Indicator 25: Tetanus Diphtheria (Tdap)

Internal variable name: outc25_tdap_vacc

Section 1: Definition

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?")

Section 2: Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 25: Tetanus Diphtheria (Tdap)			
Non-Hispanic Black vs. Non-Hispanic White	-0.1338	-0.1051	-0.1051
	(0.1059)	(0.1096)	(0.1124)
Non-Hispanic Asian vs. Non-Hispanic White	0.0338	-0.0287	-0.0287
	(0.1906)	(0.2335)	(0.1968)
Non-Hispanic Other vs. Non-Hispanic White	-0.3658	-0.3680	-0.3680
	(0.1968)	(0.2024)	(0.1943)
Hispanic vs. Non-Hispanic White	-0.2963	-0.3406	-0.3406
	(0.1851)	(0.1869)	(0.1875)
Female	0.4645***	0.4769***	0.4769***
	(0.0604)	(0.0756)	(0.0620)
Age 18-24 vs. 65+	0.9006***	0.9019***	0.9019***
	(0.1835)	(0.1532)	(0.1853)
Age 25-34 vs. 65+	0.9090***	0.9040***	0.9040***
	(0.1124)	(0.1217)	(0.1126)
Age 35-44 vs. 65+	0.7263***	0.7167***	0.7166***
	(0.1022)	(0.1141)	(0.1031)
Age 45-54 vs. 65+	0.5139***	0.4965***	0.4965***
	(0.1330)	(0.1050)	(0.1362)
Age 55-64 vs. 65+	0.3561***	0.3501***	0.3501***
	(0.0877)	(0.1009)	(0.0890)
% age 65-74		-0.6489	-0.6485
		(0.8843)	(0.9658)
Non-stratified sociodemographic domain index		0.1324*	0.1324*
		(0.0571)	(0.0586)
Esophagus Cancer Male Rate		-0.0139	-0.0139
		(0.0074)	(0.0079)
% Non-Hispanic minority among adults 18 to 64		-0.0093*	-0.0093*

		(0.0047)	(0.0045)
Liver Cancer Male Rate		-0.0316**	-0.0316**
		(0.0103)	(0.0096)
{% Non-Hispanic minority among adults 18 to 64}		0.0007*	0.0007*
interacted with {Liver Cancer Male Rate}		(0.0003)	(0.0003)
Historic SAE: current smoking rate		0.8778**	0.8778**
		(0.3179)	(0.2907)
Square of {Historic SAE: current smoking rate}		-0.0054**	-0.0054**
		(0.0019)	(0.0018)
Intercept	-1.9007***	-37.2568**	-37.2571**
	(0.0759)	(12.9653)	(11.8980)
Area effect variance	0.0292		0.0000
	(0.0180)		(0.0000)

