

Outcome 14: Tetanus Vaccination in the Past 10 Years

Internal variable name: outc14_tetanus_vacc

Definition: Since 2005, have you had a tetanus shot? (If yes, ask: "Was this Tdap, the tetanus shot that also has pertussis or whooping cough vaccine?")

Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 14: Tetanus Vaccination in the Past 10 Years			
NH White	0.0000 (.)	0.0000 (.)	0.0000 (.)
NH Black vs. NH White	-0.7943*** (0.0909)	-0.7327*** (0.0977)	-0.7327*** (0.0912)
NH Asian vs. NH White	-0.6600*** (0.1641)	-0.6699*** (0.2031)	-0.6699*** (0.1611)
NH Other vs. NH White	-0.6047*** (0.1476)	-0.5777*** (0.1661)	-0.5777*** (0.1481)
Hispanic vs. NH White	-0.6999*** (0.1352)	-0.6862*** (0.1461)	-0.6862*** (0.1352)
SEX OF RESPONDENT=1	0.0000 (.)	0.0000 (.)	0.0000 (.)
Female	-0.1491* (0.0727)	-0.1418 (0.0762)	-0.1418 (0.0736)
Age 18-34 vs. 65+	0.0886 (0.1072)	0.0946 (0.1083)	0.0946 (0.1065)
Age 35-44 vs. 65+	0.0744 (0.1162)	0.0510 (0.1164)	0.0510 (0.1172)
Age 45-54 vs. 65+	0.3310*** (0.0925)	0.3077** (0.1115)	0.3077** (0.0955)
Age 55-64 vs. 65+	0.2159* (0.0937)	0.2071* (0.1003)	0.2071* (0.0939)
65+	0.0000 (.)	0.0000 (.)	0.0000 (.)
Crude mortality rate of nephritis, nephrotic syndrome & nephrosis per 10K		-0.1035*** (0.0297)	-0.1035*** (0.0261)
VA BRFSS 2014 SAE		1.0869	1.0869

outc24_tetanus_vacc			
		(0.8475)	(0.7166)
VA BRFSS 2014 SAE outc4_health_cover		-0.8611	-0.8611
		(1.0917)	(1.1676)
VA BRFSS 2017 SAE outc26_health_cover		-2.8422*	-2.8422*
		(1.2720)	(1.1891)
VA BRFSS 2017 SAE outc27_doctor_cost		1.5675	1.5675
		(1.6185)	(1.5406)
_cons	1.1010***	0.9082	0.9082
	(0.0799)	(0.6129)	(0.4841)
Area effect variance			
var(_cons[FIPS_county])	0.0309		0.0000
	(0.0269)		(0.0000)

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

Results by health districts

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Augusta County	51015	78.1%	(66.9%, 86.2%)	76.4%	(72.9%, 79.6%)
Bath County	51017	72.8%	(36.7%, 92.5%)	55.5%	(45.4%, 65.2%)
Caroline County	51033	90.3%	(66.2%, 96.1%)	72.8%	(69.0%, 76.3%)
Clarke County	51043	84.4%	(54.1%, 94.3%)	72.4%	(66.8%, 77.3%)
Culpeper County	51047	78.0%	(59.9%, 89.4%)	75.4%	(72.5%, 78.0%)
Fauquier County	51061	73.5%	(58.3%, 84.7%)	75.4%	(72.2%, 78.4%)
Frederick County	51069	61.7%	(46.9%, 74.6%)	76.2%	(72.5%, 79.5%)
Highland County	51091	72.9%	(21.0%, 96.4%)	74.9%	(66.5%, 81.7%)
King George County	51099	53.5%	(26.7%, 78.4%)	66.5%	(62.0%, 70.8%)
Madison County	51113	45.0%	(20.2%, 72.6%)	75.7%	(72.7%, 78.4%)
Orange County	51137	75.0%	(56.7%, 87.3%)	76.4%	(72.6%, 79.7%)
Page County	51139	81.5%	(53.4%, 94.4%)	69.6%	(65.1%, 73.8%)
Rappahannock County	51157	83.2%	(40.1%, 96.2%)	77.4%	(73.5%, 80.9%)
Rockbridge County	51163	84.0%	(67.3%, 93.1%)	70.4%	(65.1%, 75.3%)
Rockingham County	51165	70.5%	(51.3%, 84.4%)	72.5%	(68.9%, 75.9%)
Shenandoah County	51171	72.8%	(52.1%, 86.8%)	76.0%	(72.0%, 79.5%)
Spotsylvania County	51177	71.4%	(58.0%, 81.8%)	75.6%	(72.2%, 78.6%)
Stafford County	51179	79.1%	(68.7%, 86.7%)	73.0%	(69.5%, 76.3%)
Warren County	51187	69.4%	(48.4%, 84.6%)	72.0%	(67.8%, 75.9%)
Buena Vista City	51530	85.5%	(28.7%, 97.6%)	75.9%	(69.3%, 81.4%)
Fredericksburg City	51630	72.7%	(49.7%, 87.8%)	73.9%	(70.4%, 77.1%)
Harrisonburg City	51660	96.6%	(60.2%, 98.3%)	75.6%	(69.8%, 80.6%)
Lexington City	51678	100.0%	(0.6%, 100.0%)	74.6%	(67.7%, 80.4%)
Staunton City	51790	58.0%	(16.3%, 90.7%)	77.0%	(72.8%, 80.7%)
Waynesboro	51820	100.0%	(23.9%,	77.1%	(72.7%, 81.0%)

City			100.0%)		
Winchester City	51840	64.3%	(32.4%, 87.1%)	74.8%	(70.3%, 78.8%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Albemarle County	51003	81.3%	(62.6%, 91.9%)	77.2%	(73.9%, 80.2%)
Alleghany County	51005	70.2%	(43.2%, 87.9%)	71.7%	(67.3%, 75.7%)
Amherst County	51009	74.3%	(54.8%, 87.4%)	72.1%	(67.7%, 76.2%)
Appomattox County	51011	80.8%	(63.3%, 91.1%)	76.5%	(72.5%, 80.2%)
Arlington City	51013	70.4%	(57.6%, 80.7%)	73.5%	(70.4%, 76.4%)
Bedford County	51019	78.1%	(66.5%, 86.5%)	76.6%	(73.1%, 79.9%)
Botetourt County	51023	71.9%	(47.0%, 88.0%)	77.4%	(74.0%, 80.4%)
Campbell County	51031	69.9%	(56.0%, 80.9%)	69.7%	(65.6%, 73.4%)
Craig County	51045	79.1%	(40.9%, 95.4%)	70.6%	(60.8%, 78.9%)
Fairfax County	51059	71.6%	(66.4%, 76.3%)	71.5%	(68.9%, 73.9%)
Fluvanna County	51065	82.2%	(57.5%, 94.0%)	75.5%	(70.1%, 80.3%)
Greene County	51079	87.3%	(44.5%, 96.1%)	74.5%	(70.2%, 78.4%)
Loudoun County	51107	72.1%	(63.1%, 79.6%)	74.7%	(71.6%, 77.5%)
Louisa County	51109	72.6%	(43.1%, 90.3%)	75.1%	(71.3%, 78.5%)
Nelson County	51125	47.6%	(11.8%, 86.1%)	72.3%	(68.0%, 76.2%)
Prince William County	51153	73.8%	(66.8%, 79.8%)	67.8%	(64.8%, 70.8%)
Roanoke County	51161	80.4%	(69.5%, 88.1%)	76.3%	(73.6%, 78.7%)
Alexandria City	51510	65.7%	(52.3%, 77.0%)	68.8%	(65.8%, 71.6%)
Charlottesville City	51540	78.0%	(58.2%, 90.1%)	76.1%	(70.8%, 80.8%)
Covington City	51580	42.8%	(3.4%, 94.1%)	56.8%	(41.3%, 71.1%)
Fairfax City	51600	77.0%	(60.5%, 88.0%)	76.0%	(71.3%, 80.2%)
Falls Church City	51610	66.4%	(28.0%, 90.9%)	73.9%	(67.9%, 79.2%)
Lynchburg City	51680	68.0%	(51.9%, 80.7%)	69.7%	(65.4%, 73.8%)
Manassas City	51683	46.0%	(21.0%, 73.2%)	64.6%	(57.6%, 71.1%)
Manassas Park City	51685	44.1%	(6.5%, 89.9%)	74.5%	(64.4%, 82.6%)
Salem City	51775	89.4%	(39.4%, 96.6%)	70.9%	(65.8%, 75.5%)

