

Indicator 27: Doctor Inaccessible Due to Cost

Internal variable name: outc27_doctor_cost

Definition: Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 27: Doctor Inaccessible Due to Cost			
NH Black vs. NH White	0.4019*** (0.1044)	0.2762* (0.1215)	0.2930** (0.0994)
NH Asian vs. NH White	-0.3600 (0.2399)	-0.3213 (0.2749)	-0.3148 (0.2463)
NH Other vs. NH White	0.4899** (0.1649)	0.4670* (0.1966)	0.4726** (0.1689)
Hispanic vs. NH White	0.7957*** (0.1758)	0.8034*** (0.1657)	0.8047*** (0.1695)
Female	0.2998** (0.0958)	0.2997** (0.0968)	0.2995** (0.0966)
Age 18-34 vs. 65+	1.5734*** (0.1555)	1.5719*** (0.1451)	1.5762*** (0.1565)
Age 35-44 vs. 65+	1.5605*** (0.1717)	1.5751*** (0.1586)	1.5819*** (0.1736)
Age 45-54 vs. 65+	1.2126*** (0.1287)	1.2327*** (0.1477)	1.2343*** (0.1293)
Age 55-64 vs. 65+	0.8504*** (0.1351)	0.8740*** (0.1484)	0.8739*** (0.1349)
Primary care physicians rate, County Rankings/AMA		0.0860 (0.1469)	0.1081 (0.1107)
Health Behaviors z-score, County Rankings		1.5470*** (0.3479)	1.4906*** (0.3517)
VA BRFSS 2014 SAE outc10_asthma		-14.0655 (18.8681)	-18.9273 (22.4355)
% families with own children		0.0369 (0.0305)	0.0353 (0.0234)
Bladder Male Rate		0.0333 (0.0324)	0.0332 (0.0249)
c.ACS_pct_fam_kids#c.BladderMaleRate		-0.0010 (0.0009)	-0.0010 (0.0006)
o.VA BRFSS 2014 SAE outc10_asthma		0.0000	

Historic SAE: ever smoking rate		(.)	
		-0.0140	-0.0257
		(0.0536)	(0.0644)
c.VA14SAE_outc10_asthma#c.eversmoke		0.1931	0.2911
		(0.3900)	(0.4627)
Intercept	-3.2985***	-3.3132	-2.6808
	(0.1143)	(3.1072)	(3.5088)
Area effect variance			
	0.1048**		0.0185
	(0.0351)		(0.0181)

Number of alternative models used to estimate model error = 15.

Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Augusta County	51015	23.5%	(15.0%, 35.0%)	13.9%	(11.7%, 16.4%)
Bath County	51017	17.5%	(4.7%, 54.6%)	11.2%	(6.5%, 18.7%)
Caroline County	51033	18.5%	(4.3%, 53.5%)	10.5%	(7.1%, 15.3%)
Clarke County	51043	12.0%	(2.7%, 39.8%)	7.6%	(6.0%, 9.6%)
Culpeper County	51047	10.8%	(4.7%, 22.7%)	10.1%	(8.7%, 11.6%)
Fauquier County	51061	17.1%	(7.5%, 34.2%)	8.1%	(6.6%, 10.0%)
Frederick County	51069	8.8%	(3.4%, 20.9%)	8.6%	(7.2%, 10.2%)
Highland County	51091	8.7%	(2.2%, 54.5%)	7.0%	(2.3%, 19.1%)
King George County	51099	29.6%	(5.0%, 77.1%)	8.5%	(6.6%, 10.7%)
Madison County	51113	2.7%	(1.3%, 25.9%)	10.1%	(7.8%, 13.0%)
Orange County	51137	19.7%	(7.6%, 42.4%)	12.1%	(10.3%, 14.2%)
Page County	51139	7.4%	(3.5%, 28.1%)	9.5%	(7.5%, 12.0%)
Rappahannock County	51157	9.9%	(3.3%, 40.0%)	7.0%	(4.9%, 9.9%)
Rockbridge County	51163	13.3%	(3.9%, 36.7%)	8.6%	(6.2%, 11.8%)
Rockingham County	51165	12.1%	(6.0%, 23.1%)	12.4%	(10.0%, 15.2%)
Shenandoah County	51171	8.3%	(2.7%, 22.8%)	9.3%	(7.9%, 10.8%)
Spotsylvania County	51177	5.8%	(2.3%, 14.0%)	10.5%	(8.2%, 13.4%)
Stafford County	51179	6.2%	(3.1%, 12.0%)	7.4%	(5.3%, 10.3%)
Warren County	51187	9.0%	(4.5%, 26.2%)	10.6%	(9.3%, 12.1%)
Buena Vista City	51530	24.2%	(5.6%, 63.2%)	19.2%	(11.3%, 30.8%)
Fredericksburg City	51630	27.7%	(11.1%, 54.0%)	13.9%	(9.6%, 19.6%)
Harrisonburg City	51660	17.7%	(2.4%, 65.8%)	13.6%	(10.2%, 17.8%)
Lexington City	51678	0.0%	(0.0%, 96.3%)	0.7%	(0.1%, 4.1%)
Staunton City	51790	0.0%	(0.0%, 43.5%)	8.9%	(6.8%, 11.6%)
Waynesboro City	51820	12.4%	(1.7%, 53.1%)	6.2%	(3.2%, 11.7%)
Winchester City	51840	51.7%	(12.2%, 89.1%)	16.9%	(10.7%, 25.5%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	7.2%	(3.2%, 15.8%)	8.0%	(6.1%, 10.4%)
Alleghany County	51005	30.9%	(7.7%, 70.4%)	12.9%	(10.0%, 16.5%)
Amherst County	51009	15.1%	(3.2%, 49.2%)	11.4%	(9.0%, 14.4%)
Appomattox County	51011	17.1%	(4.5%, 47.6%)	10.5%	(7.1%, 15.4%)
Arlington City	51013	8.4%	(4.0%, 17.1%)	10.2%	(8.1%, 12.8%)
Bedford County	51019	17.7%	(10.3%, 28.7%)	11.0%	(9.6%, 12.6%)
Botetourt County	51023	21.5%	(7.4%, 48.4%)	9.5%	(7.5%, 12.0%)
Campbell County	51031	8.3%	(4.9%, 18.0%)	13.7%	(11.1%, 16.6%)
Craig County	51045	8.1%	(1.7%, 71.6%)	7.1%	(2.4%, 19.2%)
Fairfax County	51059	8.4%	(6.5%, 10.7%)	7.4%	(5.6%, 9.6%)
Fluvanna County	51065	18.5%	(5.8%, 45.6%)	7.3%	(5.7%, 9.2%)
Greene County	51079	7.2%	(3.0%, 41.2%)	11.9%	(9.5%, 14.8%)
Loudoun County	51107	13.1%	(7.6%, 21.5%)	9.3%	(7.0%, 12.3%)
Louisa County	51109	15.2%	(6.2%, 32.7%)	11.3%	(9.3%, 13.6%)
Nelson County	51125	0.0%	(0.0%, 28.6%)	10.4%	(7.1%, 15.0%)
Prince William County	51153	15.8%	(11.1%, 21.9%)	12.7%	(10.3%, 15.6%)
Roanoke County	51161	12.4%	(6.8%, 21.5%)	8.9%	(7.4%, 10.6%)
Alexandria City	51510	14.9%	(7.2%, 28.1%)	13.7%	(10.3%, 17.9%)
Charlottesville City	51540	14.0%	(2.1%, 54.9%)	5.3%	(1.8%, 14.3%)
Covington City	51580	0.0%	(0.0%, 87.4%)	5.1%	(0.8%, 27.9%)
Fairfax City	51600	6.1%	(2.1%, 16.6%)	5.1%	(3.6%, 7.1%)
Falls Church City	51610	26.8%	(9.4%, 56.4%)	17.5%	(9.9%, 29.1%)
Lynchburg City	51680	10.9%	(5.8%, 19.6%)	11.7%	(8.6%, 15.7%)
Manassas City	51683	13.0%	(4.1%, 34.6%)	12.6%	(9.5%, 16.5%)
Manassas Park City	51685	79.3%	(17.0%, 96.8%)	27.5%	(5.5%, 71.1%)
Salem City	51775	2.5%	(1.1%, 43.9%)	7.7%	(5.3%, 11.2%)

