
Greene County	51079	69.1%	(40.8%, 87.9%)	61.2%	(55.4%, 66.7%)
Loudoun County	51107	73.9%	(65.7%, 80.7%)	69.2%	(66.0%, 72.2%)
Louisa County	51109	66.9%	(49.0%, 80.9%)	50.8%	(46.5%, 55.1%)
Nelson County	51125	81.5%	(59.1%, 93.1%)	55.5%	(49.7%, 61.1%)
Prince William County	51153	72.1%	(66.5%, 77.1%)	63.8%	(60.7%, 66.8%)
Roanoke County	51161	69.5%	(59.6%, 77.8%)	58.6%	(53.6%, 63.5%)
Alexandria City	51510	70.3%	(59.6%, 79.1%)	66.1%	(60.9%, 71.0%)
Charlottesville City	51540	81.5%	(63.4%, 91.8%)	72.0%	(62.1%, 80.1%)
Covington City	51580	75.6%	(7.9%, 98.5%)	52.4%	(47.5%, 57.2%)
Fairfax City	51600	77.5%	(65.6%, 86.1%)	65.3%	(59.9%, 70.2%)
Falls Church City	51610	89.3%	(64.2%, 94.2%)	66.4%	(45.9%, 82.2%)
Lynchburg City	51680	65.7%	(52.9%, 76.5%)	62.3%	(57.2%, 67.1%)
Manassas City	51683	68.4%	(27.1%, 92.7%)	72.1%	(58.0%, 82.9%)
Manassas Park City	51685	95.5%	(22.3%, 99.1%)	72.0%	(50.0%, 86.9%)
Salem City	51775	84.5%	(46.1%, 93.8%)	64.9%	(52.6%, 75.6%)

