Indicator 9: Ever had some form of arthritis, rheumatoid arthritis, gout, lupus, o

Internal variable name: outc9_arthritis

Definition: (Ever told) you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 9: Ever had some form of arthritis, rheumatoid arthritis, gout, lupus, o			
NH Black vs. NH White	0.0278 (0.0797)	0.0407 (0.0921)	0.0407 (0.0885)
NH Asian vs. NH White	-0.8840** (0.3015)	-0.7839* (0.3711)	-0.7839** (0.2897)
NH Other vs. NH White	0.0380 (0.1652)	0.0721 (0.1655)	0.0721 (0.1708)
Hispanic vs. NH White	-0.4375* (0.1734)	-0.3743 (0.1987)	-0.3743* (0.1751)
Female	0.3554*** (0.0603)	0.3588*** (0.0663)	0.3588*** (0.0609)
Age 18-34 vs. 65+	-2.9701*** (0.1467)	-2.9596*** (0.1424)	-2.9596*** (0.1466)
Age 35-44 vs. 65+	-1.6911*** (0.1010)	-1.6760*** (0.1214)	-1.6760*** (0.1007)
Age 45-54 vs. 65+	-1.0299*** (0.1188)	-1.0307*** (0.0881)	-1.0307*** (0.1193)
Age 55-64 vs. 65+	-0.5071*** (0.0720)	-0.5117*** (0.0790)	-0.5117*** (0.0714)
% below 1.5x poverty line		-0.0530*** (0.0134)	-0.0530*** (0.0135)
Quality of life z-score, County Rankings		0.5212* (0.2550)	0.5212 (0.2848)
% below PL, householder worked		0.0686** (0.0212)	0.0686** (0.0215)
% black HH head receiving SNAP		0.0054 (0.0031)	0.0054 (0.0031)
% nonwhite students		-0.0512*** (0.0134)	-0.0512*** (0.0130)
VA BRFSS 2014 SAE outc22_flu_vacc		-1.6475 (6.3744)	-1.6475 (6.5130)
Student/teacher ratio		-0.1816	-0.1816

		(0.1843)	(0.1911)
c.VA14SAE_outc22_flu_vacc#c.district_stu_tea_ratio		0.3003	0.3003
		(0.4186)	(0.4276)
VA BRFSS 2014 SAE outc28_dentist		-6.0308***	-6.0308***
		(1.0602)	(0.8396)
o.% nonwhite students		0.0000	
		(.)	
c.VA14SAE_outc28_dentist#c.minority_students		0.0646***	0.0646***
		(0.0186)	(0.0171)
Intercept	-0.0706	6.4045*	6.4045*
	(0.0665)	(2.7898)	(2.8616)
Area effect variance			
	0.0576		0.0000
	(0.0294)		(0.0000)

Number of alternative models used to estimate model error = 5.

Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Augusta County	51015	36.3%	(26.1%, 47.9%)	37.8%	(34.4%, 41.3%)
Bath County	51017	14.8%	(4.1%, 51.7%)	22.6%	(16.1%, 30.8%)
Caroline County	51033	31.9%	(12.9%, 59.7%)	37.4%	(29.7%, 45.8%)
Clarke County	51043	28.2%	(11.3%, 54.9%)	29.5%	(26.1%, 33.2%)
Culpeper County	51047	21.2%	(11.3%, 36.3%)	37.1%	(34.7%, 39.5%)
Fauquier County	51061	33.1%	(20.5%, 48.8%)	36.6%	(32.8%, 40.7%)
Frederick County	51069	19.2%	(11.5%, 30.4%)	34.9%	(32.0%, 37.8%)
Highland County	51091	46.0%	(13.4%, 82.4%)	24.8%	(18.7%, 32.1%)
King George County	51099	13.5%	(5.9%, 48.9%)	29.4%	(26.5%, 32.4%)
Madison County	51113	18.5%	(8.4%, 43.1%)	29.4%	(24.1%, 35.4%)
Orange County	51137	25.3%	(13.3%, 42.7%)	42.3%	(38.7%, 46.0%)
Page County	51139	51.1%	(28.5%, 73.2%)	43.8%	(38.5%, 49.3%)
Rappahannock County	51157	52.8%	(25.4%, 78.7%)	46.1%	(41.6%, 50.6%)
Rockbridge County	51163	26.0%	(13.2%, 44.8%)	33.9%	(30.4%, 37.6%)
Rockingham County	51165	19.5%	(13.0%, 28.1%)	22.8%	(20.2%, 25.7%)
Shenandoah County	51171	33.3%	(19.6%, 50.5%)	40.9%	(37.2%, 44.7%)
Spotsylvania County	51177	31.8%	(21.2%, 44.6%)	34.3%	(32.1%, 36.6%)
Stafford County	51179	20.9%	(14.0%, 29.9%)	26.3%	(23.6%, 29.2%)
Warren County	51187	23.0%	(11.9%, 39.7%)	35.7%	(33.1%, 38.3%)
Buena Vista City	51530	27.7%	(7.1%, 65.9%)	58.7%	(44.3%, 71.7%)
Fredericksburg City	51630	18.0%	(8.9%, 41.0%)	28.4%	(25.9%, 31.1%)
Harrisonburg City	51660	2.4%	(1.2%, 46.0%)	22.9%	(17.4%, 29.5%)
Lexington City	51678	20.1%	(0.5%, 97.3%)	25.7%	(19.7%, 32.8%)
Staunton City	51790	26.1%	(6.9%, 62.7%)	24.3%	(19.8%, 29.4%)
Waynesboro City	51820	17.5%	(3.6%, 54.6%)	43.2%	(36.4%, 50.2%)
Winchester City	51840	3.1%	(1.0%, 61.8%)	32.5%	(26.4%, 39.2%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	17.8%	(11.6%, 26.3%)	27.7%	(25.0%, 30.6%)
Alleghany County	51005	27.0%	(12.5%, 49.0%)	40.2%	(36.6%, 43.8%)
Amherst County	51009	24.9%	(12.3%, 43.9%)	37.7%	(34.8%, 40.6%)
Appomattox County	51011	40.6%	(20.7%, 64.1%)	52.7%	(45.9%, 59.5%)
Arlington City	51013	17.7%	(11.9%, 25.5%)	22.4%	(20.2%, 24.8%)
Bedford County	51019	32.7%	(23.6%, 43.3%)	37.1%	(34.4%, 39.8%)
Botetourt County	51023	25.3%	(12.7%, 44.0%)	32.9%	(29.5%, 36.4%)
Campbell County	51031	19.7%	(12.6%, 29.4%)	32.0%	(29.4%, 34.6%)
Craig County	51045	86.2%	(25.9%, 97.1%)	31.1%	(18.8%, 46.8%)
Fairfax County	51059	19.2%	(16.3%, 22.6%)	26.0%	(24.5%, 27.5%)
Fluvanna County	51065	28.7%	(14.9%, 48.1%)	41.5%	(36.9%, 46.2%)
Greene County	51079	41.6%	(17.1%, 71.1%)	26.1%	(23.0%, 29.4%)
Loudoun County	51107	19.3%	(14.1%, 25.8%)	24.7%	(23.1%, 26.3%)
Louisa County	51109	31.0%	(17.0%, 49.6%)	39.3%	(36.0%, 42.7%)
Nelson County	51125	15.6%	(6.8%, 44.1%)	31.1%	(26.5%, 36.1%)
Prince William County	51153	20.6%	(16.2%, 25.7%)	26.8%	(24.7%, 29.0%)
Roanoke County	51161	30.3%	(22.4%, 39.7%)	36.5%	(33.3%, 39.9%)
Alexandria City	51510	26.5%	(18.2%, 36.9%)	25.2%	(22.5%, 28.2%)
Charlottesville City	51540	11.0%	(5.8%, 30.7%)	30.5%	(23.7%, 38.3%)
Covington City	51580	24.4%	(1.5%, 92.1%)	48.1%	(35.8%, 60.7%)
Fairfax City	51600	21.7%	(12.1%, 35.6%)	27.1%	(24.7%, 29.6%)
Falls Church City	51610	13.9%	(4.6%, 34.8%)	29.2%	(24.8%, 33.9%)
Lynchburg City	51680	26.7%	(17.0%, 39.2%)	35.1%	(30.4%, 40.1%)
Manassas City	51683	13.3%	(5.8%, 45.1%)	23.1%	(18.0%, 29.2%)
Manassas Park City	51685	11.2%	(2.0%, 79.8%)	20.9%	(12.2%, 33.4%)
Salem City	51775	32.9%	(11.6%, 64.8%)	39.7%	(36.7%, 42.7%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	36.9%	(14.0%, 67.7%)	37.4%	(34.4%, 40.4%)
Buchanan County	51027	58.1%	(35.7%, 77.6%)	54.9%	(48.4%, 61.2%)
Carroll County	51035	45.3%	(27.1%, 64.8%)	45.1%	(41.1%, 49.2%)
Dickenson County	51051	60.7%	(36.5%, 80.6%)	77.0%	(66.6%, 84.9%)
Floyd County	51063	17.2%	(8.4%, 32.0%)	23.0%	(19.5%, 27.0%)
Franklin County	51067	26.3%	(14.9%, 42.3%)	42.8%	(40.0%, 45.7%)
Giles County	51071	34.9%	(20.2%, 53.3%)	23.7%	(19.8%, 28.2%)
Grayson County	51077	25.7%	(12.0%, 46.6%)	48.1%	(41.9%, 54.4%)
Henry County	51089	34.7%	(22.3%, 49.6%)	43.1%	(39.8%, 46.5%)
Lee County	51105	39.3%	(18.1%, 65.5%)	52.5%	(44.8%, 60.1%)
Montgomery County	51121	18.2%	(11.6%, 27.4%)	25.3%	(21.4%, 29.5%)
Patrick County	51141	26.5%	(10.1%, 53.7%)	43.0%	(39.1%, 47.0%)
Pittsylvania County	51143	39.4%	(29.8%, 49.8%)	44.1%	(41.2%, 47.1%)
Pulaski County	51155	41.9%	(24.4%, 61.7%)	29.0%	(26.6%, 31.5%)
Russell County	51167	21.7%	(11.1%, 38.2%)	33.4%	(27.6%, 39.8%)
Scott County	51169	51.4%	(30.7%, 71.6%)	48.3%	(43.9%, 52.8%)
Smyth County	51173	44.2%	(21.3%, 69.8%)	48.4%	(44.3%, 52.5%)
Tazewell County	51185	31.1%	(18.5%, 47.3%)	47.2%	(41.8%, 52.7%)
Washington County	51191	32.7%	(21.7%, 46.0%)	37.6%	(33.3%, 42.0%)
Wise County	51195	52.9%	(37.4%, 67.9%)	55.0%	(48.5%, 61.4%)
Wythe County	51197	44.8%	(27.0%, 64.1%)	45.1%	(40.9%, 49.5%)
Bristol City	51520	22.0%	(2.3%, 76.7%)	48.9%	(42.7%, 55.2%)
Danville City	51590	20.6%	(9.2%, 39.9%)	33.0%	(29.2%, 37.0%)
Galax City	51640	2.9%	(0.6%, 76.9%)	42.1%	(34.2%, 50.5%)
Martinsville City	51690	47.4%	(13.3%, 84.2%)	42.5%	(34.0%, 51.5%)
Norton City	51720	36.4%	(6.1%, 83.3%)	46.2%	(30.6%, 62.6%)
Radford City	51750	52.2%	(19.5%, 83.1%)	29.5%	(22.3%, 38.0%)
Roanoke City	51770	33.2%	(23.2%, 45.0%)	37.9%	(33.3%, 42.9%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	18.6%	(7.5%, 39.1%)	43.1%	(35.9%, 50.6%)
Brunswick County	51025	47.4%	(24.9%, 71.0%)	42.5%	(36.5%, 48.8%)
Buckingham County	51029	33.9%	(18.0%, 54.7%)	38.7%	(33.8%, 43.9%)
Charles City County	51036	31.5%	(6.7%, 75.3%)	45.7%	(38.9%, 52.6%)
Charlotte County	51037	30.6%	(16.8%, 49.0%)	35.1%	(30.6%, 40.0%)
Chesterfield County	51041	21.1%	(16.4%, 26.8%)	32.7%	(30.0%, 35.6%)
Cumberland County	51049	42.7%	(21.1%, 67.5%)	44.6%	(40.4%, 48.9%)
Dinwiddie County	51053	35.5%	(18.2%, 57.6%)	38.1%	(35.2%, 41.1%)
Goochland County	51075	11.0%	(5.6%, 34.8%)	34.1%	(28.4%, 40.4%)
Greensville County	51081	68.5%	(37.1%, 88.9%)	35.5%	(29.9%, 41.6%)
Halifax County	51083	36.9%	(23.1%, 53.1%)	42.5%	(38.5%, 46.6%)
Hanover County	51085	22.6%	(14.3%, 33.8%)	33.1%	(29.6%, 36.8%)
Henrico County	51087	16.5%	(12.1%, 22.1%)	30.2%	(27.3%, 33.2%)
Lunenburg County	51111	25.6%	(11.0%, 48.9%)	41.6%	(36.5%, 47.0%)
Mecklenburg County	51117	38.8%	(26.8%, 52.3%)	38.1%	(34.3%, 42.0%)
New Kent County	51127	37.9%	(17.3%, 64.0%)	41.3%	(37.4%, 45.4%)
Nottoway County	51135	30.5%	(13.1%, 56.2%)	40.8%	(36.6%, 45.1%)
Powhatan County	51145	37.9%	(18.2%, 62.5%)	43.7%	(38.5%, 49.1%)
Prince Edward County	51147	28.4%	(16.2%, 44.8%)	41.8%	(35.0%, 48.9%)
Prince George County	51149	43.4%	(26.3%, 62.2%)	46.2%	(41.4%, 51.1%)
Surry County	51181	46.3%	(18.2%, 76.9%)	46.4%	(38.4%, 54.6%)
Sussex County	51183	23.2%	(10.7%, 43.1%)	45.9%	(36.8%, 55.2%)
Colonial Heights City	51570	38.6%	(19.8%, 61.6%)	43.0%	(37.5%, 48.6%)
Emporia City	51595	100.0%	(8.2%, 100.0%)	32.2%	(26.0%, 39.2%)
Hopewell City	51670	19.6%	(9.0%, 37.5%)	30.6%	(24.7%, 37.2%)
Petersburg City	51730	25.7%	(14.5%, 41.3%)	35.7%	(28.1%, 44.2%)
Richmond City	51760	14.6%	(9.8%, 21.1%)	21.0%	(16.5%, 26.3%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	30.2%	(19.3%, 43.8%)	39.8%	(35.0%, 44.9%)
Essex County	51057	29.7%	(12.8%, 55.0%)	38.1%	(33.5%, 43.0%)
Gloucester County	51073	31.1%	(20.3%, 44.6%)	42.2%	(39.3%, 45.1%)
Isle of Wight County	51093	30.2%	(14.5%, 52.4%)	37.6%	(32.9%, 42.5%)
James City County	51095	30.2%	(21.2%, 41.2%)	30.5%	(27.7%, 33.3%)
King and Queen County	51097	64.8%	(33.5%, 87.0%)	44.2%	(38.2%, 50.5%)
King William County	51101	83.3%	(55.3%, 95.3%)	51.9%	(45.1%, 58.6%)
Lancaster County	51103	14.5%	(5.5%, 32.7%)	42.1%	(34.1%, 50.5%)
Mathews County	51115	29.5%	(13.9%, 51.9%)	47.7%	(41.9%, 53.6%)
Middlesex County	51119	47.3%	(25.9%, 69.7%)	40.1%	(35.1%, 45.3%)
Northampton County	51131	34.0%	(18.3%, 54.3%)	42.5%	(37.5%, 47.5%)
Northumberland County	51133	48.6%	(27.6%, 70.1%)	49.4%	(40.5%, 58.4%)
Richmond County	51159	15.9%	(7.3%, 31.2%)	38.9%	(34.4%, 43.5%)
Southampton County	51175	66.1%	(35.9%, 87.2%)	36.1%	(29.3%, 43.5%)
Westmoreland County	51193	22.6%	(9.1%, 45.8%)	38.7%	(32.5%, 45.3%)
York County	51199	29.7%	(18.8%, 43.6%)	36.2%	(32.7%, 39.9%)
Chesapeake City	51550	33.6%	(25.3%, 43.0%)	36.0%	(32.6%, 39.6%)
Franklin City	51620	22.9%	(9.7%, 45.0%)	31.9%	(22.6%, 42.8%)
Hampton City	51650	30.1%	(22.7%, 38.6%)	35.6%	(32.4%, 39.0%)
Newport News City	51700	26.4%	(19.0%, 35.5%)	29.7%	(26.9%, 32.7%)
Norfolk City	51710	26.3%	(19.9%, 34.0%)	28.0%	(24.8%, 31.4%)
Poquoson City	51735	21.1%	(3.9%, 75.2%)	31.8%	(27.4%, 36.5%)
Portsmouth City	51740	24.8%	(17.4%, 34.1%)	36.6%	(32.3%, 41.0%)
Suffolk City	51800	27.8%	(18.6%, 39.5%)	40.5%	(36.1%, 45.0%)
Virginia Beach City	51810	23.5%	(19.2%, 28.5%)	28.6%	(26.1%, 31.4%)
Williamsburg City	51830	5.5%	(1.6%, 66.7%)	36.4%	(27.6%, 46.2%)

