



### Indicator 38: Was there a time in the past 12 months when you did not take your medication as prescribed because of cost?

Internal variable name: outc38\_prescr\_cost

#### **Section 1: Definition**

Definition: Was there a time in the past 12 months when you did not take your medication as prescribed because of cost? Do not include over-the-counter (OTC) medication.

Section 2: Predictive models

	Mixed, demos	Logit, no area	Mixed with area
	only	effects	covariates
	b/se	b/se	b/se
Outcome 38: Could Not Get Medicine Due To Cost			
Non-Hispanic Black vs. Non-Hispanic White	0.3870*	0.3778**	0.3778*
	(0.1563)	(0.1323)	(0.1562)
Non-Hispanic Asian vs. Non-Hispanic White	-0.0396	0.0794	0.0794
	(0.4956)	(0.4432)	(0.5044)
Non-Hispanic Other vs. Non-Hispanic White	0.4768*	0.5056*	0.5056*
	(0.2121)	(0.2330)	(0.2154)
Hispanic vs. Non-Hispanic White	0.5016*	0.5814*	0.5814*
	(0.2378)	(0.2391)	(0.2402)
Female	0.6959***	0.6730***	0.6730***
	(0.1081)	(0.1187)	(0.1100)
Age 18-24 vs. 65+	0.4040	0.4162	0.4162
	(0.2751)	(0.2827)	(0.2745)
Age 25-34 vs. 65+	1.1094***	1.1258***	1.1258***
	(0.2049)	(0.2031)	(0.2016)
Age 35-44 vs. 65+	1.0669***	1.0741***	1.0741***
	(0.1830)	(0.1883)	(0.1829)
Age 45-54 vs. 65+	1.2874***	1.2972***	1.2972***
	(0.1588)	(0.1630)	(0.1564)
Age 55-64 vs. 65+	1.0109***	1.0023***	1.0023***
	(0.1879)	(0.1622)	(0.1856)
Crude mortality rate of septicemia per 10,000		0.1250	0.1250*
		(0.0689)	(0.0629)
% speaking English less than very well		-0.0797***	-0.0797***
		(0.0224)	(0.0169)
Heart Disease hospitalization rate per 1,000		-0.0425*	-0.0425**
		(0.0181)	(0.0132)
% living in institutionalized group quarters, total		0.0568**	0.0568**





population			
		(0.0184)	(0.0169)
Myeloma Cancer Male Rate		-0.0250*	-0.0250*
		(0.0108)	(0.0099)
Non-stratified built environment domain index		0.0800	0.0800
		(0.1215)	(0.0663)
{Myeloma Cancer Male Rate}		0.0052	0.0052
interacted with {Non-stratified built environment		(0.0108)	(0.0086)
domain index}			
Cervix Cancer Female Rate		0.0055	0.0055
		(0.0102)	(0.0082)
{Cervix Cancer Female Rate}		-0.0053*	-0.0053*
Interacted with {% living in institutionalized group		(0.0023)	(0.0020)
quarters, total population}			
Intercept	-3.7131***	-3.0057***	-3.0057***
	(0.1269)	(0.3136)	(0.2650)
Area effect variance	0.0646		0.0000***
	(0.0400)		(0.0000)