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

Section 3: Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Augusta County	51015	33.8%	(24.9%, 44.1%)	29.4%	(26.1%, 32.9%)
Bath County	51017	8.3%	(2.1%, 48.6%)	26.6%	(17.2%, 38.8%)
Caroline County	51033	30.1%	(12.1%, 57.4%)	20.6%	(15.2%, 27.2%)
Clarke County	51043	2.3%	(1.2%, 26.0%)	22.9%	(17.8%, 28.9%)
Culpeper County	51047	17.0%	(9.1%, 29.4%)	23.5%	(21.1%, 26.1%)
Fauquier County	51061	21.3%	(12.1%, 34.8%)	21.6%	(18.0%, 25.6%)
Frederick County	51069	24.0%	(15.4%, 35.4%)	30.0%	(25.8%, 34.6%)
Highland County	51091	0.0%	(0.0%, 83.2%)	18.9%	(3.4%, 60.5%)
King George County	51099	16.0%	(3.8%, 48.1%)	21.2%	(17.9%, 24.9%)
Madison County	51113	28.1%	(10.5%, 56.6%)	21.9%	(18.4%, 25.9%)
Orange County	51137	17.2%	(8.2%, 32.6%)	25.8%	(21.9%, 30.1%)
Page County	51139	19.2%	(5.8%, 47.9%)	20.9%	(18.1%, 23.9%)
Rappahannock County	51157	30.6%	(11.2%, 60.7%)	19.9%	(14.4%, 26.8%)
Rockbridge County	51163	25.6%	(10.9%, 49.1%)	28.7%	(24.8%, 32.9%)
Rockingham County	51165	26.1%	(15.6%, 40.2%)	29.2%	(25.3%, 33.5%)
Shenandoah County	51171	26.8%	(14.2%, 44.6%)	27.0%	(23.4%, 31.1%)
Spotsylvania County	51177	31.1%	(19.7%, 45.3%)	25.9%	(23.4%, 28.7%)
Stafford County	51179	19.7%	(12.8%, 29.0%)	26.6%	(23.7%, 29.8%)
Warren County	51187	32.6%	(16.6%, 53.9%)	26.8%	(23.8%, 30.0%)
Buena Vista City	51530	0.0%	(0.0%, 99.4%)	10.7%	(6.5%, 17.1%)
Fredericksburg City	51630	11.0%	(3.3%, 30.9%)	25.4%	(21.7%, 29.5%)
Harrisonburg City	51660	10.4%	(2.9%, 47.9%)	15.0%	(10.5%, 21.0%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	16.7%	(12.3%, 22.2%)
Staunton City	51790	39.5%	(10.6%, 78.1%)	21.5%	(19.0%, 24.2%)
Waynesboro City	51820	23.2%	(6.8%, 55.7%)	14.9%	(10.6%, 20.4%)
Winchester City	51840	28.7%	(11.5%, 55.6%)	17.0%	(12.7%, 22.3%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Albemarle County	51003	37.2%	(26.4%, 49.4%)	31.5%	(28.0%, 35.1%)
Alleghany County	51005	37.6%	(20.4%, 58.6%)	24.1%	(19.4%, 29.6%)
Amherst County	51009	25.6%	(12.2%, 46.1%)	24.6%	(22.2%, 27.1%)
Appomattox County	51011	17.1%	(5.9%, 40.4%)	19.3%	(16.4%, 22.5%)
Arlington City	51013	28.3%	(19.9%, 38.6%)	28.3%	(25.8%, 30.9%)
Bedford County	51019	25.0%	(14.7%, 39.2%)	25.8%	(23.3%, 28.6%)
Botetourt County	51023	32.3%	(19.1%, 49.2%)	27.0%	(23.7%, 30.7%)
Campbell County	51031	13.9%	(5.3%, 31.9%)	28.9%	(25.1%, 33.0%)
Craig County	51045	80.7%	(17.4%, 97.2%)	28.5%	(20.9%, 37.6%)
Fairfax County	51059	32.6%	(26.6%, 39.3%)	29.7%	(26.5%, 33.0%)
Fluvanna County	51065	13.8%	(5.4%, 38.1%)	23.8%	(19.9%, 28.2%)
Greene County	51079	16.6%	(4.1%, 48.5%)	25.3%	(21.6%, 29.4%)
Loudoun County	51107	28.0%	(20.6%, 36.8%)	28.6%	(25.7%, 31.7%)
Louisa County	51109	38.2%	(19.7%, 61.0%)	26.4%	(23.7%, 29.4%)
Nelson County	51125	26.1%	(10.0%, 53.0%)	21.6%	(19.1%, 24.3%)
Prince William County	51153	21.6%	(16.0%, 28.5%)	28.3%	(25.2%, 31.6%)
Roanoke County	51161	25.2%	(18.1%, 34.0%)	28.3%	(25.6%, 31.1%)
Alexandria City	51510	18.5%	(11.8%, 27.8%)	26.9%	(24.2%, 29.7%)
Charlottesville City	51540	25.1%	(6.8%, 60.6%)	20.8%	(17.1%, 24.9%)
Covington City	51580	0.0%	(0.0%, 99.4%)	20.0%	(14.9%, 26.2%)
Fairfax City	51600	40.8%	(26.0%, 57.4%)	31.4%	(28.1%, 34.9%)
Falls Church City	51610	10.2%	(1.7%, 79.6%)	35.2%	(29.9%, 40.9%)
Lynchburg City	51680	18.2%	(9.0%, 33.3%)	17.0%	(12.6%, 22.5%)
Manassas City	51683	15.1%	(2.1%, 59.8%)	27.3%	(23.6%, 31.3%)
Manassas Park City	51685	0.0%	(0.0%, 99.4%)	14.5%	(8.1%, 24.5%)
Salem City	51775	21.6%	(5.7%, 55.6%)	25.6%	(22.8%, 28.7%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Bland County	51021	0.0%	(0.0%, 42.3%)	16.5%	(11.8%, 22.7%)
Buchanan County	51027	12.8%	(4.8%, 30.1%)	16.7%	(11.7%, 23.3%)
Carroll County	51035	24.6%	(12.4%, 42.7%)	20.2%	(16.5%, 24.5%)
Dickenson County	51051	18.9%	(8.3%, 37.6%)	19.9%	(15.1%, 25.7%)
Floyd County	51063	12.6%	(4.3%, 31.4%)	20.1%	(16.5%, 24.1%)
Franklin County	51067	40.4%	(23.3%, 60.3%)	29.0%	(25.0%, 33.5%)
Giles County	51071	34.0%	(11.5%, 67.0%)	22.8%	(19.2%, 26.9%)
Grayson County	51077	31.0%	(12.6%, 58.2%)	22.8%	(17.8%, 28.9%)
Henry County	51089	14.3%	(8.2%, 23.9%)	20.4%	(17.8%, 23.4%)
Lee County	51105	15.7%	(6.7%, 32.8%)	22.5%	(18.4%, 27.3%)
Montgomery County	51121	30.0%	(19.8%, 42.6%)	24.8%	(20.5%, 29.7%)
Patrick County	51141	36.6%	(20.0%, 57.0%)	21.9%	(18.3%, 26.0%)
Pittsylvania County	51143	31.9%	(22.3%, 43.3%)	21.7%	(17.9%, 26.1%)
Pulaski County	51155	17.8%	(8.9%, 32.5%)	28.7%	(24.4%, 33.3%)
Russell County	51167	8.3%	(4.7%, 22.7%)	20.7%	(17.1%, 24.7%)
Scott County	51169	26.5%	(15.7%, 41.1%)	29.2%	(24.2%, 34.7%)
Smyth County	51173	21.0%	(9.8%, 39.2%)	19.1%	(15.9%, 22.7%)
Tazewell County	51185	15.1%	(7.3%, 28.9%)	21.9%	(18.9%, 25.2%)
Washington County	51191	21.2%	(12.3%, 34.0%)	28.1%	(24.5%, 32.0%)
Wise County	51195	25.0%	(13.7%, 41.2%)	23.0%	(19.0%, 27.5%)
Wythe County	51197	33.2%	(19.4%, 50.6%)	21.1%	(17.9%, 24.7%)
Bristol City	51520	9.7%	(2.1%, 68.3%)	17.0%	(12.8%, 22.1%)
Danville City	51590	17.5%	(6.1%, 40.9%)	15.4%	(11.6%, 20.2%)
Galax City	51640	24.1%	(2.4%, 80.3%)	14.6%	(8.4%, 24.0%)
Martinsville City	51690	0.0%	(0.0%, 57.4%)	14.3%	(9.4%, 21.2%)
Norton City	51720	0.0%	(0.0%, 69.6%)	11.8%	(5.2%, 24.6%)
Radford City	51750	12.3%	(2.3%, 69.2%)	12.6%	(6.9%, 21.8%)
Roanoke City	51770	21.1%	(13.4%, 31.5%)	20.5%	(17.9%, 23.3%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Amelia County	51007	20.2%	(7.6%, 43.8%)	24.0%	(19.5%, 29.3%)
Brunswick County	51025	23.8%	(8.5%, 51.1%)	20.2%	(15.8%, 25.5%)
Buckingham County	51029	5.0%	(3.0%, 28.1%)	17.4%	(14.2%, 21.1%)
Charles City County	51036	8.8%	(2.2%, 54.6%)	16.3%	(10.7%, 24.1%)
Charlotte County	51037	13.0%	(3.8%, 36.2%)	15.5%	(12.4%, 19.3%)
Chesterfield County	51041	22.9%	(17.6%, 29.4%)	24.1%	(21.7%, 26.7%)
Cumberland County	51049	39.2%	(15.8%, 68.9%)	23.4%	(18.9%, 28.6%)
Dinwiddie County	51053	23.4%	(10.6%, 44.1%)	20.8%	(17.7%, 24.3%)
Goochland County	51075	14.7%	(5.8%, 32.7%)	15.7%	(11.6%, 20.9%)
Greensville County	51081	0.0%	(0.0%, 39.2%)	21.3%	(16.9%, 26.4%)
Halifax County	51083	6.4%	(2.3%, 16.5%)	17.9%	(14.0%, 22.7%)
Hanover County	51085	21.7%	(13.6%, 32.7%)	29.4%	(25.9%, 33.1%)
Henrico County	51087	26.5%	(20.1%, 34.0%)	25.3%	(23.2%, 27.5%)
Lunenburg County	51111	10.2%	(2.4%, 34.5%)	18.0%	(14.2%, 22.4%)
Mecklenburg County	51117	12.1%	(6.0%, 22.9%)	15.8%	(13.0%, 19.1%)
New Kent County	51127	24.3%	(9.0%, 51.0%)	23.5%	(18.5%, 29.4%)
Nottoway County	51135	21.6%	(5.5%, 56.6%)	16.0%	(11.6%, 21.6%)
Powhatan County	51145	6.5%	(2.8%, 45.2%)	16.6%	(12.9%, 21.0%)
Prince Edward County	51147	13.0%	(3.0%, 42.3%)	17.0%	(11.6%, 24.3%)
Prince George County	51149	17.1%	(7.2%, 35.4%)	22.3%	(19.8%, 25.1%)
Surry County	51181	17.9%	(3.3%, 58.4%)	20.4%	(15.2%, 26.9%)
Sussex County	51183	7.3%	(3.9%, 35.7%)	19.5%	(13.8%, 26.8%)
Colonial Heights City	51570	0.0%	(0.0%, 42.5%)	29.4%	(25.3%, 33.9%)
Emporia City	51595	31.4%	(2.7%, 88.9%)	22.3%	(14.1%, 33.5%)
Hopewell City	51670	32.9%	(11.4%, 65.1%)	23.3%	(20.0%, 26.9%)
Petersburg City	51730	19.6%	(7.2%, 43.2%)	23.1%	(15.9%, 32.4%)
Richmond City	51760	18.7%	(12.9%, 26.4%)	22.3%	(19.7%, 25.1%)

