

Indicator 12: Dental visit in the past year

Internal variable name: outc12_dentist

Definition: Adults who have visited a dentist, dental hygienist or dental clinic within the past year

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 12: Dental visit in the past year			
NH Black vs. NH White	-0.4611*** (0.1048)	-0.4550*** (0.0976)	-0.4550*** (0.1037)
NH Asian vs. NH White	-0.0024 (0.1348)	-0.0487 (0.2367)	-0.0487 (0.1314)
NH Other vs. NH White	-0.3743** (0.1205)	-0.4145* (0.1718)	-0.4145*** (0.1195)
Hispanic vs. NH White	-0.2630 (0.1754)	-0.2972 (0.1890)	-0.2972 (0.1715)
Female	0.2838*** (0.0802)	0.2857*** (0.0757)	0.2857*** (0.0798)
Age 18-34 vs. 65+	-0.1395 (0.1087)	-0.1635 (0.1085)	-0.1635 (0.1079)
Age 35-44 vs. 65+	-0.0436 (0.1166)	-0.0623 (0.1169)	-0.0623 (0.1154)
Age 45-54 vs. 65+	0.1247 (0.1067)	0.1396 (0.1037)	0.1396 (0.1053)
Age 55-64 vs. 65+	0.2123* (0.0819)	0.2068* (0.0979)	0.2068* (0.0833)
% HHs receiving SNAP		-0.0691*** (0.0172)	-0.0691*** (0.0137)
Crude mortality rate of chronic lower respiratory disease per 10K		-0.1028*** (0.0208)	-0.1028*** (0.0189)
% no health insurance, ACS 2016 5yr		-0.0718*** (0.0203)	-0.0718*** (0.0170)
Violent crime rate, County Rankings/UCR		0.1918*** (0.0432)	0.1918*** (0.0323)
Oral Female Rate		-0.0209** (0.0074)	-0.0209*** (0.0060)
% education below HS, population 25+ y/o		0.0437* (0.0204)	0.0437** (0.0147)
Stomach Male Rate		0.0117 (0.0195)	0.0117 (0.0134)

c.ACS_pct_educ_lt_HS#c.StomachMaleRate		0.0004 (0.0012)	0.0004 (0.0008)
Melanoma Male Rate		-0.0064 (0.0112)	-0.0064 (0.0091)
VA BRFSS 2014 SAE outc26_shingles_vacc		0.7964 (1.1384)	0.7964 (0.8483)
c.MelanomaMaleRate#c.VA14SAE_outc26_shingles_vacc		0.0462 (0.0399)	0.0462 (0.0302)
Intercept	0.6991*** (0.0796)	1.3932** (0.4520)	1.3932*** (0.3683)
Area effect variance	0.2281*** (0.0544)		0.0000 (0.0000)

Number of alternative models used to estimate model error = 6.

Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Augusta County	51015	65.9%	(52.8%, 77.0%)	69.3%	(65.6%, 72.8%)
Bath County	51017	78.4%	(34.0%, 95.0%)	54.8%	(48.5%, 61.1%)
Caroline County	51033	45.5%	(20.3%, 73.3%)	72.9%	(66.2%, 78.6%)
Clarke County	51043	70.0%	(27.9%, 93.4%)	66.7%	(61.9%, 71.3%)
Culpeper County	51047	68.8%	(49.3%, 83.3%)	71.9%	(68.1%, 75.3%)
Fauquier County	51061	71.9%	(51.6%, 86.0%)	74.2%	(69.5%, 78.3%)
Frederick County	51069	71.1%	(55.8%, 82.7%)	68.5%	(64.5%, 72.2%)
Highland County	51091	65.8%	(19.5%, 93.9%)	70.6%	(63.6%, 76.8%)
King George County	51099	59.3%	(20.6%, 89.1%)	74.5%	(69.0%, 79.2%)
Madison County	51113	70.2%	(43.1%, 88.0%)	60.6%	(53.5%, 67.2%)
Orange County	51137	61.0%	(39.9%, 78.7%)	55.1%	(49.4%, 60.7%)
Page County	51139	53.5%	(29.3%, 76.2%)	63.2%	(57.5%, 68.5%)
Rappahannock County	51157	87.0%	(58.0%, 97.0%)	72.3%	(64.1%, 79.3%)
Rockbridge County	51163	67.6%	(45.8%, 83.7%)	62.4%	(57.7%, 66.9%)
Rockingham County	51165	79.2%	(67.2%, 87.7%)	77.9%	(72.8%, 82.2%)
Shenandoah County	51171	71.9%	(51.4%, 86.1%)	72.0%	(68.2%, 75.5%)
Spotsylvania County	51177	58.5%	(44.7%, 71.1%)	74.6%	(71.2%, 77.7%)
Stafford County	51179	78.9%	(67.9%, 86.9%)	81.9%	(78.2%, 85.0%)
Warren County	51187	61.5%	(42.3%, 77.6%)	62.4%	(57.5%, 67.0%)
Buena Vista City	51530	57.1%	(14.3%, 91.4%)	44.4%	(35.0%, 54.2%)
Fredericksburg City	51630	67.8%	(43.7%, 85.1%)	77.9%	(71.2%, 83.5%)
Harrisonburg City	51660	98.4%	(44.1%, 99.4%)	74.4%	(67.2%, 80.6%)
Lexington City	51678	100.0%	(3.7%, 100.0%)	98.5%	(42.5%, 100.0%)
Staunton City	51790	66.7%	(23.3%, 93.0%)	74.8%	(68.5%, 80.2%)
Waynesboro City	51820	56.0%	(21.5%, 85.5%)	70.0%	(60.9%, 77.7%)
Winchester City	51840	77.3%	(22.6%, 97.5%)	57.5%	(49.2%, 65.4%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	68.8%	(56.7%, 78.8%)	78.7%	(75.5%, 81.6%)
Alleghany County	51005	51.2%	(22.4%, 79.2%)	58.1%	(53.5%, 62.5%)
Amherst County	51009	77.6%	(55.7%, 90.5%)	70.1%	(65.5%, 74.2%)
Appomattox County	51011	79.8%	(52.2%, 93.4%)	77.7%	(69.0%, 84.5%)
Arlington City	51013	82.3%	(70.8%, 89.9%)	83.0%	(79.2%, 86.3%)
Bedford County	51019	66.1%	(52.7%, 77.3%)	65.9%	(61.9%, 69.7%)
Botetourt County	51023	67.4%	(44.8%, 84.0%)	76.5%	(70.9%, 81.2%)
Campbell County	51031	69.1%	(55.6%, 80.0%)	70.7%	(66.8%, 74.3%)
Craig County	51045	30.6%	(5.5%, 76.8%)	29.2%	(18.3%, 43.1%)
Fairfax County	51059	79.8%	(74.6%, 84.2%)	78.3%	(75.9%, 80.5%)
Fluvanna County	51065	67.7%	(44.6%, 84.6%)	74.7%	(67.8%, 80.4%)
Greene County	51079	93.3%	(47.9%, 97.4%)	72.8%	(65.5%, 79.0%)
Loudoun County	51107	81.8%	(72.0%, 88.8%)	82.0%	(79.3%, 84.4%)
Louisa County	51109	73.6%	(50.6%, 88.3%)	64.1%	(59.3%, 68.7%)
Nelson County	51125	59.9%	(27.7%, 85.3%)	68.3%	(63.5%, 72.7%)
Prince William County	51153	70.8%	(63.9%, 76.9%)	73.3%	(70.6%, 75.9%)
Roanoke County	51161	72.2%	(60.9%, 81.3%)	79.0%	(75.3%, 82.3%)
Alexandria City	51510	79.7%	(67.5%, 88.2%)	75.7%	(71.2%, 79.8%)
Charlottesville City	51540	86.0%	(68.1%, 94.6%)	89.8%	(83.5%, 93.9%)
Covington City	51580	100.0%	(3.6%, 100.0%)	78.5%	(55.6%, 91.4%)
Fairfax City	51600	70.3%	(55.5%, 81.8%)	68.0%	(63.3%, 72.2%)
Falls Church City	51610	96.7%	(68.8%, 98.1%)	91.9%	(86.5%, 95.2%)
Lynchburg City	51680	65.0%	(50.1%, 77.4%)	68.6%	(64.1%, 72.8%)
Manassas City	51683	53.1%	(22.6%, 81.5%)	71.7%	(64.5%, 78.0%)
Manassas Park City	51685	43.1%	(6.2%, 89.6%)	62.0%	(52.9%, 70.4%)
Salem City	51775	33.0%	(12.3%, 63.4%)	60.4%	(55.7%, 65.0%)