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





#### **Section 3: Results**

County name	County FIPS	Direct	Direct 95% CI	SAE	SAE 95% CI
		estimate		composite	
Augusta County	51015	14.0%	(7.9%, 23.7%)	8.2%	(6.4%, 10.4%)
Bath County	51017	7.7%	(1.8%, 43.2%)	6.5%	(4.0%, 10.3%)
Caroline County	51033	24.3%	(9.7%, 48.9%)	11.5%	(9.7%, 13.5%)
Clarke County	51043	15.2%	(4.8%, 38.9%)	11.1%	(8.9%, 13.7%)
Culpeper County	51047	17.1%	(8.7%, 30.8%)	11.5%	(8.8%, 14.9%)
Fauquier County	51061	13.5%	(6.7%, 25.3%)	11.1%	(9.7%, 12.7%)
Frederick County	51069	2.8%	(0.9%, 8.5%)	7.2%	(5.9%, 8.9%)
Highland County	51091	0.0%	(0.0%, 87.8%)	6.9%	(4.5%, 10.4%)
King George County	51099	10.2%	(2.3%, 35.9%)	12.4%	(9.9%, 15.5%)
Madison County	51113	15.2%	(2.3%, 57.9%)	11.9%	(9.5%, 14.9%)
Orange County	51137	14.8%	(5.2%, 35.5%)	8.4%	(6.8%, 10.5%)
Page County	51139	13.7%	(2.3%, 51.9%)	9.8%	(7.8%, 12.3%)
Rappahannock County	51157	12.6%	(3.0%, 40.3%)	8.4%	(6.8%, 10.3%)
Rockbridge County	51163	0.0%	(0.0%, 15.5%)	9.3%	(7.7%, 11.3%)
Rockingham County	51165	1.1%	(0.2%, 6.2%)	6.8%	(5.5%, 8.4%)
Shenandoah County	51171	10.1%	(3.6%, 25.4%)	8.4%	(7.1%, 10.0%)
Spotsylvania County	51177	13.8%	(5.8%, 29.5%)	10.0%	(8.5%, 11.7%)
Stafford County	51179	8.4%	(4.1%, 16.3%)	9.4%	(8.3%, 10.6%)
Warren County	51187	5.6%	(2.7%, 21.9%)	8.9%	(7.3%, 10.9%)
Buena Vista City	51530	0.0%	(0.0%, 92.4%)	11.1%	(8.2%, 14.9%)
Fredericksburg City	51630	4.8%	(2.7%, 24.5%)	8.9%	(7.0%, 11.1%)
Harrisonburg City	51660	13.1%	(4.1%, 50.5%)	5.0%	(3.5%, 7.1%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	9.4%	(5.9%, 14.6%)
Staunton City	51790	10.8%	(2.0%, 52.6%)	8.6%	(6.9%, 10.8%)
Waynesboro City	51820	0.0%	(0.0%, 38.4%)	5.9%	(4.3%, 7.9%)
Winchester City	51840	7.5%	(1.2%, 35.9%)	7.9%	(5.8%, 10.6%)





County name	County FIPS	Direct	Direct 95% CI	SAE	SAE 95% CI
		estimate		composite	
Albemarle County	51003	13.5%	(6.7%, 25.2%)	9.6%	(8.5%, 10.7%)
Alleghany County	51005	12.6%	(4.4%, 31.4%)	6.8%	(4.4%, 10.2%)
Amherst County	51009	6.1%	(1.2%, 25.7%)	7.3%	(5.9%, 9.1%)
Appomattox County	51011	12.3%	(3.6%, 34.7%)	10.3%	(7.7%, 13.8%)
Arlington City	51013	10.3%	(3.2%, 28.3%)	10.2%	(8.2%, 12.7%)
Bedford County	51019	7.5%	(3.2%, 16.7%)	7.4%	(5.7%, 9.6%)
Botetourt County	51023	8.2%	(3.1%, 20.1%)	7.9%	(5.8%, 10.6%)
Campbell County	51031	0.0%	(0.0%, 10.1%)	10.2%	(8.7%, 12.0%)
Craig County	51045	0.0%	(0.0%, 73.6%)	6.5%	(2.7%, 14.7%)
Fairfax County	51059	5.0%	(2.9%, 8.5%)	5.5%	(4.6%, 6.7%)
Fluvanna County	51065	14.5%	(2.9%, 49.2%)	9.1%	(6.5%, 12.4%)
Greene County	51079	6.1%	(1.0%, 30.4%)	10.5%	(7.6%, 14.2%)
Loudoun County	51107	6.8%	(3.3%, 13.2%)	7.4%	(6.3%, 8.7%)
Louisa County	51109	13.3%	(4.8%, 31.9%)	7.8%	(6.1%, 10.0%)
Nelson County	51125	13.0%	(3.4%, 38.7%)	10.6%	(7.9%, 14.1%)
Prince William County	51153	7.6%	(4.5%, 12.5%)	7.2%	(6.1%, 8.4%)
Roanoke County	51161	11.0%	(5.4%, 21.1%)	9.6%	(8.3%, 11.0%)
Alexandria City	51510	15.7%	(7.1%, 31.1%)	9.1%	(7.2%, 11.4%)
Charlottesville City	51540	10.1%	(2.2%, 36.3%)	10.2%	(6.3%, 15.9%)
Covington City	51580	0.0%	(0.0%, 99.4%)	1.9%	(0.5%, 7.5%)
Fairfax City	51600	8.5%	(2.2%, 28.1%)	7.3%	(4.7%, 11.1%)
Falls Church City	51610	39.6%	(5.0%, 89.0%)	10.9%	(3.2%, 31.5%)
Lynchburg City	51680	11.1%	(4.6%, 24.8%)	11.4%	(9.5%, 13.7%)
Manassas City	51683	3.8%	(1.6%, 37.4%)	3.8%	(2.6%, 5.6%)
Manassas Park City	51685	0.0%	(-0.0%, 96.8%)	3.1%	(1.7%, 5.8%)
Salem City	51775	15.4%	(3.3%, 48.9%)	7.2%	(5.7%, 9.1%)