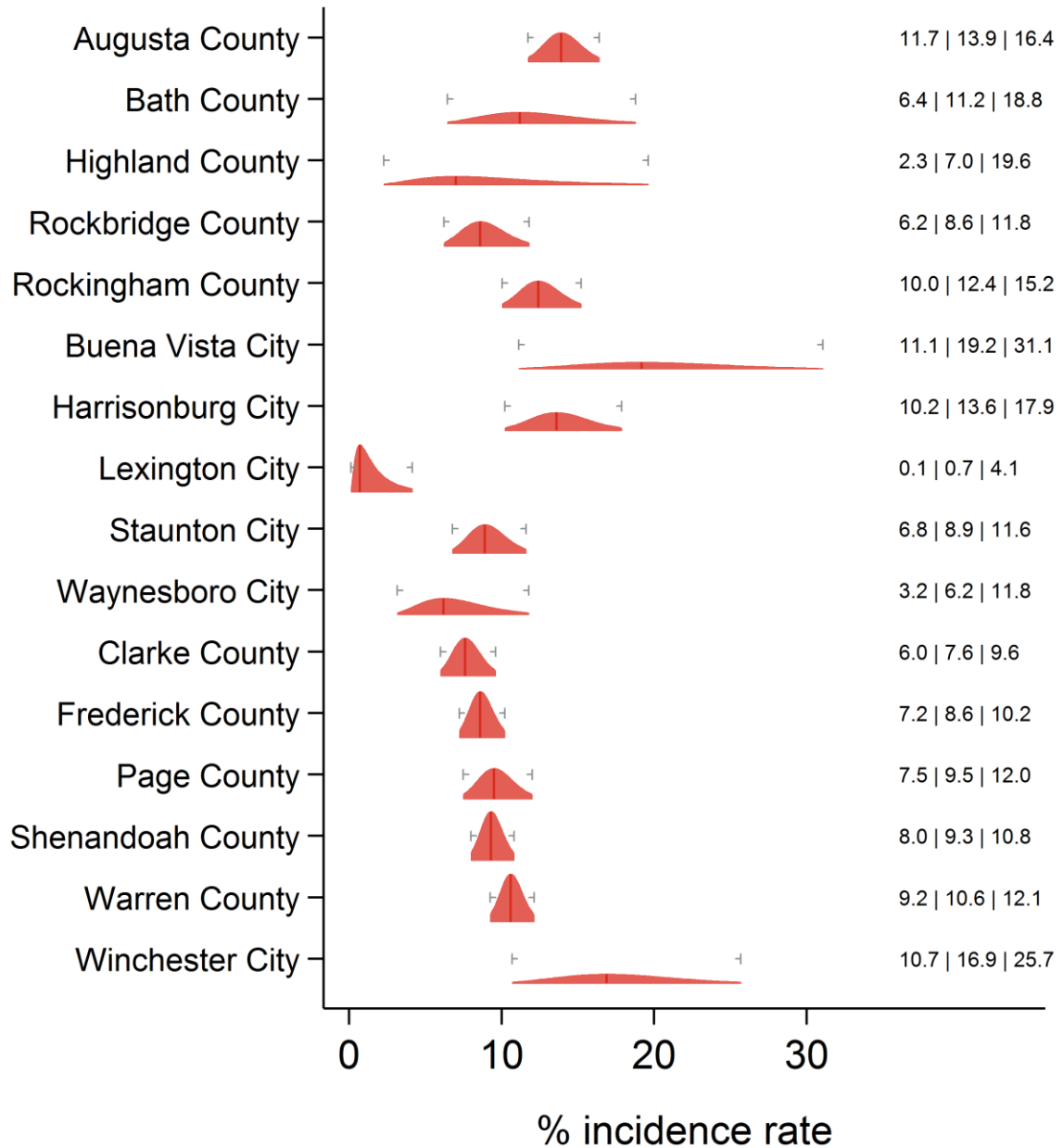
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	6.4%	(1.0%, 32.4%)	9.7%	(5.5%, 16.6%)
Buchanan County	51027	1.9%	(1.0%, 19.2%)	11.2%	(8.1%, 15.4%)
Carroll County	51035	15.2%	(5.4%, 36.1%)	10.5%	(7.8%, 14.1%)
Dickenson County	51051	34.6%	(15.5%, 60.5%)	15.9%	(10.7%, 23.0%)
Floyd County	51063	8.4%	(2.5%, 24.5%)	11.8%	(10.1%, 13.8%)
Franklin County	51067	6.0%	(1.6%, 19.8%)	8.4%	(6.6%, 10.6%)
Giles County	51071	17.1%	(7.1%, 35.8%)	11.8%	(7.8%, 17.4%)
Grayson County	51077	17.8%	(3.2%, 58.8%)	12.4%	(7.7%, 19.4%)
Henry County	51089	15.2%	(7.1%, 29.5%)	12.8%	(10.6%, 15.5%)
Lee County	51105	21.3%	(5.4%, 56.4%)	16.0%	(12.1%, 20.9%)
Montgomery County	51121	15.6%	(6.9%, 31.5%)	10.7%	(8.9%, 12.9%)
Patrick County	51141	16.4%	(3.3%, 53.1%)	12.2%	(9.6%, 15.5%)
Pittsylvania County	51143	8.9%	(4.4%, 17.1%)	10.6%	(7.5%, 14.7%)
Pulaski County	51155	13.1%	(4.9%, 30.8%)	13.2%	(9.1%, 18.9%)
Russell County	51167	16.1%	(6.4%, 34.7%)	10.5%	(7.9%, 14.0%)
Scott County	51169	8.2%	(4.4%, 25.8%)	10.5%	(7.7%, 14.2%)
Smyth County	51173	13.1%	(5.1%, 29.9%)	12.6%	(10.3%, 15.3%)
Tazewell County	51185	22.0%	(10.9%, 39.4%)	13.7%	(10.2%, 18.0%)
Washington County	51191	12.2%	(5.9%, 23.5%)	11.2%	(8.8%, 14.3%)
Wise County	51195	23.7%	(13.4%, 38.3%)	14.0%	(11.3%, 17.3%)
Wythe County	51197	27.3%	(13.1%, 48.3%)	12.3%	(8.2%, 18.2%)
Bristol City	51520	59.8%	(14.4%, 92.9%)	14.1%	(11.3%, 17.4%)
Danville City	51590	21.8%	(8.1%, 46.9%)	14.4%	(12.3%, 16.9%)
Galax City	51640	0.0%	(0.0%, 76.1%)	13.2%	(9.9%, 17.4%)
Martinsville City	51690	56.5%	(18.4%, 88.2%)	18.2%	(14.1%, 23.3%)
Norton City	51720	28.3%	(3.2%, 82.5%)	18.0%	(5.8%, 44.1%)
Radford City	51750	9.0%	(1.3%, 42.4%)	10.1%	(6.7%, 14.9%)
Roanoke City	51770	11.5%	(5.7%, 21.9%)	13.8%	(11.1%, 17.0%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	9.4%	(3.5%, 22.8%)	10.2%	(7.6%, 13.5%)
Brunswick County	51025	7.9%	(1.2%, 36.8%)	13.1%	(10.5%, 16.2%)
Buckingham County	51029	19.6%	(7.7%, 41.6%)	10.6%	(6.4%, 16.9%)
Charles City County	51036	0.0%	(0.0%, 51.5%)	11.7%	(8.6%, 15.8%)
Charlotte County	51037	8.6%	(2.6%, 24.5%)	14.0%	(9.6%, 20.0%)
Chesterfield County	51041	10.6%	(7.0%, 15.7%)	9.9%	(8.7%, 11.1%)
Cumberland County	51049	10.7%	(3.4%, 29.0%)	11.9%	(10.0%, 14.2%)
Dinwiddie County	51053	17.9%	(7.6%, 36.8%)	15.2%	(12.7%, 18.2%)
Goochland County	51075	5.0%	(0.8%, 25.8%)	7.5%	(5.8%, 9.6%)
Greensville County	51081	21.9%	(4.7%, 61.4%)	19.9%	(15.1%, 25.6%)
Halifax County	51083	19.6%	(9.6%, 35.7%)	12.6%	(10.6%, 14.8%)
Hanover County	51085	9.8%	(4.2%, 20.9%)	7.8%	(6.4%, 9.5%)