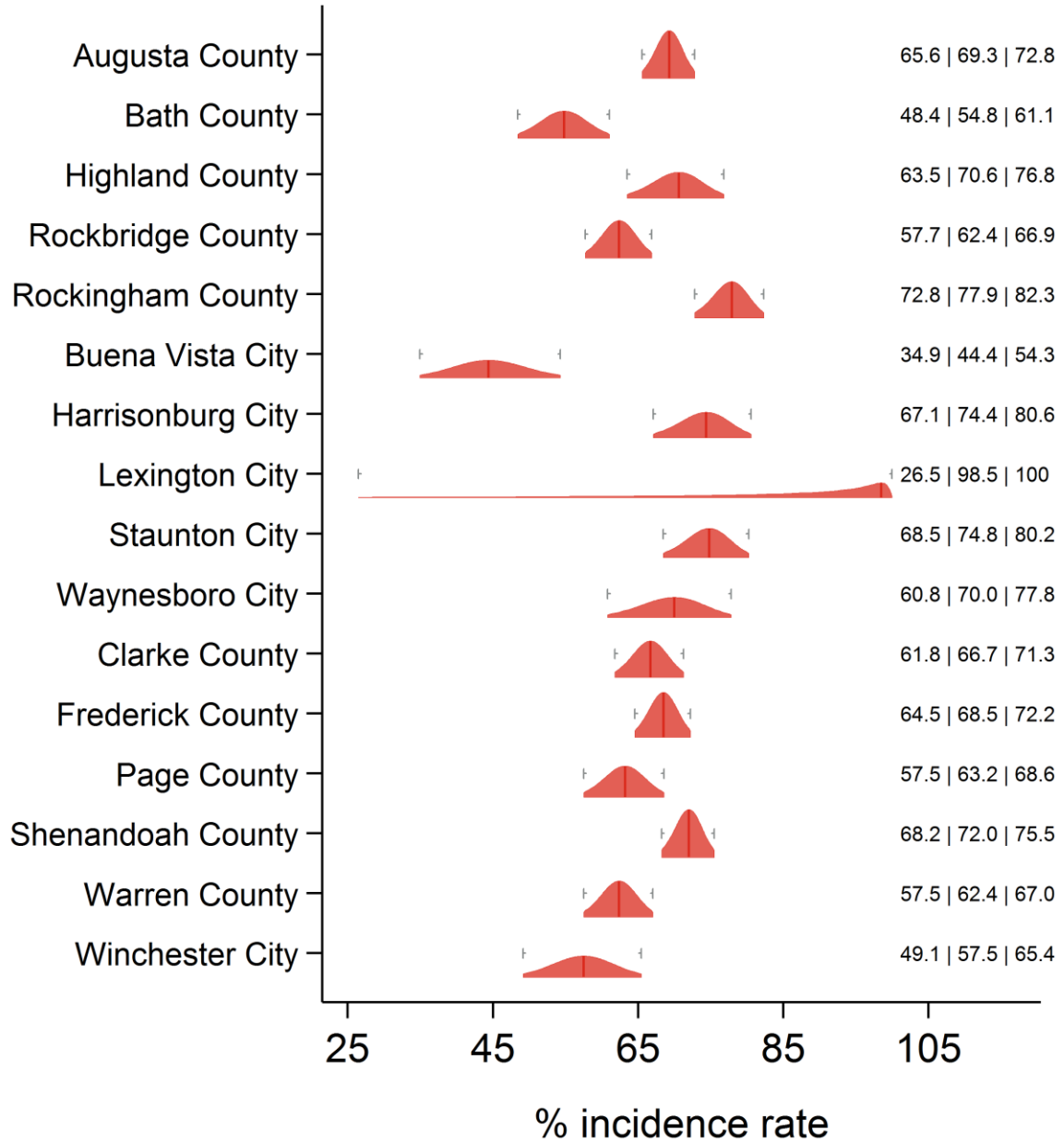
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	71.9%	(37.0%, 91.8%)	55.8%	(49.0%, 62.3%)
Buchanan County	51027	37.2%	(17.8%, 61.9%)	36.9%	(30.2%, 44.2%)
Carroll County	51035	51.5%	(30.7%, 71.8%)	56.7%	(52.2%, 61.2%)
Dickenson County	51051	26.9%	(11.1%, 51.9%)	37.8%	(27.7%, 49.1%)
Floyd County	51063	71.9%	(48.5%, 87.4%)	70.6%	(64.6%, 76.0%)
Franklin County	51067	62.9%	(39.0%, 81.9%)	62.1%	(58.7%, 65.5%)
Giles County	51071	70.0%	(48.3%, 85.3%)	69.0%	(64.1%, 73.5%)
Grayson County	51077	42.6%	(21.1%, 67.5%)	50.4%	(45.5%, 55.4%)
Henry County	51089	64.3%	(47.0%, 78.5%)	55.1%	(48.6%, 61.5%)
Lee County	51105	36.2%	(13.4%, 67.4%)	38.2%	(31.0%, 46.0%)
Montgomery County	51121	68.4%	(53.9%, 80.1%)	74.8%	(70.2%, 78.9%)
Patrick County	51141	62.4%	(31.8%, 85.5%)	61.9%	(54.9%, 68.4%)
Pittsylvania County	51143	60.6%	(48.3%, 71.7%)	55.5%	(51.3%, 59.6%)
Pulaski County	51155	74.4%	(53.6%, 87.9%)	72.5%	(67.3%, 77.1%)
Russell County	51167	71.2%	(53.1%, 84.4%)	54.7%	(50.7%, 58.7%)
Scott County	51169	48.3%	(29.4%, 67.7%)	44.4%	(39.1%, 49.7%)
Smyth County	51173	30.3%	(13.2%, 55.5%)	48.5%	(44.2%, 52.9%)
Tazewell County	51185	39.7%	(22.1%, 60.4%)	53.3%	(49.6%, 57.1%)
Washington County	51191	53.1%	(38.0%, 67.6%)	66.3%	(62.2%, 70.3%)
Wise County	51195	50.7%	(34.5%, 66.8%)	39.7%	(32.6%, 47.2%)
Wythe County	51197	39.6%	(22.8%, 59.3%)	51.1%	(46.5%, 55.8%)
Bristol City	51520	8.0%	(0.6%, 92.0%)	40.4%	(32.6%, 48.8%)
Danville City	51590	59.6%	(32.4%, 81.9%)	57.0%	(50.0%, 63.8%)
Galax City	51640	48.8%	(3.0%, 96.7%)	36.5%	(26.6%, 47.7%)
Martinsville City	51690	54.4%	(16.9%, 87.5%)	35.0%	(26.4%, 44.7%)
Norton City	51720	22.6%	(2.6%, 76.2%)	31.4%	(22.6%, 41.8%)
Radford City	51750	75.5%	(41.7%, 93.0%)	73.4%	(66.2%, 79.5%)
Roanoke City	51770	68.7%	(55.6%, 79.4%)	68.1%	(63.5%, 72.4%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	73.8%	(46.3%, 90.2%)	56.0%	(51.5%, 60.4%)
Brunswick County	51025	50.4%	(24.0%, 76.5%)	50.8%	(43.6%, 57.9%)
Buckingham County	51029	49.2%	(27.1%, 71.5%)	49.0%	(40.3%, 57.8%)
Charles City County	51036	79.3%	(26.8%, 97.6%)	68.3%	(62.7%, 73.4%)
Charlotte County	51037	59.6%	(35.4%, 79.9%)	54.8%	(46.9%, 62.5%)
Chesterfield County	51041	75.4%	(67.9%, 81.6%)	75.6%	(73.1%, 77.8%)
Cumberland County	51049	66.3%	(41.0%, 84.8%)	64.6%	(58.0%, 70.7%)
Dinwiddie County	51053	38.4%	(17.4%, 64.7%)	59.1%	(54.2%, 63.8%)
Goochland County	51075	97.9%	(72.1%, 98.9%)	76.1%	(71.5%, 80.1%)
Greensville County	51081	62.8%	(28.1%, 88.0%)	66.0%	(58.7%, 72.6%)
Halifax County	51083	43.7%	(27.7%, 61.1%)	60.5%	(55.6%, 65.2%)
Hanover County	51085	86.6%	(75.5%, 93.1%)	81.1%	(77.6%, 84.2%)