Graphical representation

Ever had arthritis
Central Shenandoah and Lord Fairfax HDs

County/City	LCB	Point	UCB
Augusta County	34.4	37.8	41.3
Bath County	16.0	22.6	30.9
Highland County	18.7	24.8	32.1
Rockbridge County	30.4	33.9	37.6
Rockingham County	20.2	22.8	25.6
Buena Vista City	44.0	58.7	72.0
Harrisonburg City	17.4	22.9	29.6
Lexington City	19.6	25.7	32.9
Staunton City	19.8	24.3	29.4
Waynesboro City	36.4	43.2	50.3
Clarke County	26.1	29.5	33.2
Frederick County	32.1	34.9	37.8
Page County	38.5	43.8	49.3
Shenandoah County	37.2	40.9	44.7
Warren County	33.1	35.7	38.3
Winchester City	26.4	32.5	39.3

% incidence rate

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

Ever had arthritis
Rappahannock/Rapidan and Rappahannock HDs

County	2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
Caroline County	29.6 | 37.4 | 45.9
King George County	26.5 | 29.4 | 32.4
Spotsylvania County	32.1 | 34.3 | 36.6
Stafford County	23.6 | 26.3 | 29.2
Fredericksburg City	25.8 | 28.4 | 31.1
Culpeper County	34.7 | 37.1 | 39.6
Fauquier County	32.8 | 36.6 | 40.6
Madison County	24.0 | 29.4 | 35.4
Orange County	38.7 | 42.3 | 46.0
Rappahannock County	41.6 | 46.1 | 50.7

% incidence rate

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

Ever had arthritis
Thomas Jefferson and Piedmont HDs
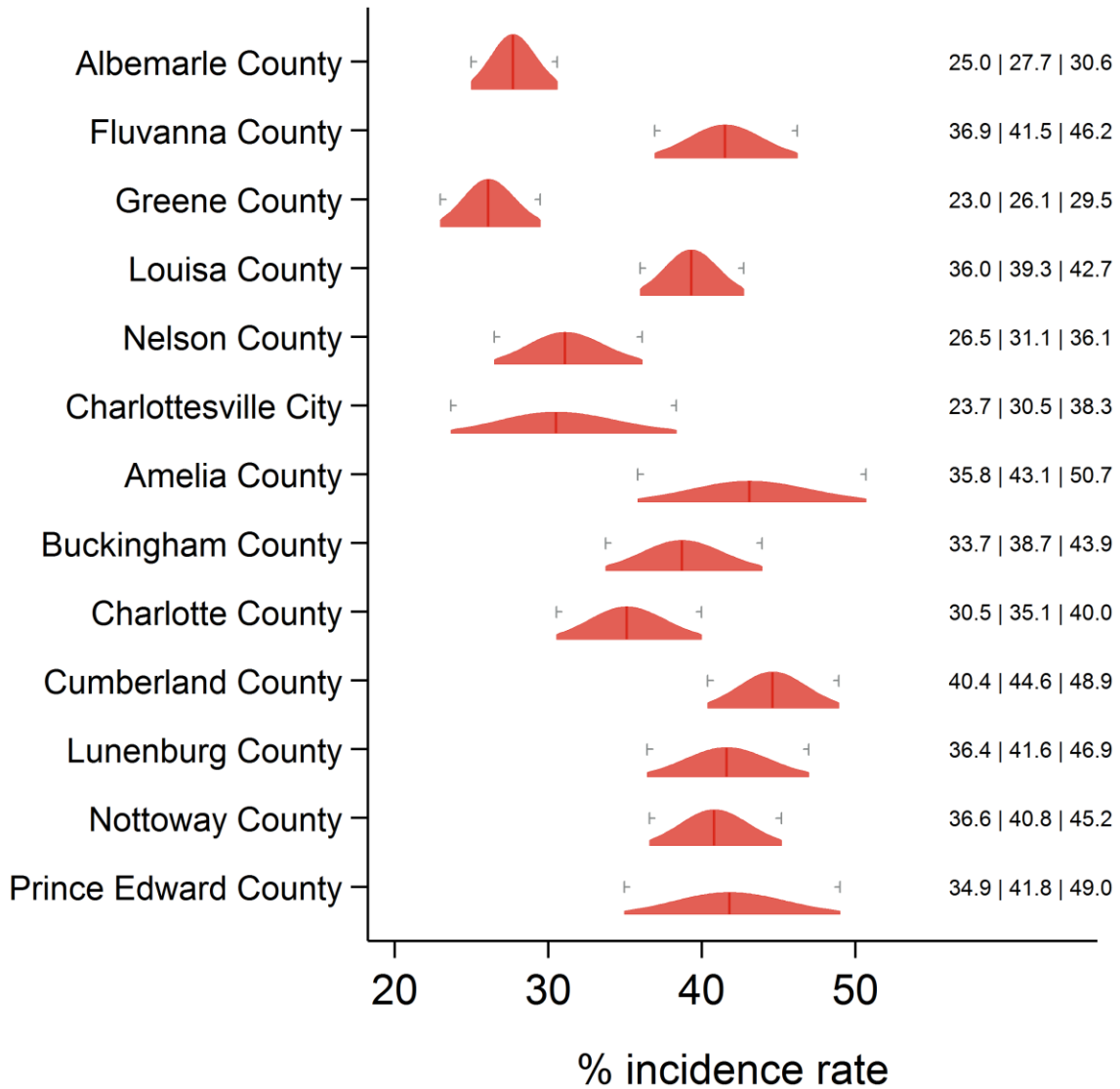
County		
Albemarle County		25.0 | 27.7 | 30.6
Fluvanna County		36.9 | 41.5 | 46.2
Greene County		23.0 | 26.1 | 29.5
Louisa County		36.0 | 39.3 | 42.7
Nelson County		26.5 | 31.1 | 36.1
Charlottesville City		23.7 | 30.5 | 38.3
Amelia County		35.8 | 43.1 | 50.7
Buckingham County		33.7 | 38.7 | 43.9
Charlotte County		30.5 | 35.1 | 40.0
Cumberland County		40.4 | 44.6 | 48.9
Lunenburg County		36.4 | 41.6 | 46.9
Nottoway County		36.6 | 40.8 | 45.2
Prince Edward County		34.9 | 41.8 | 49.0