County name	County FIPS	Direct	Direct 95% CI	SAE	SAE 95% CI
		estimate		composite	
Bland County	51021	0.0%	(0.0%, 42.3%)	4.2%	(1.4%, 11.8%)
Buchanan County	51027	17.0%	(8.3%, 31.9%)	12.4%	(9.8%, 15.4%)
Carroll County	51035	6.3%	(1.2%, 27.1%)	12.9%	(10.3%, 15.9%)
Dickenson County	51051	26.9%	(12.8%, 47.9%)	12.7%	(9.5%, 16.7%)
Floyd County	51063	9.7%	(3.3%, 25.1%)	6.7%	(4.5%, 9.8%)
Franklin County	51067	11.7%	(5.2%, 24.2%)	8.7%	(7.3%, 10.4%)
Giles County	51071	14.2%	(4.6%, 36.1%)	8.8%	(6.5%, 11.8%)
Grayson County	51077	6.9%	(3.4%, 29.8%)	9.0%	(6.2%, 12.8%)
Henry County	51089	7.0%	(3.2%, 14.6%)	9.3%	(8.0%, 10.7%)
Lee County	51105	18.6%	(6.6%, 42.6%)	12.7%	(9.9%, 16.2%)
Montgomery County	51121	11.0%	(5.4%, 21.0%)	9.1%	(7.9%, 10.6%)
Patrick County	51141	11.8%	(3.7%, 32.2%)	16.5%	(12.5%, 21.5%)
Pittsylvania County	51143	13.6%	(7.8%, 22.7%)	11.4%	(9.6%, 13.5%)
Pulaski County	51155	6.7%	(3.6%, 19.0%)	7.3%	(5.4%, 9.7%)
Russell County	51167	18.1%	(7.0%, 39.5%)	12.4%	(9.2%, 16.6%)
Scott County	51169	13.6%	(6.2%, 27.3%)	10.8%	(7.2%, 16.0%)
Smyth County	51173	11.2%	(4.0%, 27.4%)	12.8%	(10.8%, 15.2%)
Tazewell County	51185	11.3%	(4.4%, 26.1%)	10.6%	(8.9%, 12.6%)
Washington County	51191	18.8%	(8.3%, 37.2%)	14.8%	(12.0%, 18.1%)
Wise County	51195	19.8%	(10.1%, 35.4%)	12.5%	(9.2%, 16.9%)
Wythe County	51197	12.3%	(5.2%, 26.5%)	11.2%	(8.5%, 14.4%)
Bristol City	51520	10.2%	(2.1%, 53.5%)	17.0%	(11.4%, 24.6%)
Danville City	51590	20.3%	(6.0%, 50.4%)	13.0%	(9.7%, 17.3%)
Galax City	51640	0.0%	(0.0%, 70.9%)	5.4%	(3.5%, 8.4%)
Martinsville City	51690	12.9%	(1.7%, 55.2%)	16.0%	(9.5%, 25.7%)
Norton City	51720	0.0%	(0.0%, 69.6%)	12.2%	(6.1%, 22.9%)
Radford City	51750	0.0%	(-0.0%, 62.2%)	9.3%	(7.2%, 12.0%)
Roanoke City	51770	12.5%	(7.1%, 20.9%)	8.6%	(6.6%, 11.1%)





