



### Indicator 30: How often in the past 12 months would you say you were worried or stressed about having enough money to buy nutritious meals?

Internal variable name: outc30\_pay\_food

**Section 1: Definition** 

Definition: How often in the past 12 months would you say you were worried or stressed about having enough money to buy nutritious meals?

#### Section 2: Predictive models

	Mixed, demos	Logit, no area	Mixed with
	only	effects	area covariates
	b/se	b/se	b/se
Outcome 30: How often in the past 12 months			
would you say you were worried or stressed			
about having enough money to buy nutritious meals?			
Non-Hispanic Black vs. Non-Hispanic White	0.2799***	0.2628**	0.2628***
	(0.0753)	(0.0910)	(0.0752)
Non-Hispanic Asian vs. Non-Hispanic White	-0.1526	-0.0856	-0.0856
	(0.3050)	(0.2327)	(0.3039)
Non-Hispanic Other vs. Non-Hispanic White	0.4430**	0.4334**	0.4334**
	(0.1392)	(0.1609)	(0.1369)
Hispanic vs. Non-Hispanic White	0.8289***	0.8777***	0.8777***
	(0.1747)	(0.1633)	(0.1835)
Female	0.5513***	0.5320***	0.5320***
	(0.0716)	(0.0695)	(0.0732)
Age 18-24 vs. 65+	1.4107***	1.4155***	1.4155***
	(0.1616)	(0.1417)	(0.1601)
Age 25-34 vs. 65+	1.3888***	1.3987***	1.3987***
	(0.0986)	(0.1138)	(0.0985)
Age 35-44 vs. 65+	1.2294***	1.2448***	1.2448***
	(0.1263)	(0.1072)	(0.1258)
Age 45-54 vs. 65+	1.0273***	1.0511***	1.0511***
	(0.1187)	(0.0975)	(0.1197)
Age 55-64 vs. 65+	0.6393***	0.6427***	0.6427***
	(0.1075)	(0.0946)	(0.1066)
% education below High School, population 25+		0.0454***	0.0454***
years old			
		(0.0107)	(0.0098)





Leukemia Cancer Male Rate		0.0067	0.0067
		(0.0047)	(0.0043)
Crude mortality rate of influenza/pneumonia per		0.1269***	0.1269***
10,000			
		(0.0347)	(0.0335)
% occupied HUs - renter-occupied		0.0073	0.0073*
		(0.0040)	(0.0033)
% without health insurance, total population		-0.0273	-0.0273
		(0.0188)	(0.0166)
Pancreas Cancer All Rate		0.0145	0.0145*
		(0.0077)	(0.0064)
Stomach Cancer Female Rate		0.0080	0.0080
		(0.0163)	(0.0111)
{Pancreas Cancer All Rate}		-0.0024*	-0.0024**
interacted with {Stomach Cancer Female Rate}		(0.0012)	(0.0009)
% Hispanic among adults 18 to 64		-0.1397*	-0.1397**
		(0.0624)	(0.0497)
% rent >30% of income		-0.0227**	-0.0227**
		(0.0083)	(0.0068)
{% Hispanic among adults 18 to 64}		0.0026*	0.0026*
interacted with {% rent >30% of income}		(0.0013)	(0.0010)
Intercept	-1.8909***	-1.7436***	-1.7436***
	(0.1026)	(0.4174)	(0.3436)
Area effect variance	0.1156**		0.0000
	(0.0357)		(0.0000)

Number of alternative models used to estimate model error = 1.