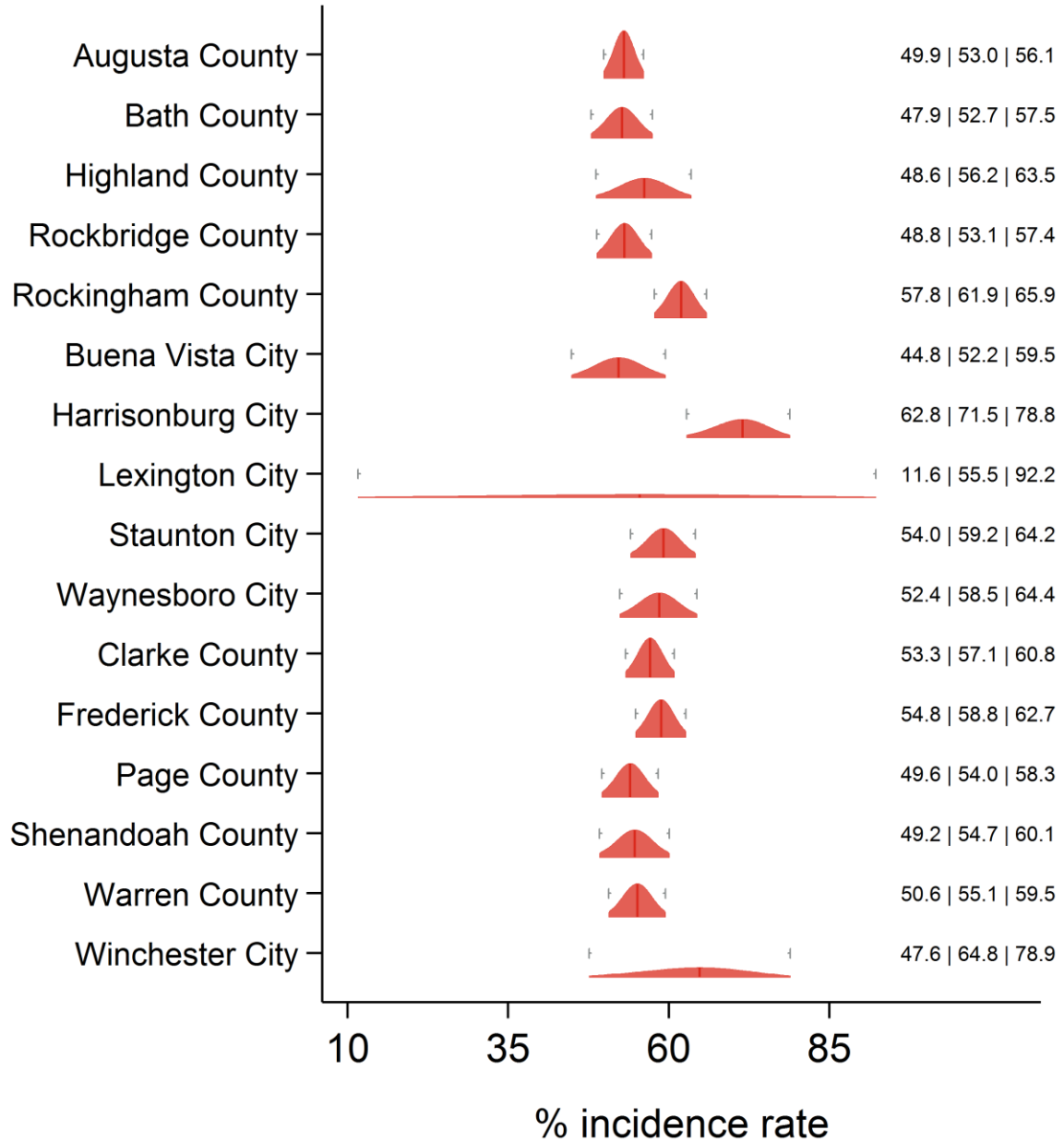
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	46.9%	(16.6%, 79.7%)	51.2%	(45.6%, 56.8%)
Buchanan County	51027	45.6%	(25.2%, 67.5%)	40.5%	(33.9%, 47.5%)
Carroll County	51035	54.3%	(34.3%, 73.1%)	47.2%	(42.1%, 52.4%)
Dickenson County	51051	53.1%	(30.6%, 74.4%)	45.2%	(40.2%, 50.4%)
Floyd County	51063	75.8%	(58.3%, 87.6%)	62.6%	(58.2%, 66.8%)
Franklin County	51067	55.1%	(36.5%, 72.3%)	50.3%	(47.2%, 53.3%)
Giles County	51071	55.3%	(37.3%, 71.9%)	58.3%	(54.9%, 61.7%)
Grayson County	51077	66.5%	(41.7%, 84.6%)	46.7%	(42.8%, 50.6%)
Henry County	51089	55.9%	(40.4%, 70.3%)	45.6%	(41.9%, 49.3%)
Lee County	51105	37.2%	(15.1%, 66.5%)	45.9%	(41.7%, 50.2%)
Montgomery County	51121	74.4%	(61.7%, 84.0%)	64.5%	(59.7%, 69.0%)
Patrick County	51141	61.4%	(34.2%, 83.0%)	44.9%	(41.2%, 48.6%)
Pittsylvania County	51143	56.0%	(45.3%, 66.2%)	45.8%	(42.5%, 49.1%)
Pulaski County	51155	42.2%	(23.8%, 63.1%)	55.3%	(51.0%, 59.5%)
Russell County	51167	46.9%	(29.2%, 65.4%)	49.2%	(45.7%, 52.6%)
Scott County	51169	40.6%	(22.9%, 61.1%)	45.7%	(39.5%, 52.1%)
Smyth County	51173	60.3%	(35.4%, 80.8%)	46.2%	(42.4%, 50.1%)
Tazewell County	51185	63.3%	(44.6%, 78.7%)	48.2%	(44.2%, 52.1%)
Washington County	51191	55.6%	(41.9%, 68.6%)	51.9%	(48.1%, 55.7%)
Wise County	51195	58.0%	(43.1%, 71.5%)	45.8%	(41.6%, 50.1%)
Wythe County	51197	47.9%	(29.4%, 67.1%)	50.6%	(47.4%, 53.8%)
Bristol City	51520	78.0%	(23.3%, 97.7%)	46.7%	(40.2%, 53.2%)
Danville City	51590	66.1%	(42.5%, 83.7%)	45.1%	(39.4%, 50.8%)
Galax City	51640	42.9%	(4.5%, 92.3%)	45.7%	(32.5%, 59.6%)
Martinsville City	51690	56.5%	(18.4%, 88.2%)	44.3%	(39.8%, 48.9%)
Norton City	51720	86.3%	(32.0%, 96.6%)	56.9%	(43.8%, 69.0%)
Radford City	51750	69.9%	(38.0%, 89.8%)	61.6%	(55.7%, 67.2%)
Roanoke City	51770	64.1%	(52.0%, 74.7%)	60.4%	(55.3%, 65.2%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	57.0%	(30.1%, 80.3%)	50.3%	(46.4%, 54.3%)
Brunswick County	51025	50.6%	(27.4%, 73.6%)	47.0%	(42.9%, 51.1%)
Buckingham County	51029	62.0%	(41.2%, 79.2%)	46.9%	(43.7%, 50.2%)
Charles City County	51036	60.4%	(18.7%, 91.0%)	49.7%	(44.4%, 55.0%)
Charlotte County	51037	49.3%	(30.3%, 68.4%)	49.0%	(44.8%, 53.2%)
Chesterfield County	51041	71.9%	(65.1%, 77.9%)	59.7%	(56.4%, 62.8%)
Cumberland County	51049	56.4%	(33.7%, 76.7%)	45.7%	(41.3%, 50.2%)
Dinwiddie County	51053	45.1%	(24.0%, 68.2%)	47.7%	(44.1%, 51.4%)
Goochland County	51075	81.3%	(61.4%, 92.3%)	57.5%	(50.5%, 64.2%)
Greensville County	51081	54.8%	(22.0%, 83.9%)	45.9%	(41.9%, 50.0%)
Halifax County	51083	47.7%	(32.1%, 63.8%)	48.2%	(45.0%, 51.5%)
Hanover County	51085	69.0%	(57.9%, 78.2%)	57.7%	(53.4%, 61.8%)