Henrico County	51087	12.6%	(7.3%, 20.9%)	11.1%	(9.4%, 13.0%)
Lunenburg County	51111	7.3%	(1.8%, 25.2%)	12.8%	(10.7%, 15.3%)
Mecklenburg County	51117	7.9%	(3.3%, 17.4%)	10.2%	(8.1%, 12.7%)
New Kent County	51127	15.6%	(3.3%, 49.9%)	10.0%	(7.7%, 13.0%)
Nottoway County	51135	42.2%	(14.5%, 75.8%)	16.3%	(13.1%, 20.1%)
Powhatan County	51145	18.6%	(7.9%, 37.8%)	7.8%	(6.2%, 9.9%)
Prince Edward County	51147	6.7%	(1.9%, 21.1%)	10.2%	(8.5%, 12.3%)
Prince George County	51149	12.4%	(5.3%, 26.4%)	13.2%	(11.2%, 15.5%)
Surry County	51181	26.3%	(7.7%, 60.5%)	16.6%	(11.1%, 24.2%)
Sussex County	51183	17.9%	(6.6%, 40.2%)	19.4%	(15.1%, 24.6%)
Colonial Heights City	51570	13.5%	(3.6%, 39.3%)	11.8%	(9.1%, 15.2%)
Emporia City	51595	0.0%	(0.0%, 91.8%)	28.0%	(16.4%, 43.4%)
Hopewell City	51670	30.2%	(12.3%, 57.2%)	22.1%	(16.9%, 28.4%)
Petersburg City	51730	26.9%	(13.5%, 46.3%)	25.1%	(18.8%, 32.6%)
Richmond City	51760	22.9%	(14.1%, 35.1%)	21.7%	(18.3%, 25.7%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	14.7%	(7.2%, 27.6%)	12.2%	(10.2%, 14.5%)
Essex County	51057	16.7%	(4.9%, 43.7%)	11.8%	(8.8%, 15.7%)
Gloucester County	51073	10.9%	(4.6%, 23.7%)	9.5%	(8.4%, 10.8%)
Isle of Wight County	51093	13.5%	(3.5%, 39.9%)	10.4%	(9.1%, 11.9%)
James City County	51095	7.6%	(3.4%, 15.8%)	7.2%	(5.4%, 9.5%)
King and Queen County	51097	6.4%	(1.7%, 38.5%)	11.0%	(8.6%, 14.0%)
King William County	51101	1.8%	(1.0%, 29.3%)	8.9%	(7.0%, 11.2%)
Lancaster County	51103	11.4%	(2.0%, 44.8%)	9.5%	(5.7%, 15.4%)
Mathews County	51115	15.8%	(3.4%, 50.1%)	9.2%	(6.1%, 13.7%)
Middlesex County	51119	0.0%	(0.0%, 19.2%)	6.0%	(4.0%, 9.0%)
Northampton County	51131	16.8%	(6.4%, 37.0%)	13.1%	(9.1%, 18.5%)
Northumberland County	51133	14.0%	(4.8%, 34.8%)	5.8%	(3.4%, 9.7%)
Richmond County	51159	12.9%	(3.5%, 37.5%)	9.9%	(7.4%, 13.1%)
Southampton County	51175	35.3%	(12.2%, 68.2%)	17.1%	(13.3%, 21.7%)
Westmoreland County	51193	41.8%	(14.7%, 75.0%)	12.5%	(9.7%, 15.9%)
York County	51199	17.4%	(9.1%, 30.8%)	10.0%	(8.0%, 12.3%)
Chesapeake City	51550	10.6%	(5.0%, 21.0%)	10.7%	(9.3%, 12.3%)
Franklin City	51620	21.4%	(6.5%, 51.7%)	18.9%	(15.6%, 22.7%)
Hampton City	51650	13.2%	(7.7%, 21.8%)	11.8%	(9.2%, 14.9%)
Newport News City	51700	15.8%	(9.4%, 25.5%)	16.0%	(13.8%, 18.4%)
Norfolk City	51710	26.3%	(18.3%, 36.3%)	22.1%	(18.7%, 26.0%)
Poquoson City	51735	16.1%	(2.3%, 76.1%)	8.0%	(5.4%, 11.9%)
Portsmouth City	51740	17.5%	(10.6%, 27.5%)	19.6%	(15.6%, 24.4%)
Suffolk City	51800	10.2%	(4.6%, 21.0%)	10.6%	(8.5%, 13.2%)
Virginia Beach City	51810	18.0%	(13.1%, 24.2%)	13.2%	(11.5%, 15.2%)
Williamsburg City	51830	0.0%	(0.0%, 73.7%)	6.8%	(3.7%, 12.0%)