### Section 3: Results

County name	County FIPS	Direct	Direct 95% Cl	SAE	SAE 95% CI
		estimate		composite	
Augusta County	51015	31.0%	(22.6%, 41.0%)	34.0%	(31.7%, 36.4%)
Bath County	51017	22.2%	(5.0%, 60.5%)	22.3%	(15.4%, 31.3%)
Caroline County	51033	44.8%	(24.1%, 67.5%)	37.7%	(33.2%, 42.4%)
Clarke County	51043	33.3%	(14.7%, 59.0%)	29.3%	(26.3%, 32.6%)
Culpeper County	51047	49.3%	(34.3%, 64.4%)	37.2%	(34.0%, 40.5%)
Fauquier County	51061	42.4%	(29.6%, 56.3%)	29.7%	(27.3%, 32.2%)
Frederick County	51069	34.3%	(23.8%, 46.6%)	35.7%	(32.8%, 38.7%)
Highland County	51091	0.0%	(0.0%, 83.2%)	20.4%	(10.8%, 35.0%)
King George County	51099	8.8%	(2.9%, 36.4%)	37.1%	(33.1%, 41.3%)
Madison County	51113	19.2%	(8.4%, 38.1%)	31.8%	(26.4%, 37.8%)
Orange County	51137	37.2%	(21.7%, 55.9%)	33.9%	(30.4%, 37.6%)
Page County	51139	69.3%	(42.5%, 87.3%)	47.8%	(41.8%, 53.9%)
Rappahannock County	51157	55.4%	(28.3%, 79.6%)	46.5%	(40.0%, 53.2%)
Rockbridge County	51163	42.4%	(23.9%, 63.4%)	29.0%	(25.5%, 32.8%)
Rockingham County	51165	31.4%	(21.0%, 44.1%)	36.0%	(33.0%, 39.1%)
Shenandoah County	51171	46.0%	(30.8%, 62.0%)	43.1%	(38.6%, 47.7%)
Spotsylvania County	51177	32.8%	(21.4%, 46.7%)	30.3%	(27.9%, 32.8%)
Stafford County	51179	29.6%	(20.6%, 40.6%)	28.9%	(26.2%, 31.8%)
Warren County	51187	41.5%	(23.0%, 62.8%)	32.5%	(29.7%, 35.4%)
Buena Vista City	51530	100.0%	(0.6%, 100.0%)	34.9%	(29.1%, 41.2%)
Fredericksburg City	51630	37.0%	(18.8%, 59.9%)	28.5%	(24.2%, 33.3%)
Harrisonburg City	51660	78.7%	(45.5%, 94.2%)	40.8%	(32.6%, 49.5%)
Lexington City	51678	0.0%	(0.0%, 99.4%)	62.9%	(47.6%, 76.0%)
Staunton City	51790	18.4%	(2.5%, 66.8%)	32.9%	(27.4%, 39.1%)
Waynesboro City	51820	15.3%	(3.3%, 48.8%)	37.6%	(32.5%, 43.0%)
Winchester City	51840	63.0%	(35.7%, 83.9%)	44.5%	(37.2%, 52.0%)