Henrico County	51087	63.0%	(54.6%, 70.6%)	57.2%	(53.5%, 60.8%)
Lunenburg County	51111	49.4%	(23.4%, 75.8%)	45.9%	(42.7%, 49.1%)
Mecklenburg County	51117	52.4%	(38.6%, 65.9%)	48.5%	(45.3%, 51.6%)
New Kent County	51127	58.6%	(33.9%, 79.7%)	54.8%	(50.8%, 58.6%)
Nottoway County	51135	37.8%	(16.2%, 65.5%)	50.8%	(46.8%, 54.8%)
Powhatan County	51145	54.7%	(30.5%, 76.8%)	53.1%	(49.3%, 56.9%)
Prince Edward County	51147	52.5%	(34.8%, 69.6%)	44.9%	(40.1%, 49.7%)
Prince George County	51149	63.1%	(43.1%, 79.3%)	50.2%	(46.3%, 54.0%)
Surry County	51181	53.8%	(23.9%, 81.2%)	50.8%	(45.9%, 55.6%)
Sussex County	51183	55.3%	(35.3%, 73.7%)	45.3%	(39.9%, 50.9%)
Colonial Heights City	51570	78.8%	(58.6%, 90.7%)	56.9%	(50.2%, 63.3%)
Emporia City	51595	0.0%	(0.0%, 91.8%)	43.3%	(37.6%, 49.2%)
Hopewell City	51670	73.2%	(53.5%, 86.6%)	49.2%	(44.3%, 54.1%)
Petersburg City	51730	63.9%	(45.4%, 79.0%)	50.5%	(44.7%, 56.3%)
Richmond City	51760	71.8%	(62.0%, 79.9%)	57.3%	(52.3%, 62.1%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	57.1%	(41.5%, 71.4%)	48.1%	(43.3%, 52.9%)
Essex County	51057	47.0%	(22.9%, 72.5%)	46.4%	(42.8%, 50.2%)
Gloucester County	51073	58.8%	(43.7%, 72.5%)	48.9%	(45.8%, 52.0%)
Isle of Wight County	51093	64.0%	(42.6%, 80.9%)	52.2%	(48.2%, 56.3%)
James City County	51095	72.8%	(61.4%, 81.8%)	61.0%	(56.8%, 65.1%)
King and Queen County	51097	33.4%	(12.7%, 63.4%)	43.8%	(39.9%, 47.8%)
King William County	51101	45.0%	(20.1%, 72.7%)	52.4%	(46.8%, 57.9%)
Lancaster County	51103	60.4%	(29.3%, 84.9%)	41.9%	(36.7%, 47.3%)
Mathews County	51115	58.2%	(32.4%, 80.2%)	49.9%	(45.1%, 54.7%)
Middlesex County	51119	46.6%	(25.3%, 69.2%)	51.4%	(46.3%, 56.5%)
Northampton County	51131	65.2%	(45.7%, 80.7%)	50.8%	(43.0%, 58.5%)
Northumberland County	51133	34.8%	(18.1%, 56.3%)	47.0%	(42.4%, 51.6%)
Richmond County	51159	42.0%	(21.2%, 66.1%)	41.5%	(36.2%, 47.1%)
Southampton County	51175	66.9%	(39.8%, 86.0%)	45.6%	(40.4%, 50.9%)
Westmoreland County	51193	73.0%	(47.8%, 88.9%)	48.7%	(45.4%, 51.9%)
York County	51199	56.1%	(40.9%, 70.3%)	61.2%	(56.8%, 65.4%)
Chesapeake City	51550	62.2%	(52.9%, 70.8%)	58.7%	(54.8%, 62.5%)
Franklin City	51620	45.7%	(23.4%, 69.9%)	48.3%	(41.8%, 54.9%)
Hampton City	51650	69.6%	(61.1%, 76.9%)	55.4%	(51.1%, 59.5%)
Newport News City	51700	63.4%	(53.1%, 72.7%)	58.4%	(53.9%, 62.8%)
Norfolk City	51710	57.8%	(49.0%, 66.2%)	60.5%	(55.8%, 65.0%)
Poquoson City	51735	58.6%	(14.9%, 91.9%)	61.5%	(54.2%, 68.3%)
Portsmouth City	51740	64.6%	(53.8%, 74.0%)	54.5%	(49.9%, 59.1%)
Suffolk City	51800	59.8%	(46.7%, 71.7%)	53.5%	(48.8%, 58.1%)
Virginia Beach City	51810	73.1%	(67.6%, 77.9%)	64.5%	(61.3%, 67.5%)
Williamsburg City	51830	70.1%	(26.5%, 93.8%)	58.4%	(48.8%, 67.5%)