Henrico County	51087	76.7%	(68.1%, 83.6%)	72.8%	(69.6%, 75.8%)
Lunenburg County	51111	34.1%	(14.0%, 62.2%)	39.3%	(33.9%, 44.9%)
Mecklenburg County	51117	71.8%	(57.5%, 82.8%)	71.3%	(66.3%, 75.8%)
New Kent County	51127	70.4%	(37.6%, 90.3%)	81.0%	(77.1%, 84.3%)
Nottoway County	51135	79.4%	(53.5%, 92.8%)	62.5%	(56.0%, 68.6%)
Powhatan County	51145	80.3%	(49.3%, 94.5%)	75.3%	(70.0%, 79.9%)
Prince Edward County	51147	50.9%	(31.2%, 70.3%)	57.8%	(51.6%, 63.7%)
Prince George County	51149	71.8%	(54.2%, 84.6%)	67.0%	(63.0%, 70.8%)
Surry County	51181	49.0%	(19.8%, 78.9%)	63.7%	(57.8%, 69.2%)
Sussex County	51183	81.5%	(57.4%, 93.5%)	73.1%	(62.9%, 81.4%)
Colonial Heights City	51570	70.1%	(42.2%, 88.3%)	61.8%	(52.6%, 70.1%)
Emporia City	51595	0.0%	(0.0%, 99.4%)	31.7%	(20.8%, 45.2%)
Hopewell City	51670	82.6%	(60.8%, 93.6%)	56.6%	(48.9%, 63.9%)
Petersburg City	51730	54.4%	(35.5%, 72.2%)	60.0%	(54.1%, 65.7%)
Richmond City	51760	69.3%	(55.1%, 80.6%)	68.6%	(64.1%, 72.8%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	48.4%	(33.6%, 63.5%)	55.8%	(47.2%, 64.1%)
Essex County	51057	59.5%	(28.5%, 84.4%)	69.1%	(62.0%, 75.4%)
Gloucester County	51073	57.8%	(40.4%, 73.5%)	63.6%	(59.7%, 67.3%)
Isle of Wight County	51093	69.2%	(45.5%, 85.8%)	72.9%	(66.9%, 78.1%)
James City County	51095	84.3%	(71.5%, 92.0%)	83.5%	(79.6%, 86.7%)
King and Queen County	51097	39.6%	(14.7%, 71.5%)	48.4%	(39.4%, 57.6%)
King William County	51101	60.9%	(28.6%, 85.8%)	66.2%	(61.1%, 70.9%)
Lancaster County	51103	65.6%	(38.6%, 85.2%)	62.2%	(53.8%, 69.8%)
Mathews County	51115	55.7%	(27.0%, 81.0%)	52.2%	(44.6%, 59.7%)
Middlesex County	51119	67.2%	(42.7%, 84.9%)	59.2%	(50.8%, 67.1%)
Northampton County	51131	69.8%	(41.6%, 88.2%)	69.0%	(60.6%, 76.3%)
Northumberland County	51133	76.2%	(53.2%, 90.0%)	79.0%	(73.0%, 83.9%)
Richmond County	51159	60.3%	(31.0%, 83.7%)	59.3%	(54.1%, 64.3%)
Southampton County	51175	55.2%	(23.4%, 83.2%)	55.8%	(48.5%, 62.8%)
Westmoreland County	51193	56.6%	(30.3%, 79.6%)	57.0%	(51.5%, 62.3%)
York County	51199	77.5%	(59.3%, 89.1%)	84.4%	(80.7%, 87.4%)
Chesapeake City	51550	83.8%	(77.0%, 88.9%)	80.1%	(76.5%, 83.2%)
Franklin City	51620	85.6%	(63.1%, 95.4%)	77.7%	(69.1%, 84.4%)
Hampton City	51650	63.1%	(51.9%, 73.1%)	55.5%	(49.7%, 61.1%)
Newport News City	51700	60.1%	(48.3%, 70.8%)	65.8%	(62.2%, 69.1%)
Norfolk City	51710	61.6%	(51.5%, 70.7%)	66.0%	(62.3%, 69.5%)
Poquoson City	51735	51.5%	(5.8%, 94.9%)	91.1%	(85.9%, 94.5%)
Portsmouth City	51740	71.1%	(59.7%, 80.4%)	69.8%	(65.3%, 73.9%)
Suffolk City	51800	80.4%	(67.5%, 89.0%)	74.6%	(70.8%, 78.0%)
Virginia Beach City	51810	78.6%	(72.3%, 83.7%)	78.1%	(75.4%, 80.7%)
Williamsburg City	51830	94.2%	(10.5%, 99.5%)	81.9%	(71.0%, 89.3%)