County name	County FIPS	Direct	Direct 95% Cl	SAE	SAE 95% CI
		estimate		composite	
Albemarle County	51003	24.7%	(15.9%, 36.1%)	32.2%	(29.5%, 35.0%)
Alleghany County	51005	46.8%	(28.7%, 65.7%)	44.9%	(40.1%, 49.7%)
Amherst County	51009	24.7%	(9.2%, 51.5%)	34.0%	(29.0%, 39.3%)
Appomattox County	51011	41.8%	(22.0%, 64.6%)	32.2%	(28.4%, 36.2%)
Arlington City	51013	33.6%	(22.2%, 47.1%)	32.1%	(27.6%, 36.9%)
Bedford County	51019	38.1%	(26.2%, 51.7%)	32.6%	(28.7%, 36.7%)
Botetourt County	51023	28.8%	(16.8%, 44.7%)	30.9%	(26.0%, 36.3%)
Campbell County	51031	29.4%	(16.7%, 46.3%)	35.9%	(32.9%, 39.0%)
Craig County	51045	50.3%	(6.5%, 93.7%)	47.9%	(32.4%, 63.8%)
Fairfax County	51059	23.8%	(18.7%, 29.9%)	26.4%	(24.0%, 28.9%)
Fluvanna County	51065	27.0%	(10.1%, 54.9%)	37.0%	(32.8%, 41.6%)
Greene County	51079	42.1%	(19.4%, 68.7%)	45.6%	(41.5%, 49.7%)
Loudoun County	51107	28.9%	(21.6%, 37.4%)	25.3%	(23.0%, 27.6%)
Louisa County	51109	22.4%	(10.7%, 41.1%)	39.3%	(33.2%, 45.8%)
Nelson County	51125	31.7%	(14.5%, 56.1%)	36.4%	(30.4%, 42.9%)
Prince William County	51153	31.0%	(23.3%, 39.9%)	30.8%	(27.2%, 34.8%)
Roanoke County	51161	33.2%	(24.0%, 43.9%)	31.3%	(28.5%, 34.3%)
Alexandria City	51510	28.5%	(16.7%, 44.3%)	28.6%	(24.6%, 33.0%)
Charlottesville City	51540	51.5%	(25.3%, 76.9%)	47.9%	(41.6%, 54.3%)
Covington City	51580	0.0%	(0.0%, 99.4%)	44.5%	(37.8%, 51.5%)
Fairfax City	51600	22.0%	(10.6%, 40.1%)	27.2%	(22.9%, 32.0%)
Falls Church City	51610	52.0%	(8.2%, 92.9%)	37.5%	(31.3%, 44.2%)
Lynchburg City	51680	51.8%	(34.9%, 68.3%)	39.1%	(35.5%, 42.8%)
Manassas City	51683	23.7%	(6.3%, 58.9%)	46.9%	(31.7%, 62.7%)
Manassas Park City	51685	18.1%	(0.4%, 97.5%)	21.8%	(15.5%, 29.8%)
Salem City	51775	53.4%	(18.1%, 85.6%)	37.5%	(33.8%, 41.3%)





County name	County FIPS	Direct	Direct 95% Cl	SAE	SAE 95% CI
		estimate		composite	
Bland County	51021	38.4%	(9.8%, 78.1%)	48.1%	(42.8%, 53.3%)
Buchanan County	51027	46.7%	(31.3%, 62.7%)	41.2%	(33.6%, 49.4%)
Carroll County	51035	35.8%	(20.4%, 54.9%)	39.1%	(35.4%, 42.9%)
Dickenson County	51051	36.1%	(20.7%, 55.1%)	48.3%	(42.0%, 54.6%)
Floyd County	51063	26.5%	(12.8%, 46.9%)	36.5%	(31.5%, 41.9%)
Franklin County	51067	34.3%	(18.3%, 54.8%)	31.9%	(29.2%, 34.7%)
Giles County	51071	41.1%	(17.7%, 69.4%)	37.0%	(32.2%, 42.0%)
Grayson County	51077	33.4%	(14.3%, 60.0%)	43.2%	(39.6%, 46.9%)
Henry County	51089	40.9%	(28.6%, 54.4%)	42.0%	(38.9%, 45.1%)
Lee County	51105	66.5%	(46.9%, 81.7%)	48.3%	(43.7%, 52.9%)
Montgomery County	51121	38.4%	(26.7%, 51.5%)	30.9%	(27.0%, 35.0%)
Patrick County	51141	36.5%	(18.8%, 58.8%)	40.8%	(37.0%, 44.7%)
Pittsylvania County	51143	39.2%	(29.0%, 50.4%)	38.8%	(35.8%, 41.8%)
Pulaski County	51155	37.6%	(23.6%, 54.1%)	35.7%	(31.6%, 40.0%)
Russell County	51167	43.9%	(27.1%, 62.2%)	53.1%	(46.3%, 59.7%)
Scott County	51169	44.1%	(29.7%, 59.6%)	44.1%	(40.2%, 48.0%)
Smyth County	51173	49.2%	(31.7%, 66.9%)	41.6%	(38.9%, 44.3%)
Tazewell County	51185	35.4%	(22.3%, 51.2%)	46.7%	(42.0%, 51.6%)
Washington County	51191	47.8%	(33.8%, 62.1%)	39.8%	(35.7%, 44.1%)
Wise County	51195	44.2%	(31.2%, 58.0%)	37.9%	(31.3%, 45.0%)
Wythe County	51197	43.3%	(28.1%, 59.9%)	43.6%	(39.4%, 47.9%)
Bristol City	51520	71.2%	(30.7%, 93.3%)	50.9%	(43.0%, 58.8%)
Danville City	51590	39.7%	(19.6%, 63.9%)	47.7%	(40.6%, 54.9%)
Galax City	51640	64.4%	(13.6%, 94.8%)	44.0%	(30.4%, 58.6%)
Martinsville City	51690	70.2%	(31.4%, 92.3%)	53.9%	(48.6%, 59.1%)
Norton City	51720	51.6%	(8.8%, 92.1%)	48.8%	(42.1%, 55.5%)
Radford City	51750	60.4%	(15.8%, 92.5%)	44.7%	(34.8%, 55.0%)
Roanoke City	51770	37.4%	(27.1%, 49.0%)	37.8%	(34.5%, 41.2%)





