



## Indicator 16: Diagnosed with Diabetes

Internal variable name: outc16\_diabetes\_diag

### Section 1: Definition

Definition: (Ever told) you have diabetes

### Section 2: Predictive models

	Mixed, demos only	Logit, no area effects	Mixed with area covariates
	b/se	b/se	b/se
Outcome 16: Diagnosed with Diabetes			
Non-Hispanic Black vs. Non-Hispanic White	0.8481*** (0.0983)	0.8508*** (0.1097)	0.8508*** (0.1091)
Non-Hispanic Asian vs. Non-Hispanic White	0.0018 (0.4081)	0.2442 (0.3694)	0.2442 (0.3922)
Non-Hispanic Other vs. Non-Hispanic White	0.0733 (0.1984)	0.0820 (0.2118)	0.0820 (0.2038)
Hispanic vs. Non-Hispanic White	0.4434 (0.2772)	0.5806* (0.2818)	0.5806* (0.2687)
Female	-0.0919 (0.0794)	-0.1077 (0.0847)	-0.1077 (0.0809)
Age 18-24 vs. 65+	-3.9655*** (0.5902)	-3.9148*** (0.6207)	-3.9148*** (0.5929)
Age 25-34 vs. 65+	-2.7031*** (0.2737)	-2.6457*** (0.2598)	-2.6457*** (0.2733)
Age 35-44 vs. 65+	-2.2246*** (0.2341)	-2.1914*** (0.1958)	-2.1914*** (0.2292)
Age 45-54 vs. 65+	-1.1942*** (0.1149)	-1.1464*** (0.1202)	-1.1464*** (0.1155)
Age 55-64 vs. 65+	-0.5250*** (0.1138)	-0.5116*** (0.0982)	-0.5116*** (0.1120)
Melanoma Cancer Female Rate		-0.0095* (0.0046)	-0.0095* (0.0044)
% education Bachelor+, population 25+ years old		-0.0144* (0.0063)	-0.0144* (0.0062)
% Non-Hispanic minority among adults 18 to 64		0.0224* (0.0096)	0.0224** (0.0076)
% Non-Hispanic minority among adults 65+		-0.0257* (0.0096)	-0.0257** (0.0076)

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		(0.0107)	(0.0083)
% moved past year, population 1+ years old		-0.0175	-0.0175
		(0.0108)	(0.0090)
% Hispanic among adults 18 to 64		-0.0549*	-0.0549*
		(0.0225)	(0.0239)
% households without phone service		-0.0868*	-0.0868
		(0.0438)	(0.0450)
{% Non-Hispanic minority among adults 18 to 64}		0.0168	0.0168
interacted with {% households without phone service}		(0.0098)	(0.0101)
% age 75+		-3.7019	-3.7019
		(3.6782)	(3.5783)
Crude mortality rate of nephritis nephrotic syndrome per 10,000		0.0718	0.0718
{% age 75+}		(0.0501)	(0.0474)
Interacted with {Crude mortality rate of nephritis nephrotic syndrome per 10,000}		0.0322	0.0322
		(0.6904)	(0.7551)
Intercept	-1.2686***	-0.3180	-0.3180
	(0.0843)	(0.2922)	(0.2483)
Area effect variance	0.0609		0.0000**
	(0.0521)		(0.0000)

Number of alternative models used to estimate model error = 3.



### Section 3: Results

County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Augusta County	51015	13.0%	(8.2%, 20.0%)	11.6%	(10.1%, 13.4%)
Bath County	51017	0.0%	(0.0%, 35.0%)	11.2%	(3.2%, 32.0%)
Caroline County	51033	9.8%	(2.5%, 31.3%)	10.7%	(9.3%, 12.3%)
Clarke County	51043	8.9%	(1.8%, 33.8%)	8.0%	(5.9%, 10.6%)
Culpeper County	51047	9.6%	(4.3%, 20.0%)	9.9%	(8.3%, 11.9%)
Fauquier County	51061	14.0%	(7.9%, 23.7%)	9.1%	(7.8%, 10.6%)
Frederick County	51069	6.5%	(3.8%, 13.5%)	8.9%	(7.9%, 10.1%)
Highland County	51091	10.5%	(1.2%, 85.5%)	1.8%	(0.1%, 20.9%)
King George County	51099	9.6%	(2.0%, 35.3%)	8.1%	(6.7%, 9.8%)
Madison County	51113	2.6%	(1.3%, 22.9%)	8.2%	(6.1%, 10.9%)
Orange County	51137	6.2%	(3.4%, 19.8%)	9.8%	(8.7%, 11.1%)
Page County	51139	18.7%	(5.2%, 49.1%)	10.8%	(9.3%, 12.5%)
Rappahannock County	51157	18.3%	(5.6%, 45.7%)	6.4%	(3.4%, 11.9%)
Rockbridge County	51163	12.6%	(6.7%, 29.6%)	11.1%	(8.9%, 13.7%)
Rockingham County	51165	8.2%	(4.1%, 15.8%)	9.3%	(8.1%, 10.8%)
Shenandoah County	51171	5.2%	(2.8%, 15.7%)	8.7%	(7.3%, 10.5%)
Spotsylvania County	51177	10.1%	(5.5%, 17.6%)	9.7%	(8.6%, 11.0%)
Stafford County	51179	10.9%	(6.4%, 17.8%)	7.5%	(6.5%, 8.6%)
Warren County	51187	19.5%	(9.0%, 37.3%)	12.7%	(10.7%, 14.9%)
Buena Vista City	51530	0.0%	(-0.0%, 89.6%)	3.6%	(1.8%, 7.1%)
Fredericksburg City	51630	8.2%	(3.2%, 29.5%)	4.6%	(3.4%, 6.4%)
Harrisonburg City	51660	12.4%	(1.8%, 52.0%)	5.2%	(2.9%, 9.0%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	0.7%	(0.1%, 4.0%)
Staunton City	51790	0.0%	(0.0%, 42.2%)	7.5%	(5.7%, 9.9%)
Waynesboro City	51820	0.0%	(0.0%, 33.1%)	10.5%	(8.4%, 13.0%)
Winchester City	51840	0.0%	(0.0%, 23.5%)	8.7%	(5.6%, 13.4%)