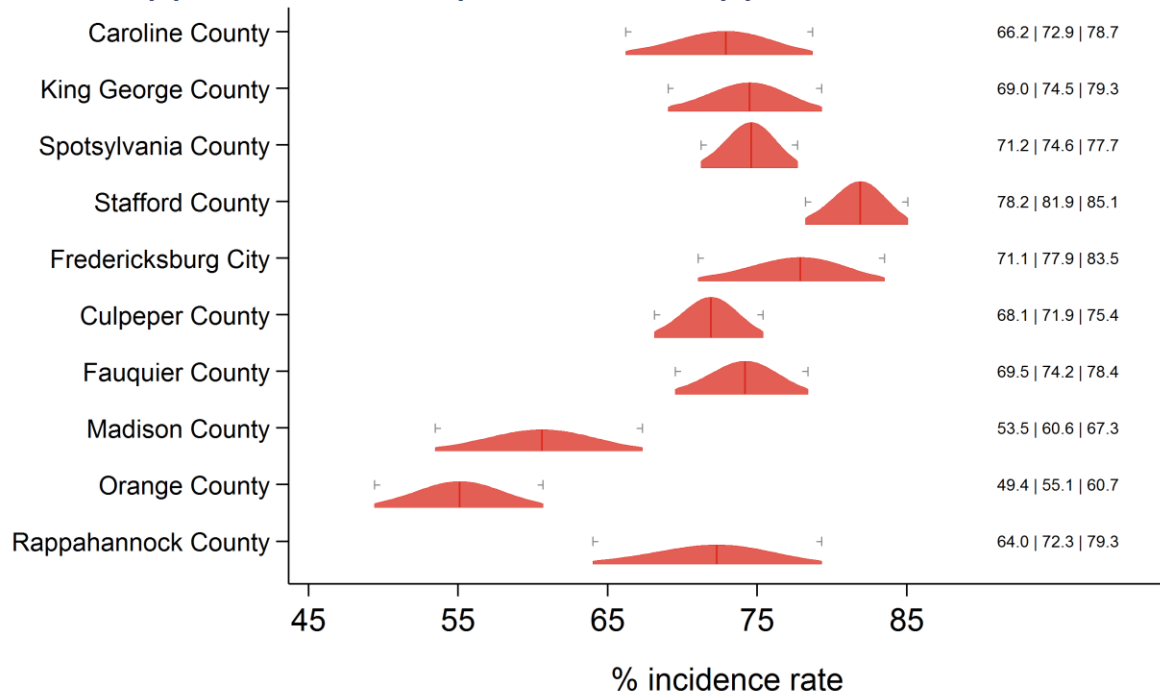
Graphical representation

Dental visit in the past year Central Shenandoah and Lord Fairfax HDs



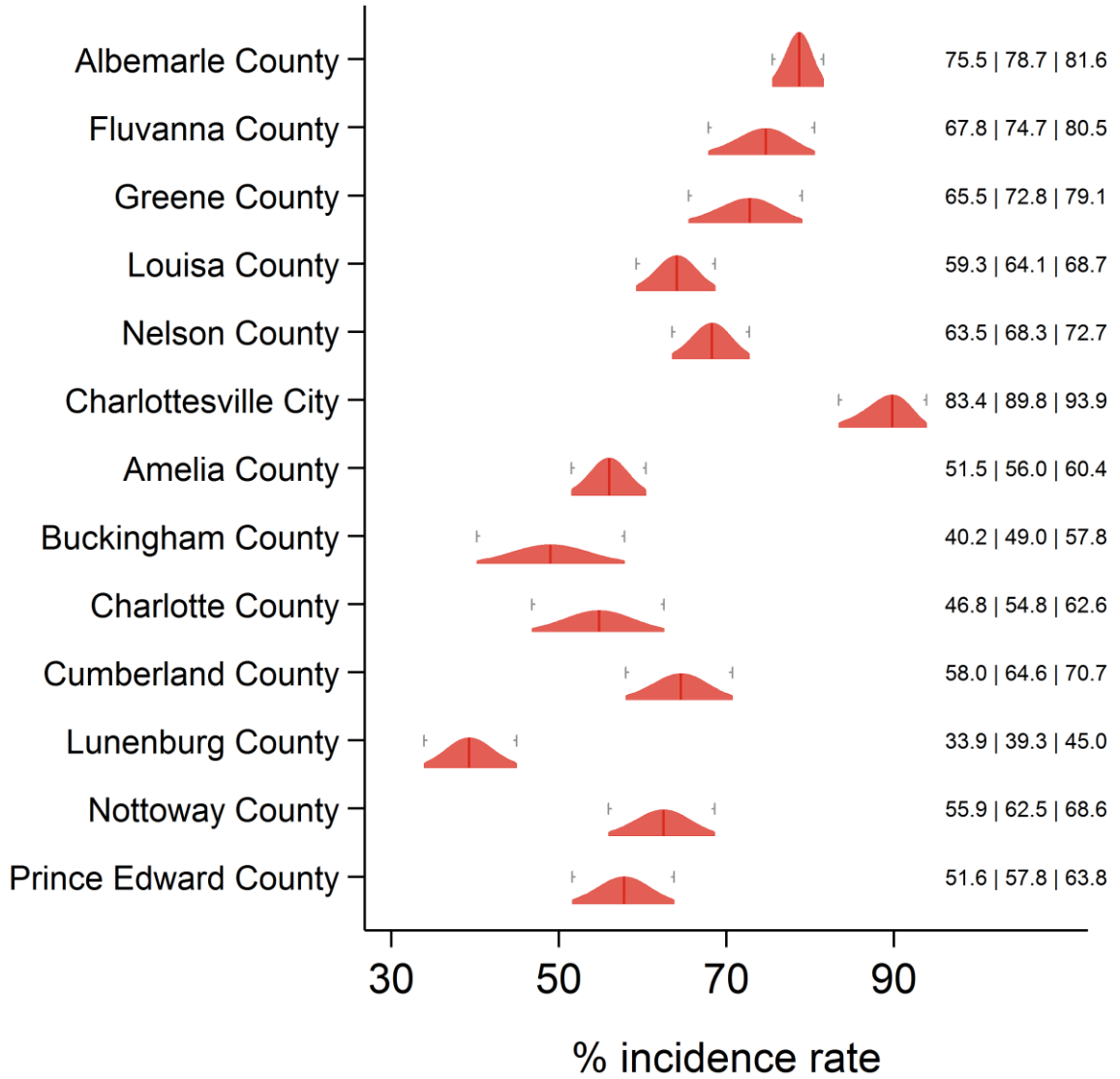
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Rappahannock/Rapidan and Rappahannock HDs