County name	County FIPS	Direct	Direct 95% Cl	SAE	SAE 95% CI
		estimate		composite	
Amelia County	51007	23.9%	(9.7%, 47.8%)	35.8%	(30.4%, 41.5%)
Brunswick County	51025	50.9%	(26.4%, 74.9%)	45.8%	(39.2%, 52.5%)
Buckingham County	51029	42.5%	(21.3%, 66.9%)	43.8%	(36.3%, 51.6%)
Charles City County	51036	34.0%	(11.0%, 68.3%)	44.0%	(35.9%, 52.4%)
Charlotte County	51037	48.5%	(21.4%, 76.5%)	51.5%	(39.3%, 63.5%)
Chesterfield County	51041	32.1%	(25.9%, 39.1%)	33.2%	(31.1%, 35.4%)
Cumberland County	51049	28.5%	(10.5%, 57.8%)	39.4%	(33.7%, 45.5%)
Dinwiddie County	51053	41.6%	(22.0%, 64.2%)	43.6%	(39.7%, 47.6%)
Goochland County	51075	25.2%	(10.2%, 50.0%)	30.8%	(27.2%, 34.7%)
Greensville County	51081	34.2%	(11.5%, 67.6%)	50.3%	(42.9%, 57.7%)
Halifax County	51083	30.1%	(18.3%, 45.2%)	38.3%	(35.0%, 41.7%)
Hanover County	51085	27.4%	(18.8%, 38.1%)	31.0%	(28.3%, 33.8%)
Henrico County	51087	30.5%	(24.5%, 37.4%)	35.8%	(32.8%, 39.0%)
Lunenburg County	51111	66.2%	(37.9%, 86.2%)	57.9%	(49.9%, 65.5%)
Mecklenburg County	51117	47.6%	(31.4%, 64.3%)	45.4%	(39.5%, 51.3%)
New Kent County	51127	44.9%	(21.6%, 70.7%)	38.5%	(33.6%, 43.5%)
Nottoway County	51135	48.2%	(24.6%, 72.6%)	40.9%	(36.0%, 45.9%)
Powhatan County	51145	48.4%	(19.0%, 78.9%)	36.2%	(32.9%, 39.7%)
Prince Edward County	51147	38.2%	(19.9%, 60.6%)	37.4%	(33.3%, 41.7%)
Prince George County	51149	30.7%	(15.1%, 52.6%)	34.0%	(30.8%, 37.4%)
Surry County	51181	60.4%	(22.6%, 88.8%)	45.2%	(37.5%, 53.1%)
Sussex County	51183	69.4%	(43.8%, 86.9%)	59.8%	(50.1%, 68.9%)
Colonial Heights City	51570	87.9%	(42.3%, 97.8%)	40.3%	(34.8%, 46.0%)
Emporia City	51595	73.0%	(17.1%, 97.3%)	69.4%	(56.8%, 79.7%)
Hopewell City	51670	53.8%	(26.7%, 78.8%)	46.3%	(41.5%, 51.3%)
Petersburg City	51730	39.7%	(23.5%, 58.4%)	44.2%	(39.0%, 49.5%)
Richmond City	51760	42.2%	(33.6%, 51.4%)	43.1%	(39.3%, 47.0%)