County name	County FIPS	Direct	Direct 95% CI	SAE	SAE 95% CI
		estimate		composite	
Amelia County	51007	0.0%	(0.0%, 26.6%)	6.5%	(4.5%, 9.2%)
Brunswick County	51025	22.8%	(8.2%, 49.2%)	14.1%	(10.5%, 18.6%)
Buckingham County	51029	25.9%	(8.9%, 55.5%)	10.2%	(3.5%, 26.2%)
Charles City County	51036	4.2%	(1.7%, 44.6%)	5.8%	(3.3%, 10.0%)
Charlotte County	51037	8.4%	(1.5%, 35.5%)	10.1%	(6.6%, 15.1%)
Chesterfield County	51041	9.2%	(6.0%, 13.8%)	9.1%	(8.1%, 10.2%)
Cumberland County	51049	8.9%	(4.7%, 35.0%)	11.0%	(8.7%, 13.7%)
Dinwiddie County	51053	14.3%	(3.6%, 42.5%)	9.4%	(7.0%, 12.6%)
Goochland County	51075	7.1%	(1.1%, 34.0%)	12.0%	(9.3%, 15.4%)
Greensville County	51081	15.0%	(4.0%, 42.6%)	33.3%	(18.1%, 52.9%)
Halifax County	51083	5.1%	(2.9%, 14.5%)	8.0%	(6.1%, 10.3%)
Hanover County	51085	7.7%	(3.6%, 15.8%)	9.7%	(8.5%, 11.1%)
Henrico County	51087	6.6%	(4.1%, 10.7%)	8.3%	(7.5%, 9.3%)
Lunenburg County	51111	31.6%	(10.9%, 63.4%)	10.9%	(7.7%, 15.3%)
Mecklenburg County	51117	2.5%	(1.8%, 13.2%)	8.0%	(5.6%, 11.4%)
New Kent County	51127	5.2%	(0.8%, 26.4%)	6.3%	(3.9%, 9.9%)
Nottoway County	51135	2.4%	(1.2%, 25.9%)	1.2%	(0.1%, 8.7%)
Powhatan County	51145	0.0%	(-0.0%, 32.8%)	7.5%	(3.4%, 15.5%)
Prince Edward County	51147	7.1%	(1.8%, 23.9%)	8.3%	(5.8%, 11.7%)
Prince George County	51149	5.0%	(2.9%, 19.0%)	6.4%	(3.4%, 11.9%)
Surry County	51181	0.0%	(0.0%, 56.6%)	15.3%	(7.5%, 28.7%)
Sussex County	51183	23.3%	(5.5%, 61.4%)	24.1%	(15.2%, 36.0%)
Colonial Heights City	51570	9.9%	(1.9%, 49.5%)	5.9%	(3.9%, 8.9%)
Emporia City	51595	0.0%	(0.0%, 68.6%)	10.4%	(5.4%, 19.2%)
Hopewell City	51670	5.2%	(2.8%, 29.6%)	6.7%	(4.9%, 9.2%)
Petersburg City	51730	7.7%	(2.5%, 21.0%)	6.0%	(3.9%, 9.0%)
Richmond City	51760	7.9%	(4.5%, 13.5%)	8.8%	(6.2%, 12.3%)