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County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Albemarle County	51003	8.3%	(3.4%, 18.9%)	6.1%	(4.8%, 7.6%)
Alleghany County	51005	2.8%	(1.8%, 16.3%)	13.0%	(10.2%, 16.4%)
Amherst County	51009	8.3%	(1.7%, 32.0%)	12.7%	(11.2%, 14.5%)
Appomattox County	51011	33.9%	(15.6%, 58.6%)	15.3%	(12.3%, 19.0%)
Arlington City	51013	0.8%	(0.5%, 4.7%)	3.2%	(2.1%, 5.0%)
Bedford County	51019	16.7%	(9.7%, 27.2%)	13.0%	(11.6%, 14.6%)
Botetourt County	51023	4.0%	(2.3%, 13.2%)	10.7%	(8.6%, 13.2%)
Campbell County	51031	13.7%	(6.8%, 25.7%)	13.3%	(12.0%, 14.7%)
Craig County	51045	0.0%	(0.0%, 73.6%)	12.8%	(8.7%, 18.4%)
Fairfax County	51059	4.2%	(2.6%, 6.6%)	4.7%	(3.7%, 5.9%)
Fluvanna County	51065	11.3%	(2.9%, 35.5%)	10.4%	(8.8%, 12.1%)
Greene County	51079	9.7%	(4.1%, 32.9%)	6.3%	(4.7%, 8.3%)
Loudoun County	51107	4.4%	(2.9%, 8.0%)	4.9%	(3.9%, 6.0%)
Louisa County	51109	13.9%	(7.1%, 30.2%)	12.6%	(10.9%, 14.7%)
Nelson County	51125	12.5%	(3.8%, 33.6%)	8.5%	(6.3%, 11.3%)
Prince William County	51153	8.6%	(5.6%, 12.8%)	6.2%	(4.3%, 8.9%)
Roanoke County	51161	9.5%	(5.9%, 15.0%)	9.8%	(8.4%, 11.4%)
Alexandria City	51510	4.5%	(3.3%, 10.9%)	4.9%	(3.5%, 6.8%)
Charlottesville City	51540	6.8%	(1.1%, 33.0%)	4.6%	(3.3%, 6.5%)
Covington City	51580	100.0%	(0.6%, 100.0%)	12.2%	(3.4%, 35.2%)
Fairfax City	51600	1.8%	(1.1%, 7.1%)	5.2%	(3.8%, 7.1%)
Falls Church City	51610	40.1%	(5.1%, 89.3%)	4.2%	(2.3%, 7.5%)
Lynchburg City	51680	11.7%	(5.4%, 23.6%)	7.8%	(6.0%, 10.1%)
Manassas City	51683	3.7%	(1.5%, 35.1%)	4.5%	(2.1%, 9.1%)
Manassas Park City	51685	0.0%	(-0.0%, 96.8%)	2.2%	(0.8%, 6.0%)
Salem City	51775	8.4%	(1.2%, 41.2%)	6.4%	(4.3%, 9.4%)

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County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Bland County	51021	13.3%	(2.4%, 49.5%)	10.9%	(7.4%, 15.9%)
Buchanan County	51027	30.3%	(17.5%, 47.2%)	14.8%	(10.3%, 20.9%)
Carroll County	51035	16.0%	(8.5%, 30.6%)	15.8%	(13.0%, 19.1%)
Dickenson County	51051	16.4%	(6.8%, 34.6%)	9.8%	(7.8%, 12.2%)
Floyd County	51063	8.9%	(2.5%, 27.4%)	8.2%	(6.8%, 9.9%)
Franklin County	51067	7.0%	(2.6%, 17.3%)	12.1%	(10.6%, 13.7%)
Giles County	51071	11.6%	(3.8%, 29.9%)	10.3%	(7.8%, 13.6%)
Grayson County	51077	4.9%	(2.8%, 25.6%)	14.4%	(10.7%, 19.0%)
Henry County	51089	19.0%	(11.4%, 29.9%)	17.4%	(15.1%, 19.9%)
Lee County	51105	9.5%	(5.0%, 25.7%)	13.9%	(11.6%, 16.5%)
Montgomery County	51121	7.9%	(3.9%, 15.4%)	6.1%	(4.1%, 9.0%)
Patrick County	51141	10.8%	(2.7%, 35.1%)	16.1%	(13.5%, 19.1%)
Pittsylvania County	51143	19.0%	(11.9%, 28.8%)	16.8%	(14.8%, 19.1%)
Pulaski County	51155	22.0%	(12.2%, 36.5%)	11.4%	(9.2%, 14.0%)
Russell County	51167	8.5%	(3.6%, 19.0%)	13.4%	(10.9%, 16.3%)
Scott County	51169	19.4%	(10.2%, 33.6%)	13.0%	(11.1%, 15.3%)
Smyth County	51173	4.9%	(2.7%, 18.1%)	14.5%	(12.1%, 17.1%)
Tazewell County	51185	15.3%	(8.1%, 27.1%)	13.7%	(11.8%, 15.8%)
Washington County	51191	13.2%	(6.9%, 23.8%)	12.9%	(10.9%, 15.1%)
Wise County	51195	13.8%	(7.5%, 24.2%)	14.8%	(12.5%, 17.6%)
Wythe County	51197	15.8%	(7.9%, 29.4%)	14.7%	(12.4%, 17.3%)
Bristol City	51520	12.4%	(3.9%, 51.3%)	12.7%	(9.7%, 16.3%)
Danville City	51590	19.7%	(8.6%, 39.0%)	20.1%	(15.9%, 25.1%)
Galax City	51640	0.0%	(0.0%, 70.9%)	4.4%	(1.9%, 9.8%)
Martinsville City	51690	13.1%	(1.8%, 55.7%)	13.8%	(9.2%, 20.0%)
Norton City	51720	0.0%	(0.0%, 69.6%)	3.8%	(1.9%, 7.6%)
Radford City	51750	0.0%	(0.0%, 56.8%)	4.4%	(2.2%, 8.4%)
Roanoke City	51770	15.5%	(9.6%, 24.2%)	10.3%	(8.9%, 11.9%)

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County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Amelia County	51007	6.2%	(3.0%, 29.9%)	12.8%	(10.0%, 16.2%)
Brunswick County	51025	7.7%	(4.3%, 29.1%)	14.1%	(10.9%, 18.2%)
Buckingham County	51029	13.9%	(6.2%, 28.2%)	16.9%	(13.7%, 20.6%)
Charles City County	51036	12.8%	(4.1%, 49.4%)	11.0%	(7.5%, 15.8%)
Charlotte County	51037	29.3%	(8.7%, 64.3%)	16.4%	(13.8%, 19.3%)
Chesterfield County	51041	11.0%	(7.8%, 15.3%)	10.7%	(9.1%, 12.4%)
Cumberland County	51049	37.9%	(16.2%, 65.9%)	17.0%	(14.0%, 20.4%)
Dinwiddie County	51053	3.6%	(2.4%, 19.7%)	10.3%	(6.8%, 15.5%)
Goochland County	51075	6.6%	(1.8%, 21.2%)	8.2%	(6.2%, 10.7%)
Greensville County	51081	15.5%	(3.2%, 50.6%)	22.0%	(18.2%, 26.4%)
Halifax County	51083	18.8%	(10.6%, 31.1%)	18.8%	(16.7%, 21.2%)
Hanover County	51085	7.3%	(4.0%, 13.0%)	10.3%	(8.8%, 12.1%)
Henrico County	51087	9.8%	(6.8%, 14.0%)	10.5%	(9.2%, 11.9%)
Lunenburg County	51111	32.7%	(10.9%, 65.8%)	16.6%	(14.1%, 19.5%)
Mecklenburg County	51117	15.1%	(7.7%, 27.8%)	19.6%	(17.3%, 22.1%)
New Kent County	51127	2.9%	(1.7%, 24.8%)	10.7%	(9.0%, 12.6%)
Nottoway County	51135	11.2%	(5.9%, 33.4%)	12.1%	(8.9%, 16.2%)
Powhatan County	51145	23.3%	(4.0%, 68.6%)	10.9%	(9.2%, 13.0%)
Prince Edward County	51147	11.5%	(4.2%, 27.6%)	11.6%	(9.4%, 14.3%)
Prince George County	51149	8.8%	(3.5%, 20.4%)	17.8%	(11.1%, 27.2%)
Surry County	51181	0.0%	(-0.0%, 47.9%)	6.2%	(3.5%, 10.7%)
Sussex County	51183	9.9%	(3.4%, 25.6%)	14.6%	(10.9%, 19.2%)
Colonial Heights City	51570	18.6%	(4.6%, 59.7%)	13.9%	(9.3%, 20.4%)
Emporia City	51595	40.9%	(6.4%, 87.5%)	17.7%	(9.1%, 31.6%)
Hopewell City	51670	36.5%	(14.3%, 66.5%)	25.9%	(12.5%, 45.9%)
Petersburg City	51730	6.5%	(2.3%, 16.9%)	11.5%	(6.7%, 19.1%)
Richmond City	51760	7.6%	(4.8%, 12.0%)	8.1%	(6.5%, 10.1%)