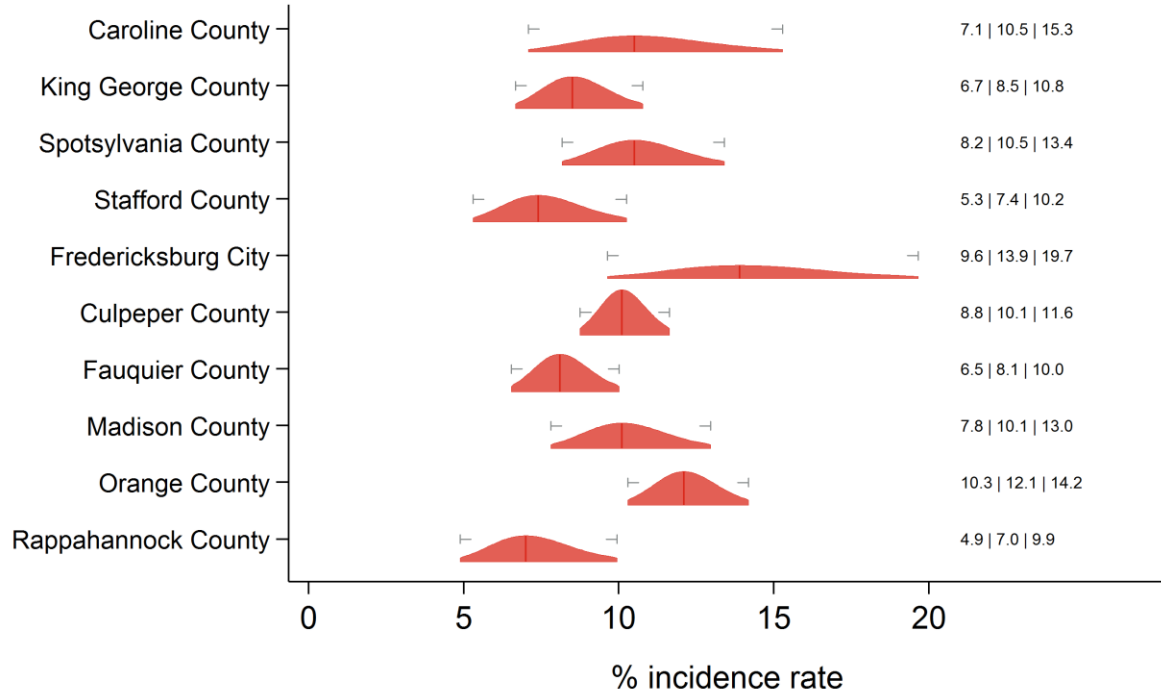
Graphical representation

Doctor Inaccessible Due to Cost Central Shenandoah and Lord Fairfax HDs



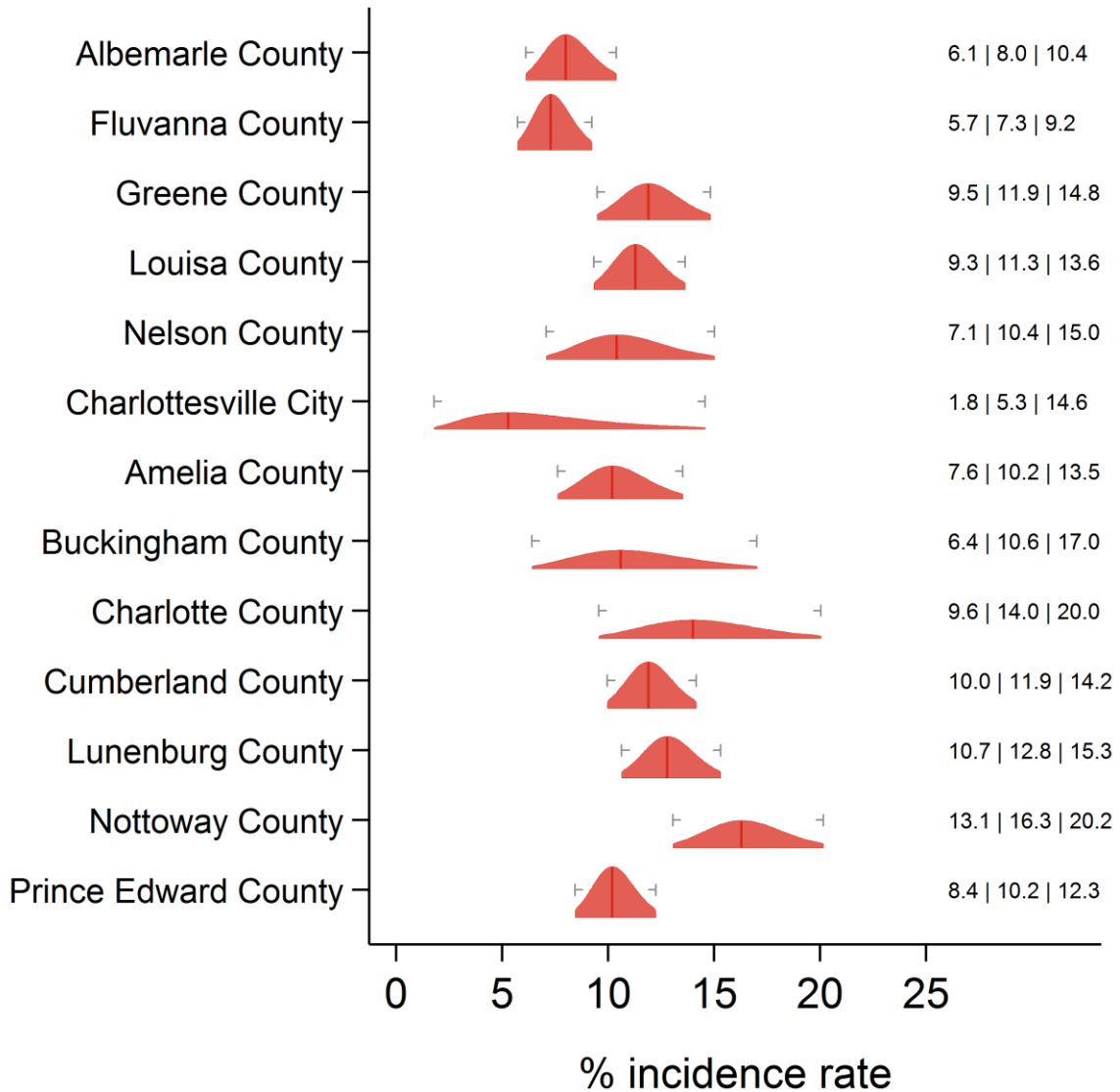
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Rappahannock/Rapidan and Rappahannock HDs