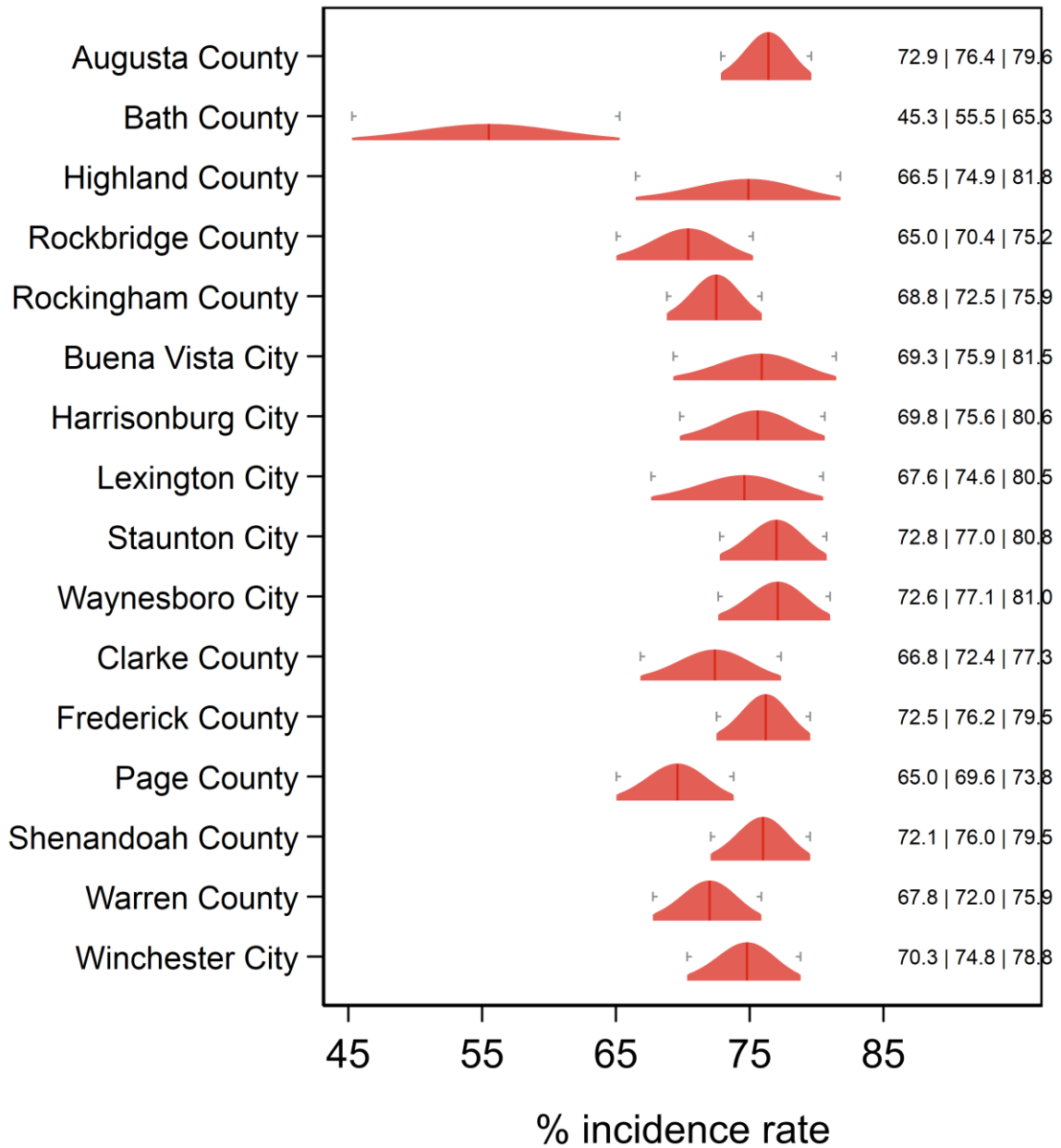
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Bland County	51021	55.0%	(12.1%, 91.6%)	68.4%	(63.4%, 73.0%)
Buchanan County	51027	55.1%	(31.0%, 77.0%)	65.3%	(58.4%, 71.7%)
Carroll County	51035	70.3%	(41.6%, 88.7%)	67.4%	(62.0%, 72.4%)
Dickenson County	51051	88.9%	(61.8%, 96.9%)	77.0%	(71.8%, 81.5%)
Floyd County	51063	49.8%	(24.8%, 74.8%)	71.7%	(65.2%, 77.4%)
Franklin County	51067	59.4%	(42.5%, 74.2%)	74.6%	(70.8%, 78.1%)
Giles County	51071	58.2%	(25.2%, 85.3%)	67.8%	(60.7%, 74.2%)
Grayson County	51077	46.0%	(21.0%, 73.2%)	63.4%	(56.4%, 69.9%)
Henry County	51089	72.5%	(57.6%, 83.6%)	62.6%	(58.7%, 66.4%)
Lee County	51105	70.0%	(43.7%, 87.5%)	68.8%	(63.7%, 73.4%)
Montgomery County	51121	71.9%	(58.9%, 82.0%)	75.5%	(72.1%, 78.7%)
Patrick County	51141	60.2%	(36.8%, 79.7%)	65.8%	(61.7%, 69.8%)
Pittsylvania County	51143	63.6%	(49.6%, 75.6%)	66.8%	(63.3%, 70.1%)
Pulaski County	51155	77.5%	(57.8%, 89.6%)	72.3%	(67.0%, 77.0%)
Russell County	51167	60.2%	(33.9%, 81.7%)	68.7%	(64.0%, 73.0%)
Scott County	51169	73.9%	(56.9%, 85.9%)	72.7%	(68.9%, 76.1%)
Smyth County	51173	77.0%	(58.7%, 88.7%)	69.4%	(65.5%, 73.1%)
Tazewell County	51185	74.1%	(56.8%, 86.2%)	75.4%	(71.6%, 78.8%)
Washington County	51191	80.2%	(66.2%, 89.3%)	74.3%	(71.0%, 77.4%)
Wise County	51195	69.2%	(53.9%, 81.1%)	75.2%	(71.0%, 79.0%)
Wythe County	51197	57.9%	(37.7%, 75.8%)	70.7%	(66.6%, 74.5%)
Bristol City	51520	50.8%	(7.5%, 92.9%)	65.4%	(57.7%, 72.4%)
Danville City	51590	34.6%	(14.1%, 63.1%)	63.1%	(59.4%, 66.7%)
Galax City	51640	100.0%	(0.6%, 100.0%)	66.3%	(57.0%, 74.5%)
Martinsville City	51690	77.0%	(36.4%, 95.1%)	60.3%	(50.9%, 69.0%)
Norton City	51720	23.2%	(0.6%, 97.0%)	70.7%	(62.1%, 78.0%)
Radford City	51750	81.0%	(50.9%, 94.6%)	72.4%	(64.8%, 78.8%)
Roanoke City	51770	72.7%	(58.3%, 83.6%)	71.4%	(66.8%, 75.6%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Amelia County	51007	91.8%	(59.8%, 96.7%)	73.4%	(69.5%, 77.0%)
Brunswick County	51025	31.5%	(14.1%, 56.3%)	63.0%	(52.3%, 72.6%)
Buckingham County	51029	58.7%	(25.9%, 85.3%)	60.0%	(51.4%, 68.0%)
Charles City County	51036	85.3%	(16.3%, 97.9%)	70.7%	(65.8%, 75.2%)
Charlotte County	51037	44.7%	(21.1%, 71.0%)	53.8%	(44.7%, 62.5%)
Chesterfield County	51041	70.7%	(62.9%, 77.5%)	71.6%	(69.5%, 73.7%)
Cumberland County	51049	49.3%	(19.3%, 79.9%)	61.6%	(56.6%, 66.3%)
Dinwiddie County	51053	71.0%	(49.9%, 85.8%)	58.5%	(54.0%, 62.8%)
Goochland County	51075	68.8%	(26.7%, 93.0%)	76.4%	(73.0%, 79.5%)
Greensville County	51081	63.3%	(34.7%, 84.9%)	50.6%	(41.7%, 59.4%)
Halifax County	51083	66.1%	(47.4%, 80.9%)	59.3%	(53.7%, 64.7%)
Hanover County	51085	86.0%	(72.7%, 93.4%)	77.4%	(74.2%, 80.4%)
Henrico County	51087	66.0%	(55.8%, 74.8%)	68.7%	(66.2%, 71.1%)
Lunenburg County	51111	54.4%	(21.8%, 83.6%)	52.9%	(45.0%, 60.7%)
Mecklenburg County	51117	66.4%	(46.9%, 81.5%)	65.7%	(61.8%, 69.3%)
New Kent County	51127	71.3%	(43.2%, 89.1%)	77.9%	(74.8%, 80.7%)
Nottoway County	51135	70.7%	(47.4%, 86.6%)	67.5%	(63.1%, 71.5%)
Powhatan County	51145	76.6%	(43.7%, 93.3%)	79.1%	(75.8%, 82.0%)
Prince Edward County	51147	57.1%	(31.3%, 79.6%)	71.3%	(67.7%, 74.6%)
Prince George County	51149	73.6%	(54.6%, 86.6%)	70.6%	(66.8%, 74.2%)
Surry County	51181	79.6%	(31.1%, 94.9%)	72.0%	(67.1%, 76.4%)
Sussex County	51183	41.6%	(19.0%, 68.5%)	63.9%	(57.4%, 69.8%)
Colonial Heights City	51570	65.1%	(38.7%, 84.7%)	68.0%	(61.8%, 73.7%)
Emporia City	51595	100.0%	(3.0%, 100.0%)	23.7%	(13.2%, 38.8%)
Hopewell City	51670	53.2%	(24.1%, 80.2%)	61.4%	(55.1%, 67.4%)
Petersburg	51730	75.3%	(52.7%, 89.3%)	54.3%	(45.1%, 63.2%)