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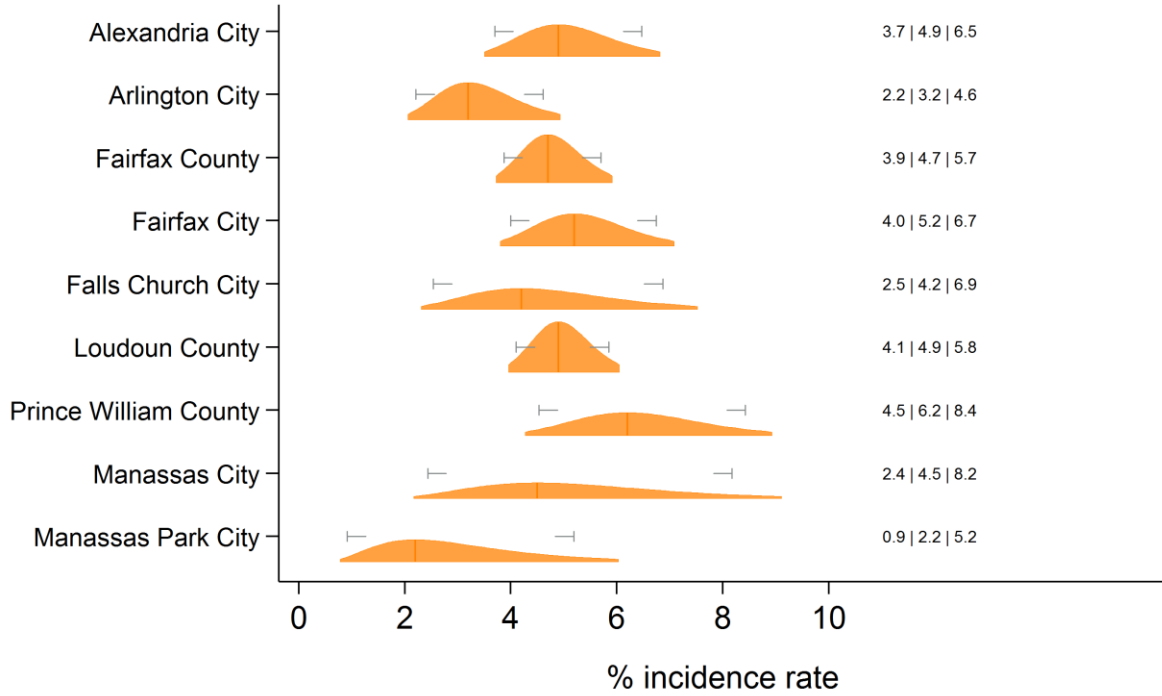


County name	County FIPS	Direct estimate	Direct 95% CI	SAE composite	SAE 95% CI
Accomack County	51001	13.9%	(8.0%, 23.2%)	18.2%	(13.2%, 24.5%)
Essex County	51057	35.4%	(14.2%, 64.5%)	17.6%	(14.3%, 21.4%)
Gloucester County	51073	11.2%	(4.3%, 26.3%)	11.8%	(10.3%, 13.4%)
Isle of Wight County	51093	22.2%	(11.1%, 39.4%)	11.4%	(9.3%, 13.8%)
James City County	51095	10.1%	(5.0%, 19.1%)	9.1%	(7.7%, 10.7%)
King and Queen County	51097	0.0%	(0.0%, 58.6%)	11.7%	(7.1%, 18.7%)
King William County	51101	16.3%	(4.7%, 43.2%)	9.0%	(6.8%, 11.9%)
Lancaster County	51103	33.4%	(10.6%, 67.9%)	19.3%	(12.9%, 27.9%)
Mathews County	51115	5.3%	(1.7%, 24.9%)	7.1%	(3.3%, 14.5%)
Middlesex County	51119	0.8%	(0.4%, 48.5%)	10.8%	(7.2%, 16.0%)
Northampton County	51131	16.0%	(5.4%, 39.0%)	10.1%	(7.3%, 13.7%)
Northumberland County	51133	33.9%	(14.1%, 61.6%)	25.8%	(18.4%, 35.0%)
Richmond County	51159	16.3%	(5.6%, 39.1%)	16.3%	(13.2%, 19.9%)
Southampton County	51175	21.2%	(5.7%, 54.6%)	13.6%	(11.1%, 16.6%)
Westmoreland County	51193	16.5%	(6.2%, 37.0%)	16.6%	(14.2%, 19.4%)
York County	51199	8.0%	(3.6%, 17.1%)	8.6%	(7.5%, 9.9%)
Chesapeake City	51550	9.1%	(5.9%, 13.7%)	9.6%	(8.6%, 10.7%)
Franklin City	51620	9.6%	(4.9%, 26.2%)	12.9%	(8.8%, 18.6%)
Hampton City	51650	13.3%	(8.7%, 19.8%)	13.0%	(11.5%, 14.7%)
Newport News City	51700	7.9%	(4.3%, 14.1%)	9.1%	(7.5%, 11.1%)
Norfolk City	51710	11.0%	(6.9%, 17.2%)	8.3%	(7.2%, 9.6%)
Poquoson City	51735	61.1%	(20.8%, 90.3%)	7.1%	(4.6%, 11.0%)
Portsmouth City	51740	15.6%	(9.3%, 25.0%)	14.7%	(12.9%, 16.7%)
Suffolk City	51800	17.2%	(10.5%, 26.9%)	13.2%	(11.7%, 14.9%)
Virginia Beach City	51810	7.0%	(5.0%, 10.7%)	7.5%	(6.6%, 8.5%)
Williamsburg City	51830	0.0%	(0.0%, 55.7%)	2.3%	(1.0%, 5.2%)