% incidence rate

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

Ever had arthritis
Alexandria, Fairfax, Arlington, Loudon, Prince William HDs

Location	LCB	Point Estimate	UCB
Alexandria City	22.5	25.2	28.1
Arlington City	20.2	22.4	24.8
Fairfax County	24.5	26.0	27.6
Fairfax City	24.7	27.1	29.6
Falls Church City	24.9	29.2	33.9
Loudoun County	23.2	24.7	26.3
Prince William County	24.7	26.8	29.0
Manassas City	18.0	23.1	29.2
Manassas Park City	12.1	20.9	33.7

% incidence rate

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

Ever had arthritis
Alleghany, Roanoke and Central Virginia HDs

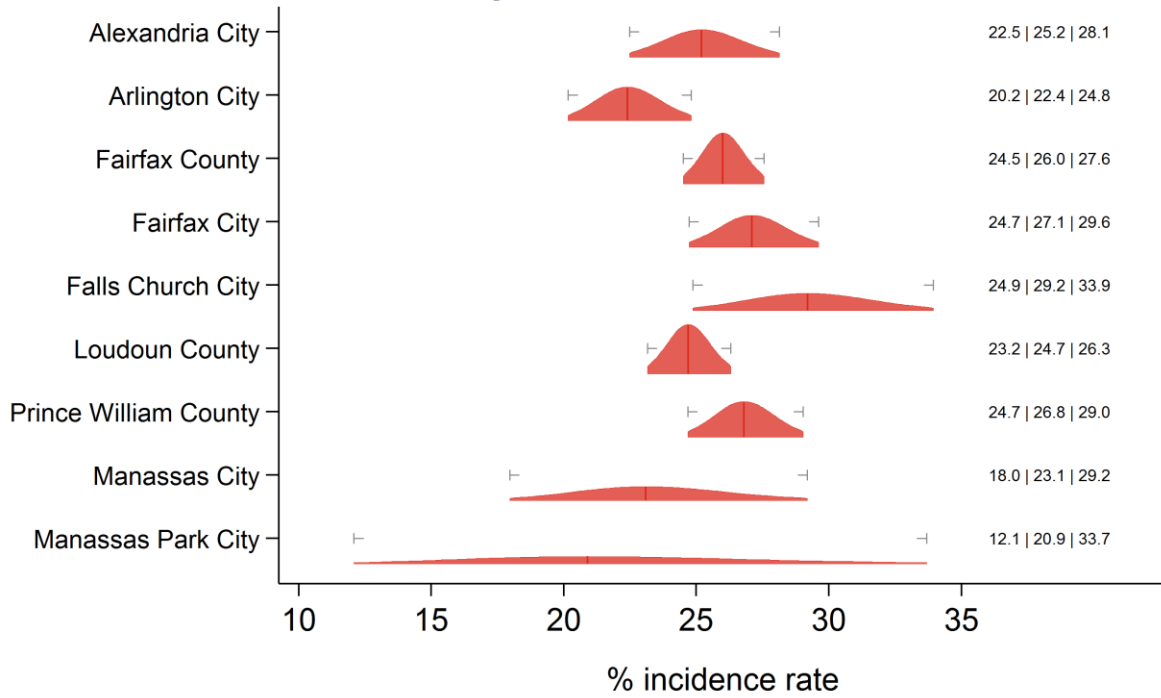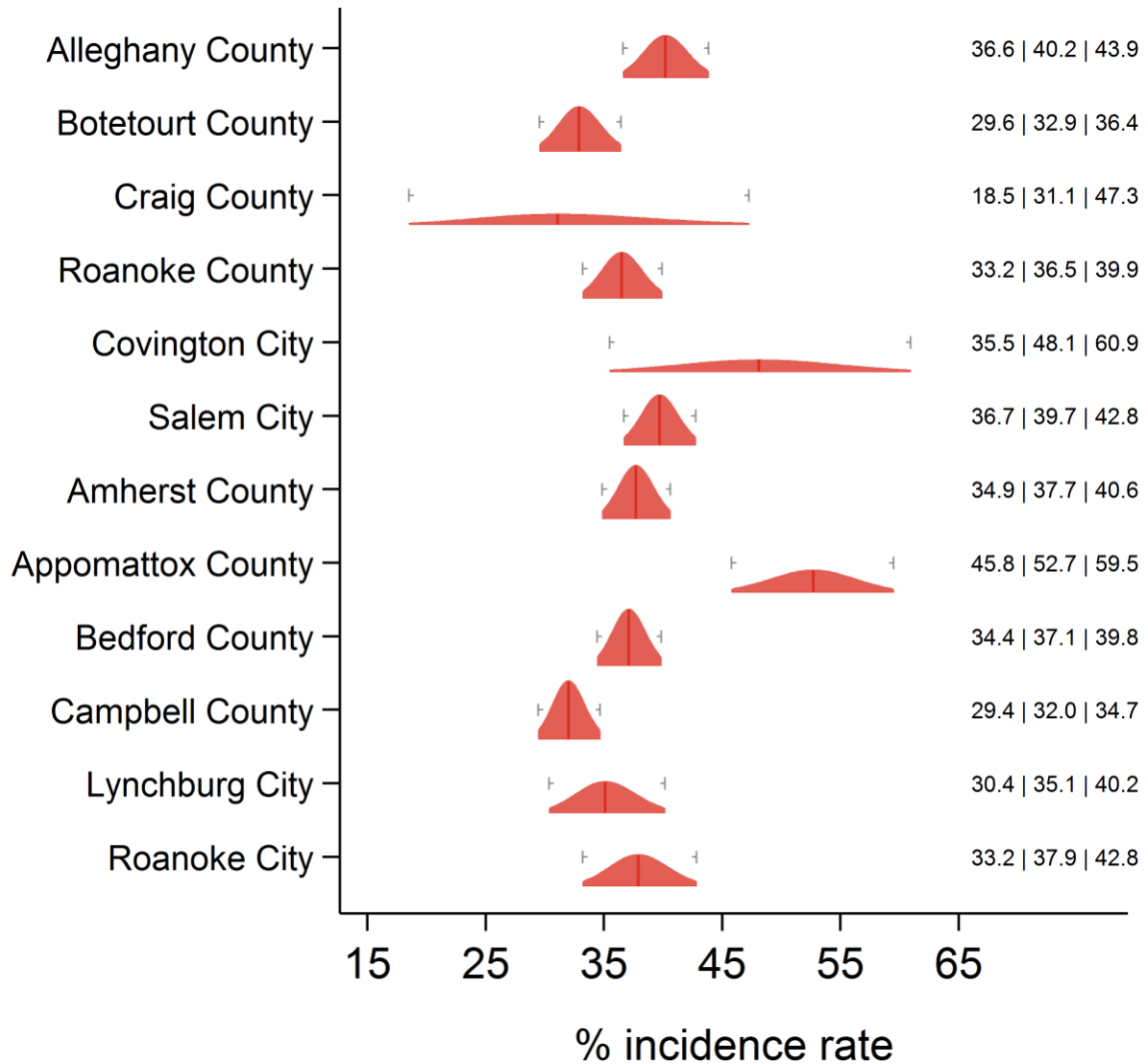| County	LCB | Point | UCB
Alleghany County	36.6 | 40.2 | 43.9
Botetourt County	29.6 | 32.9 | 36.4
Craig County	18.5 | 31.1 | 47.3
Roanoke County	33.2 | 36.5 | 39.9
Covington City	35.5 | 48.1 | 60.9
Salem City	36.7 | 39.7 | 42.8
Amherst County	34.9 | 37.7 | 40.6
Appomattox County	45.8 | 52.7 | 59.5
Bedford County	34.4 | 37.1 | 39.8
Campbell County	29.4 | 32.0 | 34.7
Lynchburg City	30.4 | 35.1 | 40.2
Roanoke City	33.2 | 37.9 | 42.8