City					
Richmond City	51760	64.7%	(53.6%, 74.4%)	59.0%	(52.9%, 64.9%)

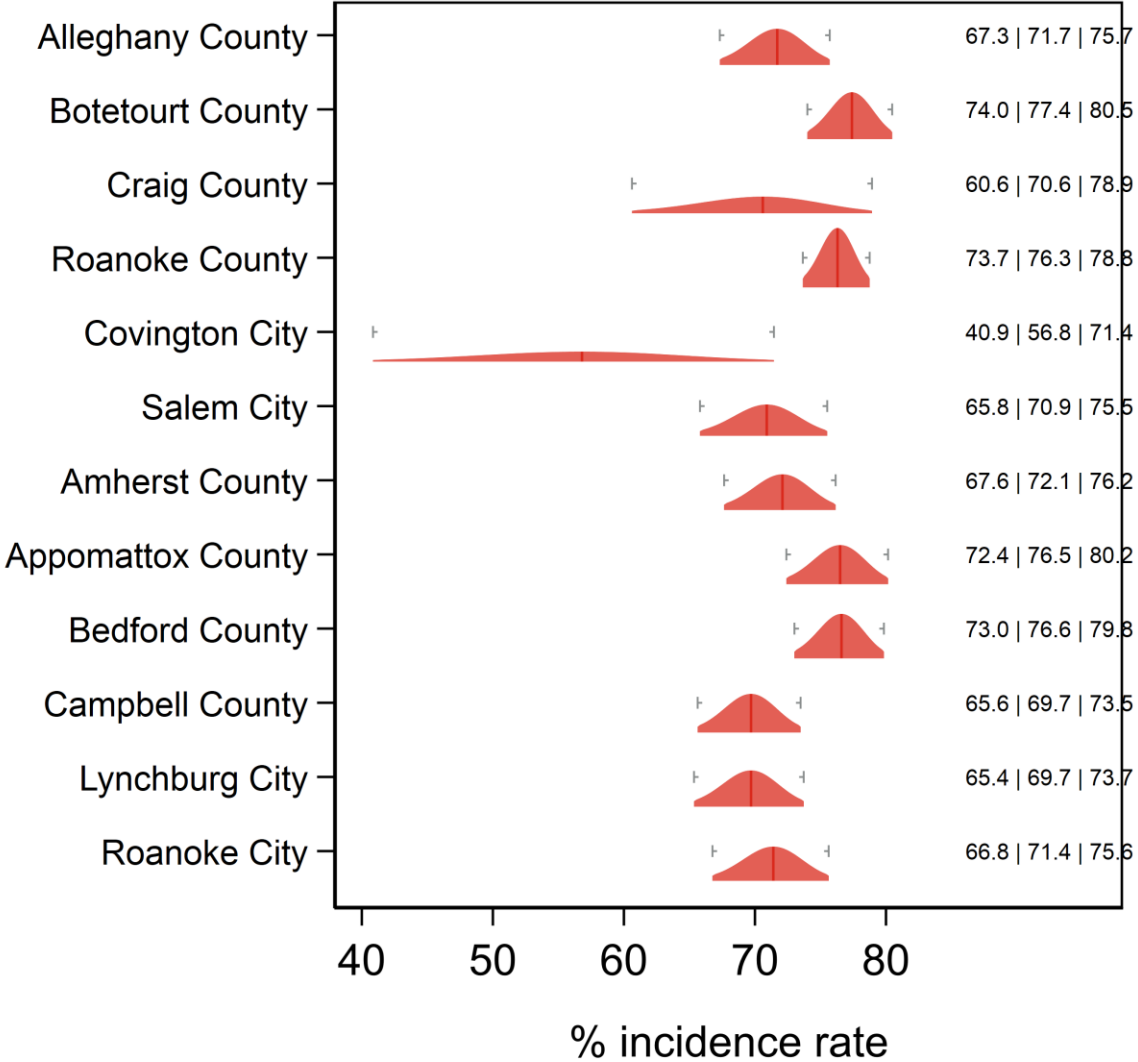
County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE CI
Accomack County	51001	60.2%	(41.0%, 76.7%)	60.4%	(53.2%, 67.1%)
Essex County	51057	85.0%	(63.2%, 94.9%)	69.4%	(63.0%, 75.2%)
Gloucester County	51073	78.6%	(59.8%, 90.0%)	73.7%	(70.6%, 76.6%)
Isle of Wight County	51093	75.2%	(53.6%, 88.9%)	70.3%	(67.0%, 73.4%)
James City County	51095	74.5%	(60.1%, 85.0%)	77.2%	(73.9%, 80.1%)
King and Queen County	51097	52.3%	(14.8%, 87.4%)	73.6%	(68.8%, 77.9%)
King William County	51101	90.6%	(53.6%, 96.0%)	76.0%	(73.4%, 78.5%)
Lancaster County	51103	71.9%	(37.2%, 91.7%)	61.0%	(53.7%, 67.8%)
Mathews County	51115	87.7%	(66.1%, 94.3%)	79.1%	(74.2%, 83.3%)
Middlesex County	51119	73.1%	(40.3%, 91.6%)	64.6%	(58.4%, 70.4%)
Northampton County	51131	72.5%	(48.6%, 88.0%)	68.3%	(64.0%, 72.3%)
Northumberland County	51133	83.4%	(56.1%, 95.2%)	56.7%	(45.3%, 67.5%)
Richmond County	51159	58.5%	(38.1%, 76.4%)	62.3%	(54.7%, 69.4%)
Southampton County	51175	75.6%	(53.2%, 89.4%)	66.2%	(60.7%, 71.3%)
Westmoreland County	51193	68.6%	(43.6%, 86.0%)	64.8%	(60.3%, 69.0%)
York County	51199	88.9%	(74.3%, 95.7%)	76.8%	(73.8%, 79.5%)
Chesapeake City	51550	68.4%	(59.6%, 76.0%)	71.2%	(68.5%, 73.8%)
Franklin City	51620	85.0%	(28.8%, 97.6%)	71.5%	(62.8%, 78.9%)
Hampton City	51650	62.9%	(52.2%, 72.4%)	62.1%	(58.7%, 65.2%)
Newport News City	51700	56.3%	(44.7%, 67.3%)	63.9%	(60.0%, 67.6%)
Norfolk City	51710	61.3%	(51.9%, 70.0%)	60.7%	(55.1%, 66.1%)
Poquoson City	51735	56.1%	(19.9%, 86.7%)	76.1%	(71.2%, 80.4%)
Portsmouth City	51740	47.2%	(34.9%, 59.9%)	59.7%	(53.4%, 65.8%)
Suffolk City	51800	78.1%	(65.8%, 86.9%)	70.2%	(67.1%, 73.2%)
Virginia Beach City	51810	79.3%	(72.8%, 84.5%)	74.7%	(72.0%, 77.2%)
Williamsburg City	51830	82.7%	(34.6%, 97.8%)	79.7%	(75.1%, 83.6%)