County name	County FIPS	Direct	Direct 95% Cl	SAE	SAE 95% CI
		estimate		composite	
Accomack County	51001	46.9%	(27.9%, 66.8%)	42.4%	(37.6%, 47.4%)
Essex County	51057	38.2%	(15.1%, 68.2%)	41.9%	(33.4%, 50.9%)
Gloucester County	51073	40.1%	(23.3%, 59.6%)	29.3%	(25.8%, 33.1%)
Isle of Wight County	51093	32.6%	(19.9%, 48.4%)	36.6%	(33.5%, 39.7%)
James City County	51095	25.8%	(15.6%, 39.6%)	27.4%	(24.8%, 30.0%)
King and Queen County	51097	89.6%	(35.7%, 97.1%)	41.5%	(34.8%, 48.6%)
King William County	51101	22.6%	(8.1%, 49.2%)	25.9%	(22.0%, 30.2%)
Lancaster County	51103	36.9%	(13.1%, 69.5%)	39.1%	(34.8%, 43.6%)
Mathews County	51115	7.5%	(2.6%, 28.3%)	22.9%	(18.9%, 27.5%)
Middlesex County	51119	71.8%	(36.2%, 92.0%)	41.2%	(34.5%, 48.2%)
Northampton County	51131	46.6%	(26.6%, 67.8%)	48.3%	(40.8%, 55.8%)
Northumberland County	51133	18.9%	(7.1%, 41.5%)	29.0%	(22.4%, 36.6%)
Richmond County	51159	53.0%	(33.5%, 71.6%)	52.6%	(43.0%, 62.1%)
Southampton County	51175	28.7%	(10.0%, 59.5%)	38.8%	(35.5%, 42.2%)
Westmoreland County	51193	46.1%	(18.8%, 75.9%)	39.9%	(34.9%, 45.1%)
York County	51199	26.2%	(13.4%, 45.0%)	28.0%	(25.3%, 30.9%)
Chesapeake City	51550	33.4%	(26.0%, 41.7%)	31.2%	(29.1%, 33.3%)
Franklin City	51620	41.9%	(23.6%, 62.8%)	46.7%	(40.1%, 53.4%)
Hampton City	51650	35.6%	(27.1%, 45.2%)	34.2%	(31.5%, 37.0%)
Newport News City	51700	44.5%	(34.0%, 55.6%)	38.1%	(34.7%, 41.6%)
Norfolk City	51710	30.7%	(23.1%, 39.4%)	36.2%	(32.6%, 40.1%)
Poquoson City	51735	60.3%	(17.3%, 91.7%)	36.7%	(29.9%, 44.0%)
Portsmouth City	51740	41.3%	(29.4%, 54.3%)	41.6%	(38.3%, 44.9%)
Suffolk City	51800	26.8%	(16.5%, 40.5%)	36.0%	(33.3%, 38.9%)
Virginia Beach City	51810	29.3%	(23.1%, 36.3%)	30.9%	(28.5%, 33.5%)
Williamsburg City	51830	29.7%	(5.9%, 73.8%)	37.6%	(30.2%, 45.6%)





### Section 4: Graphical representation

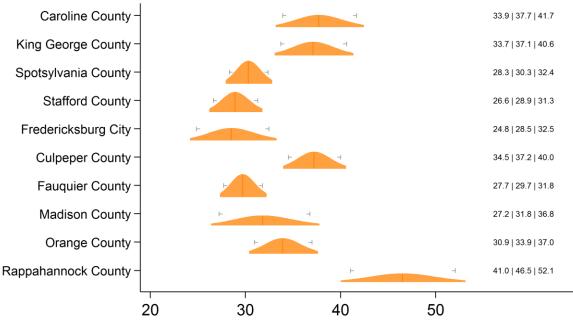
## Stressed about buying food past 12 months Central Shenandoah and Lord Fairfax HDs