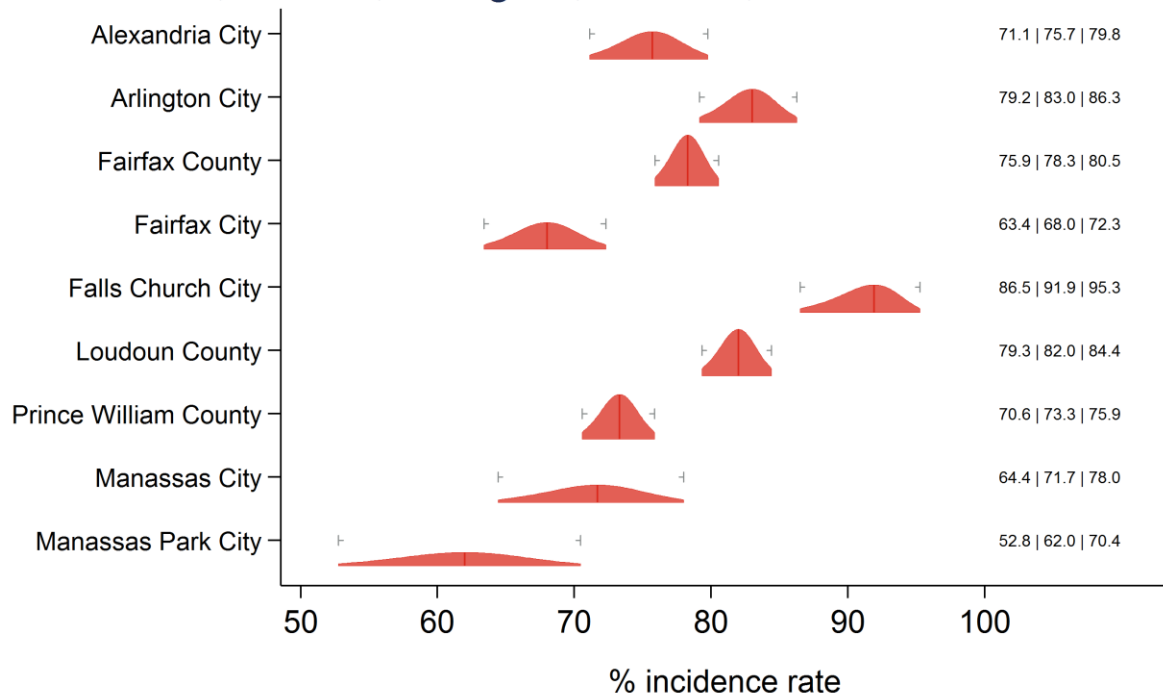
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Thomas Jefferson and Piedmont HDs



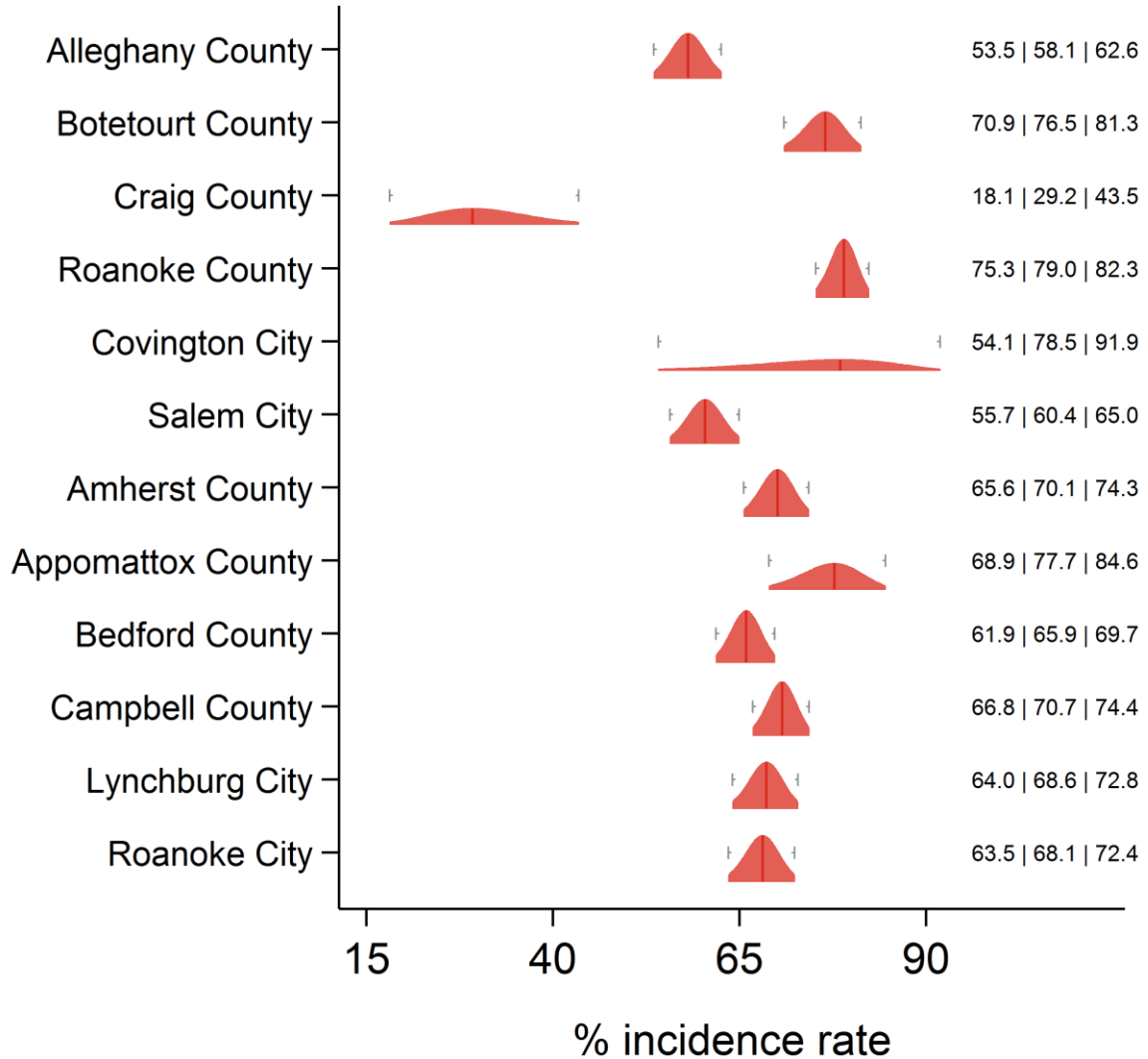
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



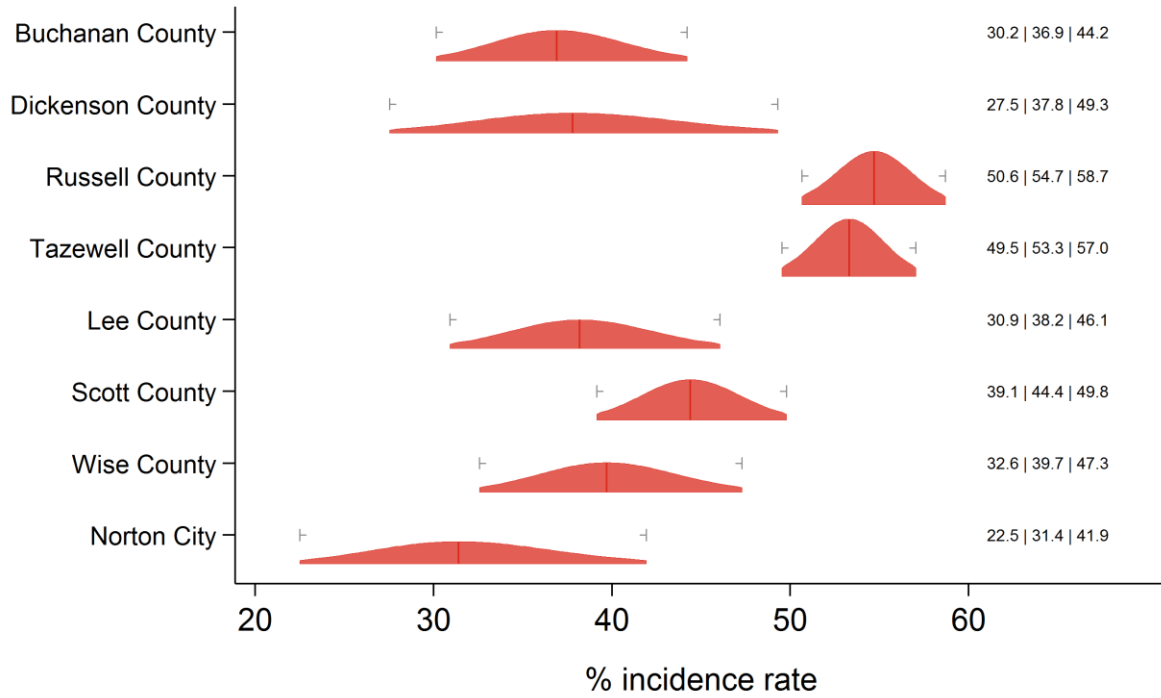
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Alleghany, Roanoke and Central Virginia HDs