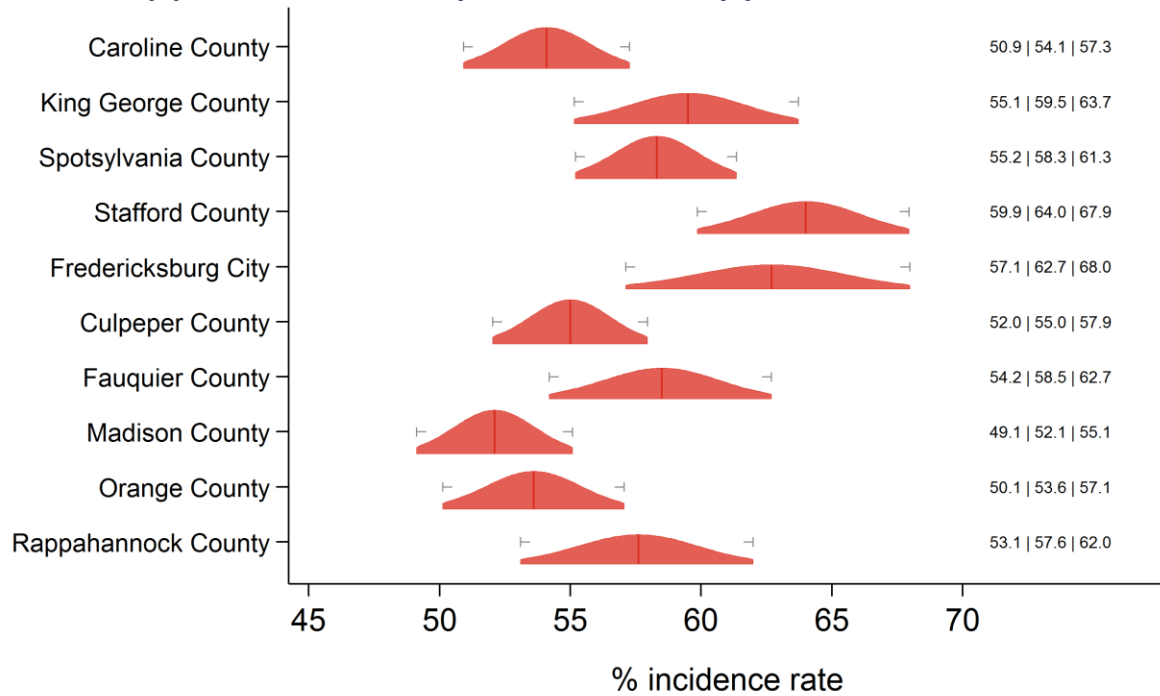
Graphical representation

Hypertension Central Shenandoah and Lord Fairfax HDs



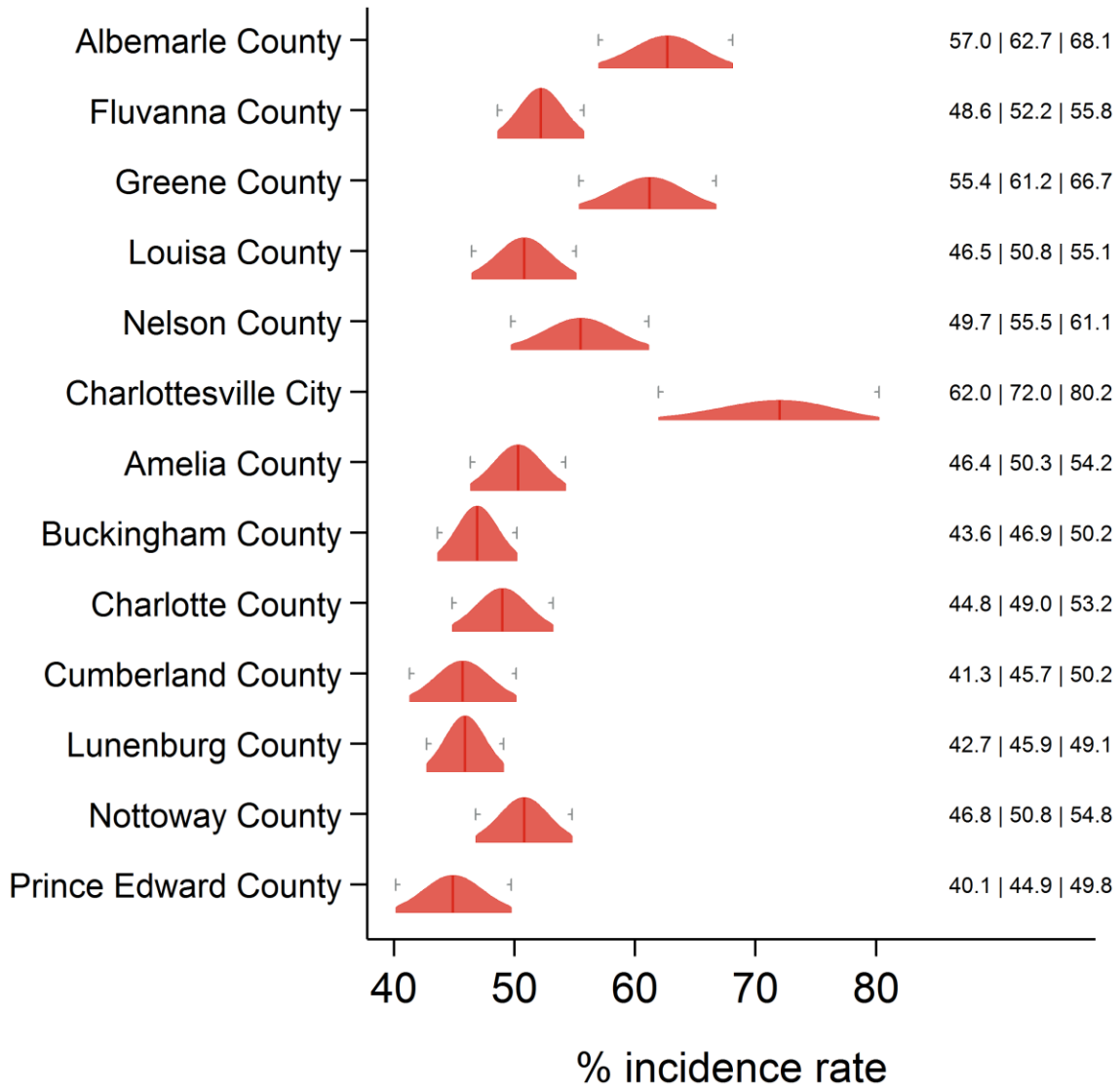
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Rappahannock/Rapidan and Rappahannock HDs



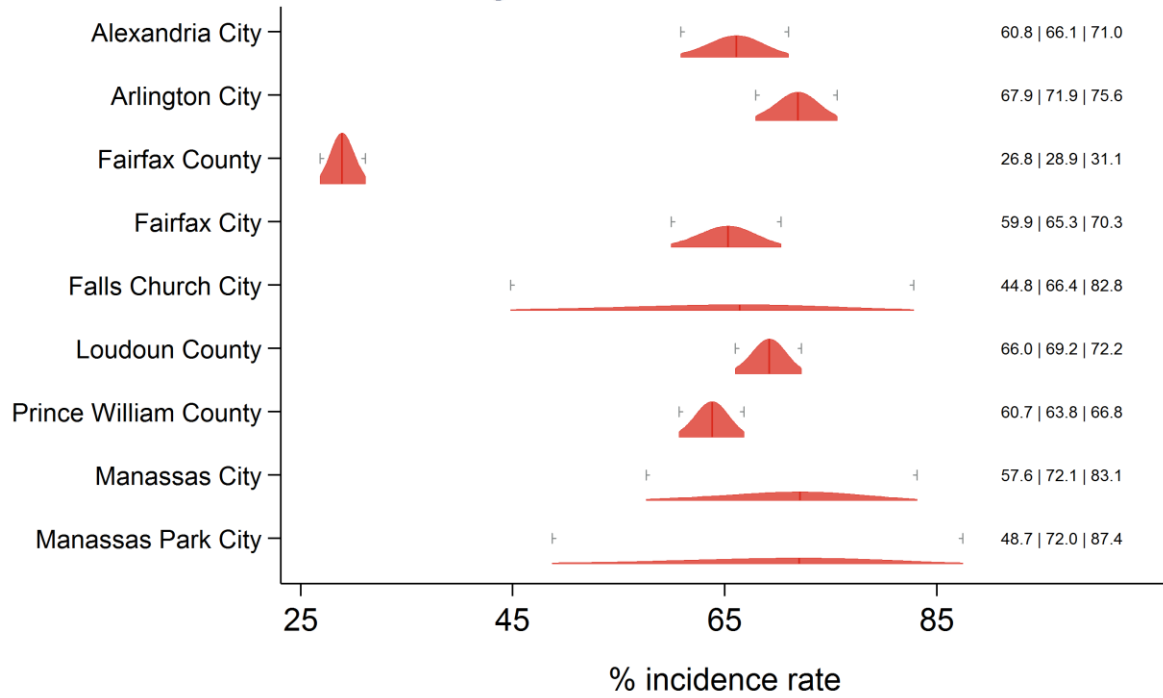
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Thomas Jefferson and Piedmont HDs