	P 1			32.1   34.0   36.0	
F	+			16.3   22.3   29.7	
F	ł			12.1   20.4   32.4	
	F 4			26.0   29.0   32.1	
	F .	1		33.5   36.0   38.6	
	F	1		30.0   34.9   40.1	
	ł	ł		33.9   40.8   48.1	
		F	1	50.1   62.9   74.1	
	F I			28.2   32.9   38.0	
	F	ł		33.3   37.6   42.1	
	F 1			26.7   29.3   32.0	
	F A	1		33.2   35.7   38.3	
		F I		42.7   47.8   52.9	
		F 1		39.3   43.1   46.9	
	F 4			30.1   32.5   34.9	
	-			38.3   44.5   50.8	
	1	1	1		
10	30	50	70		
% incidence rate					
	F 10			<sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup> <sup>4</sup>	





### Stressed about buying food past 12 months Rappahannock/Rapidan and Rappahannock HDs

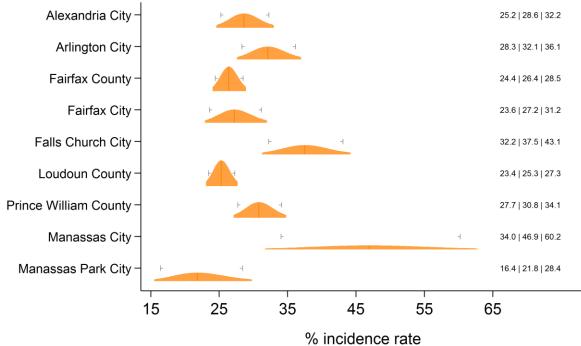


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





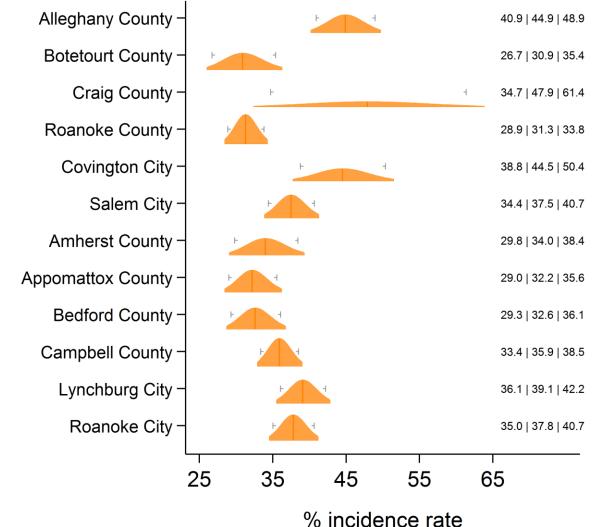
### Stressed about buying food past 12 months Alexandria, Fairfax, Arlington, Loudon, Prince William HDs