Section 4: Graphical representation

Lifetime diabetes  
Alexandria, Fairfax, Arlington, Loudon, Prince William HDs

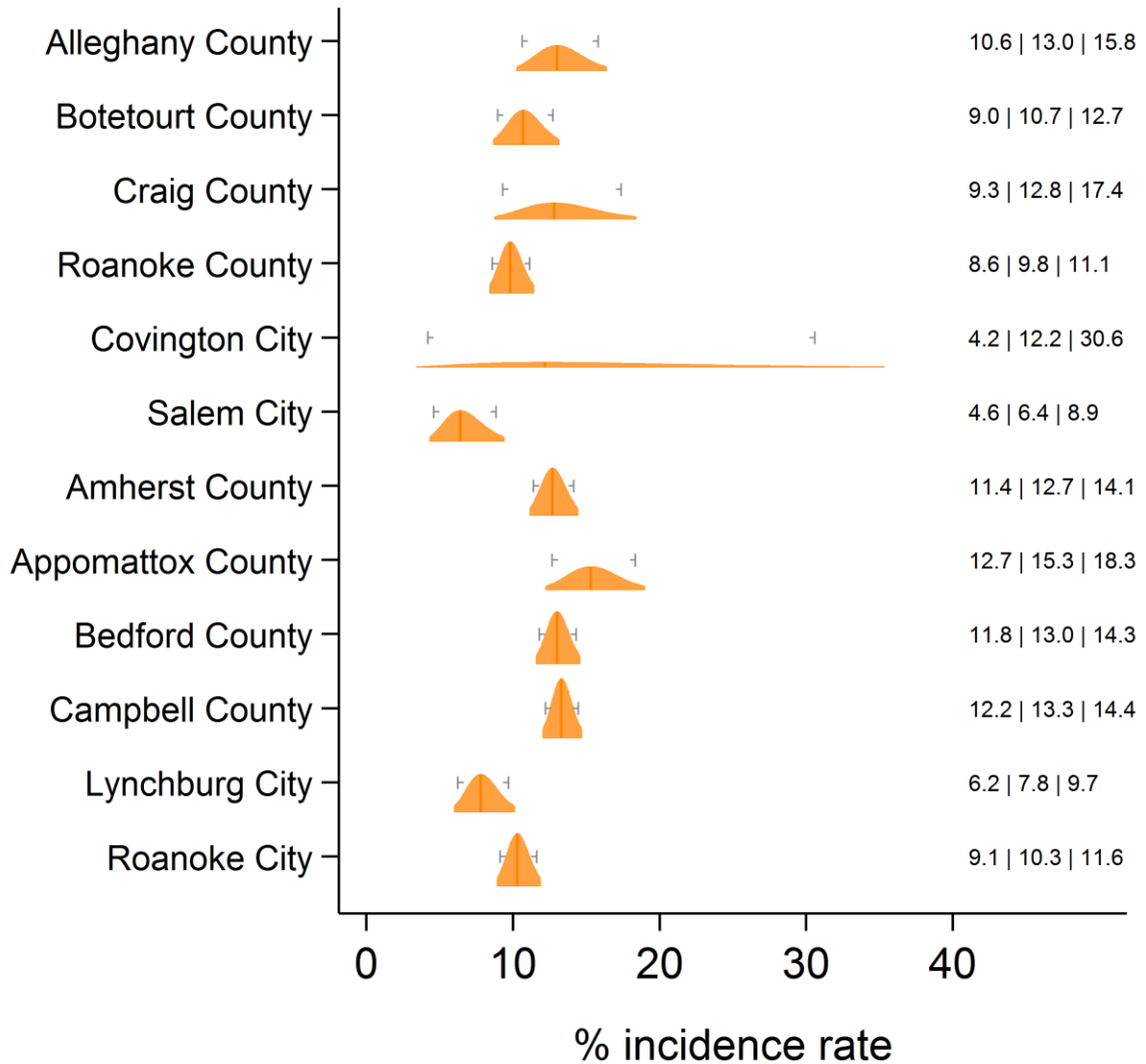


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval





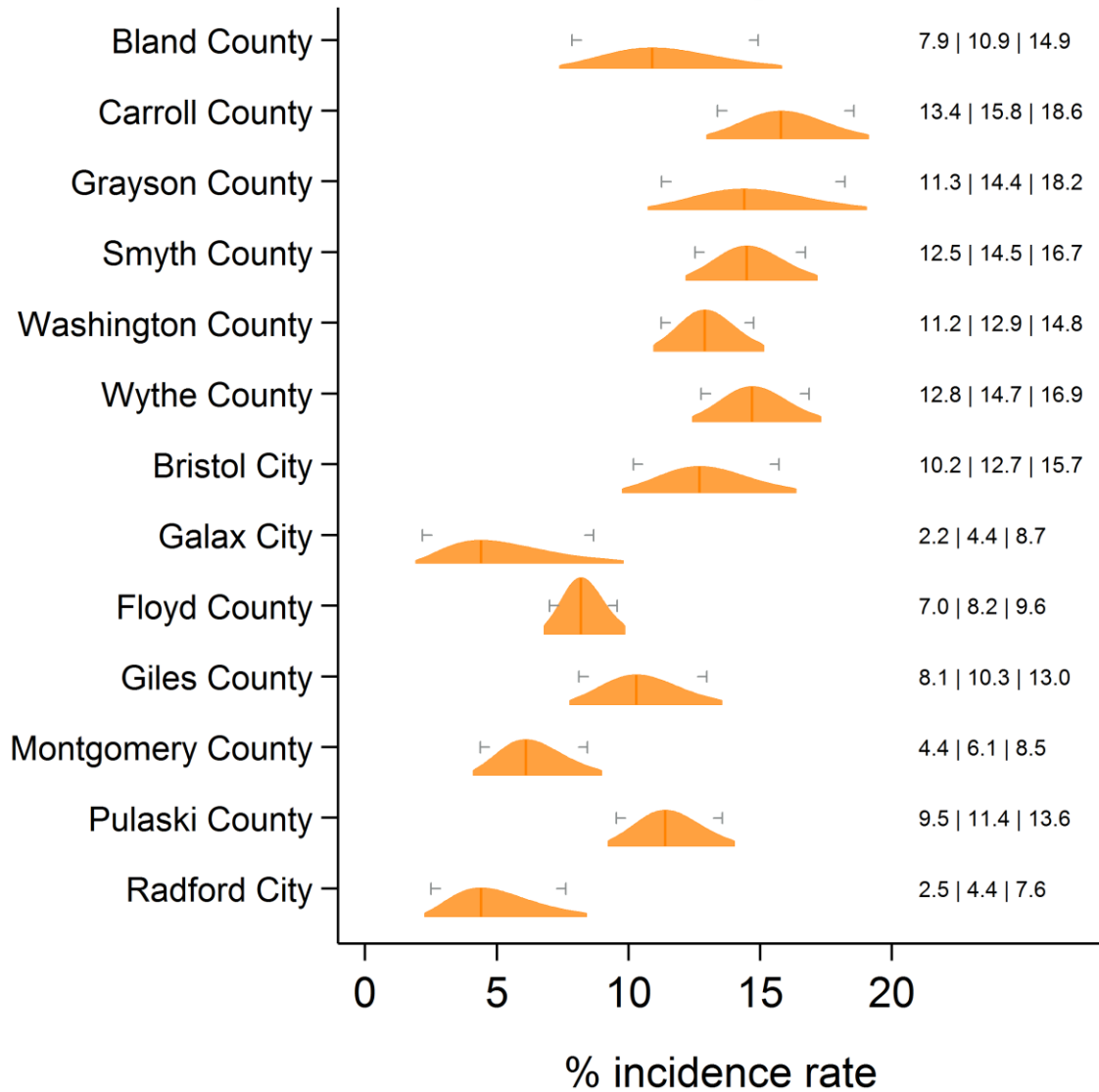
## Lifetime diabetes Alleghany, Roanoke and Central Virginia HDs