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Accomack County	51001	22.3%	(12.8%, 36.0%)	15.5%	(12.0%, 19.7%)
Essex County	51057	18.0%	(5.3%, 46.6%)	20.2%	(16.0%, 25.3%)
Gloucester County	51073	31.7%	(16.0%, 52.9%)	22.5%	(19.7%, 25.5%)
Isle of Wight County	51093	16.2%	(7.4%, 31.9%)	29.2%	(25.6%, 33.2%)
James City County	51095	26.7%	(16.5%, 40.2%)	26.7%	(24.0%, 29.7%)
King and Queen County	51097	21.9%	(3.3%, 69.7%)	23.7%	(18.6%, 29.7%)
King William County	51101	11.5%	(2.6%, 38.9%)	20.6%	(16.9%, 24.9%)
Lancaster County	51103	15.7%	(5.1%, 39.2%)	20.5%	(16.4%, 25.2%)
Mathews County	51115	20.8%	(7.0%, 47.9%)	24.0%	(18.5%, 30.5%)
Middlesex County	51119	13.7%	(3.6%, 70.6%)	25.1%	(20.4%, 30.4%)
Northampton County	51131	30.3%	(13.2%, 55.2%)	14.8%	(11.1%, 19.4%)
Northumberland County	51133	8.5%	(2.1%, 29.0%)	14.2%	(9.1%, 21.4%)
Richmond County	51159	16.9%	(6.7%, 36.6%)	21.8%	(17.6%, 26.7%)
Southampton County	51175	25.8%	(6.6%, 63.3%)	22.9%	(19.6%, 26.5%)
Westmoreland County	51193	15.4%	(3.8%, 45.6%)	17.3%	(14.6%, 20.3%)
York County	51199	31.0%	(17.7%, 48.3%)	26.9%	(23.3%, 30.8%)
Chesapeake City	51550	24.5%	(18.3%, 32.0%)	25.2%	(23.4%, 27.2%)
Franklin City	51620	38.0%	(20.1%, 59.9%)	21.9%	(17.6%, 26.9%)
Hampton City	51650	30.4%	(22.4%, 39.7%)	24.6%	(21.2%, 28.4%)
Newport News City	51700	23.0%	(15.6%, 32.5%)	24.2%	(21.2%, 27.6%)
Norfolk City	51710	19.9%	(13.6%, 28.2%)	21.4%	(18.9%, 24.1%)
Poquoson City	51735	30.7%	(4.7%, 80.0%)	27.5%	(21.8%, 34.0%)
Portsmouth City	51740	27.3%	(17.1%, 40.6%)	23.6%	(20.6%, 26.8%)
Suffolk City	51800	15.9%	(8.9%, 26.8%)	24.2%	(21.3%, 27.5%)
Virginia Beach City	51810	22.2%	(16.6%, 29.0%)	26.6%	(24.6%, 28.7%)
Williamsburg City	51830	44.1%	(9.2%, 86.0%)	11.5%	(5.2%, 23.6%)

Section 4: Graphical representation

TDAP vaccination since 2005
Rappahannock/Rapidan and Rappahannock HDs
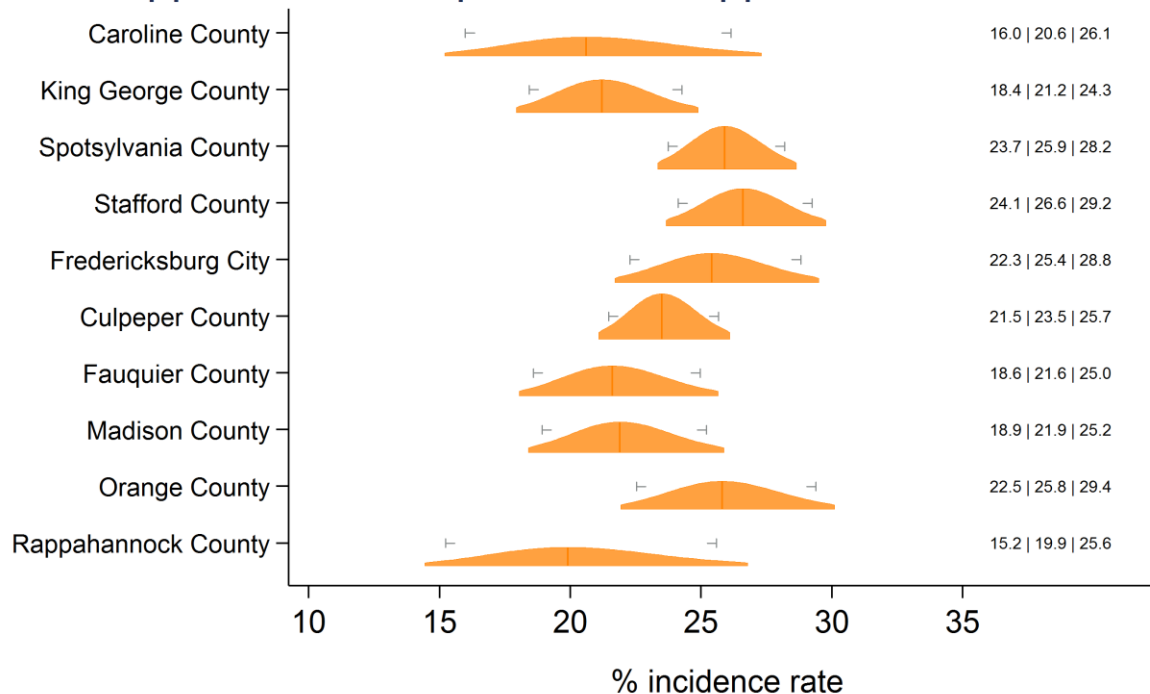
County	1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Caroline County	16.0 | 20.6 | 26.1
King George County	18.4 | 21.2 | 24.3
Spotsylvania County	23.7 | 25.9 | 28.2
Stafford County	24.1 | 26.6 | 29.2
Fredericksburg City	22.3 | 25.4 | 28.8
Culpeper County	21.5 | 23.5 | 25.7
Fauquier County	18.6 | 21.6 | 25.0
Madison County	18.9 | 21.9 | 25.2
Orange County	22.5 | 25.8 | 29.4
Rappahannock County	15.2 | 19.9 | 25.6