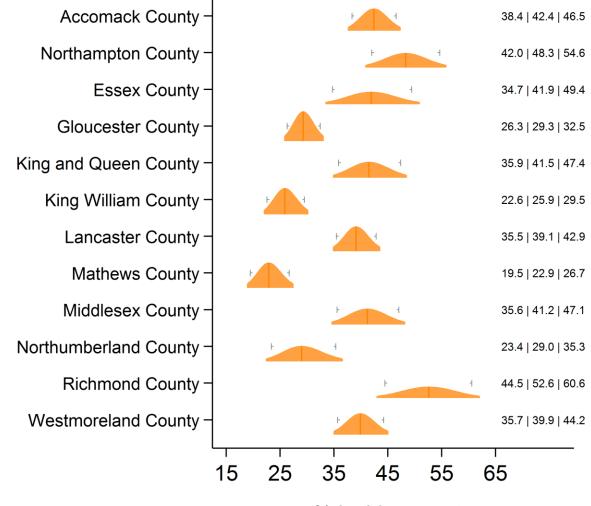


# Stressed about buying food past 12 months Alleghany, Roanoke and Central Virginia HDs

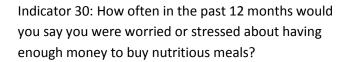




## Stressed about buying food past 12 months Eastern Shore and Three Rivers HDs



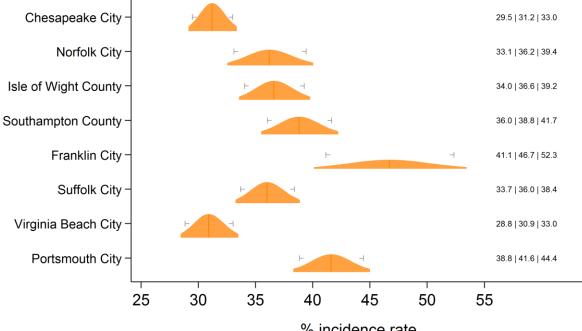
% incidence rate







## Stressed about buying food past 12 months Norfolk,Portsmouth,Chesapeake,VA Beach,W. Tidewater HDs

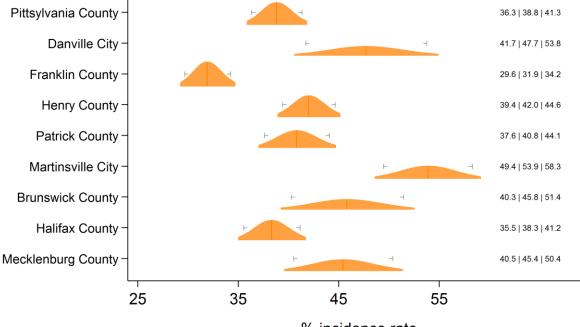


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





### Stressed about buying food past 12 months Pittsylvania/Danville, Southside and West Piedmont HDs

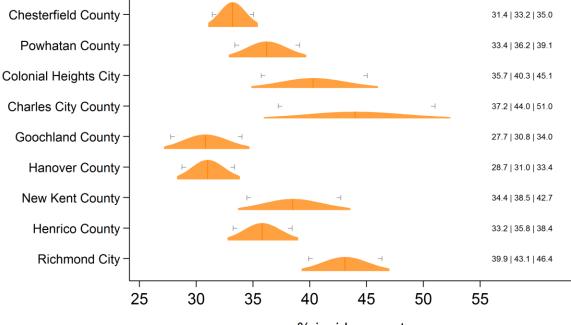


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





### Stressed about buying food past 12 months Chesterfield, Chickahominy, Henrico and Richmond HDs

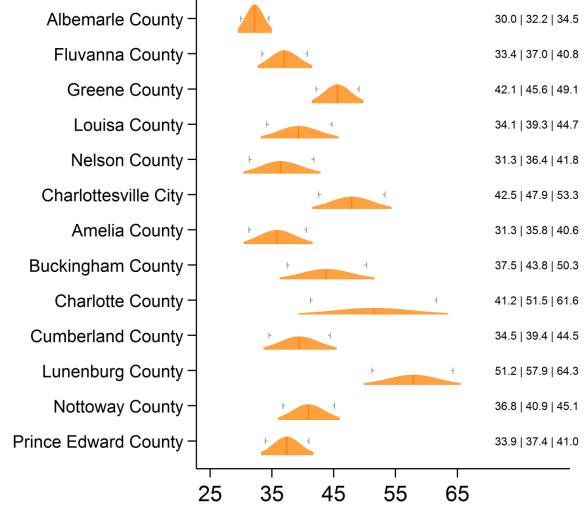


Text at right: 1-sided 95% LCB | Point Estimate | 1-sided 95% UCB Gray markers: 90% confidence interval





