Appendix C

2021 National Survey of Children's Health
Table of State Sample Sizes

2021 NSCH - Estimated State Sample Sizes

State Sample Sizes	Base Sample Oversampling Rate[1] 'k'	Proportion of Households with Children from 2019 ACS 'P'	Base Sample Sampling Variance[1] 'R'	Total Sample[2]	Stratum 1 Sample (Admin Flag for HHLD w/Children)	Stratum 2a Sample (Admin Flag for HHLD w/o Children)
Alabama	4	29%	1.05	6200	4600	1700
Alaska	4	26%	1.06	8100	4500	3600
Arizona	3	34%	0.99	6000	4000	2000
Arkansas	4	30%	1.05	6700	4600	2100
California	3	43%	1.02	4900	3700	1200
Colorado	3	38%	0.98	10000	6300	3900
Connecticut	3	40%	0.98	4500	3200	1300
Delaware	4	35%	1.04	5600	4000	1500
District of Columbia	6	21%	1.03	5000	3600	1400
Florida	3	32%	0.98	6200	4200	2000
Georgia	3	37%	1.01	10500	6900	3400
Hawaii	2	33%	0.99	7200	3500	3700
Idaho	3	36%	0.99	4300	2800	1500
Illinois	3	38%	0.99	4900	3500	1500
Indiana	3	37%	0.98	5100	3600	1600
Iowa	6	25%	1.03	4000	3000	1000
Kansas	3	38%	0.98	4600	3500	1200
Kentucky	4	31%	1.03	5300	3800	1500
Louisiana	3	33%	0.99	9000	5900	3000
Maine	5	25%	0.99	5300	3700	1500
Maryland	3	41%	0.99	4400	3200	1200
Massachusetts	4	37%	1.04	3700	2800	900
Michigan	4	38%	1.04	4300	3400	850
Minnesota	4	39%	1.03	3100	2400	700
Mississippi	4	30%	1.05	7400	5500	1900
Missouri	4	33%	1.03	4500	3400	1100
Montana	5	22%	1.01	5600	3600	2000
Nebraska	5	29%	1.03	5800	4200	1700
Nevada	3	34%	0.99	6300	4300	1900
New Hampshire	5	29%	1.01	4200	3100	1100
New Jersey	3	42%	1.01	4500	3200	1300
New Mexico	4	23%	1.02	7400	4600	2700
New York	3	33%	0.98	5800	3900	2000
North Carolina	3	35%	0.98	5300	3800	1500
North Dakota	6	22%	1.01	4500	3200	1300
Ohio	3	37%	0.97	9900	6500	3300
Oklahoma	4	28%	1.03	6300	4400	1900
Oregon	4	34%	1.03	15500	10500	5000
Pennsylvania	4	36%	1.03	4100	3200	900
Rhode Island	3	36%	0.98	5000	3600	1400
South Carolina	4	32%	1.04	5700	4300	1400
South Dakota	5	25%	1.02	4800	3300	1500
Tennessee	3	36%	0.98	5200	3900	1400
Texas	3	38%	1.02	6600	4700	1900
Utah	3	47%	1.01	3800	2900	900
Vermont	6	22%	1.01	4400	3000	1400
Virginia	3	39%	0.98	4300	3100	1200
Washington	3	39%	0.98	4300	3000	1300
West Virginia	5	22%	1.04	6100	4000	2100
Wisconsin	4	38%	1.04	8000	5900	2200
Wyoming	5	23%	1.04	5800	3800	2000
Total				300,000	207,000	93,000
Proportion by Strata					69%	31%

[1] These are the Stratum 1 oversampling rates and the sampling variances for the base production sample only. Colorado, Nebraska, Oregon, Wisconsin, Georgia, Louisiana, and Ohio all have additional sample that may have different oversampling rates and sampling variances.

[2] Sample sizes include both the base production sample as well as the additional nationwide oversample of young children and state oversamples in CO, NE, OR, WI, GA, LA, and OH. All sample sizes have been rounded.

<u>Calculations for Base Production State Sample Sizes</u>

The oversampling rate (k) was calculated to maximize the sample from Stratum 1 without increasing the variance (R) too much beyond that of a proportional stratified design of a similar cost.

(P) is the proportion of households with children based on the 2019 ACS audit[3].

The portion of the sample coming from each stratum was calculated using the oversampling rate (k) and the proportion of all households in each of the sampling strata (W1 and W2a). Address valid rates, child prevalence rates, and Screener and Topical returns rates were estimated by state and stratum primarily using previous years' response outcomes. A national total sample size of approximately 300,000 was determined based on budget. This includes the base production sample for all states as well as a national oversample aimed at getting additional interviews from children aged zero to five and additional sample in Colorado, Nebraska, Oregon, Wisconsin, Georgia, Louisiana, and Ohio. We expect the base production sample will produce approximately 600 Topical interviews per state. The expected number of interviews along with previous years' response information was used to calculate stratum sample sizes (n1 and n2a) in each state.

<u>For example, in Alabama[4]:</u>
The oversampling rate (k) was recalculated to be 4.0, for an R = 1.05. Of the 2019 ACS households eligible for NSCH sampling, 20.8% would be put in Stratum 1 (W1) and 53.5% would be put in Stratum 2a (W2a).

The portion of the sample coming from Stratum 1 was estimated to be (k*W1) / (W2a + k*W1) = 60.9% and the portion of the sample from Stratum 2a was 39.1%.

We can expect a completed Topical from 91.6% (Valid) * 37.3% (Screener) * 78.7% (Children) * 78.7% (Topical) = 21.2% of addresses in Stratum 1 and 76.4% (Valid) * 43.1% (Screener) * 10.6% (Children) * 82.7% (Topical) = 2.9% of addresses in Stratum 2a.

Since we expect to get 600 Topicals per state, we can get the state sample size (n) by evaluating the following:

(n * Portion of the sample from Stratum 1 * Stratum 1 completed Topical rate) + (n * Portion of the sample from Stratum 2a * Stratum 2a completed Topical rate) = 600.

Within rounding, it then follows that n = 600 / (60.9% * 21.2% + 39.1% * 2.9%) = 4300. Now n1 = 4300 * 60.9% = 2600 and n2a = 4300 * 39.1% = 1700. These are the base production sample sizes in each stratum for Alabama.[5]

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[3] Before mailout, this will be updated with the 2020 ACS.
[4] Note that numbers have been rounded here for all calculations.
[5] These numbers do not match what is in the table since this shows only the calculation for Alabama's base production sample while the sample sizes in the table include the additional nationwide oversample of young children.