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Alleghany, Roanoke and Central Virginia HDs
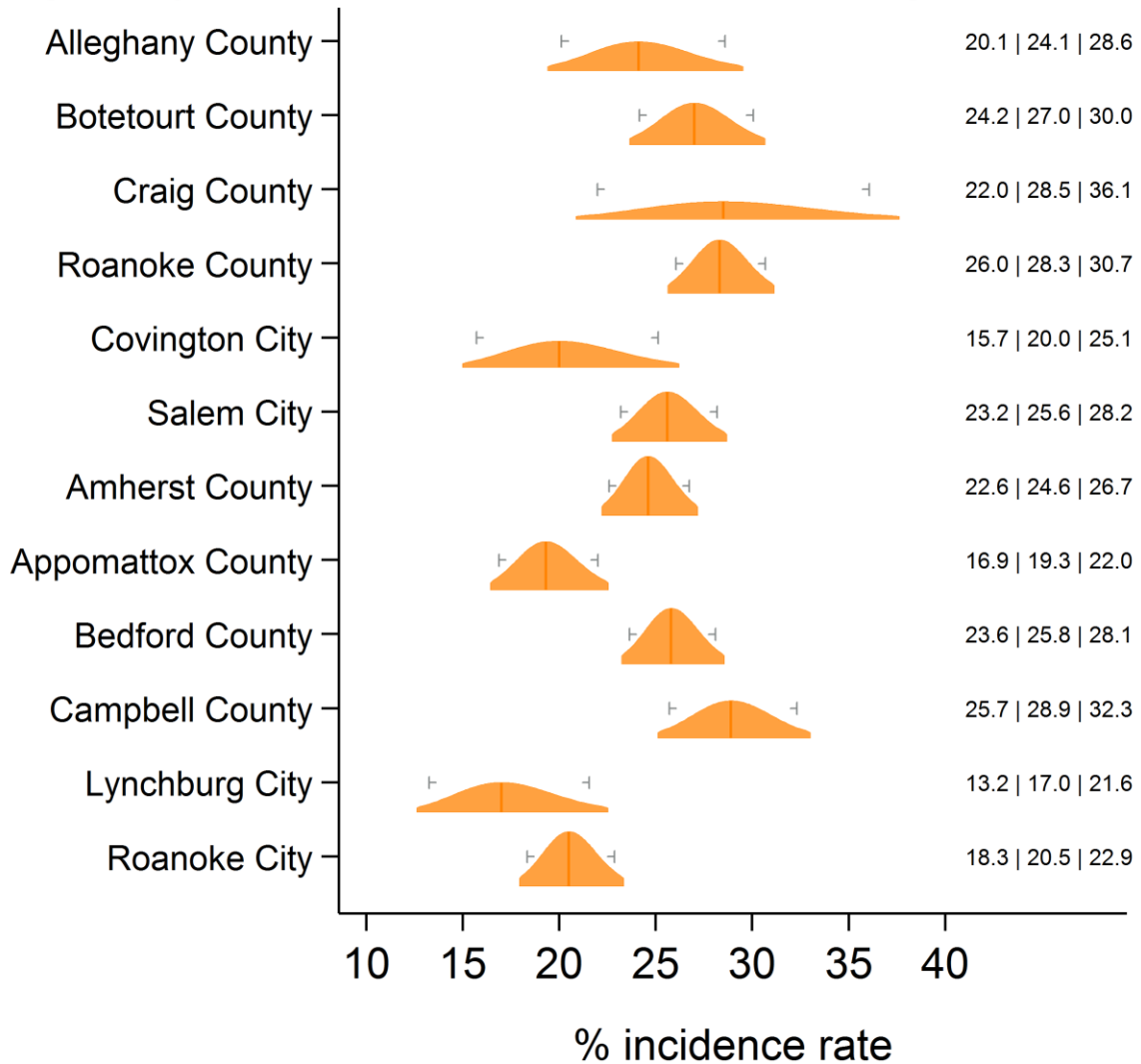
County	LCB | Point | UCB
Alleghany County	20.1 | 24.1 | 28.6
Botetourt County	24.2 | 27.0 | 30.0
Craig County	22.0 | 28.5 | 36.1
Roanoke County	26.0 | 28.3 | 30.7
Covington City	15.7 | 20.0 | 25.1
Salem City	23.2 | 25.6 | 28.2
Amherst County	22.6 | 24.6 | 26.7
Appomattox County	16.9 | 19.3 | 22.0
Bedford County	23.6 | 25.8 | 28.1
Campbell County	25.7 | 28.9 | 32.3
Lynchburg City	13.2 | 17.0 | 21.6
Roanoke City	18.3 | 20.5 | 22.9

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Alexandria, Fairfax, Arlington, Loudon, Prince William HDs
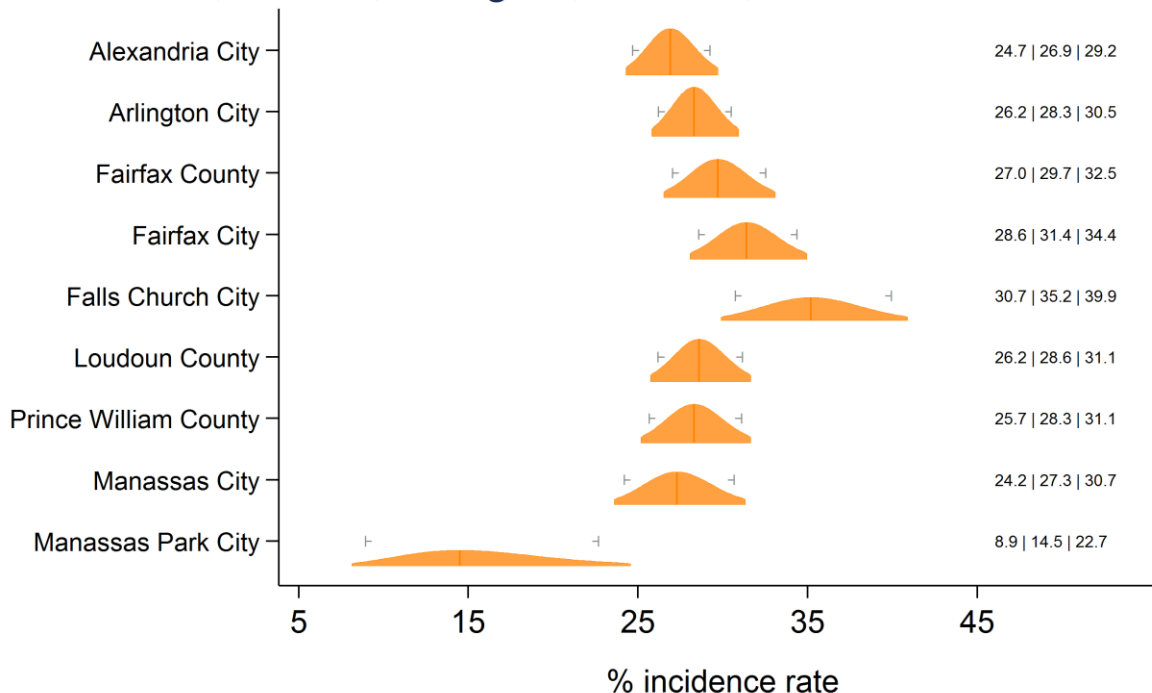
Health District	Values
Alexandria City	24.7	26.9	29.2
Arlington City	26.2	28.3	30.5
Fairfax County	27.0	29.7	32.5
Fairfax City	28.6	31.4	34.4
Falls Church City	30.7	35.2	39.9
Loudoun County	26.2	28.6	31.1
Prince William County	25.7	28.3	31.1
Manassas City	24.2	27.3	30.7
Manassas Park City	8.9	14.5	22.7

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Cumberland Plateau and Lenowisco HDs
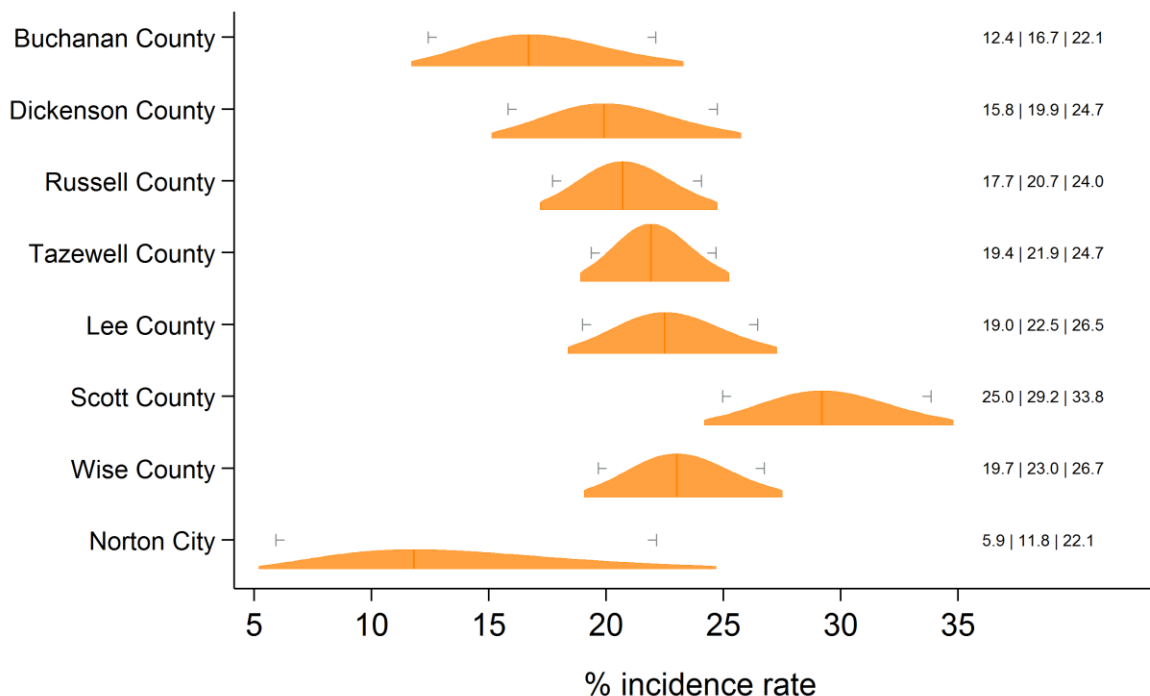
County	1-sided 95% LCB	Point Estimate	1-sided 95% UCB
Buchanan County	12.4	16.7	22.1
Dickenson County	15.8	19.9	24.7
Russell County	17.7	20.7	24.0
Tazewell County	19.4	21.9	24.7
Lee County	19.0	22.5	26.5
Scott County	25.0	29.2	33.8
Wise County	19.7	23.0	26.7
Norton City	5.9	11.8	22.1

