

Appendix C – 2019 NSCH Table of State Sample Sizes

2019 NSCH - Estimated State Sample Sizes

State Sample Sizes	Oversampling Rate 'k'	Proportion of Households with Children from 2016 ACS 'P'	Sampling Variance 'R'	Total Sample	Stratum 1 Sample (Admin Flag for HHL w/Children)	Stratum 2a Sample (Admin Flag for HHL w/o Children)
Alabama	4.0	30%	1.05	4076	2549	1527
Alaska	4.0	26%	1.04	4480	2398	2081
Arizona	3.0	34%	1.00	4078	2353	1725
Arkansas	3.0	32%	0.99	5131	2802	2328
California	3.0	44%	1.04	3236	2219	1017
Colorado	3.0	39%	1.00	2899	1797	1103
Connecticut	3.0	40%	1.00	2886	1894	992
Delaware	4.0	33%	1.04	3482	2343	1139
District of Columbia	5.0	25%	1.01	3639	2343	1296
Florida	3.0	33%	0.98	4354	2646	1708
Georgia	3.0	38%	1.02	4222	2680	1542
Hawaii	2.0	33%	0.98	4247	1458	2789
Idaho	3.0	35%	1.00	2950	1735	1215
Illinois	3.0	38%	0.99	3154	1972	1182
Indiana	3.0	37%	1.00	3209	2025	1185
Iowa	5.0	26%	0.99	2801	1713	1088
Kansas	4.0	36%	1.06	2882	1948	934
Kentucky	4.0	30%	1.03	3788	2266	1522
Louisiana	3.0	34%	1.01	5140	3144	1996
Maine	5.0	23%	0.98	3355	1953	1402
Maryland	3.0	41%	1.00	2815	1862	953
Massachusetts	4.0	38%	1.06	2598	1799	799
Michigan	4.0	36%	1.04	2626	1798	828
Minnesota	4.0	40%	1.04	2004	1414	589
Mississippi	3.0	30%	0.98	5582	3087	2495
Missouri	4.0	35%	1.06	3196	2116	1080
Montana	5.0	21%	1.01	3790	1991	1799
Nebraska	5.0	27%	1.02	2986	1834	1152
Nevada	3.0	33%	1.00	4287	2484	1802
New Hampshire	4.0	32%	0.99	3175	2012	1163
New Jersey	3.0	42%	1.02	2906	1897	1009
New Mexico	4.0	25%	1.04	5238	2662	2576
New York	3.0	35%	1.00	3709	2189	1520
North Carolina	3.0	35%	0.99	3719	2223	1496
North Dakota	5.0	23%	1.01	3352	1882	1470
Ohio	3.0	39%	0.99	3099	1983	1116
Oklahoma	4.0	26%	1.03	4624	2576	2047
Oregon	4.0	34%	1.03	2821	1837	984
Pennsylvania	4.0	36%	1.03	2740	1864	876
Rhode Island	4.0	33%	1.06	3540	2179	1362
South Carolina	4.0	33%	1.05	3776	2531	1245
South Dakota	5.0	25%	1.03	3082	1831	1251
Tennessee	3.0	35%	1.00	3548	2186	1362
Texas	3.0	40%	1.03	4112	2632	1480
Utah	3.0	49%	1.05	2211	1573	638
Vermont	5.0	24%	1.03	3171	1804	1367
Virginia	3.0	40%	1.00	2767	1800	967
Washington	3.0	38%	0.99	2841	1763	1078
West Virginia	4.0	24%	1.00	4926	2330	2596
Wisconsin	4.0	36%	1.04	2340	1565	775
Wyoming	4.0	23%	0.99	4433	2218	2215
Total				180,022	108,163	71,859
Proportion by Strata					60%	40%

Calculations for State Sample Sizes

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 2016 ACS audit¹.

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 2018 response outcomes. A national total sample size of approximately 180,000 was determined based on budget, which we expect will produce 516 Topical interviews per state. The expected number of interviews along with the 2018 response information was used to calculate stratum sample sizes (n1 and n2a) in each state.

For example, in Alabama:

The oversampling rate (k) was recalculated to be 4.0, for an $R = 1.05$. Of the 2016 ACS households eligible for NSCH sampling, 29.4% would be put in Stratum 1 (W1) and 70.6% would be put in Stratum 2a (W2a).

The portion of the sample coming from Stratum 1 was estimated to be $(k \cdot W1) / (W2a + k \cdot W1) = 62.5\%$ and the portion of the sample from Stratum 2a was 37.5%.

We can expect a completed Topical from 92.2% (Valid) * 35.9% (Screener) * 76.9% (Children) * 73.9% (Topical) = 18.8% of addresses in Stratum 1 and 75.1% (Valid) * 42.4% (Screener) * 11.2% (Children) * 67.3% (Topical) = 2.4% of addresses in Stratum 2a.

Since we expect to get 516 Topicals per state, we can get the state sample size (n) by evaluating the following:

$(n \cdot \text{Portion of the sample from Stratum 1} \cdot \text{Stratum 1 completed Topical rate}) + (n \cdot \text{Portion of the sample from Stratum 2a} \cdot \text{Stratum 2a completed Topical rate}) = 516$.

Within rounding, it then follows that $n = 516 / (62.5\% \cdot 18.8\% + 37.5\% \cdot 2.4\%) = 4076$. Now $n1 = 4076 \cdot 62.5\% = 2549$ and $n2a = 4076 \cdot 37.5\% = 1527$.

¹ Before mailout, this will be updated with the 2017 ACS.