Tetanus Vaccination in the Past 10 Years Central Shenandoah and Lord Fairfax HDs



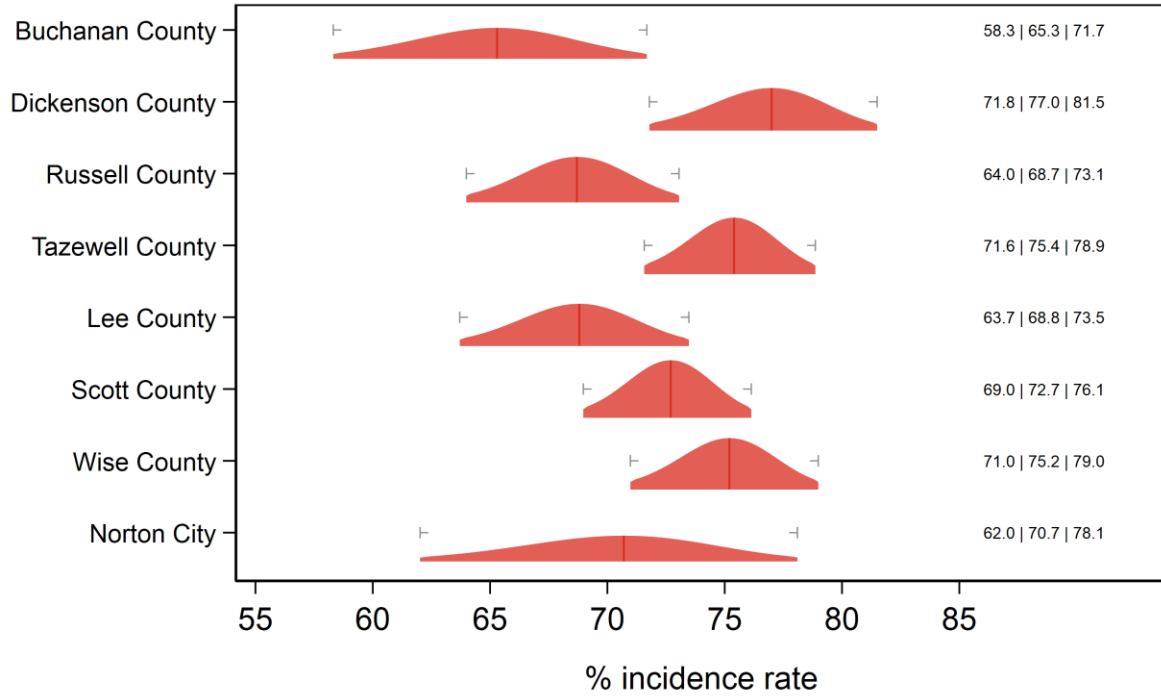
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
Gray markers: 95% confidence interval

Tetanus Vaccination in the Past 10 Years Alleghany, Roanoke and Central Virginia HDs