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Norfolk,Portsmouth,Chesapeake,VA Beach,W. Tidewater HDs
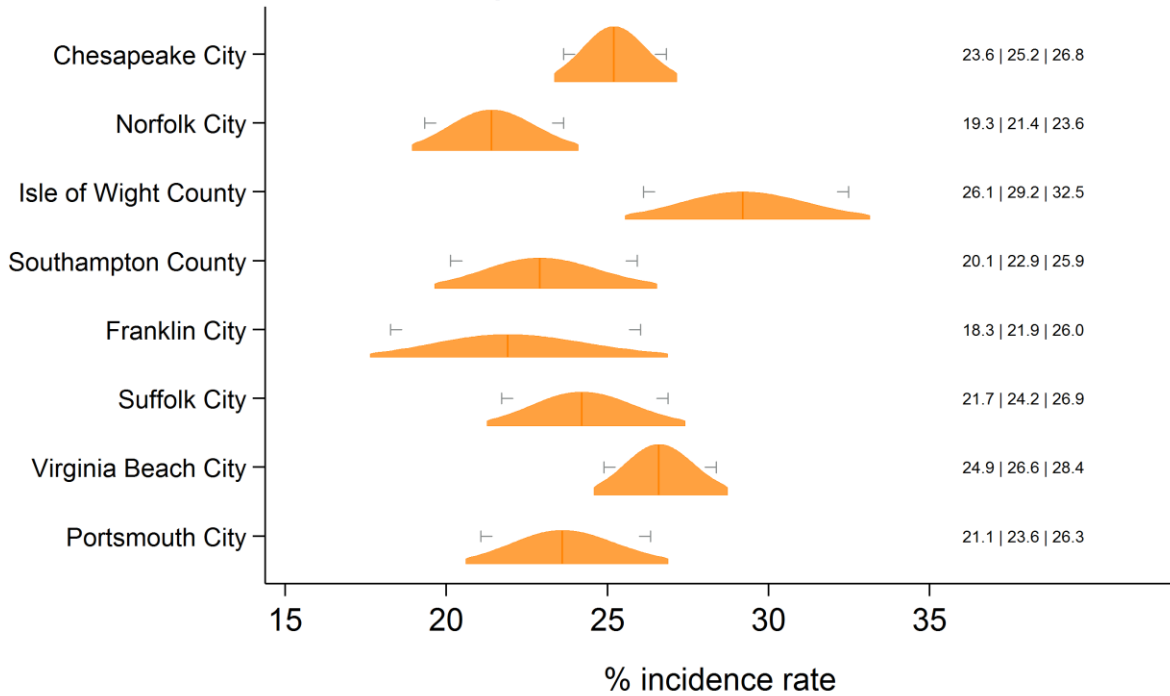
Chesapeake City	23.6 | 25.2 | 26.8
Norfolk City	19.3 | 21.4 | 23.6
Isle of Wight County	26.1 | 29.2 | 32.5
Southampton County	20.1 | 22.9 | 25.9
Franklin City	18.3 | 21.9 | 26.0
Suffolk City	21.7 | 24.2 | 26.9
Virginia Beach City	24.9 | 26.6 | 28.4
Portsmouth City	21.1 | 23.6 | 26.3

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Pittsylvania/Danville, Southside and West Piedmont HDs

County	1-sided 95% LCB	Point Estimate	1-sided 95% UCB
Pittsylvania County	18.5	21.7	25.3
Danville City	12.1	15.4	19.4
Franklin County	25.6	29.0	32.7
Henry County	18.1	20.4	22.9
Patrick County	18.8	21.9	25.3
Martinsville City	10.1	14.3	19.9
Brunswick County	16.4	20.2	24.6
Halifax County	14.6	17.9	21.8
Mecklenburg County	13.4	15.8	18.5

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Chesterfield, Chickahominy, Henrico and Richmond HDs
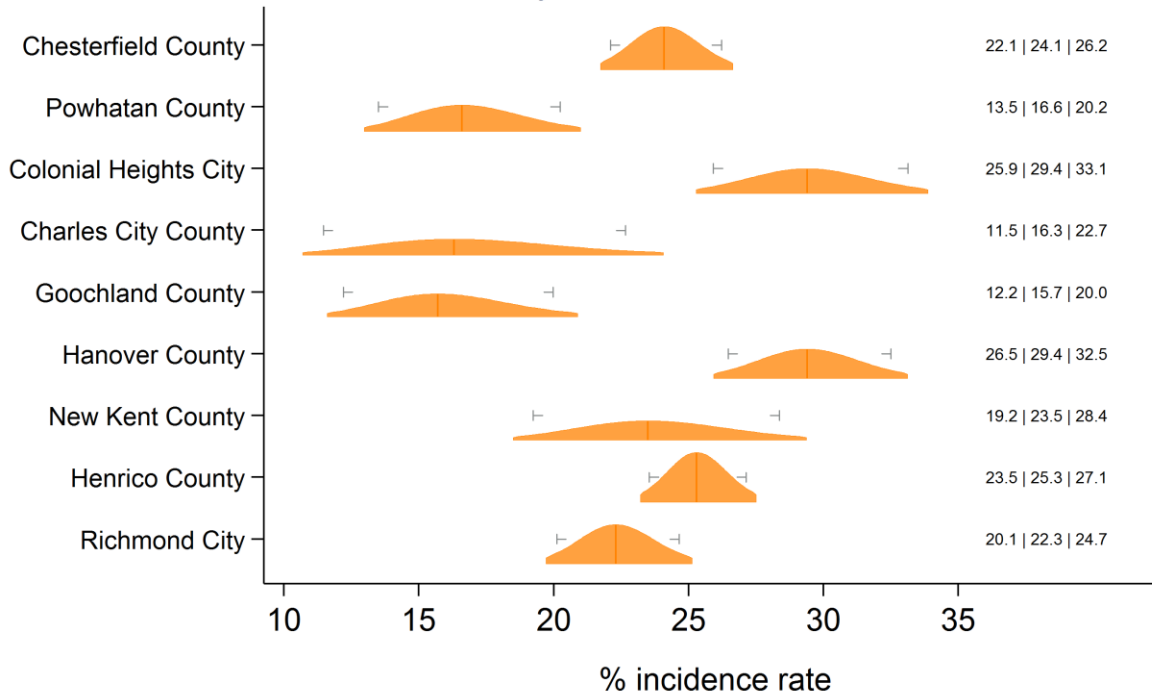
Chesterfield County	22.1 | 24.1 | 26.2
Powhatan County	13.5 | 16.6 | 20.2
Colonial Heights City	25.9 | 29.4 | 33.1
Charles City County	11.5 | 16.3 | 22.7
Goochland County	12.2 | 15.7 | 20.0
Hanover County	26.5 | 29.4 | 32.5
New Kent County	19.2 | 23.5 | 28.4
Henrico County	23.5 | 25.3 | 27.1
Richmond City	20.1 | 22.3 | 24.7