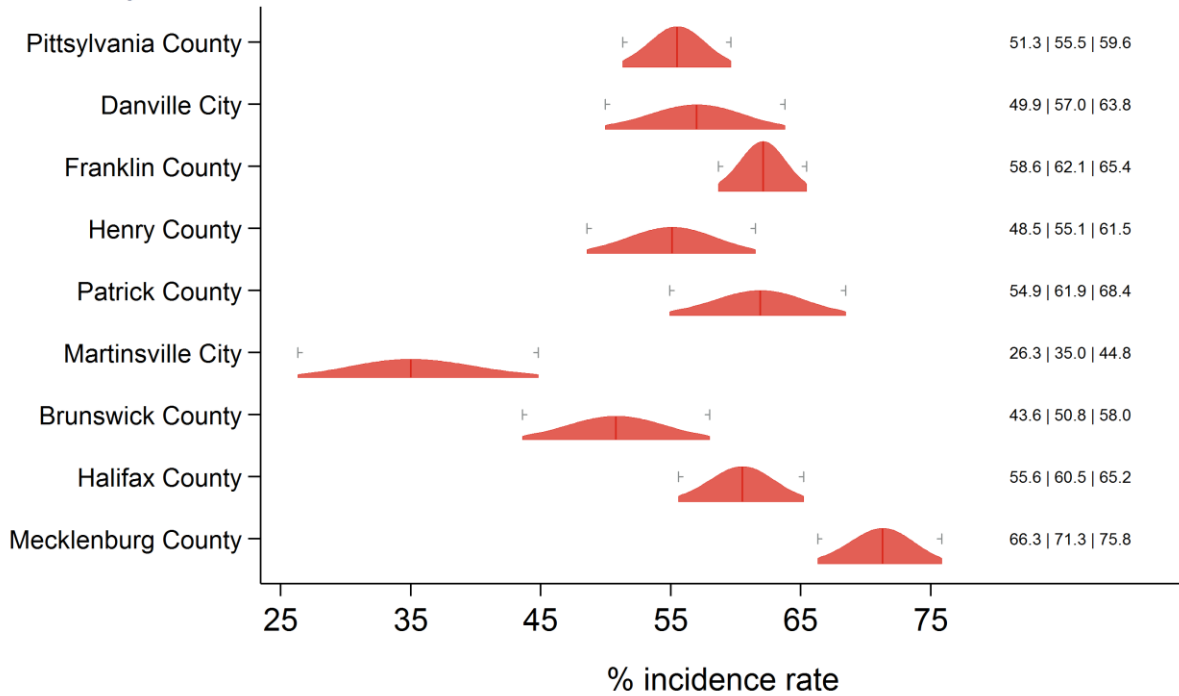
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Cumberland Plateau and Lenowisco HDs



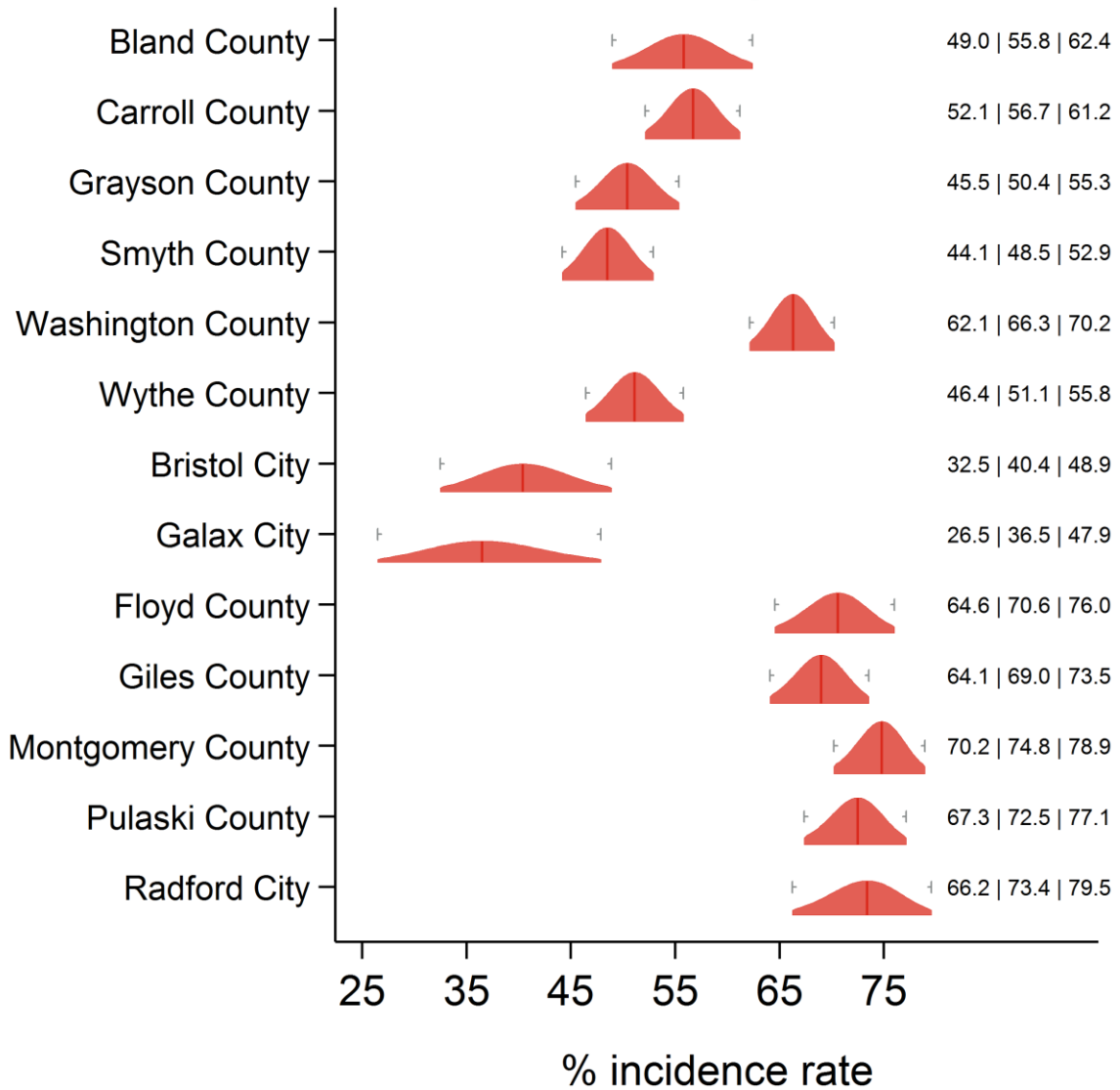
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Pittsylvania/Danville, Southside and West Piedmont HDs