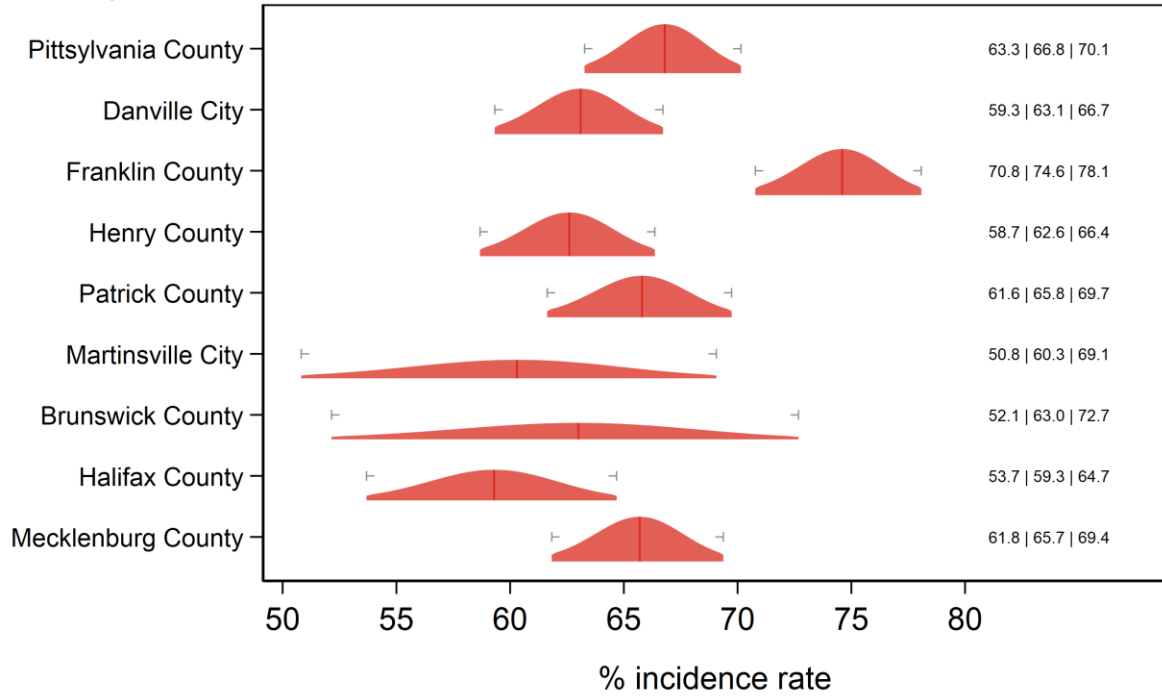
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Tetanus Vaccination in the Past 10 Years Cumberland Plateau and Lenowisco HDs



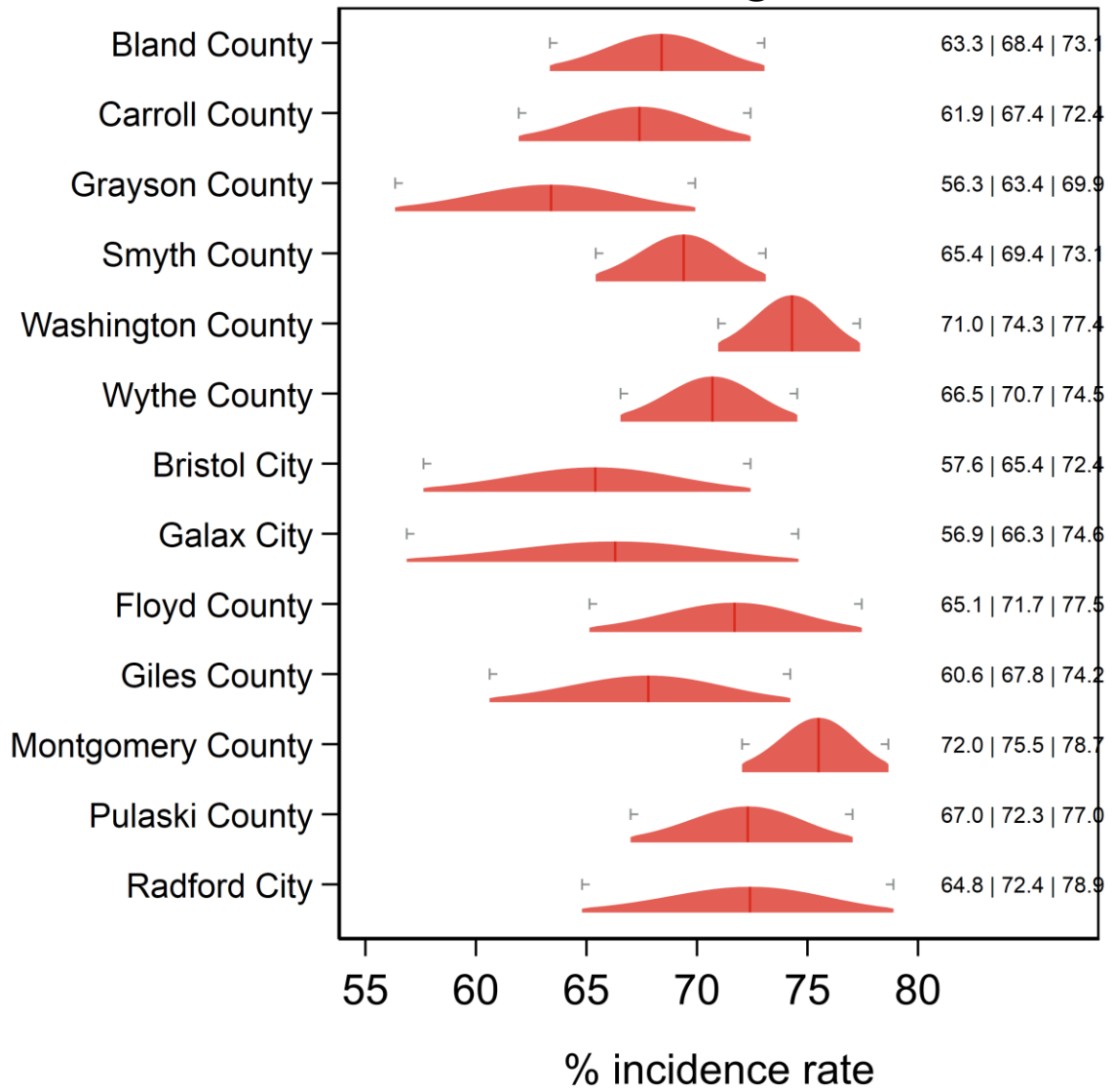
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 Gray markers: 95% confidence interval

Tetanus Vaccination in the Past 10 Years Pittsylvania/Danville, Southside and West Piedmont HDs



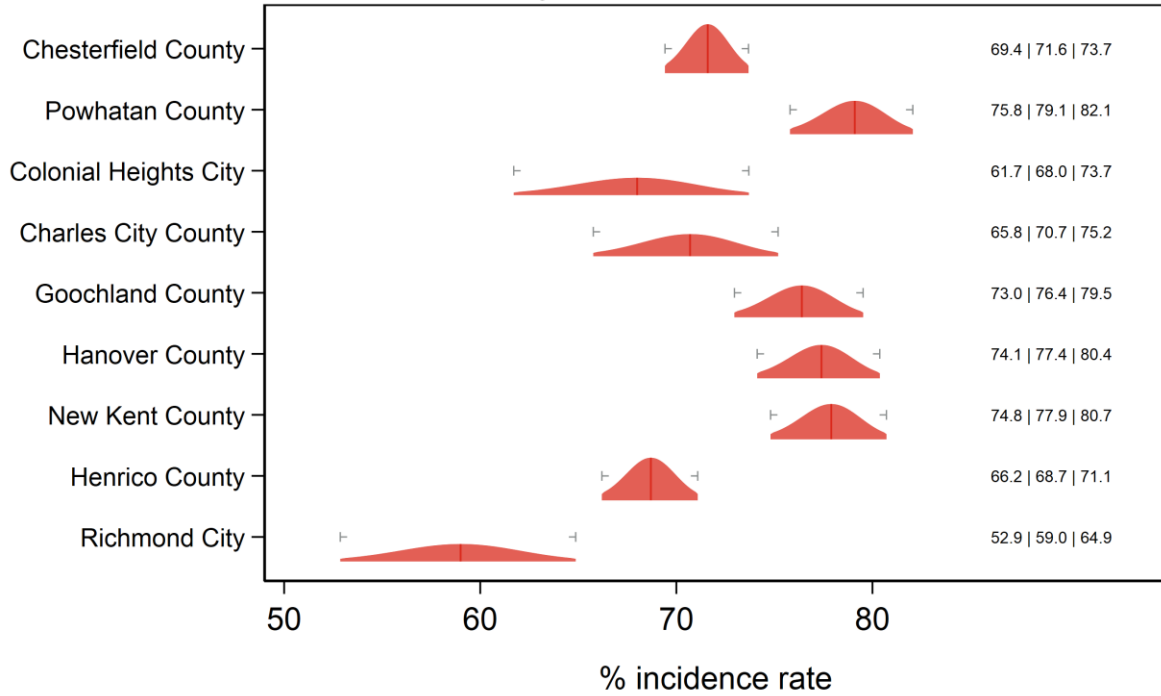
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Tetanus Vaccination in the Past 10 Years New River and Mount Rogers HDs