% incidence rate

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

Ever had arthritis
Cumberland Plateau and Lenowisco HDs

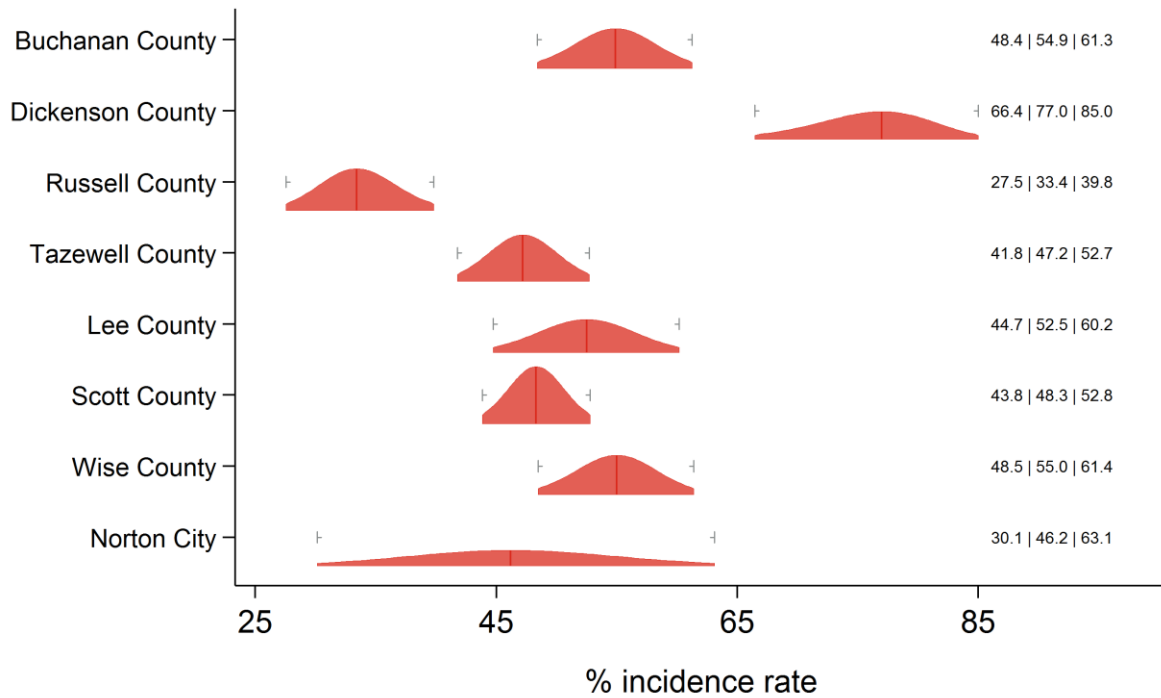| County	2-sided 95% LCB	Point Estimate	2-sided 95% UCB
Buchanan County	48.4	54.9	61.3
Dickenson County	66.4	77.0	85.0
Russell County	27.5	33.4	39.8
Tazewell County	41.8	47.2	52.7
Lee County	44.7	52.5	60.2
Scott County	43.8	48.3	52.8
Wise County	48.5	55.0	61.4
Norton City	30.1	46.2	63.1