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
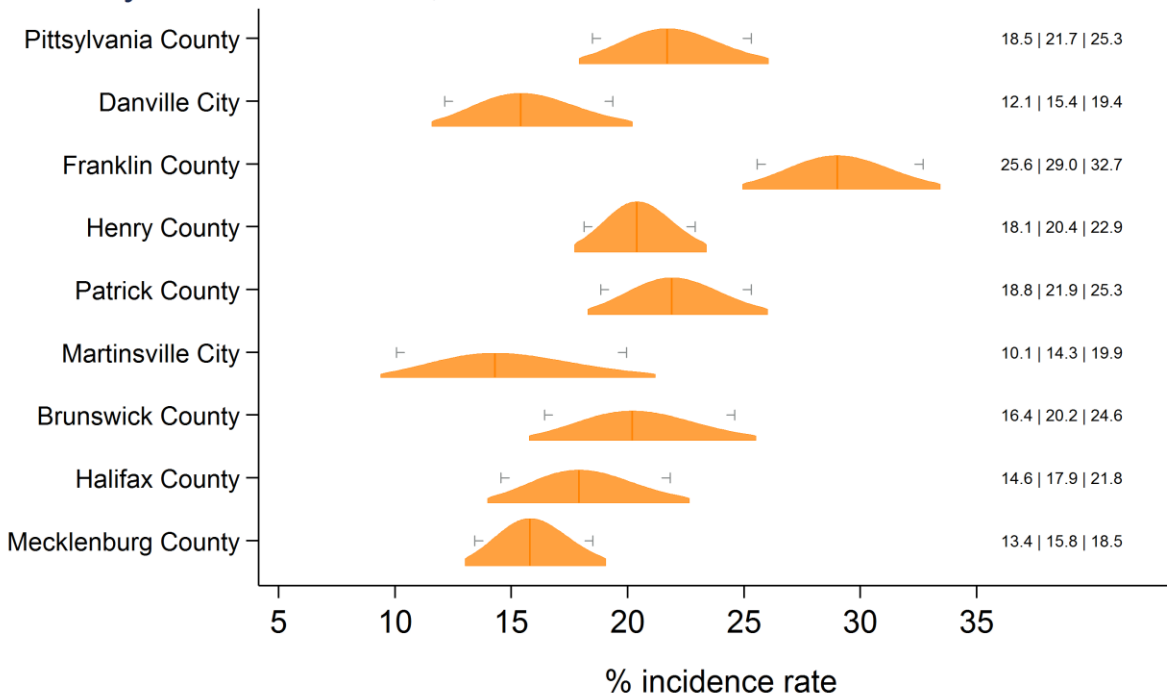# Central Shenandoah and Lord Fairfax HDs

County	LCB	Point	UCB
Augusta County	26.6	29.4	32.3
Bath County	18.5	26.6	36.7
Highland County	4.5	18.9	53.4
Rockbridge County	25.4	28.7	32.2
Rockingham County	25.9	29.2	32.7
Buena Vista City	7.0	10.7	16.0
Harrisonburg City	11.1	15.0	19.9
Lexington City	13.0	16.7	21.2
Staunton City	19.4	21.5	23.7
Waynesboro City	11.3	14.9	19.5
Clarke County	18.6	22.9	27.9
Frederick County	26.4	30.0	33.8
Page County	18.6	20.9	23.4
Shenandoah County	23.9	27.0	30.4
Warren County	24.2	26.8	29.5
Winchester City	13.3	17.0	21.4

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Thomas Jefferson and Piedmont HDs
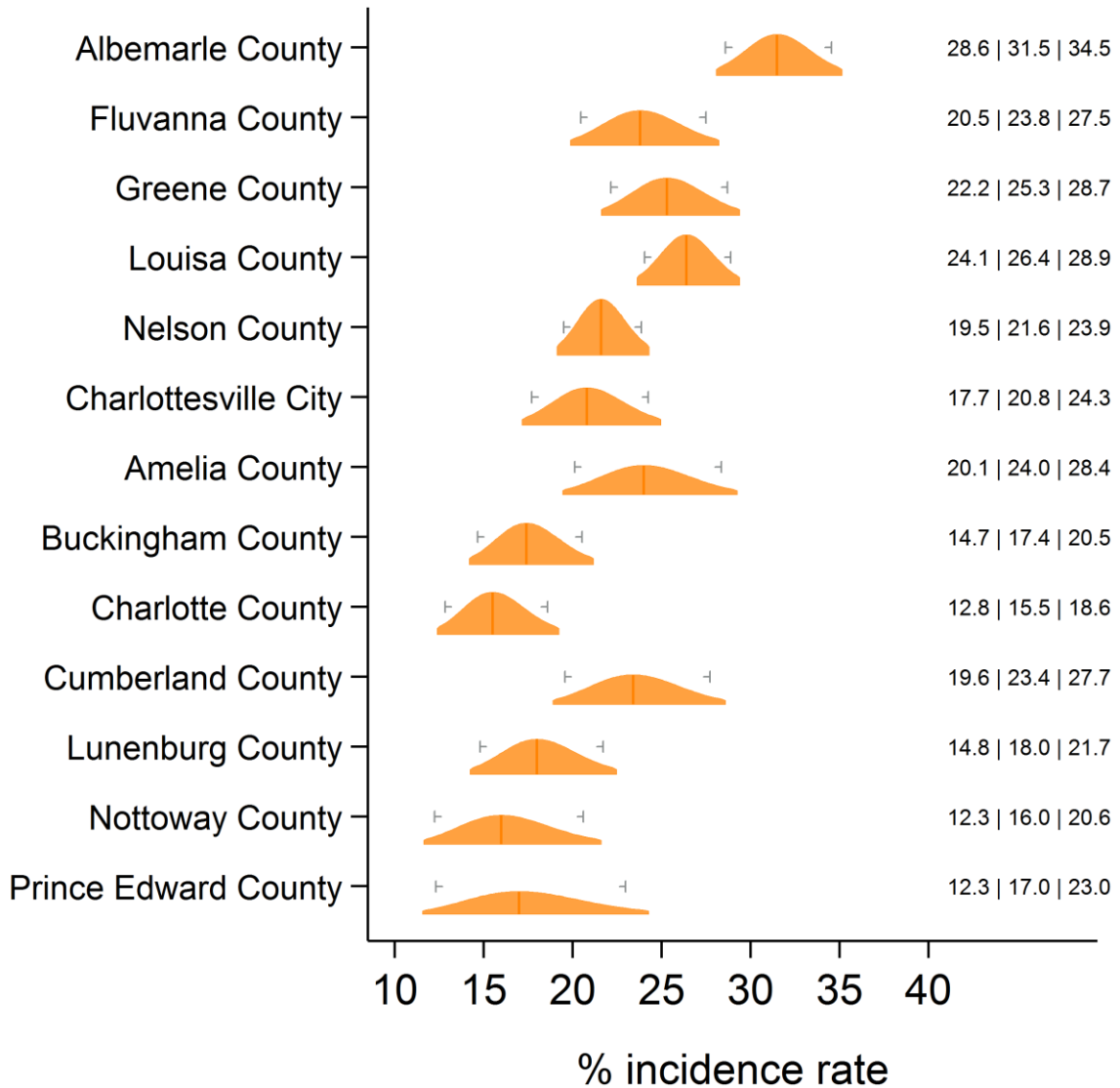
County	LCB | Point | UCB
Albemarle County	28.6 | 31.5 | 34.5
Fluvanna County	20.5 | 23.8 | 27.5
Greene County	22.2 | 25.3 | 28.7
Louisa County	24.1 | 26.4 | 28.9
Nelson County	19.5 | 21.6 | 23.9
Charlottesville City	17.7 | 20.8 | 24.3
Amelia County	20.1 | 24.0 | 28.4
Buckingham County	14.7 | 17.4 | 20.5
Charlotte County	12.8 | 15.5 | 18.6
Cumberland County	19.6 | 23.4 | 27.7
Lunenburg County	14.8 | 18.0 | 21.7
Nottoway County	12.3 | 16.0 | 20.6
Prince Edward County	12.3 | 17.0 | 23.0