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



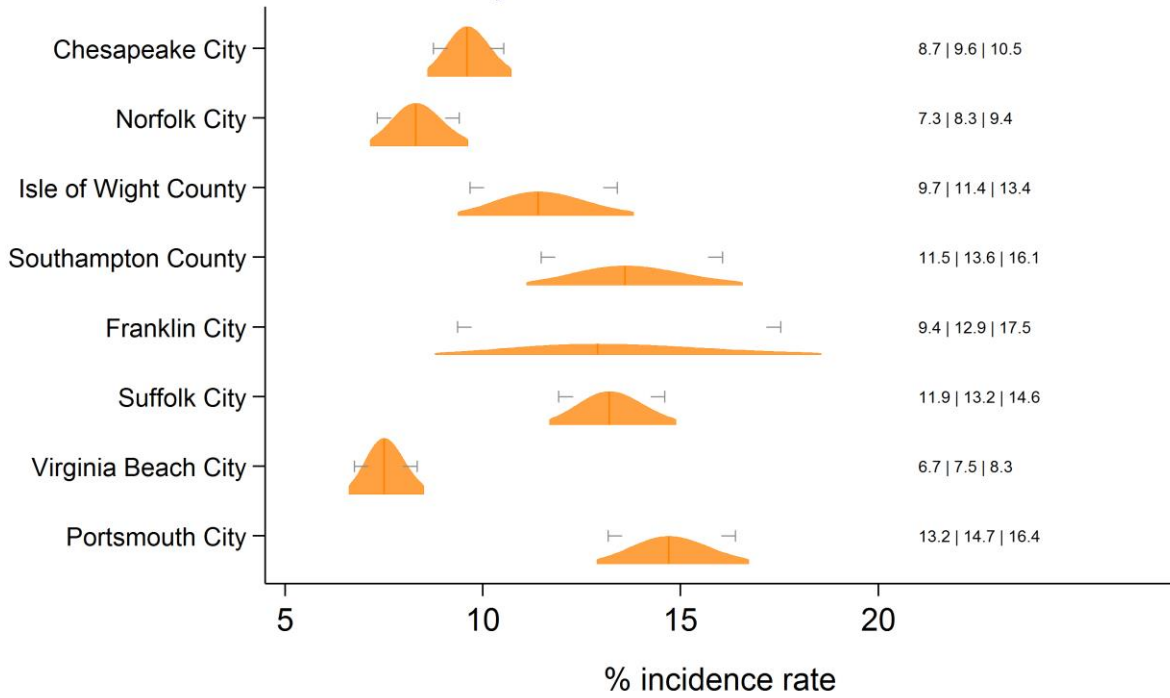
## Lifetime diabetes New River and Mount Rogers HDs



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



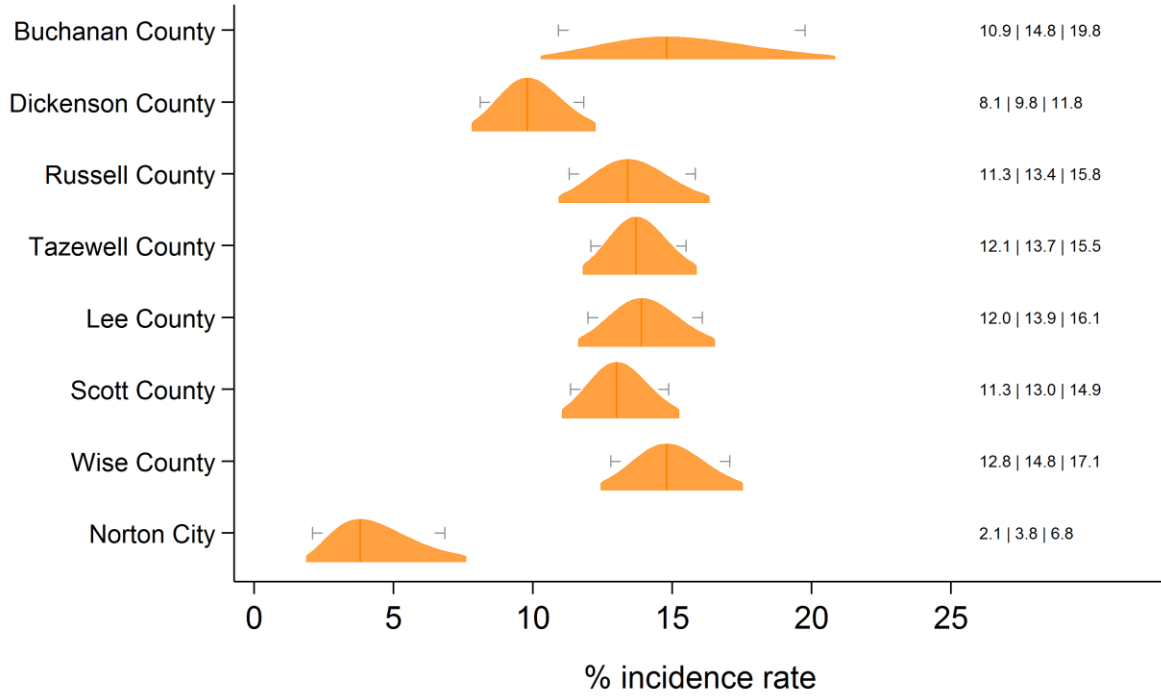
### Lifetime diabetes Norfolk, Portsmouth, Chesapeake, VA Beach, W. Tidewater HDs



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



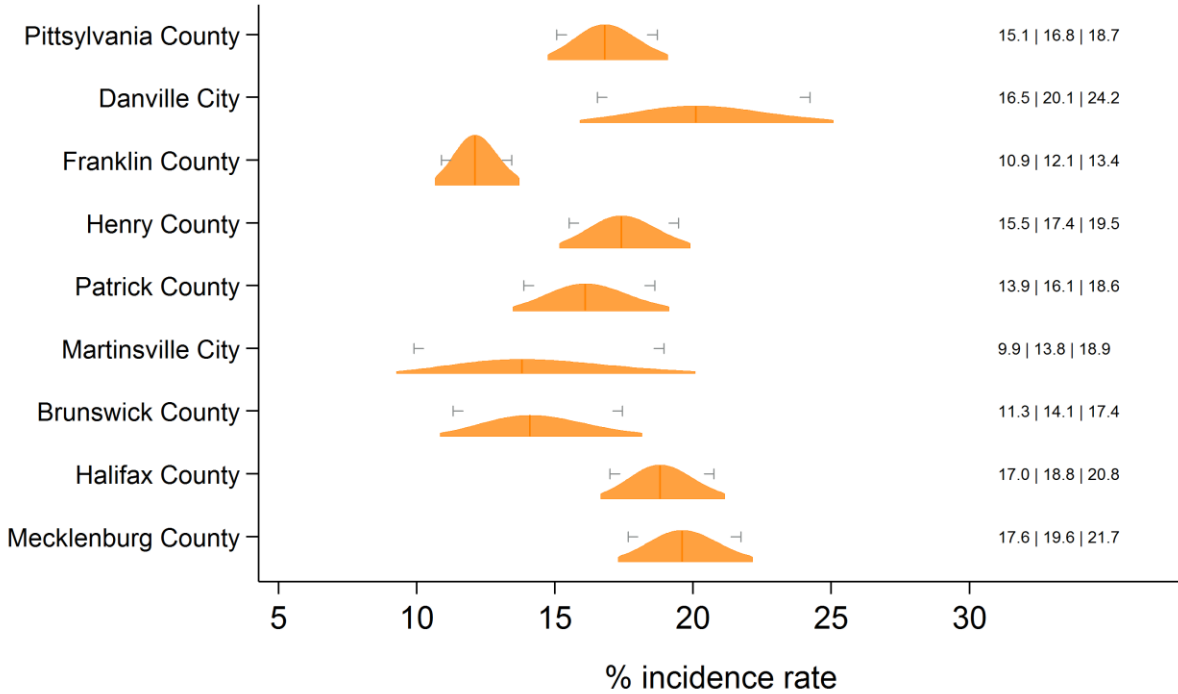
### Lifetime diabetes Cumberland Plateau and Lenowisco HDs