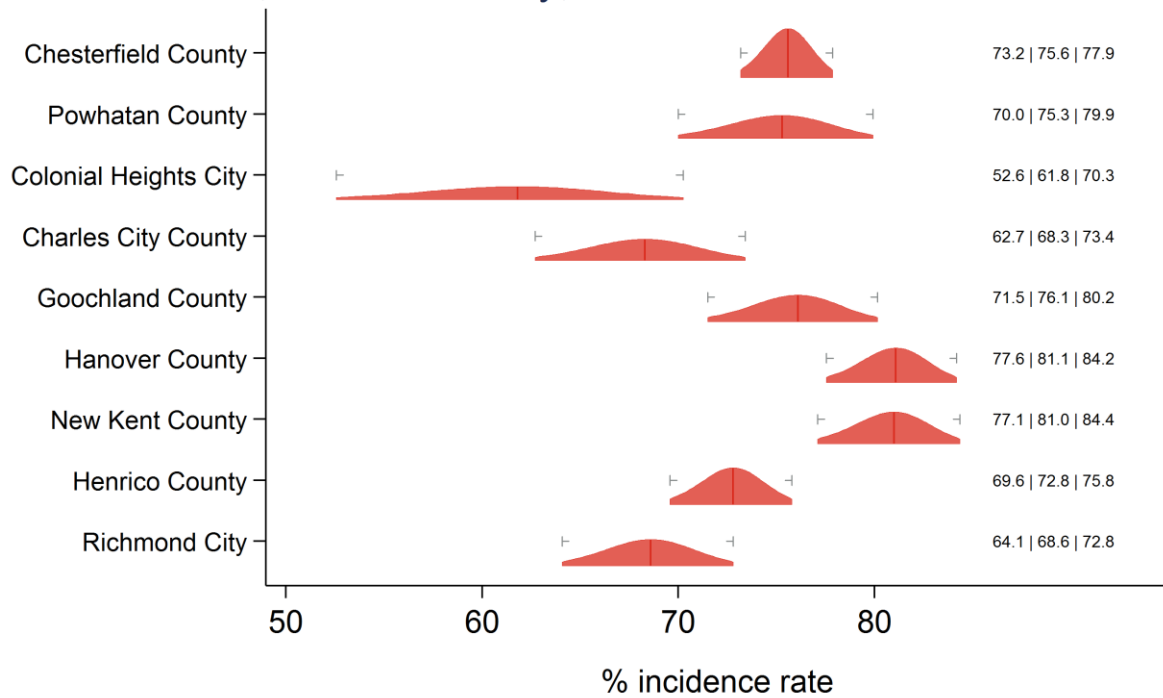
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year New River and Mount Rogers HDs



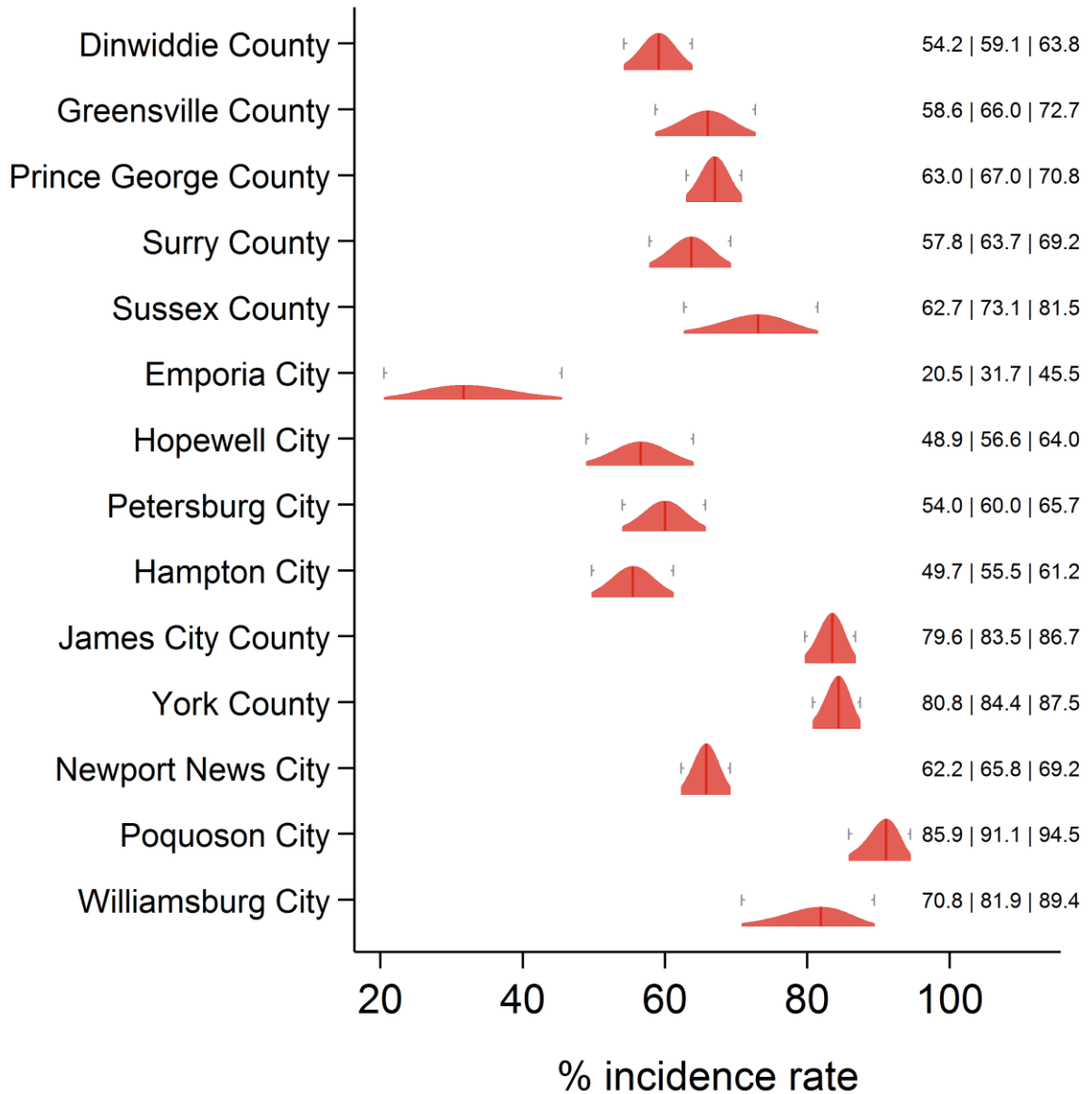
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Chesterfield, Chickahominy, Henrico and Richmond HDs