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
New River and Mount Rogers HDs
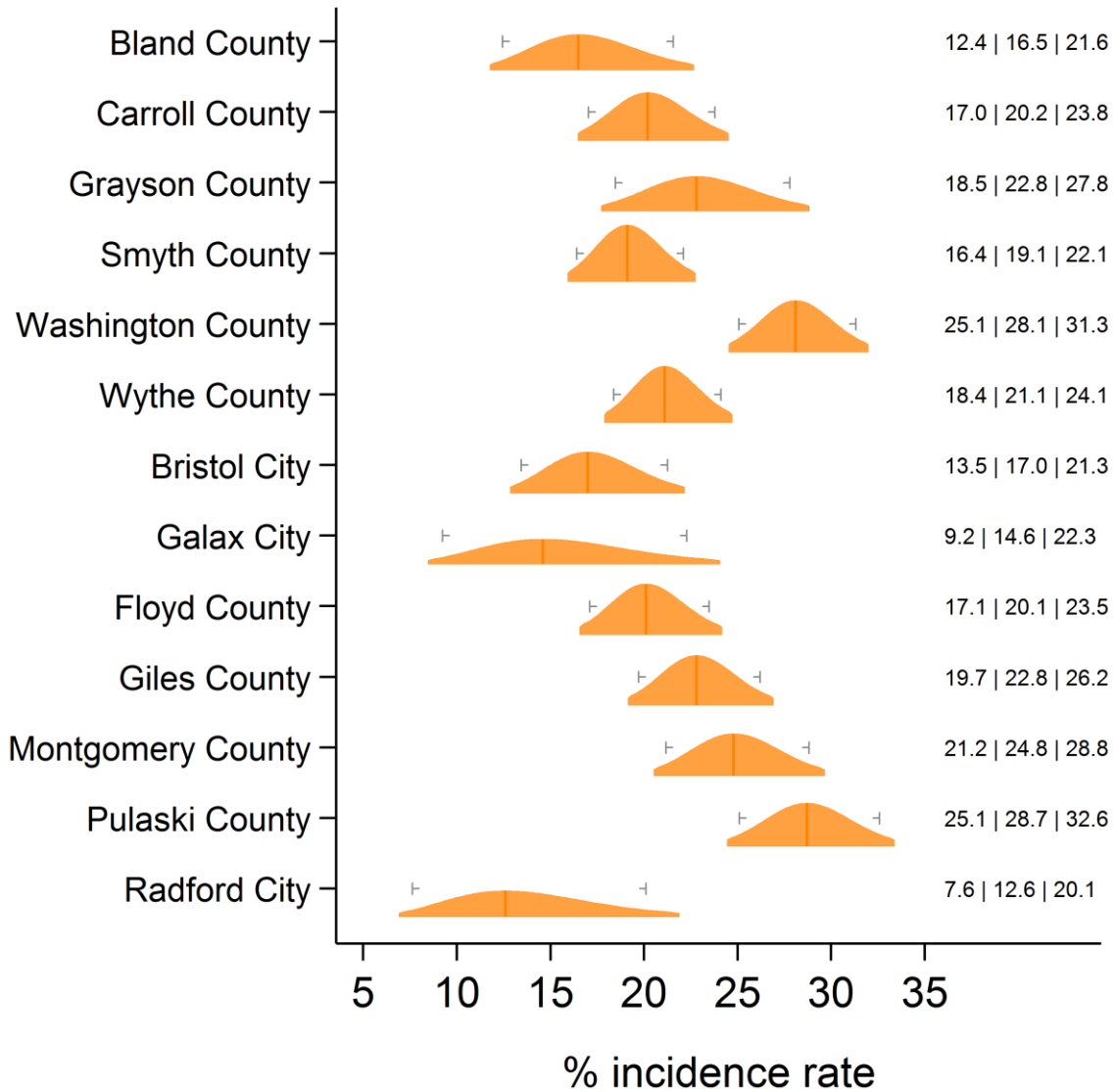
County	1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Bland County	12.4 | 16.5 | 21.6
Carroll County	17.0 | 20.2 | 23.8
Grayson County	18.5 | 22.8 | 27.8
Smyth County	16.4 | 19.1 | 22.1
Washington County	25.1 | 28.1 | 31.3
Wythe County	18.4 | 21.1 | 24.1
Bristol City	13.5 | 17.0 | 21.3
Galax City	9.2 | 14.6 | 22.3
Floyd County	17.1 | 20.1 | 23.5
Giles County	19.7 | 22.8 | 26.2
Montgomery County	21.2 | 24.8 | 28.8
Pulaski County	25.1 | 28.7 | 32.6
Radford City	7.6 | 12.6 | 20.1