## Stressed about buying food past 12 months Thomas Jefferson and Piedmont HDs

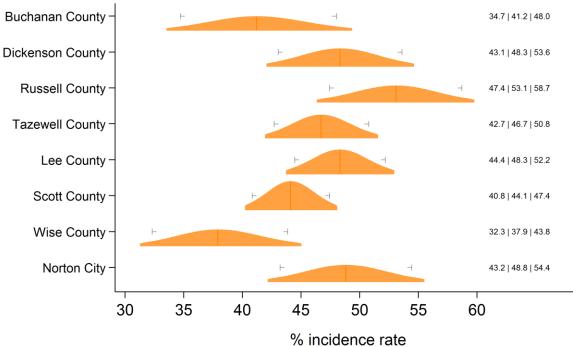


% incidence rate





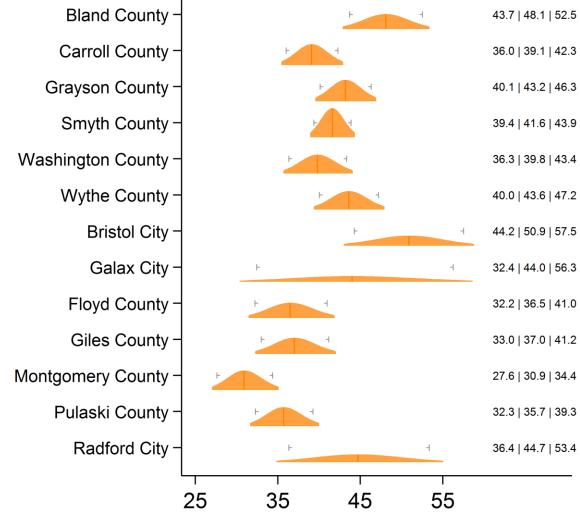
### Stressed about buying food past 12 months Cumberland Plateau and Lenowisco HDs







## Stressed about buying food past 12 months New River and Mount Rogers HDs

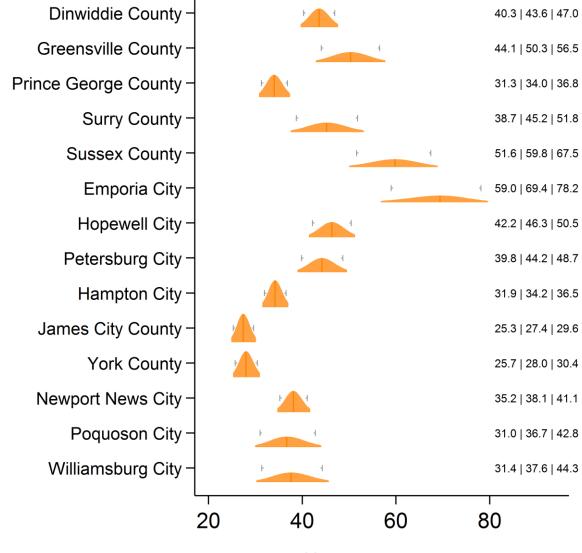


% incidence rate





## Stressed about buying food past 12 months Crater, Peninsula and Hampton HDs



% incidence rate





### Section 5: Additional diagnostics

Direct estimate is inside the 95% SAE Wilson CI: 50 areas.

Direct estimate is outside the 95% SAE Wilson CI: 83 areas.

SAE estimate is inside the 95% direct Wilson CI: 130 areas.

SAE estimate is outside the 95% direct Wilson CI: 3 areas.

SAE Wilson 95% CI is fully inside the 95% direct Wilson CI: 119 areas.

SAE Wilson 95% CI partially overlaps with the 95% direct Wilson CI: 14 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: 0 areas.

Direct standard error is zero: 4 areas.

Proportion of SAE variance due to ACS sampling error: min = 0.37%; med = 8.20%; max = 30.44%.

Proportion of SAE variance to sampling error in regression coefficient estimates: min = 69.56%; med = 91.80%; max = 99.63%.

Proportion of SAE variance due to model selection: min = 0.00%; med = 0.00%; max = 0.00%.