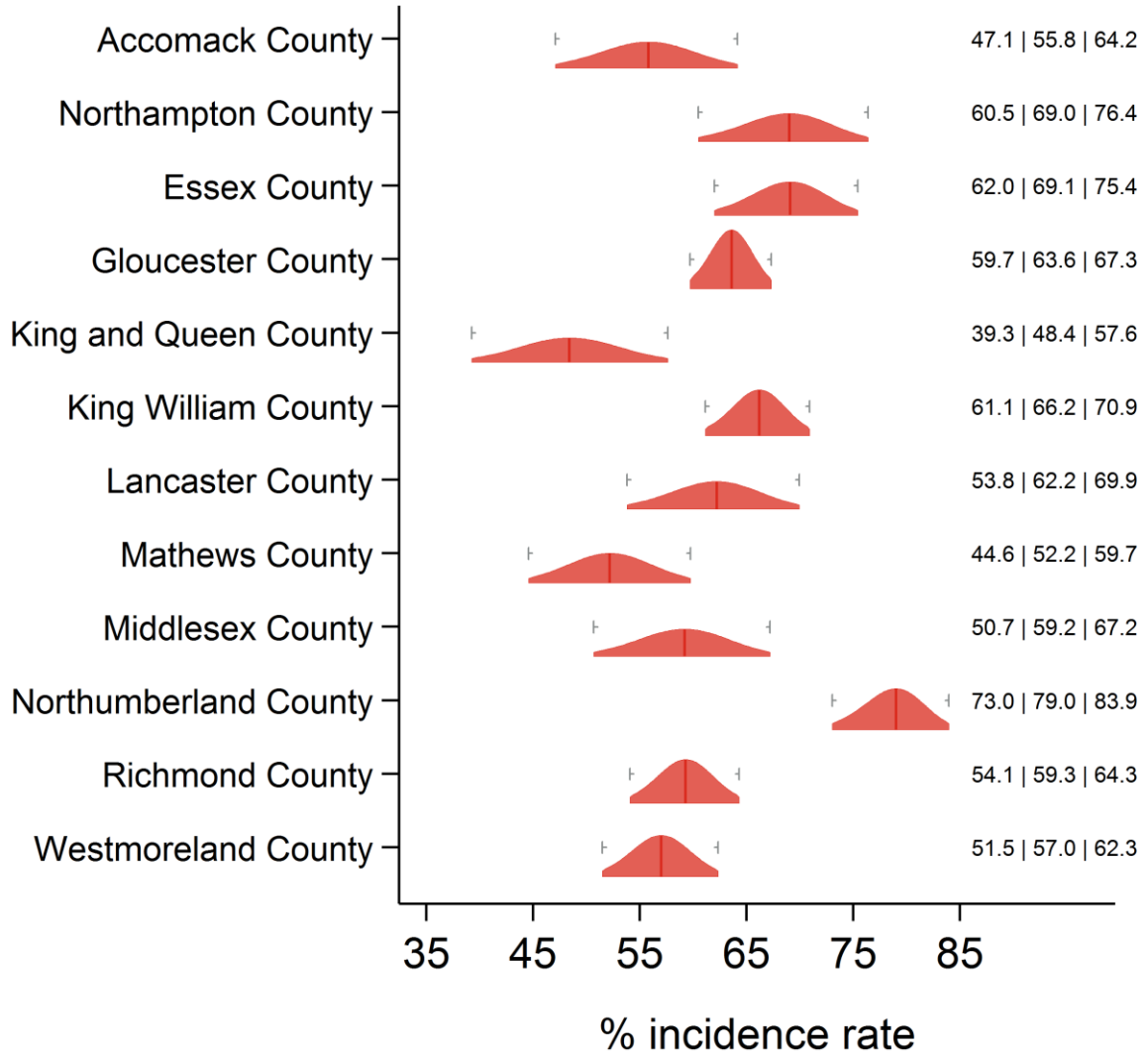
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Crater, Peninsula and Hampton HDs



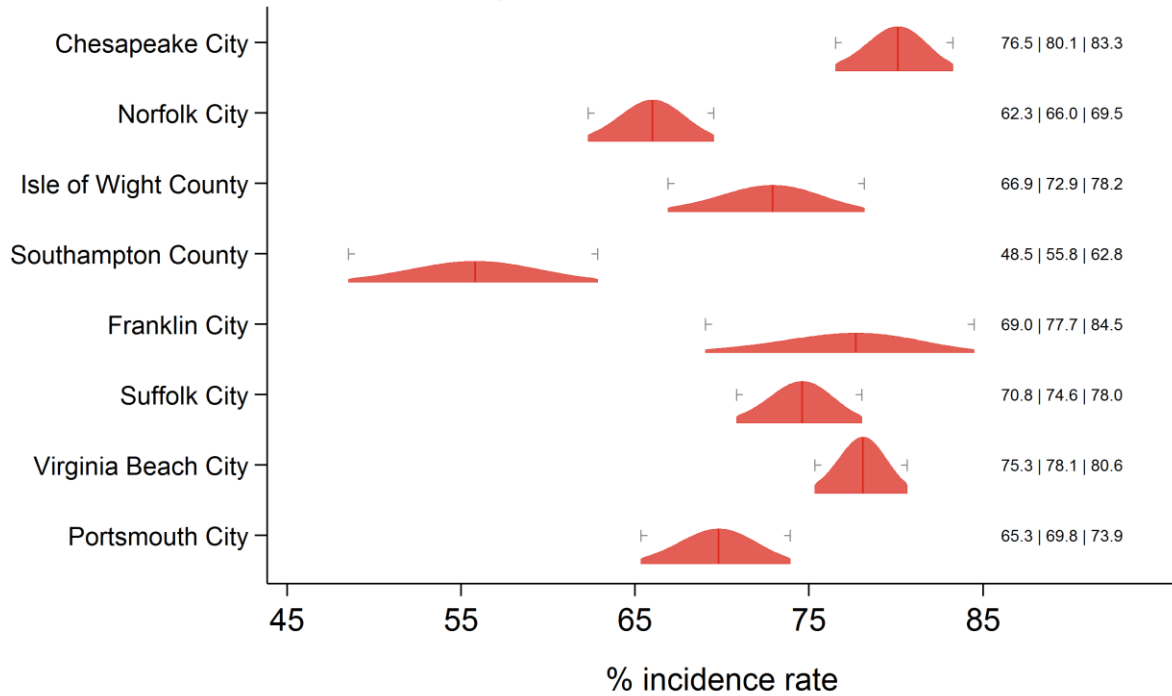
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Dental visit in the past year Eastern Shore and Three Rivers HDs



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

Dental visit in the past year 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: 57 areas.

Direct estimate is outside the 95% SAE Wilson CI: 76 areas.

SAE estimate is inside the 95% direct Wilson CI: 131 areas.

SAE estimate is outside the 95% direct Wilson CI: 2 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 119 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 14 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: 2 areas.

Direct standard error is zero: 3 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.34%; med = 14.83%; max = 63.75%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 15.02%; med = 78.96%; max = 97.18%.

Proportion of SAE variance due to model selection: min = 0.14%; med = 3.04%; max = 77.24%.

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