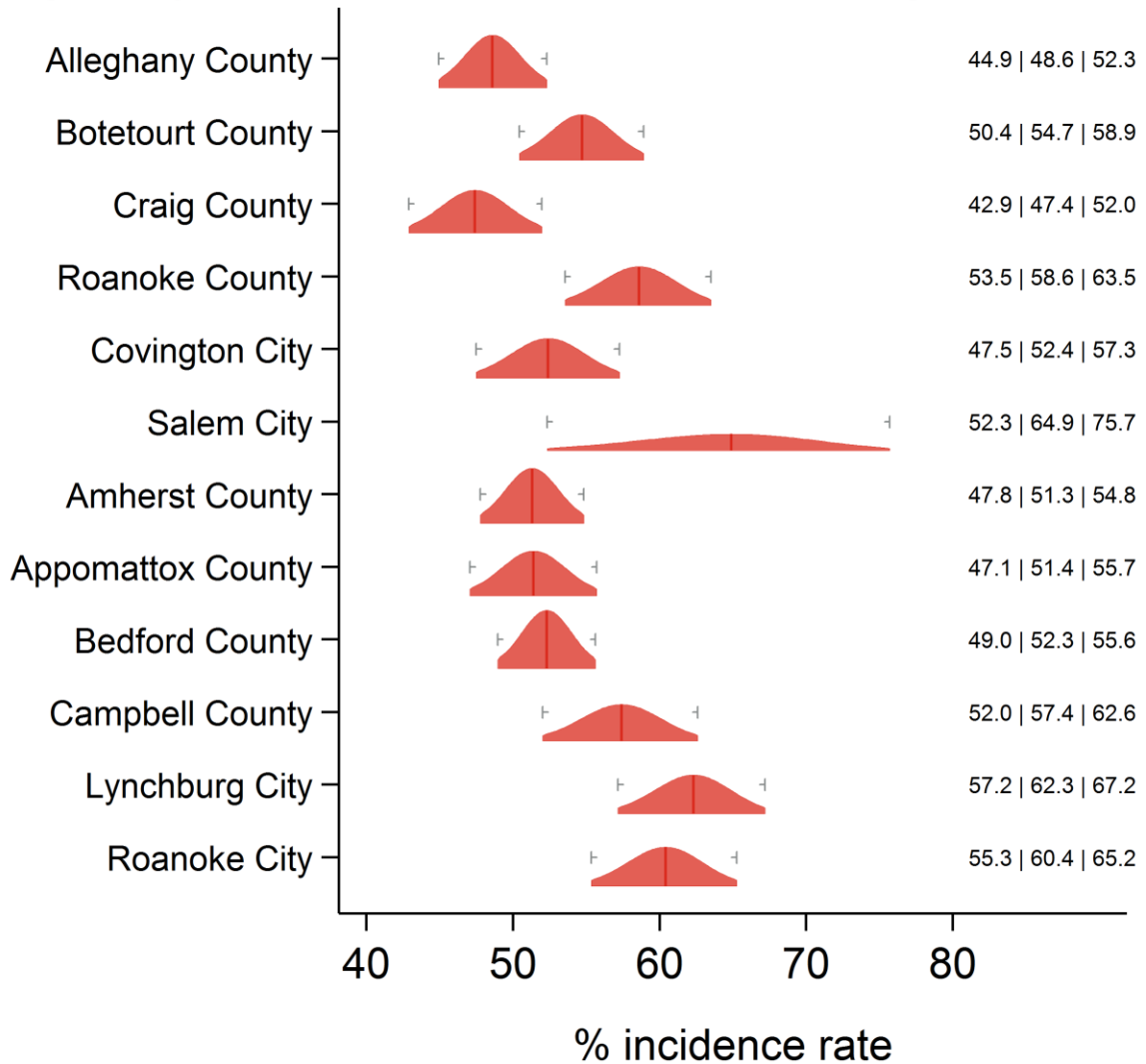
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



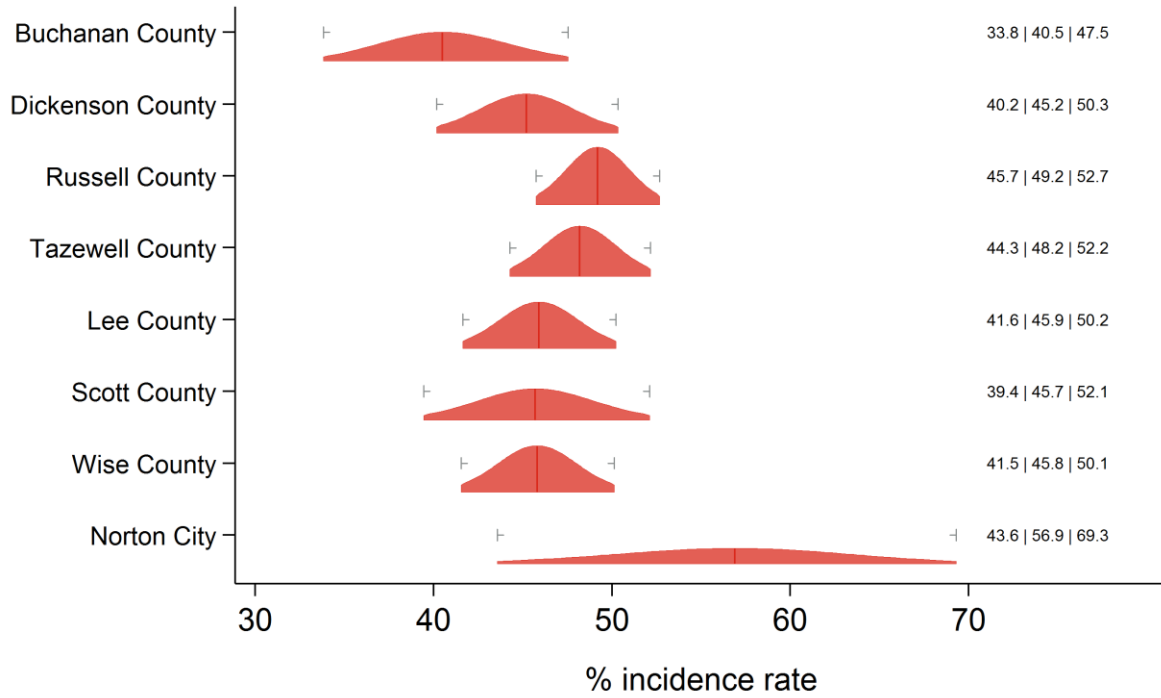
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Alleghany, Roanoke and Central Virginia HDs



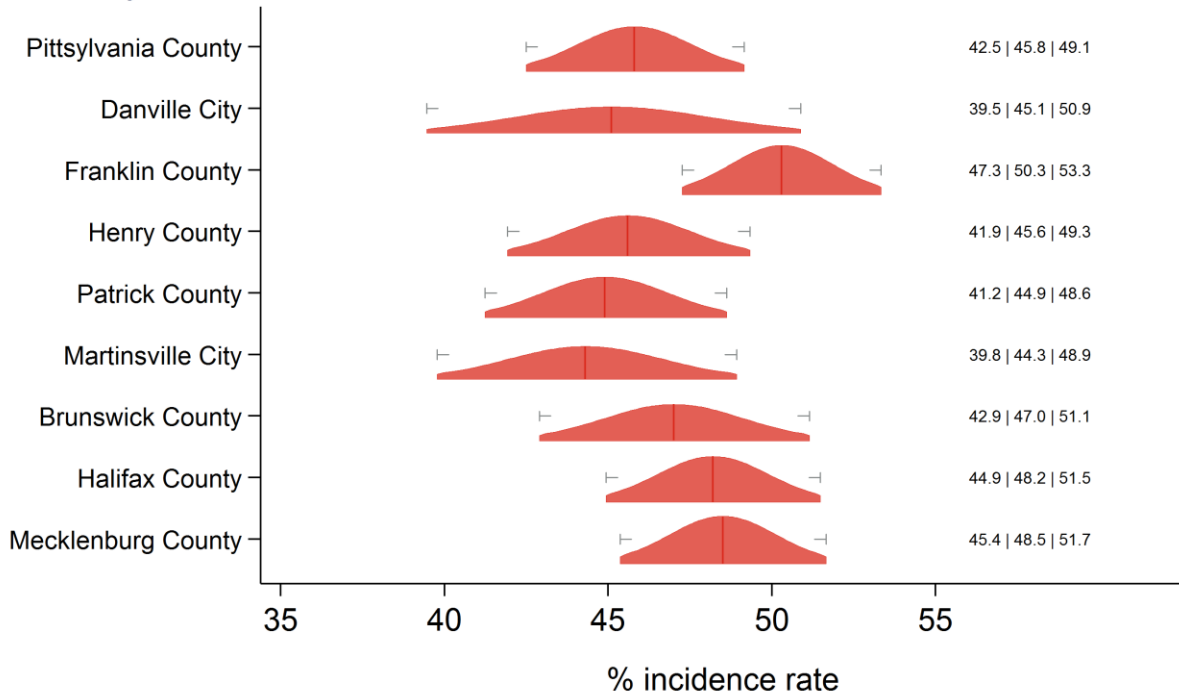
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Cumberland Plateau and Lenowisco HDs