% incidence rate

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

Ever had arthritis
Pittsylvania/Danville, Southside and West Piedmont HDs

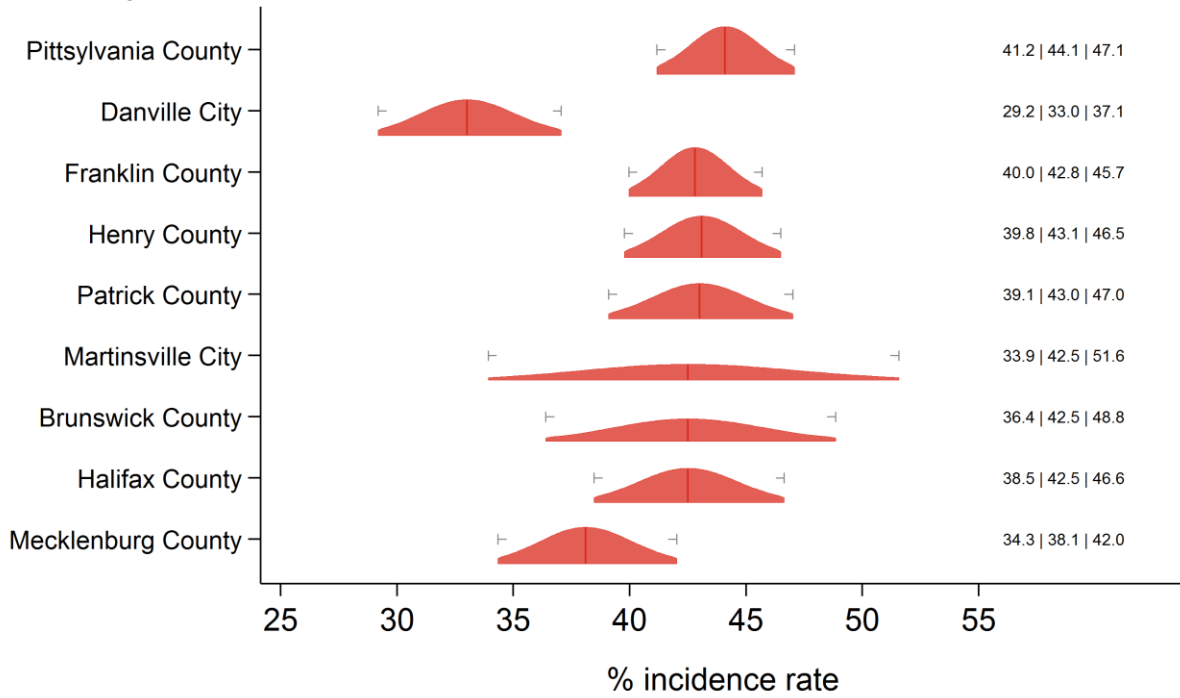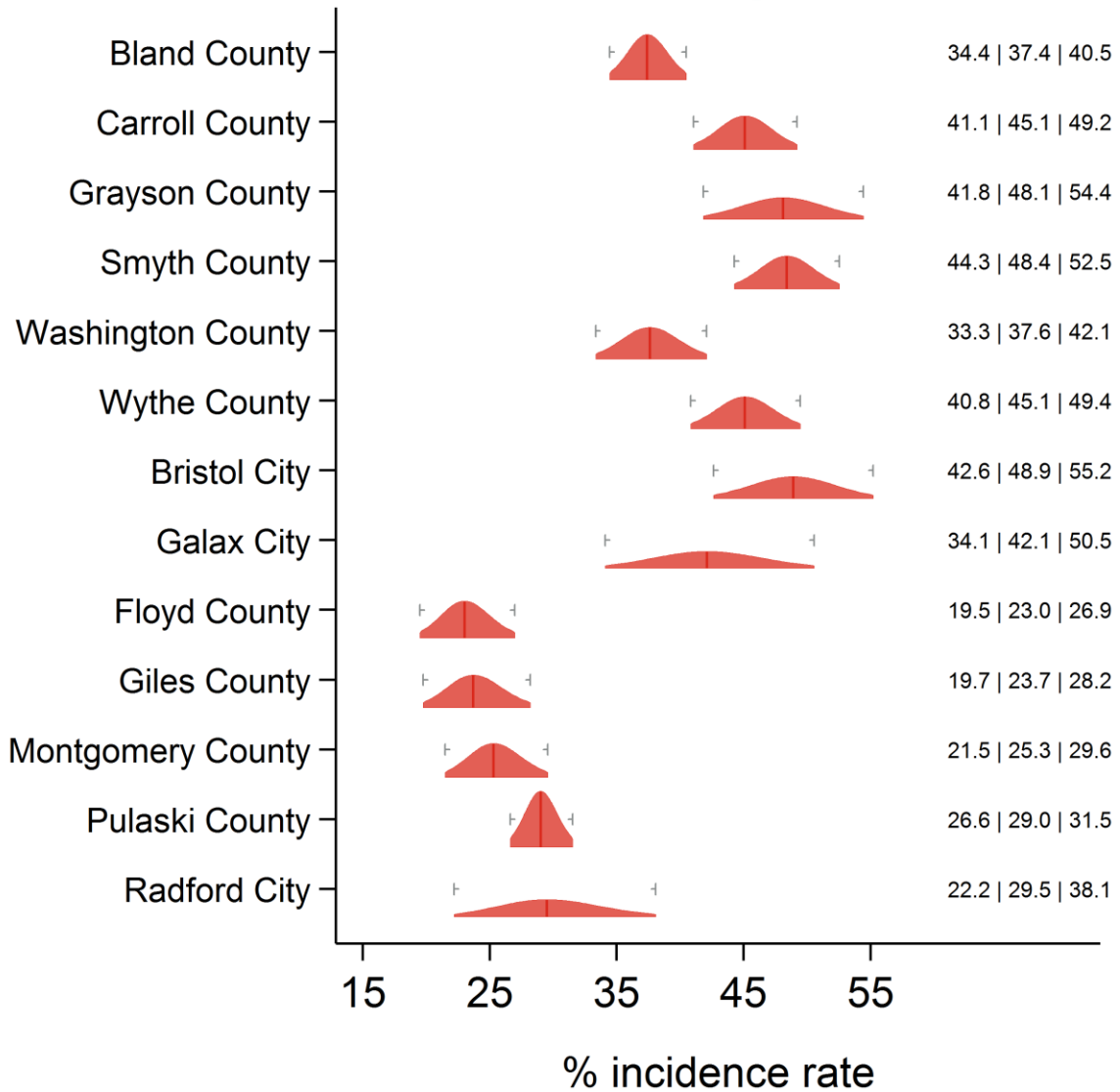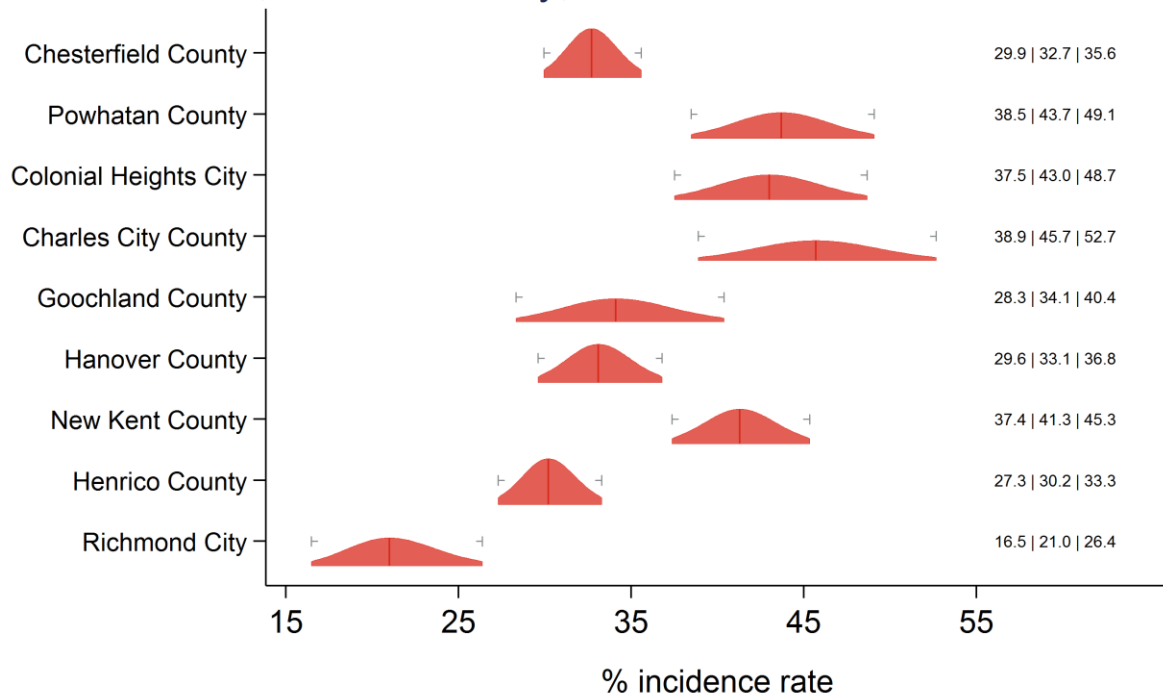| County	2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
Pittsylvania County	41.2 | 44.1 | 47.1
Danville City	29.2 | 33.0 | 37.1
Franklin County	40.0 | 42.8 | 45.7
Henry County	39.8 | 43.1 | 46.5
Patrick County	39.1 | 43.0 | 47.0
Martinsville City	33.9 | 42.5 | 51.6
Brunswick County	36.4 | 42.5 | 48.8
Halifax County	38.5 | 42.5 | 46.6
Mecklenburg County	34.3 | 38.1 | 42.0