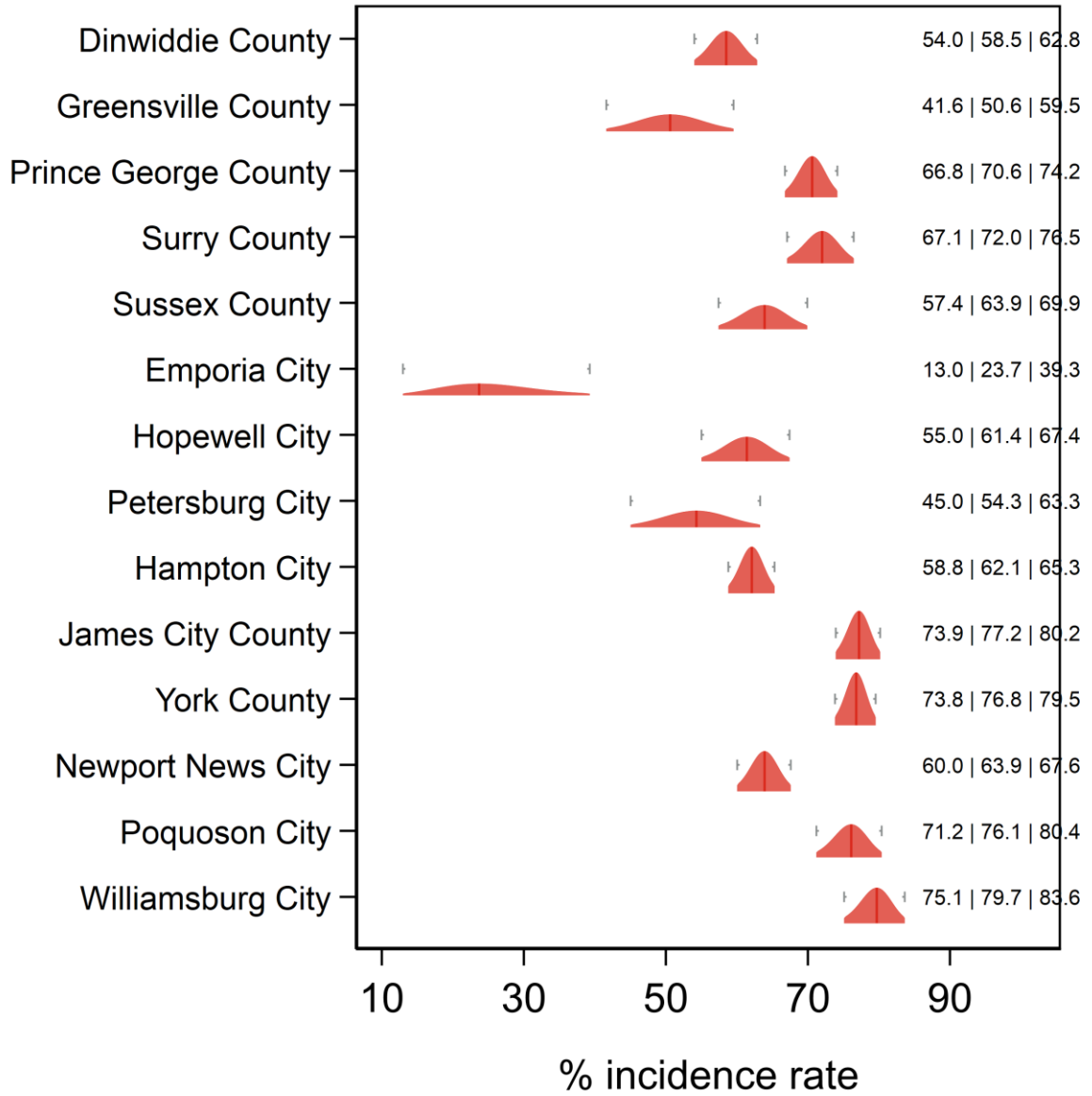
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Tetanus Vaccination in the Past 10 Years Chesterfield, Chickahominy, Henrico and Richmond HDs



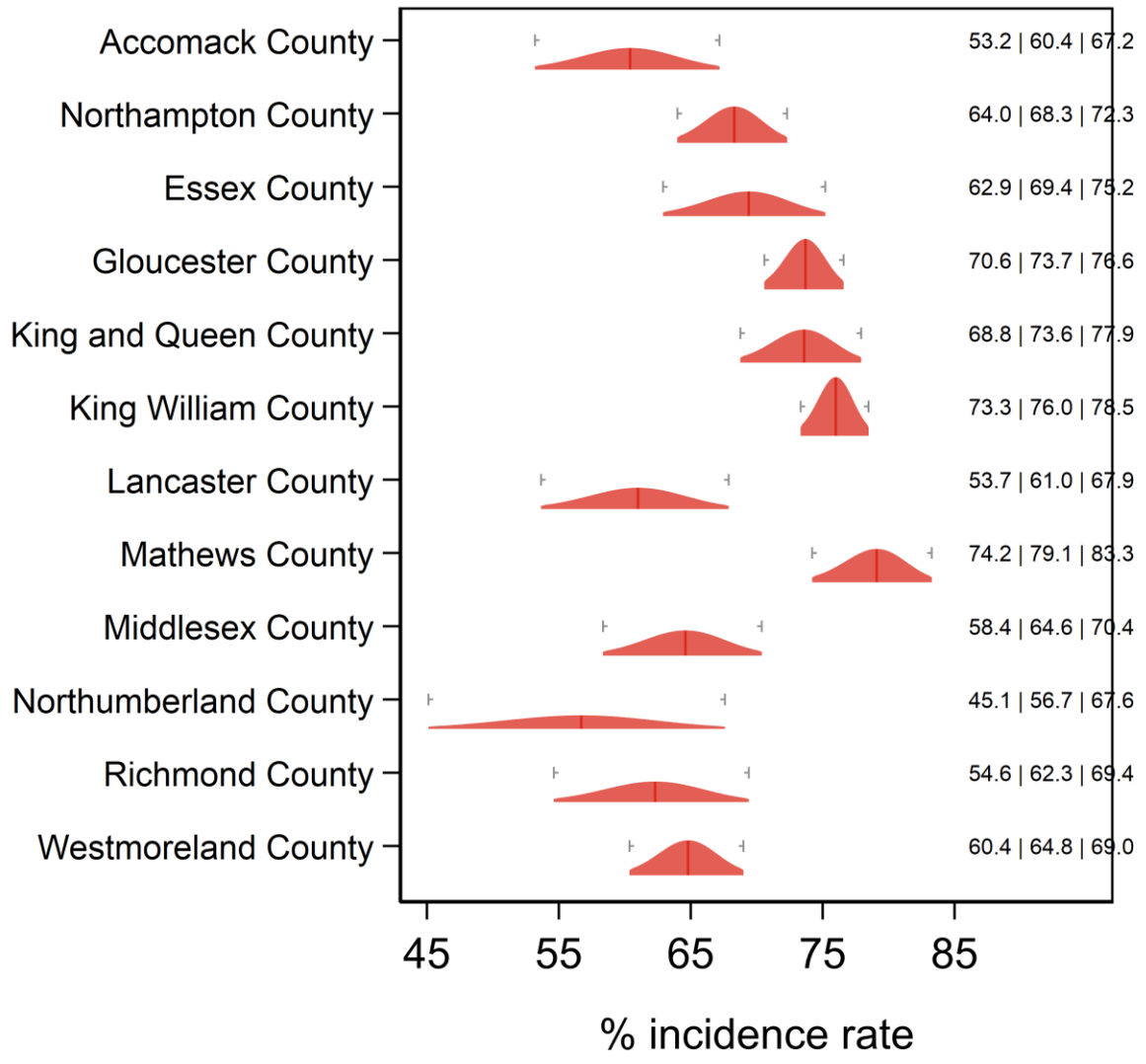
Text at right: 2-sided 95% LCB | Point Estimate | 2-sided 95% UCB
 Gray markers: 95% confidence interval