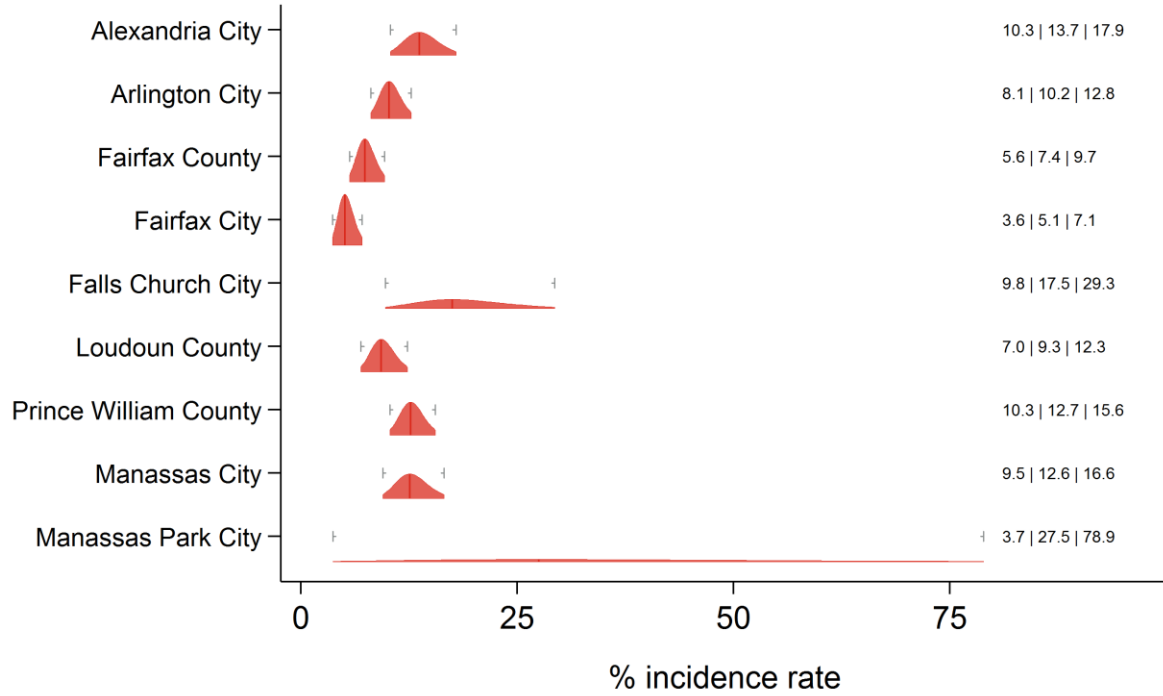
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Thomas Jefferson and Piedmont HDs



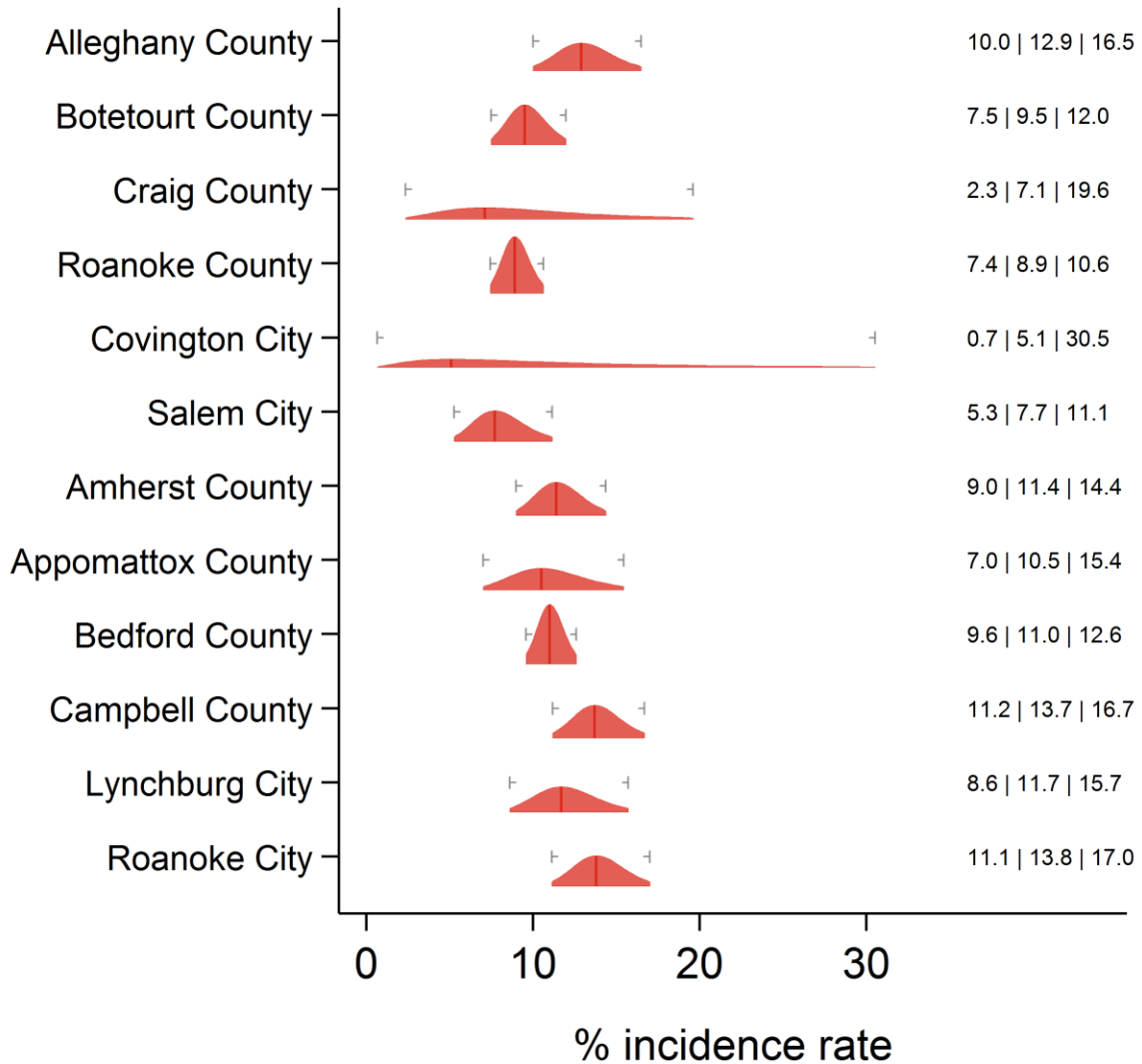
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



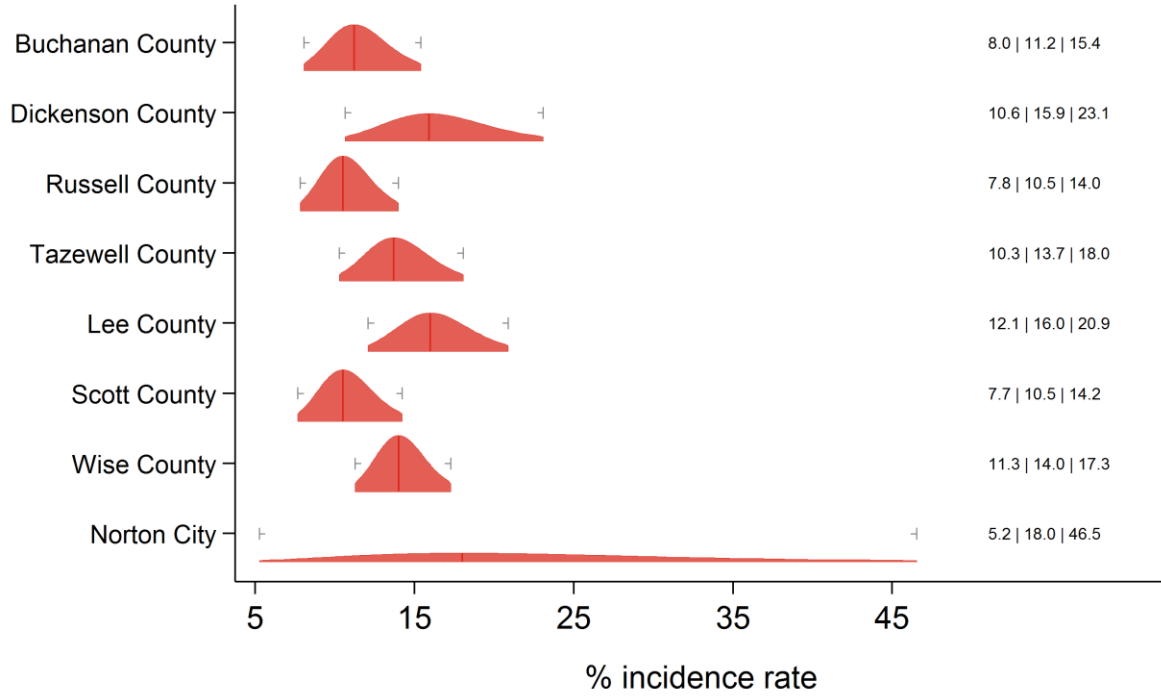
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Alleghany, Roanoke and Central Virginia HDs