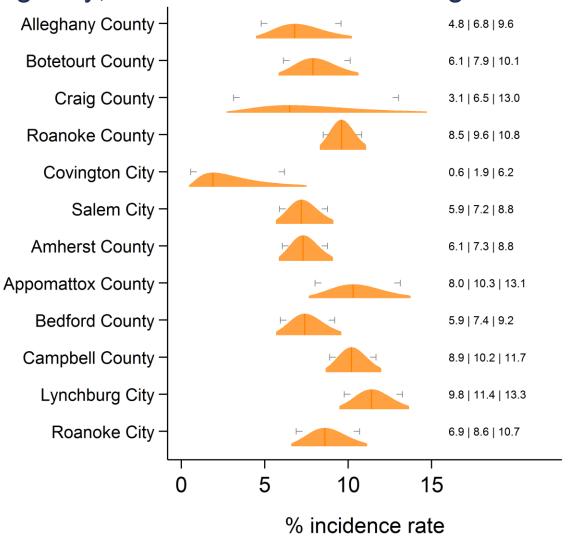
County name	County FIPS	Direct	Direct 95% CI	SAE	SAE 95% CI
		estimate		composite	
Accomack County	51001	9.7%	(3.2%, 25.7%)	4.6%	(2.7%, 8.0%)
Essex County	51057	2.9%	(1.3%, 30.9%)	8.2%	(5.8%, 11.6%)
Gloucester County	51073	12.0%	(3.9%, 31.3%)	8.5%	(6.9%, 10.5%)
Isle of Wight County	51093	8.1%	(4.1%, 20.9%)	11.9%	(10.2%, 13.8%)
James City County	51095	6.8%	(2.4%, 17.4%)	10.7%	(8.5%, 13.3%)
King and Queen County	51097	6.9%	(2.0%, 66.5%)	3.0%	(1.2%, 7.4%)
King William County	51101	4.1%	(2.1%, 30.9%)	12.8%	(10.0%, 16.2%)
Lancaster County	51103	25.0%	(5.6%, 65.3%)	8.8%	(6.8%, 11.2%)
Mathews County	51115	4.4%	(1.2%, 26.0%)	9.7%	(7.4%, 12.6%)
Middlesex County	51119	14.1%	(1.8%, 59.1%)	10.0%	(7.6%, 13.2%)
Northampton County	51131	12.0%	(3.4%, 34.4%)	11.2%	(6.9%, 17.6%)
Northumberland County	51133	2.6%	(1.2%, 25.9%)	8.8%	(6.4%, 11.9%)
Richmond County	51159	13.0%	(4.3%, 32.8%)	14.9%	(9.1%, 23.4%)
Southampton County	51175	20.8%	(5.0%, 56.9%)	12.9%	(9.9%, 16.6%)
Westmoreland County	51193	2.4%	(1.2%, 23.7%)	7.4%	(5.4%, 10.1%)
York County	51199	9.3%	(3.1%, 24.9%)	8.7%	(7.3%, 10.5%)
Chesapeake City	51550	7.1%	(4.0%, 12.4%)	10.8%	(9.5%, 12.2%)
Franklin City	51620	11.1%	(5.8%, 27.9%)	6.5%	(4.5%, 9.5%)
Hampton City	51650	10.9%	(5.3%, 21.1%)	11.2%	(9.7%, 12.8%)
Newport News City	51700	11.4%	(6.4%, 19.5%)	10.5%	(9.2%, 12.0%)
Norfolk City	51710	6.9%	(3.9%, 12.0%)	8.9%	(7.7%, 10.3%)
Poquoson City	51735	0.0%	(0.0%, 61.8%)	12.3%	(9.6%, 15.5%)
Portsmouth City	51740	6.5%	(3.2%, 12.5%)	12.0%	(10.4%, 13.7%)
Suffolk City	51800	8.6%	(3.7%, 18.7%)	10.2%	(8.4%, 12.2%)
Virginia Beach City	51810	8.0%	(5.1%, 12.3%)	10.0%	(8.8%, 11.5%)
Williamsburg City	51830	0.0%	(0.0%, 55.7%)	5.5%	(2.7%, 10.9%)