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
Crater, Peninsula and Hampton HDs
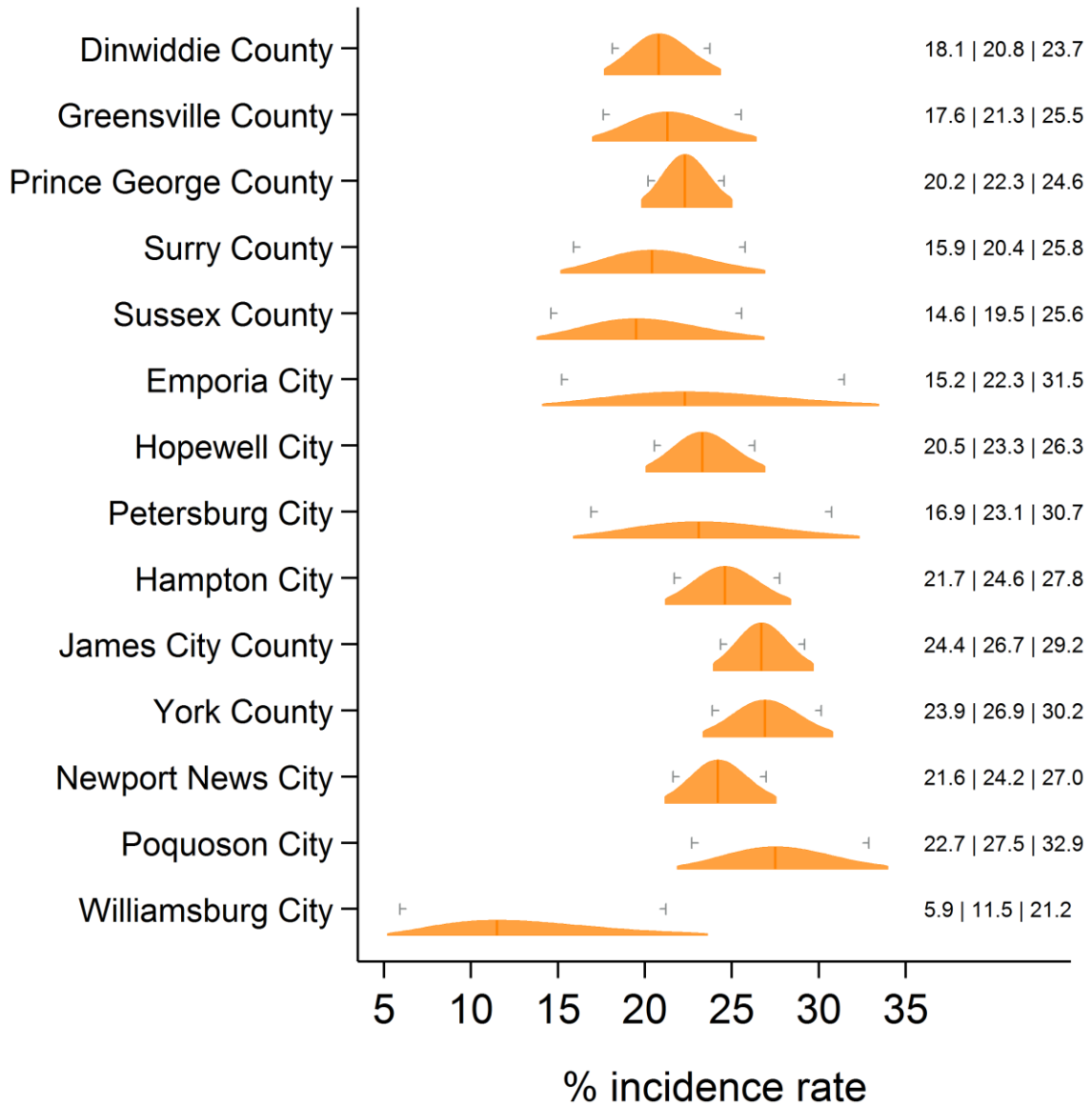
County/City	LCB	Point	UCB
Dinwiddie County	18.1	20.8	23.7
Greensville County	17.6	21.3	25.5
Prince George County	20.2	22.3	24.6
Surry County	15.9	20.4	25.8
Sussex County	14.6	19.5	25.6
Emporia City	15.2	22.3	31.5
Hopewell City	20.5	23.3	26.3
Petersburg City	16.9	23.1	30.7
Hampton City	21.7	24.6	27.8
James City County	24.4	26.7	29.2
York County	23.9	26.9	30.2
Newport News City	21.6	24.2	27.0
Poquoson City	22.7	27.5	32.9
Williamsburg City	5.9	11.5	21.2

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

TDAP vaccination since 2005
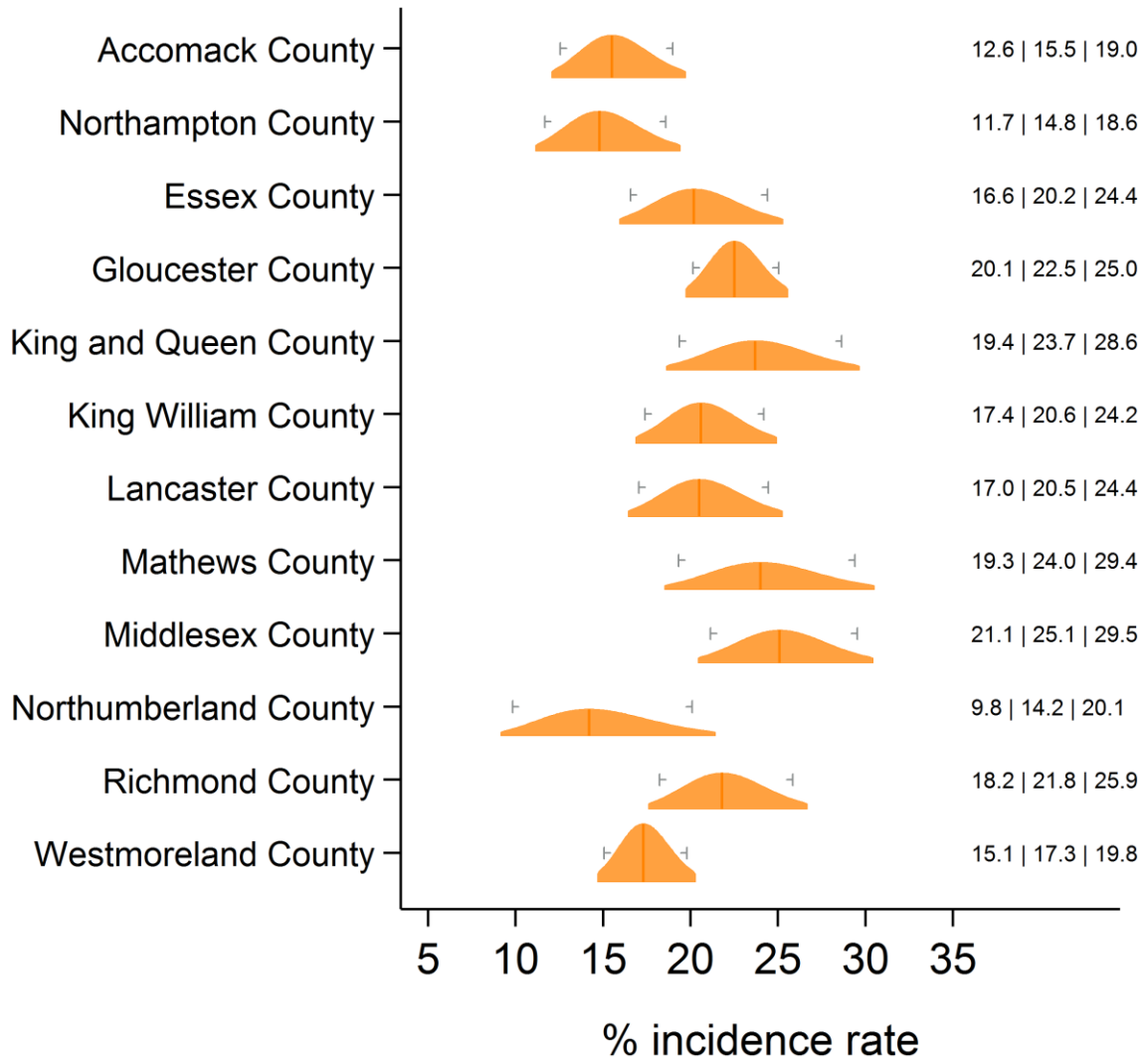# Eastern Shore and Three Rivers HDs

County		% incidence rate
Accomack County		12.6 | 15.5 | 19.0
Northampton County		11.7 | 14.8 | 18.6
Essex County		16.6 | 20.2 | 24.4
Gloucester County		20.1 | 22.5 | 25.0
King and Queen County		19.4 | 23.7 | 28.6
King William County		17.4 | 20.6 | 24.2
Lancaster County		17.0 | 20.5 | 24.4
Mathews County		19.3 | 24.0 | 29.4
Middlesex County		21.1 | 25.1 | 29.5
Northumberland County		9.8 | 14.2 | 20.1
Richmond County		18.2 | 21.8 | 25.9
Westmoreland County		15.1 | 17.3 | 19.8

% incidence rate

Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB
Gray markers: 90% confidence interval

Section 5: 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: 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: 112 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 21 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: 122 areas.

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

Direct standard error is zero: 10 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.05%; med = 3.51%; max = 14.54%.

Proportion of SAE variance to sampling error in regression coefficient estimates: min = 77.12%; med = 91.55%; max = 98.97%.

Proportion of SAE variance due to model selection: min = 0.36%; med = 3.54%; max = 22.50%.