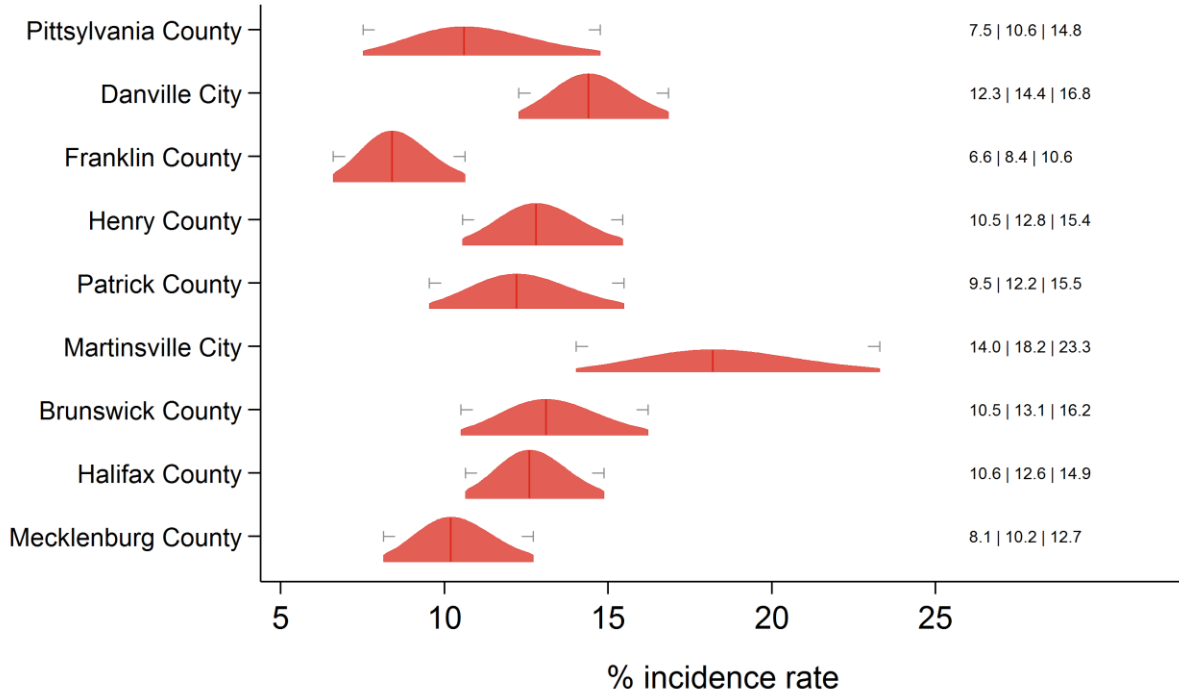
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Cumberland Plateau and Lenowisco HDs



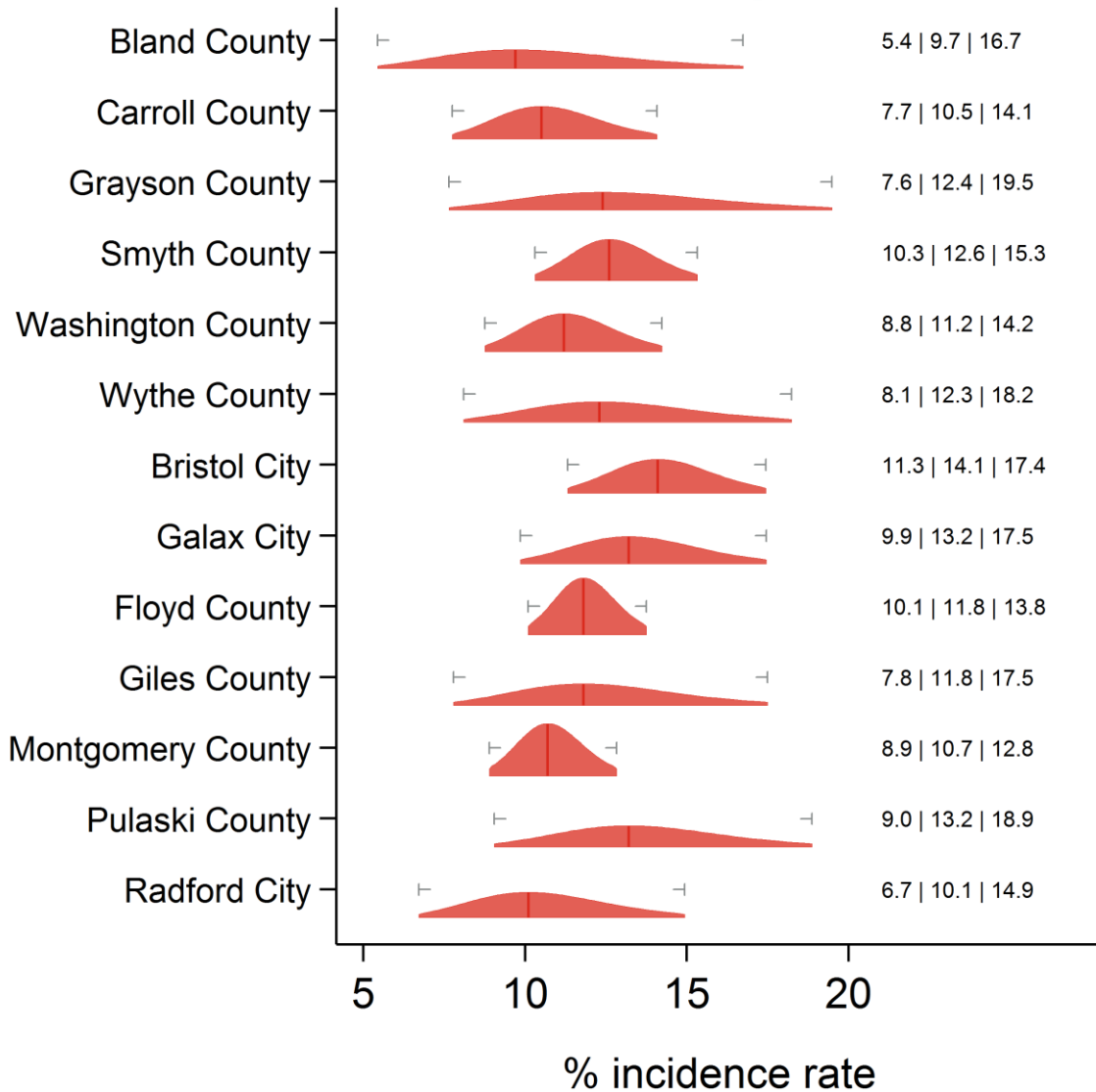
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Pittsylvania/Danville, Southside and West Piedmont HDs