% incidence rate

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

Ever had arthritis
New River and Mount Rogers HDs

County	2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
Bland County	34.4 | 37.4 | 40.5
Carroll County	41.1 | 45.1 | 49.2
Grayson County	41.8 | 48.1 | 54.4
Smyth County	44.3 | 48.4 | 52.5
Washington County	33.3 | 37.6 | 42.1
Wythe County	40.8 | 45.1 | 49.4
Bristol City	42.6 | 48.9 | 55.2
Galax City	34.1 | 42.1 | 50.5
Floyd County	19.5 | 23.0 | 26.9
Giles County	19.7 | 23.7 | 28.2
Montgomery County	21.5 | 25.3 | 29.6
Pulaski County	26.6 | 29.0 | 31.5
Radford City	22.2 | 29.5 | 38.1

% incidence rate

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

Ever had arthritis
Chesterfield, Chickahominy, Henrico and Richmond HDs

County	LCB | Point | UCB
Chesterfield County	29.9 | 32.7 | 35.6
Powhatan County	38.5 | 43.7 | 49.1
Colonial Heights City	37.5 | 43.0 | 48.7
Charles City County	38.9 | 45.7 | 52.7
Goochland County	28.3 | 34.1 | 40.4
Hanover County	29.6 | 33.1 | 36.8
New Kent County	37.4 | 41.3 | 45.3
Henrico County	27.3 | 30.2 | 33.3
Richmond City	16.5 | 21.0 | 26.4

% incidence rate

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

Ever had arthritis
Crater, Peninsula and Hampton HDs
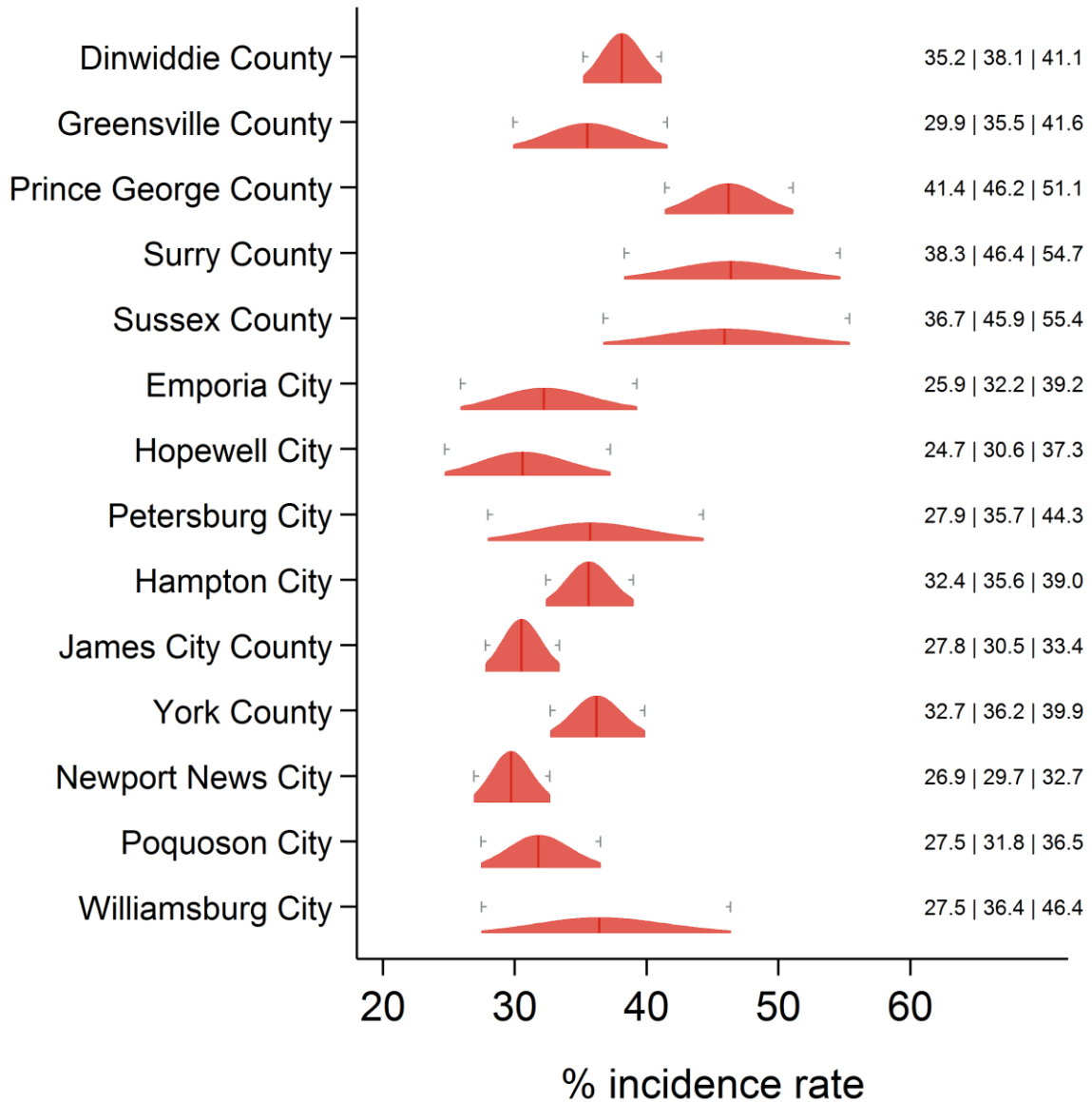
County/City	LCB | Point | UCB
Dinwiddie County	35.2 | 38.1 | 41.1
Greensville County	29.9 | 35.5 | 41.6
Prince George County	41.4 | 46.2 | 51.1
Surry County	38.3 | 46.4 | 54.7
Sussex County	36.7 | 45.9 | 55.4
Emporia City	25.9 | 32.2 | 39.2
Hopewell City	24.7 | 30.6 | 37.3
Petersburg City	27.9 | 35.7 | 44.3
Hampton City	32.4 | 35.6 | 39.0
James City County	27.8 | 30.5 | 33.4
York County	32.7 | 36.2 | 39.9
Newport News City	26.9 | 29.7 | 32.7
Poquoson City	27.5 | 31.8 | 36.5
Williamsburg City	27.5 | 36.4 | 46.4