Tetanus Vaccination in the Past 10 Years Crater, Peninsula and Hampton HDs



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

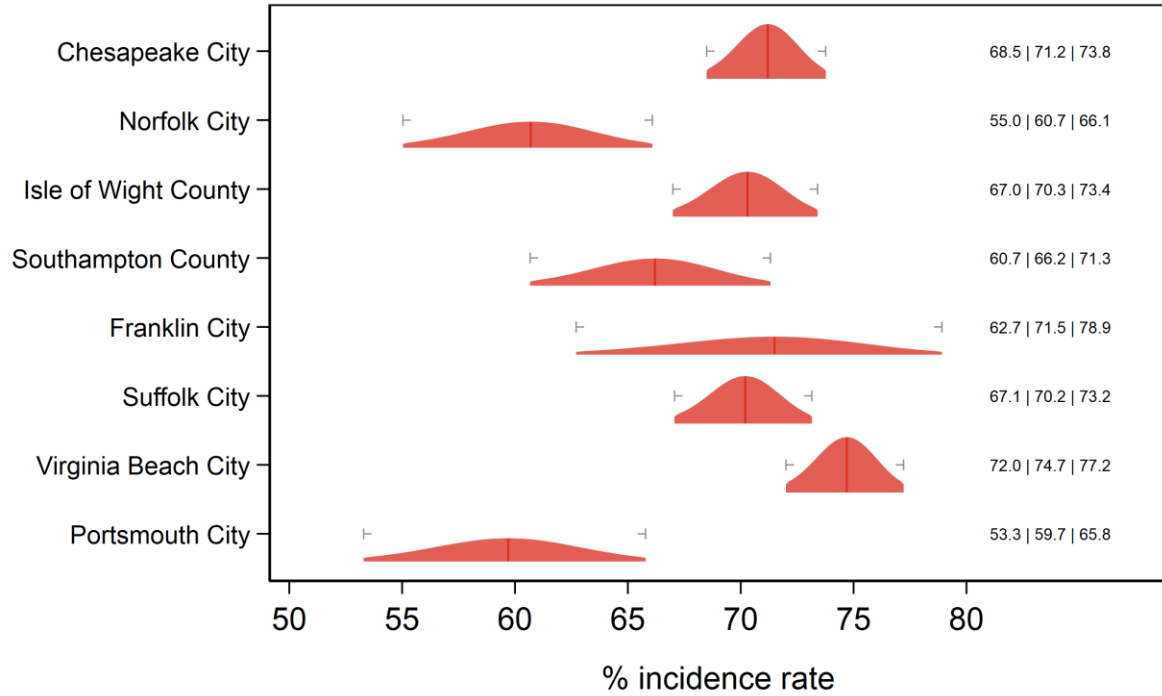
Tetanus Vaccination in the Past 10 Years Eastern Shore and Three Rivers HDs



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

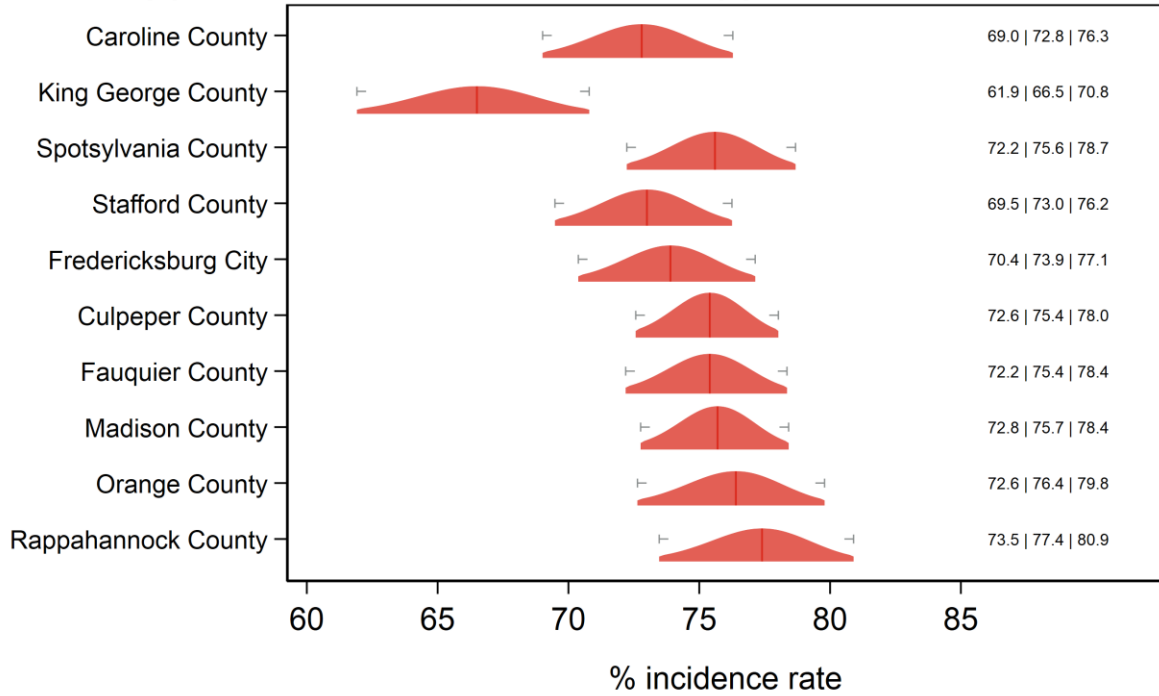
Tetanus Vaccination in the Past 10 Years