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



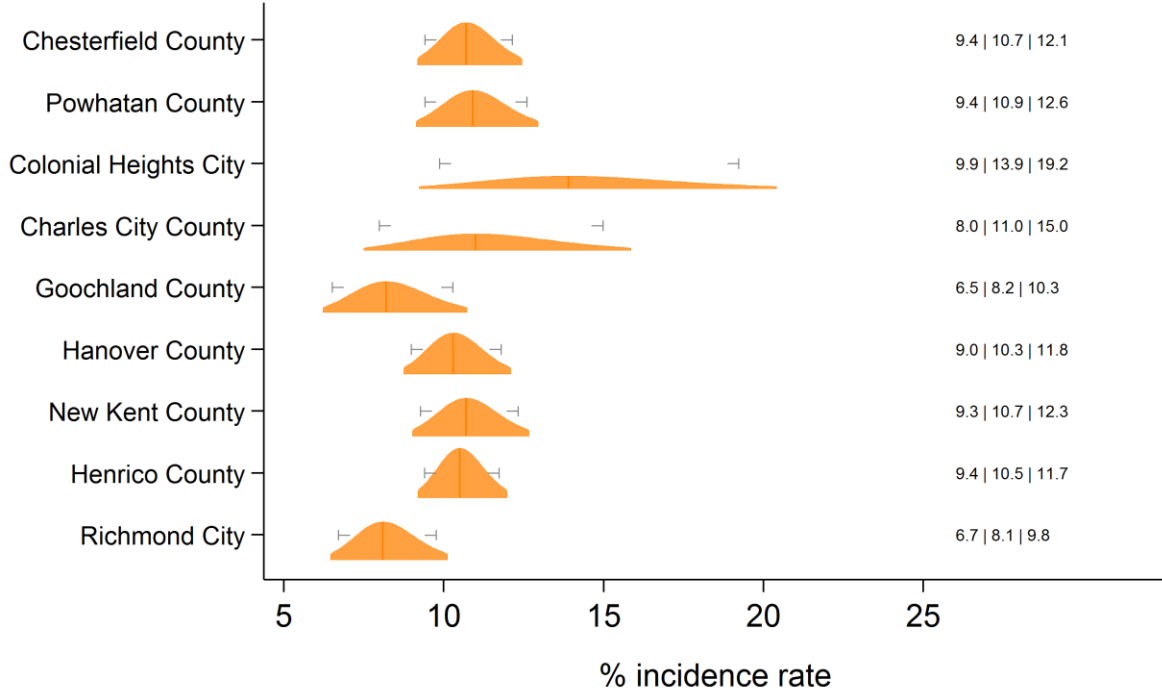
### Lifetime diabetes Pittsylvania/Danville, Southside and West Piedmont HDs



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



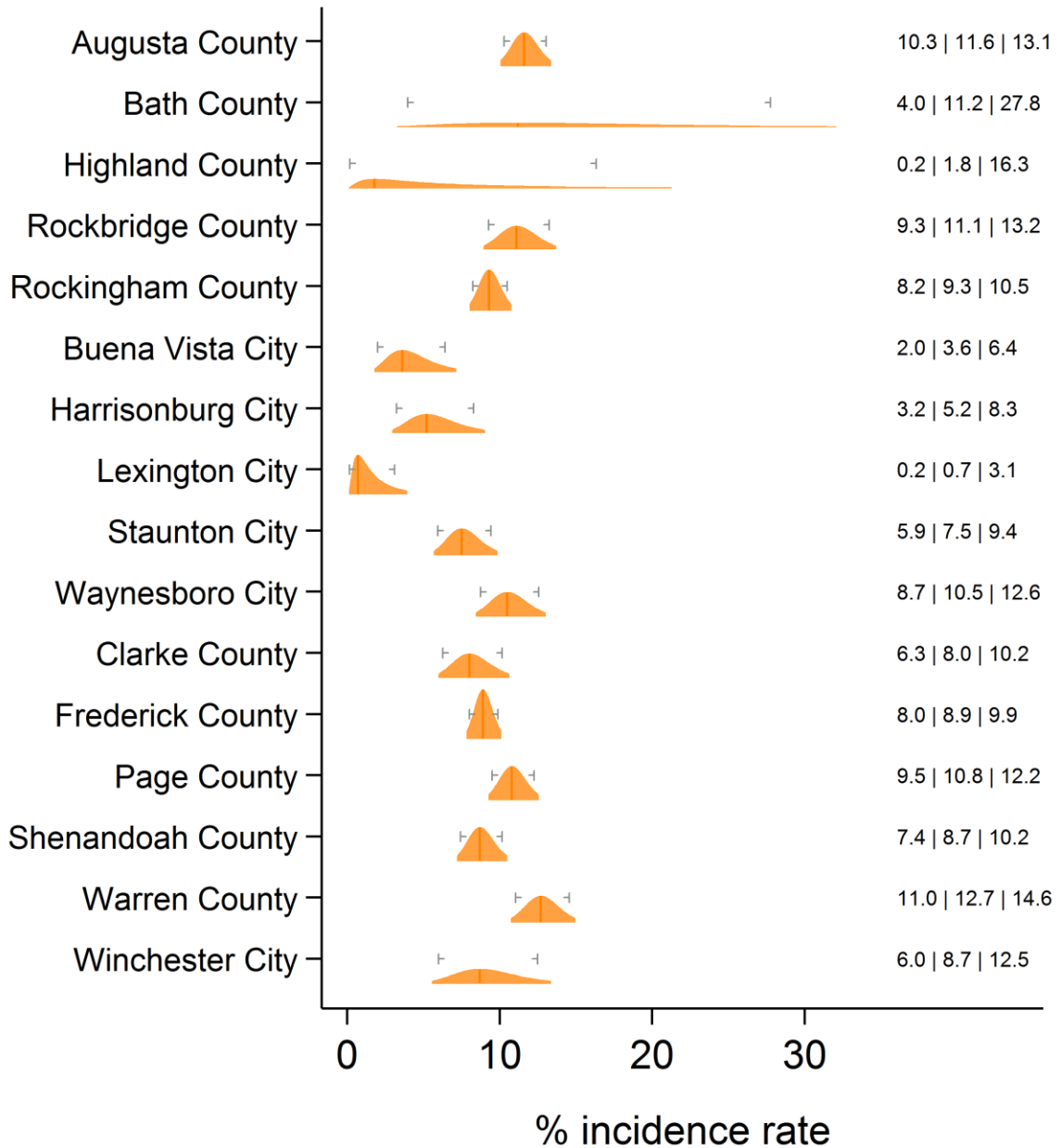
### Lifetime diabetes Chesterfield, Chickahominy, Henrico and Richmond HDs