#### **Section 4: Graphical representation**

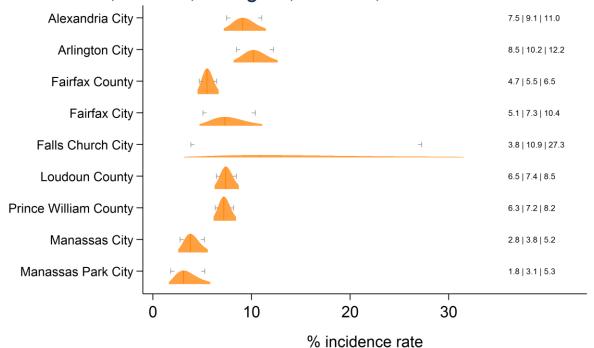
### Could not afford prescriptions in past 12 months Alleghany, Roanoke and Central Virginia HDs



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



## Could not afford prescriptions in past 12 months Alexandria, Fairfax, Arlington, Loudon, Prince William HDs



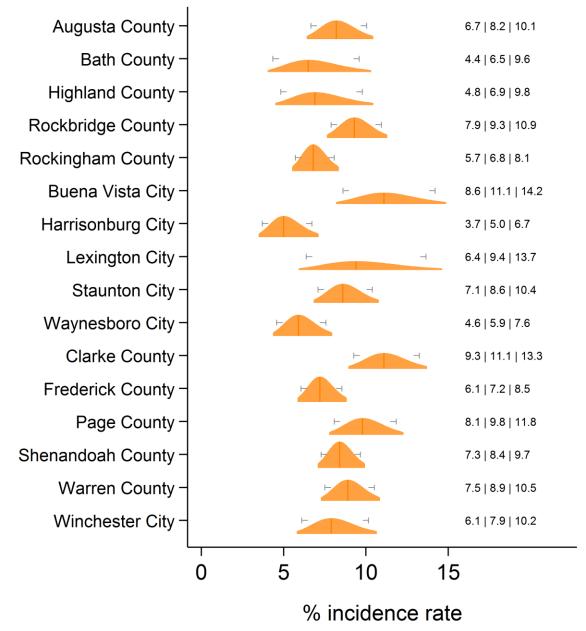
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB