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

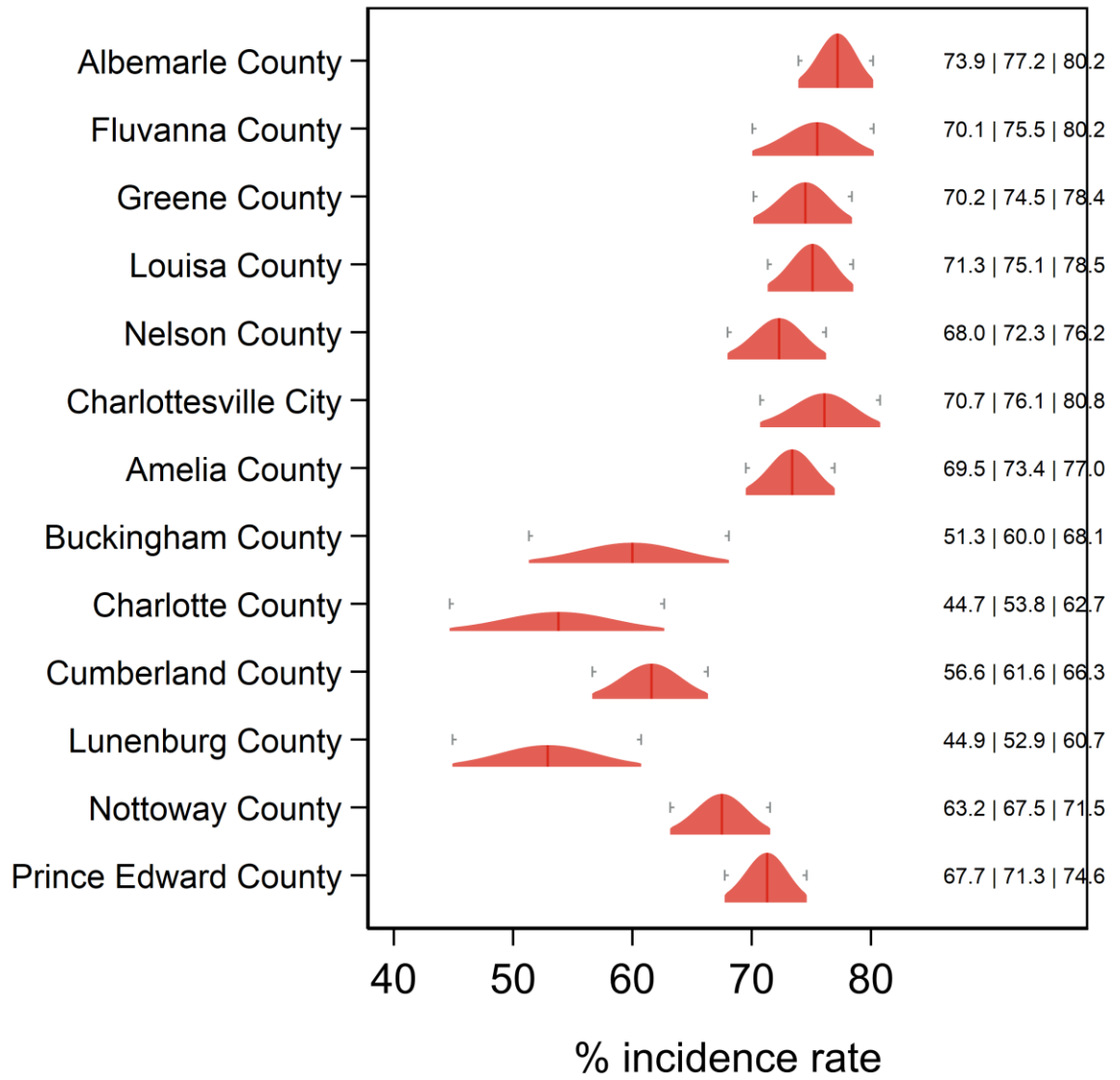
Tetanus Vaccination in the Past 10 Years Rappahannock/Rapidan and Rappahannock HDs



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

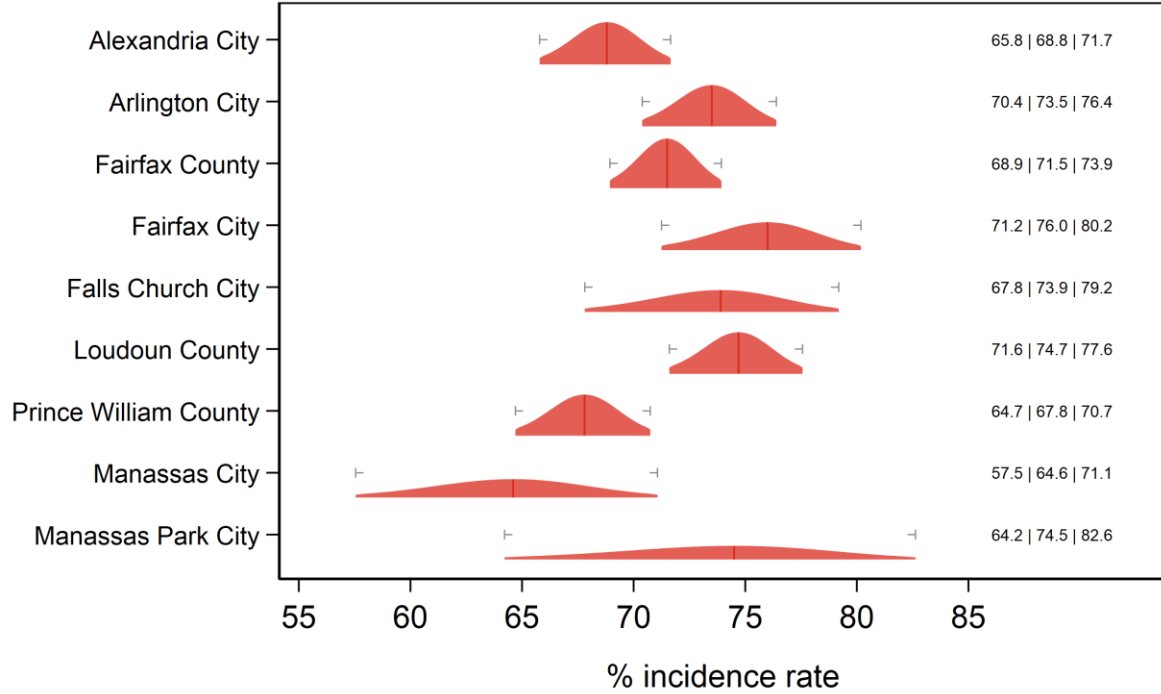
Tetanus Vaccination in the Past 10 Years

Thomas Jefferson and Piedmont HDs



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

Tetanus Vaccination in the Past 10 Years 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

Additional diagnostics

Direct estimate is inside the 95% SAE Wilson CI: 43 areas.

Direct estimate is outside the 95% SAE Wilson CI: 90 areas.

SAE estimate is inside the 95% direct Wilson CI: 128 areas.

SAE estimate is outside the 95% direct Wilson CI: 5 areas.

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

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 17 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: 129 areas.

SAE standard error is greater than the (nonzero) direct standard error: 0 areas.

Direct standard error is zero: 4 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.35%; med = 25.72%; max = 77.42%.

Proportion of SAE variance due to sampling error in regression coefficient estimates: min = 21.97%; med = 71.04%; max = 97.73%.

Proportion of SAE variance due to model selection: min = 0.03%; med = 1.14%; max = 37.41%.

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