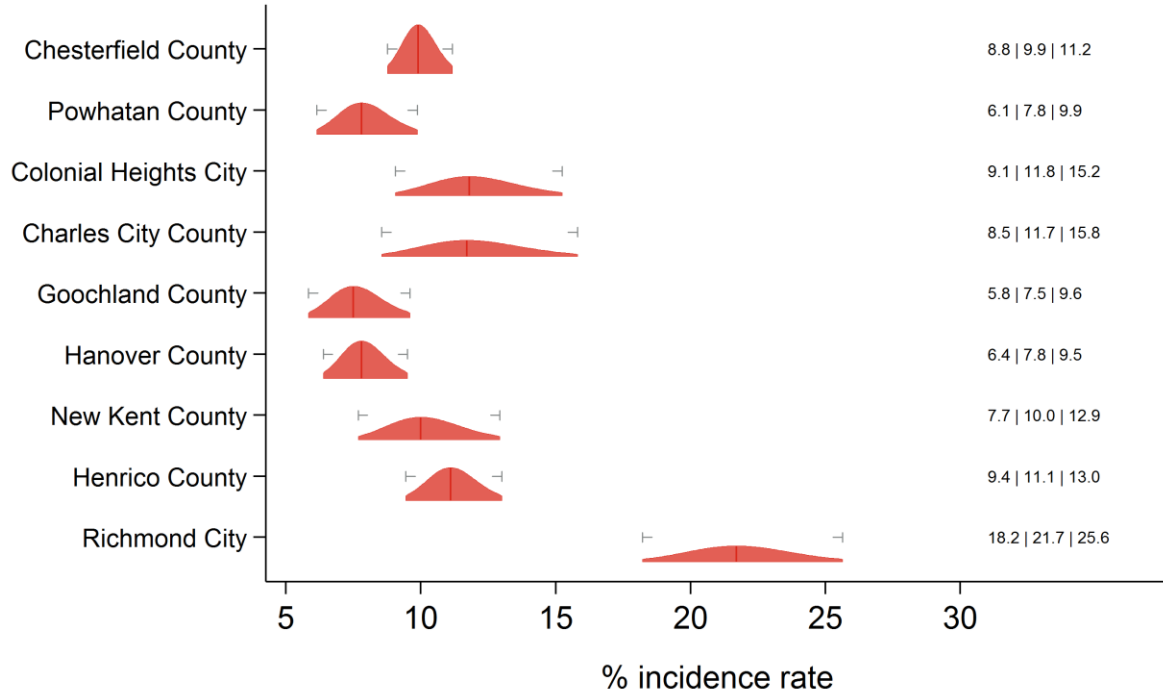
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost New River and Mount Rogers HDs



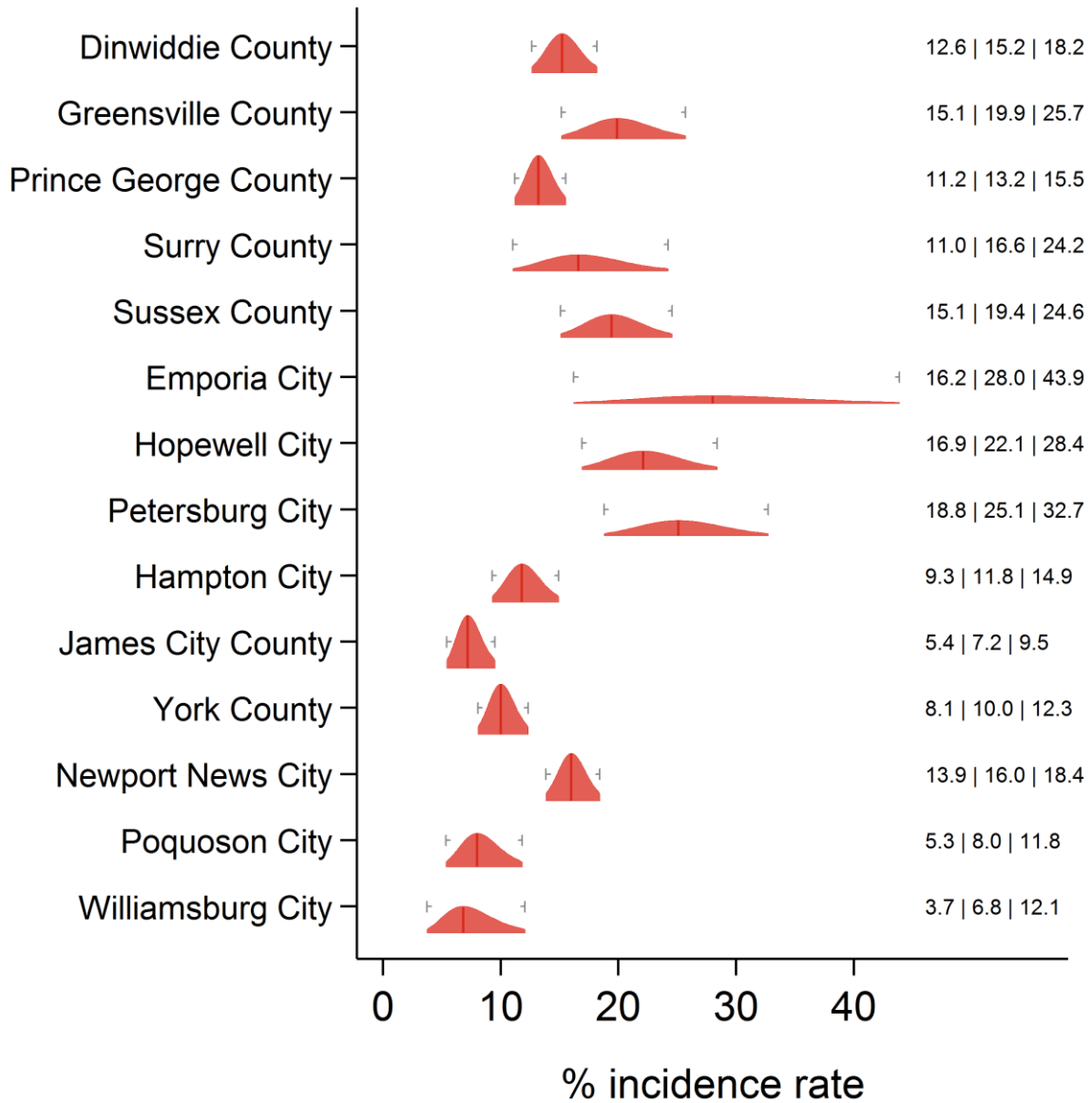
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Chesterfield, Chickahominy, Henrico and Richmond HDs