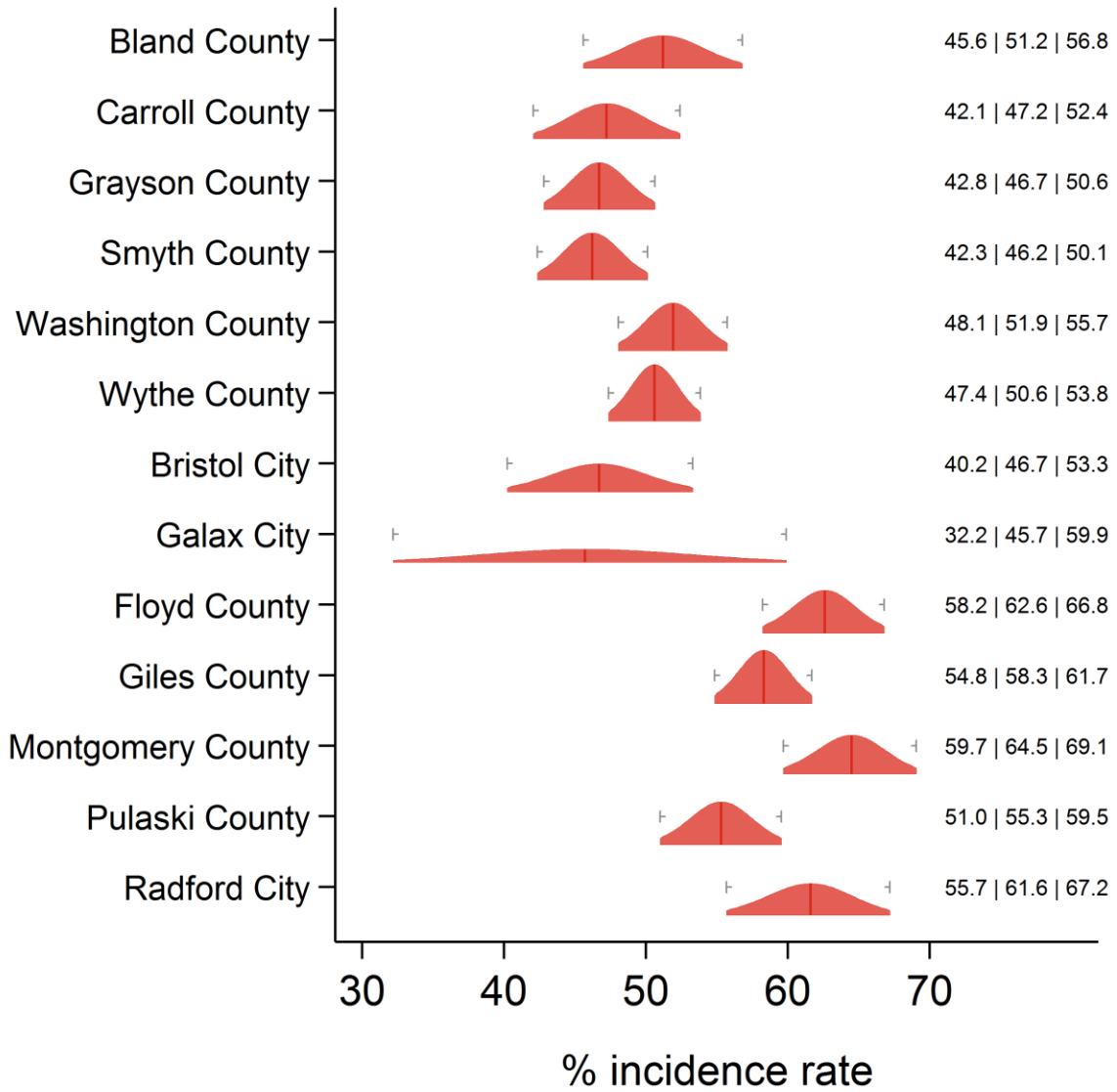
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Pittsylvania/Danville, Southside and West Piedmont HDs