Gray markers: 90% confidence interval





## Central Shenandoah and Lord Fairfax HDs

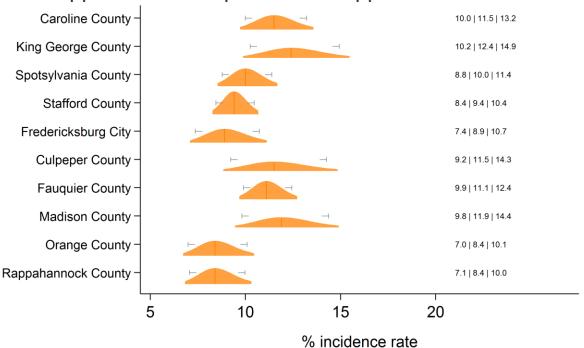


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB

Gray markers: 90% confidence interval



### Could not afford prescriptions in past 12 months Rappahannock/Rapidan and Rappahannock HDs

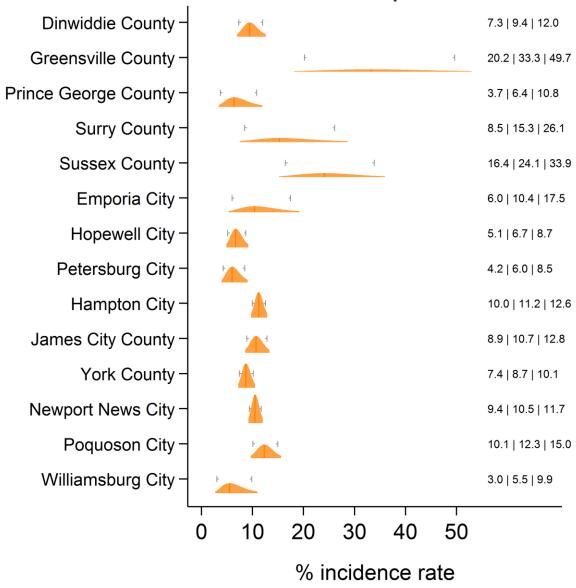


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





## Crater, Peninsula and Hampton HDs

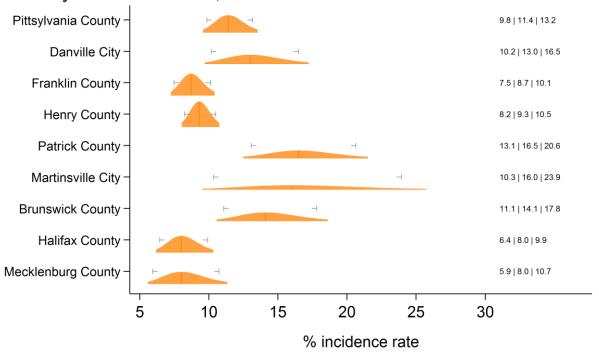


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB

Gray markers: 90% confidence interval



## Could not afford prescriptions in past 12 months Pittsylvania/Danville, Southside and West Piedmont HDs

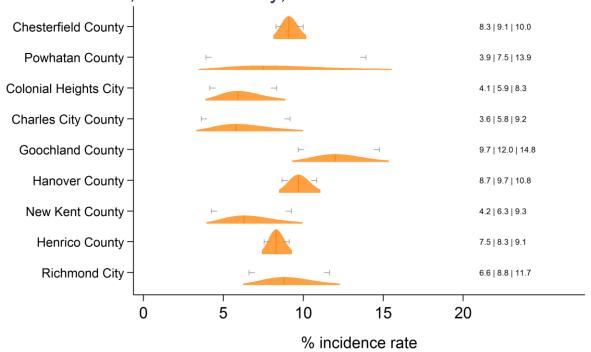


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





## Could not afford prescriptions in past 12 months Chesterfield, Chickahominy, Henrico and Richmond HDs



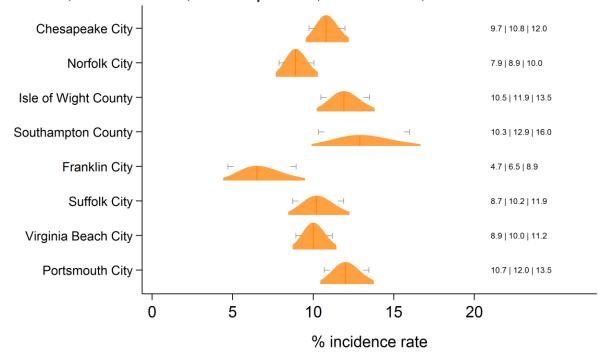
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB

Gray markers: 90% confidence interval





## Could not afford prescriptions in past 12 months Norfolk, Portsmouth, Chesapeake, VA Beach, W. Tidewater HDs



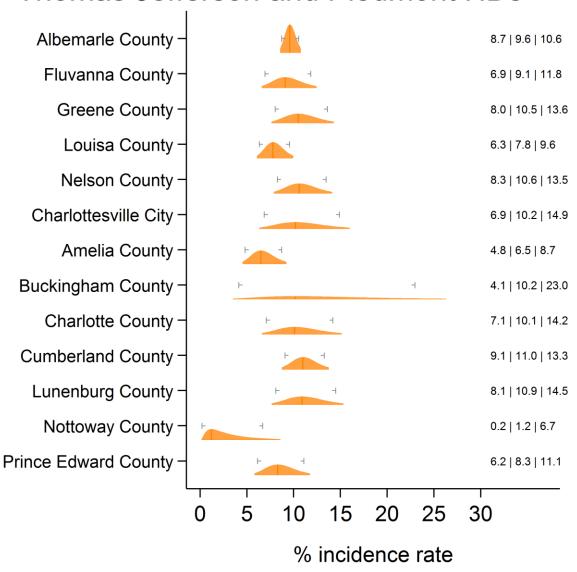
Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB