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



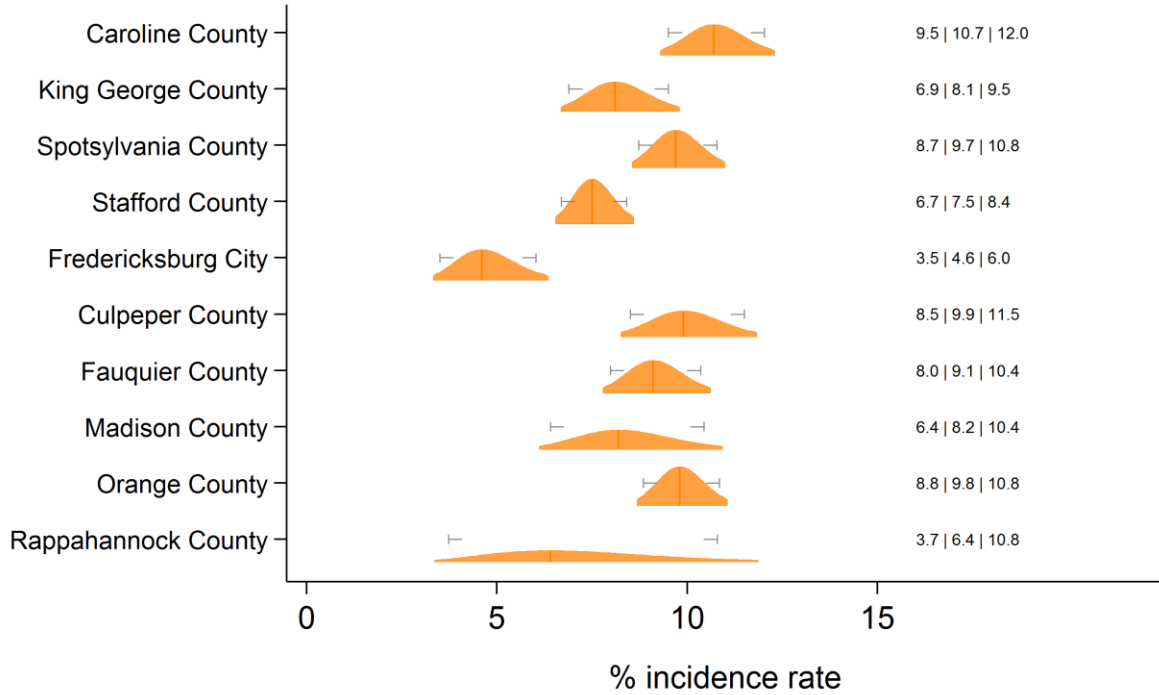
## Lifetime diabetes Central Shenandoah and Lord Fairfax HDs



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



### Lifetime diabetes Rappahannock/Rapidan and Rappahannock HDs

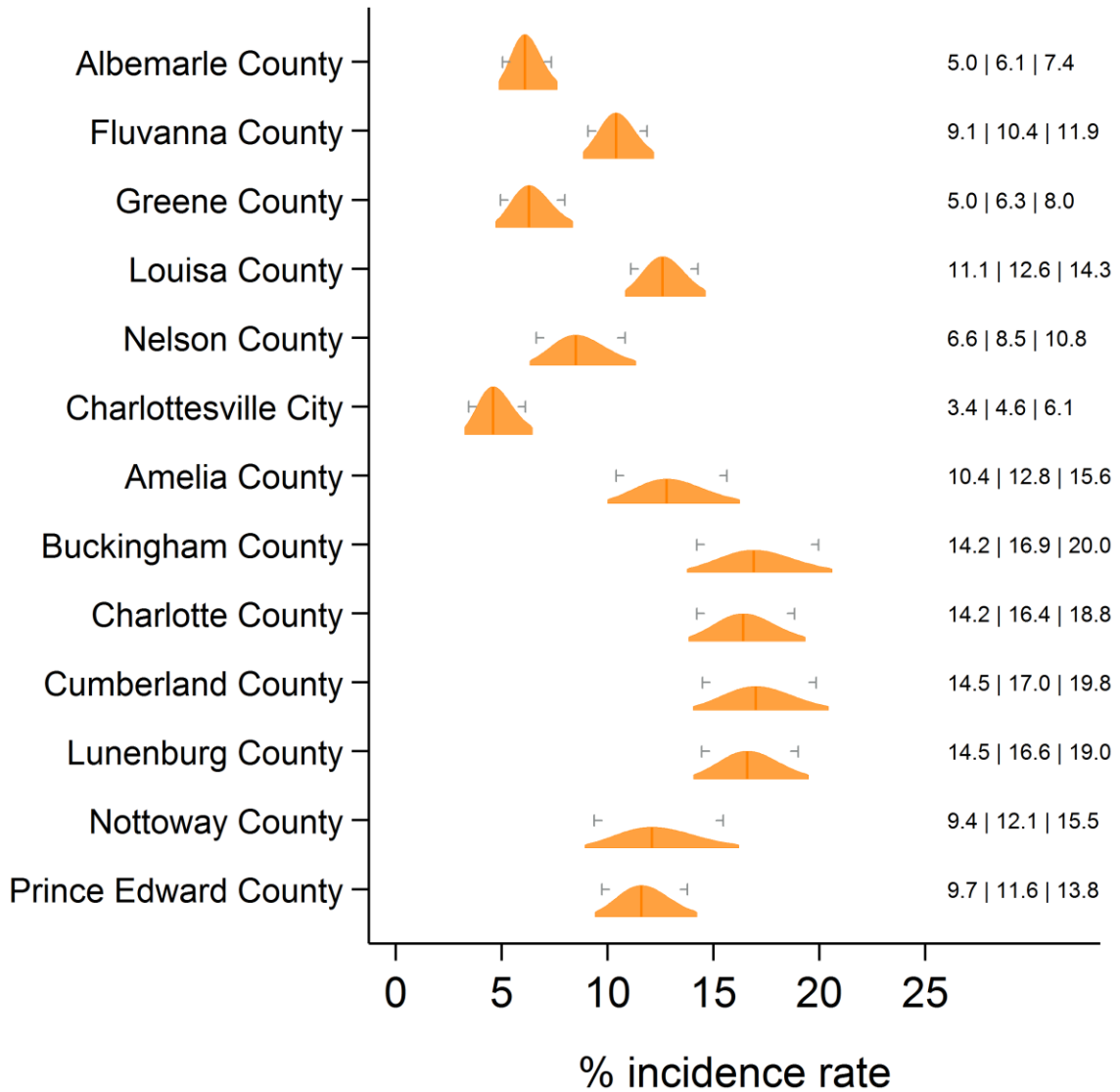


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB  
 Gray markers: 90% confidence interval