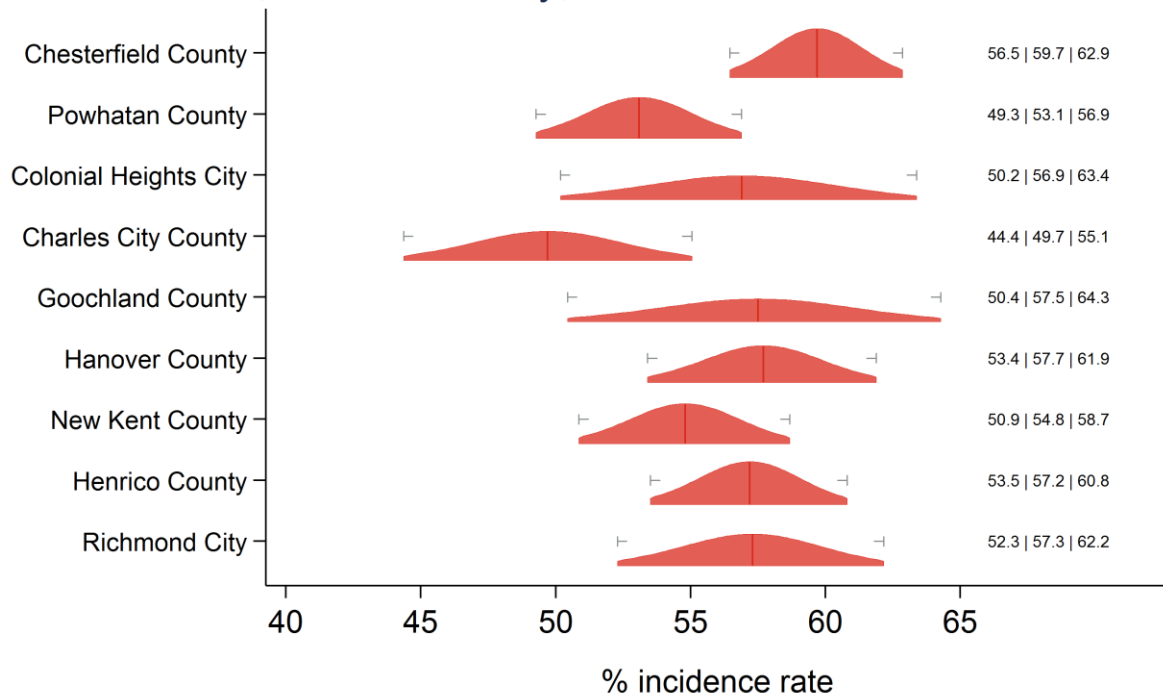
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension New River and Mount Rogers HDs



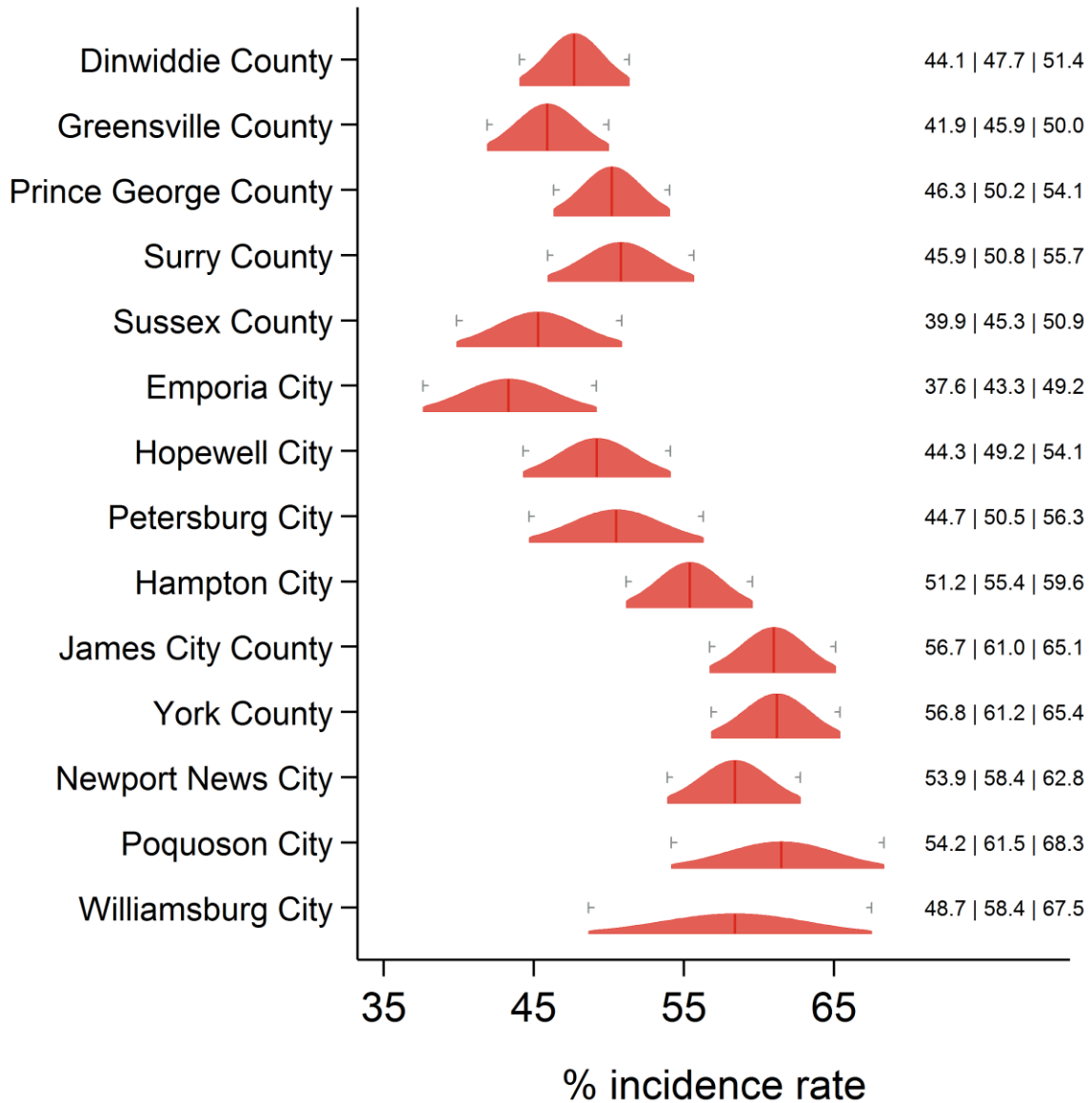
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Chesterfield, Chickahominy, Henrico and Richmond HDs