Gray markers: 90% confidence interval





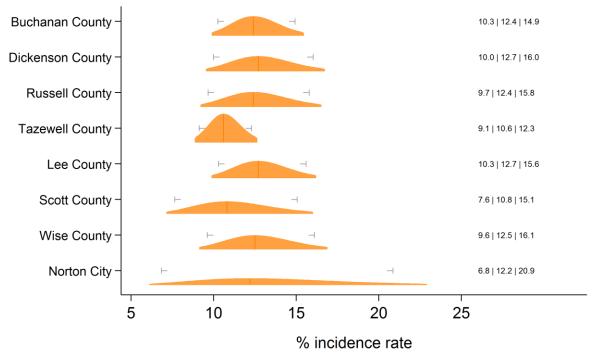
## Could not afford prescriptions in past 12 months Thomas Jefferson and Piedmont HDs



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



#### Could not afford prescriptions in past 12 months Cumberland Plateau and Lenowisco HDs

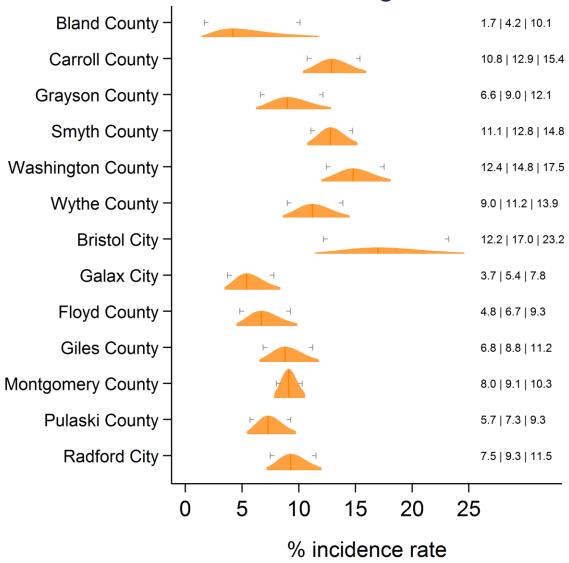


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





# Could not afford prescriptions in past 12 months New River and Mount Rogers HDs

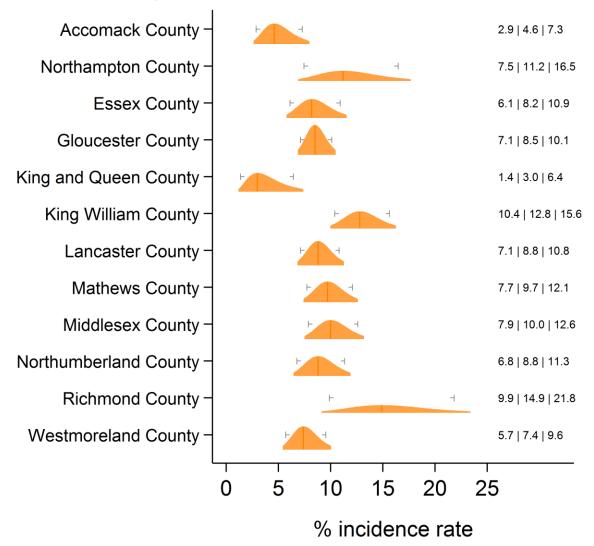


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





### Could not afford prescriptions in past 12 months 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: 47 areas.

Direct estimate is outside the 95% SAE Wilson CI: 86 areas.

SAE estimate is inside the 95% direct Wilson CI: 129 areas.

SAE estimate is outside the 95% direct Wilson CI: 3 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 that the direct standard error: 113 areas.

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

Direct standard error is zero: 19 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.03%; med = 1.88%; max = 9.68%.

Proportion of SAE variance to sampling error in regression coefficient estimates: min = 47.59%; med = 94.29%; max = 98.90%.

Proportion of SAE variance due to model selection: min = 0.14%; med = 2.92%; max = 52.38%.