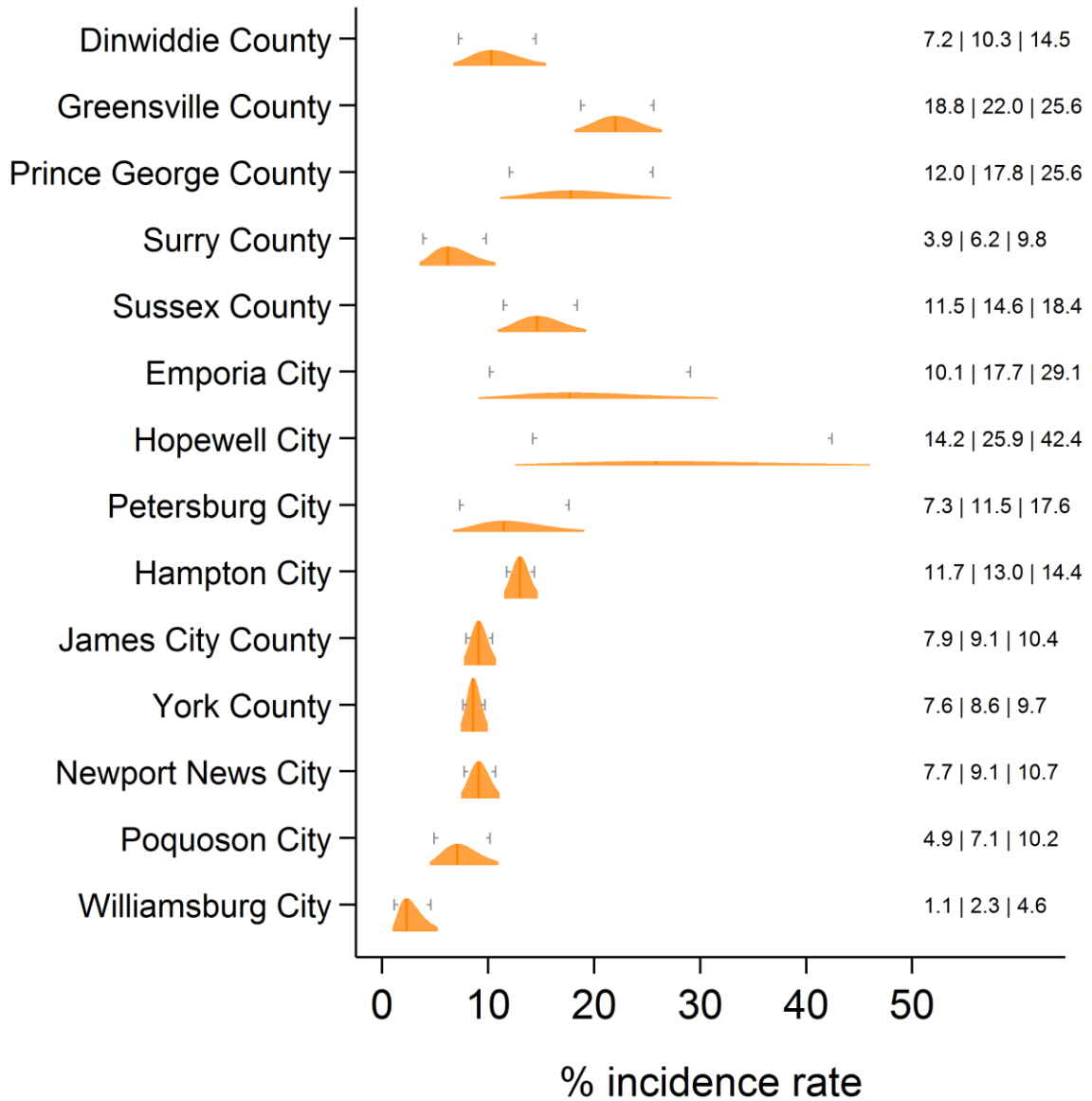
## Lifetime diabetes Thomas Jefferson and Piedmont HDs



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



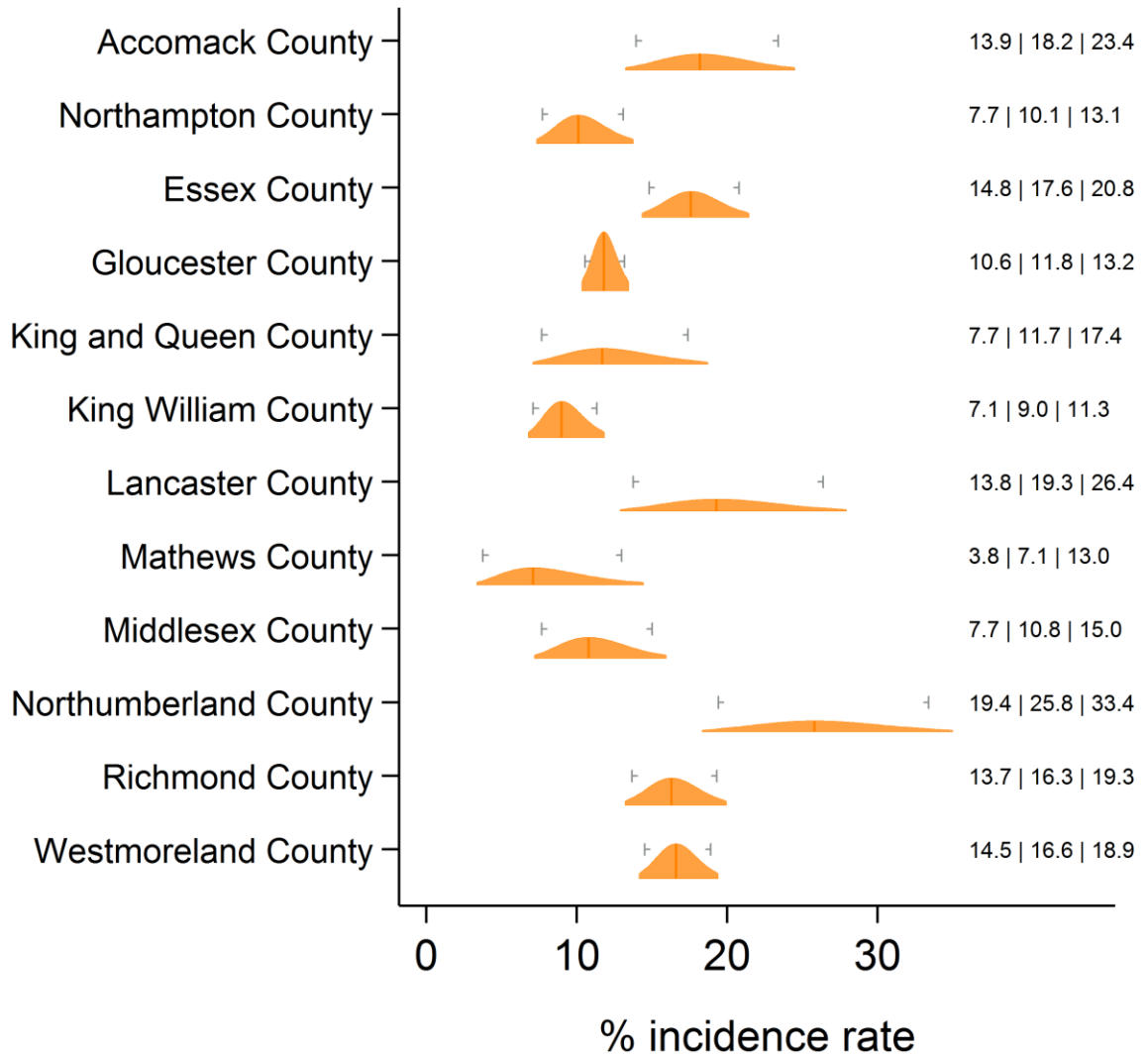
## Lifetime diabetes Crater, Peninsula and Hampton HDs



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



## Lifetime diabetes Eastern Shore and Three Rivers HDs



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: 58 areas.

Direct estimate is outside the 95% SAE Wilson CI: 75 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: 115 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 18 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: 114 areas.

SAE standard error is greater than the (nonzero) direct standard error: 4 areas.

Direct standard error is zero: 15 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.01%; med = 2.58%; max = 16.39%.

Proportion of SAE variance to sampling error in regression coefficient estimates: min = 44.63%; med = 93.81%; max = 99.68%.

Proportion of SAE variance due to model selection: min = 0.01%; med = 2.05%; max = 53.65%.