% incidence rate

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

Ever had arthritis
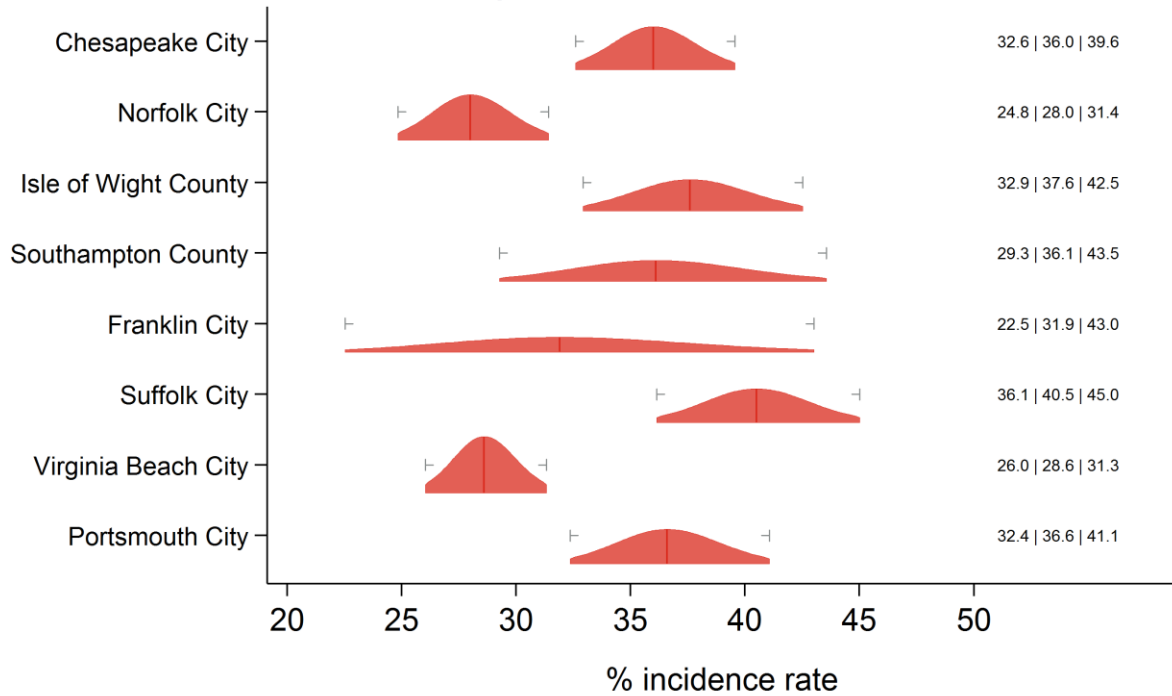## Eastern Shore and Three Rivers HDs
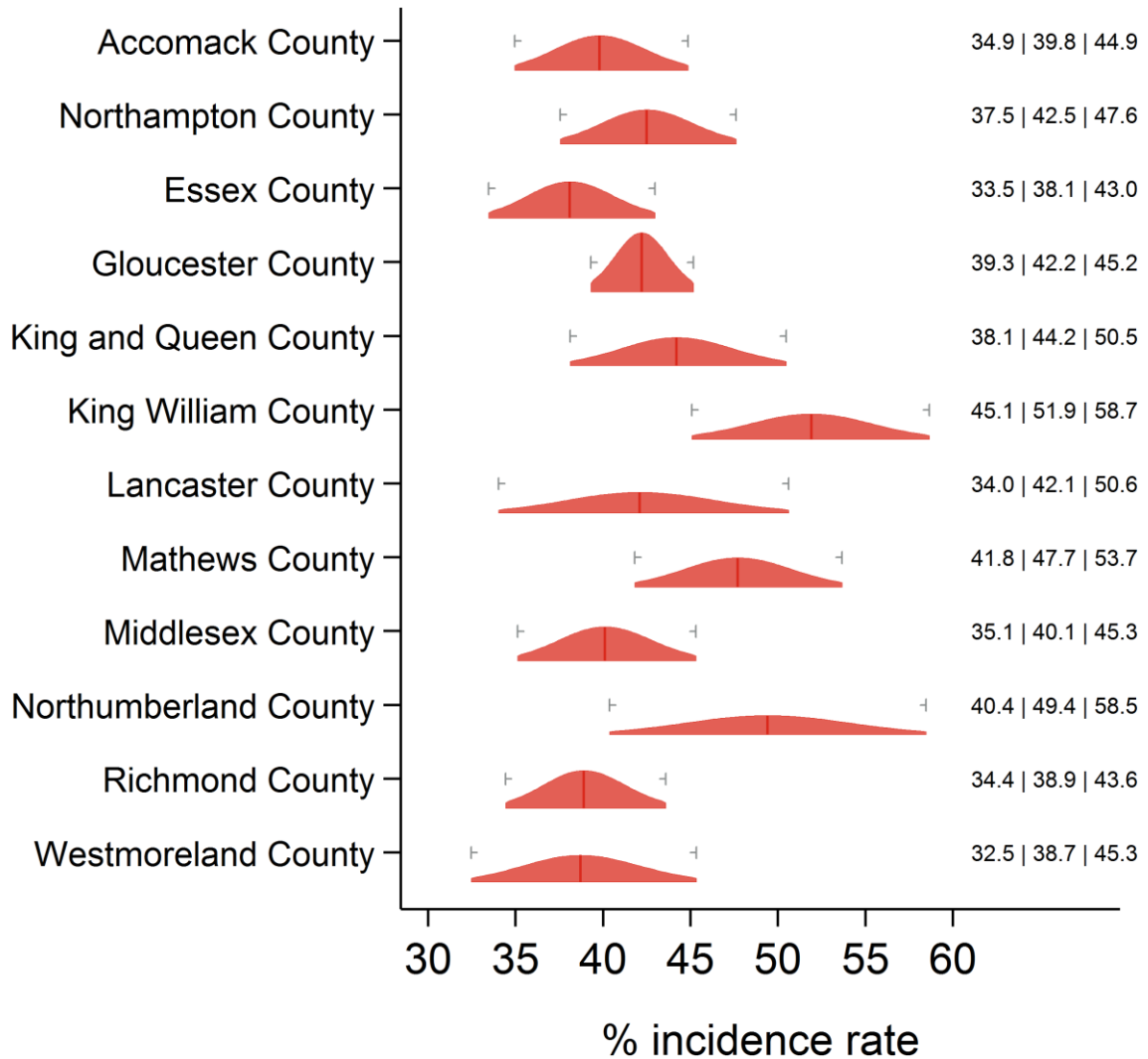
County	LCB | Point | UCB
Accomack County	34.9 | 39.8 | 44.9
Northampton County	37.5 | 42.5 | 47.6
Essex County	33.5 | 38.1 | 43.0
Gloucester County	39.3 | 42.2 | 45.2
King and Queen County	38.1 | 44.2 | 50.5
King William County	45.1 | 51.9 | 58.7
Lancaster County	34.0 | 42.1 | 50.6
Mathews County	41.8 | 47.7 | 53.7
Middlesex County	35.1 | 40.1 | 45.3
Northumberland County	40.4 | 49.4 | 58.5
Richmond County	34.4 | 38.9 | 43.6
Westmoreland County	32.5 | 38.7 | 45.3

% incidence rate

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

Ever had arthritis
Norfolk,Portsmouth,Chesapeake,VA Beach,W. Tidewater HDs

Chesapeake City	32.6 | 36.0 | 39.6
Norfolk City	24.8 | 28.0 | 31.4
Isle of Wight County	32.9 | 37.6 | 42.5
Southampton County	29.3 | 36.1 | 43.5
Franklin City	22.5 | 31.9 | 43.0
Suffolk City	36.1 | 40.5 | 45.0
Virginia Beach City	26.0 | 28.6 | 31.3
Portsmouth City	32.4 | 36.6 | 41.1

% incidence rate

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: 29 areas.

Direct estimate is outside the 95% SAE Wilson CI: 104 areas.

SAE estimate is inside the 95% direct Wilson CI: 114 areas.

SAE estimate is outside the 95% direct Wilson CI: 19 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 92 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 41 areas.

SAE Wilson 95% CI and the 95% direct Wilson CI do not overlap: 0 areas.

SAE standard error is less that the direct standard error: 129 areas.

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

Direct standard error is zero: 1 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.30%; med = 5.58%; max = 25.51%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 57.13%; med = 87.27%; max = 97.95%.

Proportion of SAE variance due to model selection: min = 0.29%; med = 5.11%; max = 33.40%.

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