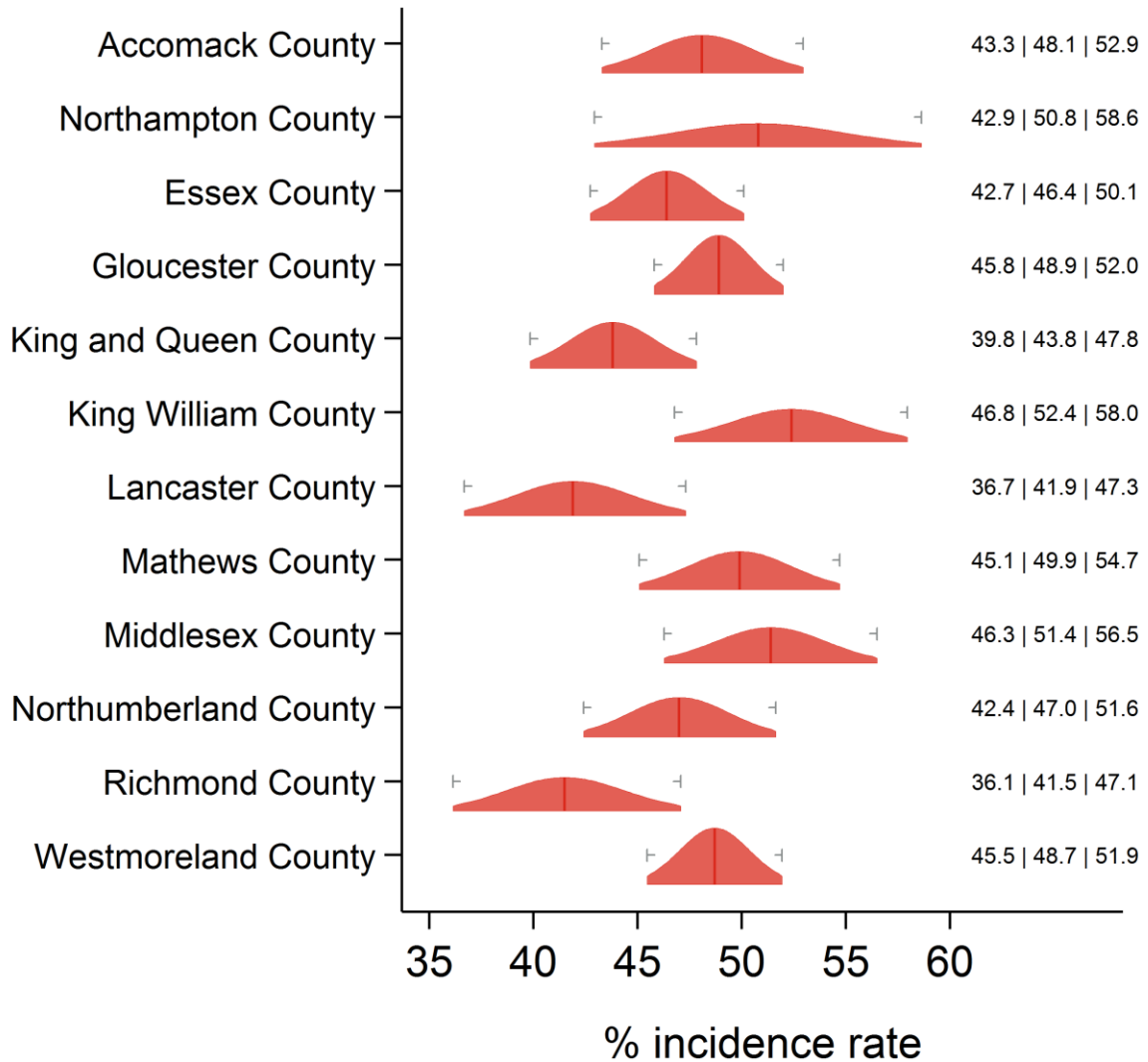
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Crater, Peninsula and Hampton HDs



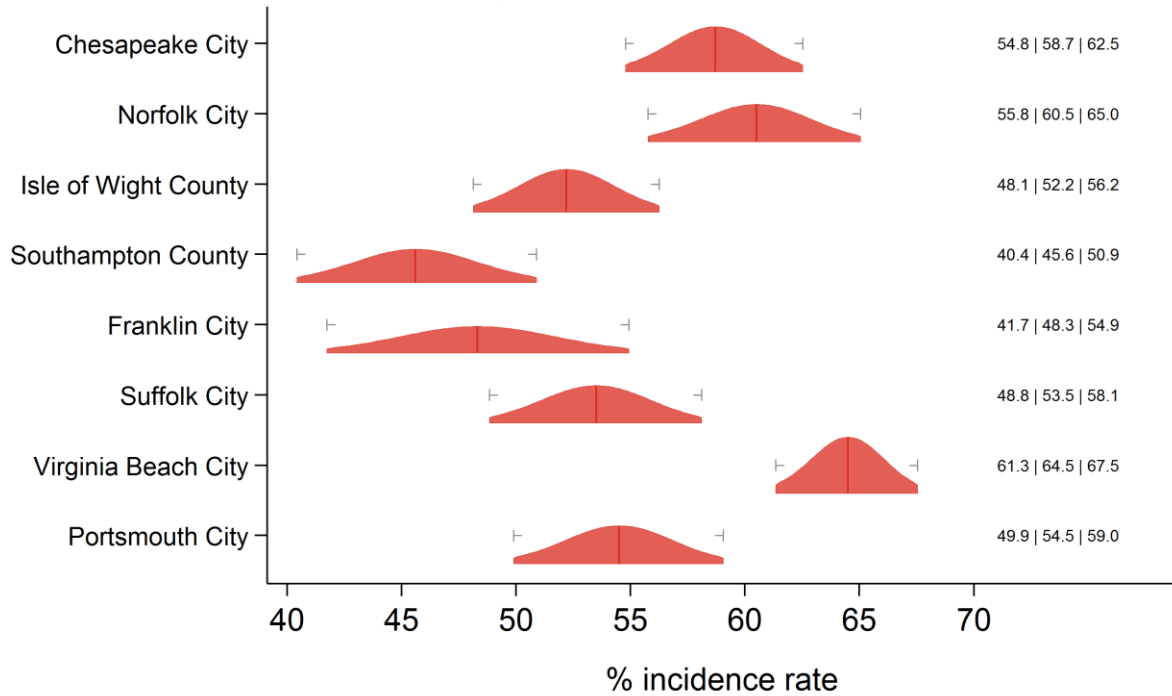
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Hypertension Eastern Shore and Three Rivers HDs



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

Hypertension 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

Additional diagnostics

Direct estimate is inside the 95% SAE Wilson CI: 32 areas.

Direct estimate is outside the 95% SAE Wilson CI: 101 areas.

SAE estimate is inside the 95% direct Wilson CI: 116 areas.

SAE estimate is outside the 95% direct Wilson CI: 17 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 97 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 36 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: 128 areas.

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

Direct standard error is zero: 2 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.24%; med = 18.46%; max = 47.74%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 50.84%; med = 80.55%; max = 99.44%.

Proportion of SAE variance due to model selection: min = 0.02%; med = 0.44%; max = 9.14%.

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