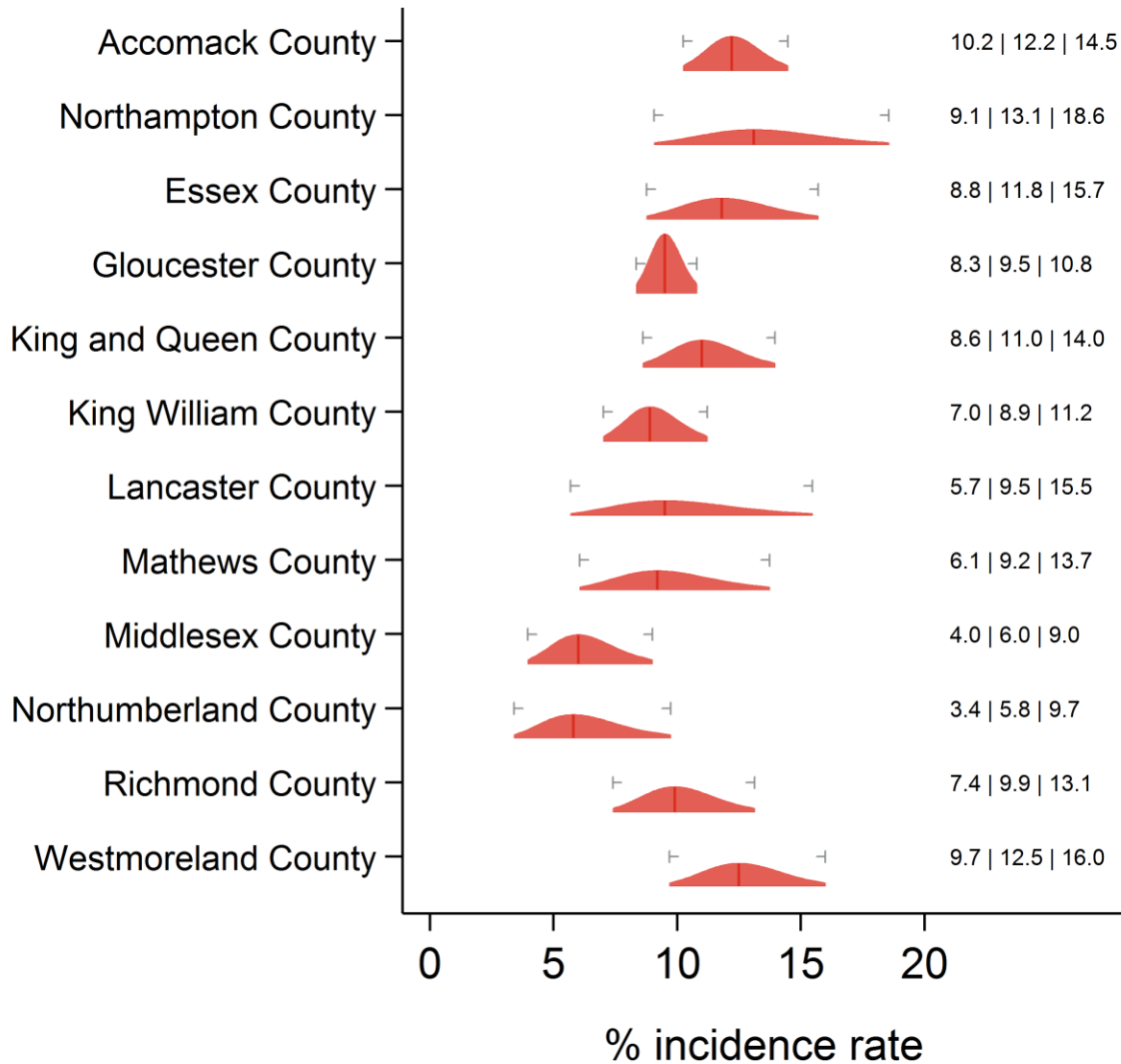
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Crater, Peninsula and Hampton HDs



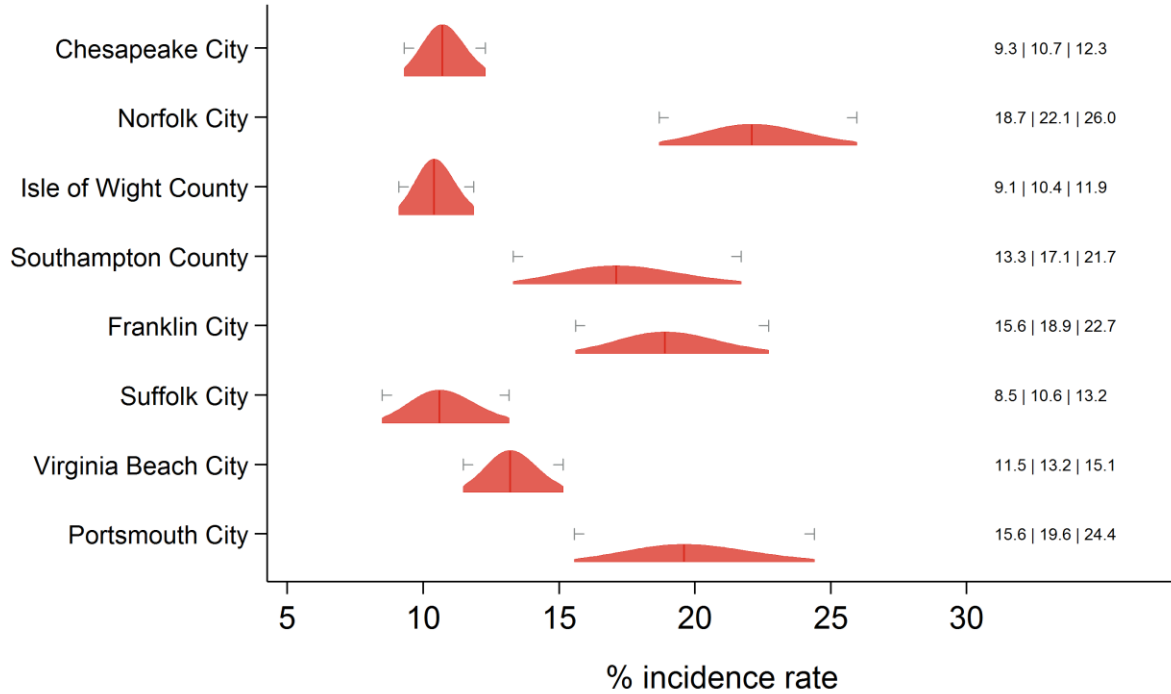
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Doctor Inaccessible Due to Cost Eastern Shore and Three Rivers HDs



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

Doctor Inaccessible Due to Cost 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: 53 areas.

Direct estimate is outside the 95% SAE Wilson CI: 80 areas.

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

SAE estimate is outside the 95% direct Wilson CI: 6 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 109 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 24 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: 123 areas.

SAE standard error is greater than the (nonzero) direct standard error: 1 areas.

Direct standard error is zero: 9 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.04%; med = 2.81%; max = 17.56%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 20.72%; med = 87.37%; max = 99.33%.

Proportion of SAE variance due to model selection: min = 0.28%; med = 4.60%; max = 79.15%.

Proportion of SAE variance due to area random effects: min = 0.06%; med = 4.08%; max = 19.23%.