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2022 National Survey of Children's Health

Data Users Frequently Asked Questions (FAQs)

The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release. CBDRB-FY23-POP001-0125

INTRODUCTION

This document identifies frequently asked questions (FAQs) and provides summarized answers for the 2022 National Survey of Children's Health (NSCH). In addition to the Data Users FAQs, the 2022 NSCH Methodology Report provides a detailed report on the design and operation of the survey.

The FAQs are organized by topic:

- Overview
- History
- Data Collection Design
- Data Collection Results
- Data Processing Methods
 - 2022 Imputation Revisions and Weighting Enhancement
- Data Use
- Estimation, Hypothesis Testing, and Data Analysis

For further questions about the survey design, operation, and analysis not addressed in this document, please send an email to childrenshealth@census.gov.

OVERVIEW

What is the NSCH?

The NSCH is a household survey that produces national and state-level data on the physical and emotional health of children 0 - 17 years old in the United States. The survey collects information related to the health and well-being of children, including access to and use of health care, family interactions, parental health, school and after-school experiences, and neighborhood characteristics.

Why is the NSCH important?

The NSCH is the only national and state-level survey on the health and well-being of children, their families, and their communities. The NSCH is essential to:

- Title V Maternal and Child Health Services Block Grant program.
- state-level planning and program development.
- federal policy and program development.
- general scientific research on public health.

Who sponsored the 2022 NSCH?

The United States Department of Health and Human Services (HHS), Health Resources and Services Administration's (HRSA) Maternal and Child Health Bureau (MCHB) provided the primary funding for the 2022 NSCH. Additional funding for specific questions was provided by:

- Centers for Disease Control and Prevention (CDC), National Center on Birth Defects and Developmental Disabilities (NCBDDD)
- Centers for Disease Control and Prevention (CDC), Division of Nutrition, Physical Activity, and Obesity (DNPAO)
- United States Department of Agriculture (USDA), Food and Nutrition Service

Who conducted the 2022 NSCH?

The United States Census Bureau, Associate Director for Demographic Programs on behalf of the United States Department of Health and Human Services (HHS), Health Resources and Services Administration's (HRSA) Maternal and Child Health Bureau (MCHB) conducted the 2022 NSCH.

How often are data collected and released?

Since 2016, the NSCH has been an annual survey. The survey supports national estimates every year and state-level estimates by combining 2 or 3 years of data. Before 2016, the survey was conducted every 4 years.

What kinds of questions are asked?

Survey topics include:

- Child and family characteristics
- Physical and mental health status, including current conditions and functional difficulties
- Health insurance status, type, and adequacy
- Access and use of health care services, including the impact of the coronavirus pandemic on access
- Medical, dental, and specialty care needed and received
- School readiness, school outcomes, and activities
- Family nutrition, housing, health and activities
- Impact of child's health on family
- Neighborhood characteristics

When and where will the new 2022 data be released?

The 2022 NSCH SAS and Stata public use data files will be released October 2023. Use <https://www.census.gov/programs-surveys/nsch/data/datasets.html> to download these data. This link can also be used to access data from previous years of the NSCH since its redesign for 2016.

Where can I find additional information about the NSCH?

You can find additional information about the survey here:

- [National Survey of Children's Health \(MCHB\)](#)
- [National Survey of Children's Health \(Census\)](#)

HISTORY

How long has HRSA MCHB been collecting these data?

HRSA MCHB first conducted the NSCH in 2003. MCHB also fielded the National Survey of Children with Special Health Care Needs (NS-CSHCN) in 2001, 2005-2006, and 2009-2010 to assess the prevalence and impact of special health care needs among children and their families in the U.S. In 2016, HRSA MCHB combined content from both the NSCH and NS-CSHCN into a single survey which retained the NSCH name. More Information on the 2016 redesign is in the [2016 NSCH Methodology Report](#).

Where can I find data released before 2016?

Information about, and data from, the NSCH and NS-CSHCN prior to 2016 can be accessed through the CDC's [National Center for Health Statistics \(NCHS\)](#) or the [Data Resource Center for Child & Adolescent Health](#).

What were the major content additions to the NSCH in 2022?

Forty-two items were added in 2022:

- Two items on autoimmune diseases:
 - AUTOIMMUNE “Has a doctor or other health care provider EVER told you that this child has Autoimmune disease (such as Type 1 Diabetes, Celiac, or Juvenile Idiopathic Arthritis)?”
 - AUTOIMMUNE_DESC “Is it mild, moderate, or severe?”
- Three items on Fetal Alcohol Spectrum Disorder:
 - FASD “Has a doctor or other health care provider EVER told you that this child has Fetal Alcohol Spectrum Disorder (FASD)?”
 - EVALFASD “Has a doctor, other health care provider, or educator EVER recommended that this child be evaluated for a Fetal Alcohol Spectrum Disorder?”
 - RECEVALFASD “Has this child EVER received an evaluation for a Fetal Alcohol Spectrum Disorder?”
- Ten items on eating disorders and body image:
 - DURING THE PAST 12 MONTHS, did this child engage in ...
 - ENGAGE_FAST “Skipping meals or fasting (Do NOT include skipping meals or fasting for religious reasons)?”
 - ENGAGE_INTEREST “Low interest in food?”
 - ENGAGE_PICKY “Extremely picky eating?”
 - ENGAGE_BINGE “Binge eating?”
 - ENGAGE_PURG “Purging or vomiting after eating?”
 - ENGAGE_PILLS “Using diet pills, laxatives, or diuretics (water pills) to lose or maintain weight without a doctor's orders?”
 - ENGAGE_EXERCISE “Over-exercising?”
 - ENGAGE_NOEAT “Not eating due to fear of vomiting or choking?”
 - ENGAGECONCERN “DURING THE PAST 12 MONTHS, how concerned were you about this child engaging in these behaviors?”
 - BODYIMAGE “DURING THE PAST 12 MONTHS, how concerned was this child about their weight, body shape, or body size?”
- GRADES “Across all subjects, what grades did this child get during the 2021-2022 school year?”
- VAPE “Does anyone vape or use e-cigarettes inside your home?”
- EBTCARDS “At any time DURING THE PAST 12 MONTHS, even for one month, did anyone in your family receive school meal debit/Electronic Benefits Transfer (EBT) cards?”
- Two items on SSI:
 - SSI “Does this child receive SSI, that is, Supplemental Security Income?”
 - SSIDISABILITY “Is this for a disability they have?”
- Four items on housing instability:
 - MISSMORTGAGE “DURING THE PAST 12 MONTHS, was there a time when you were not able to pay the mortgage or rent on time?”
 - HOMEEVIC “DURING THE PAST 12 MONTHS, how often were you worried or stressed about being evicted, foreclosed on, or having your housing condemned?”
 - PLACESLIVED “DURING THE PAST 12 MONTHS, how many places has this child lived?”
 - EVERHOMELESS “SINCE THIS CHILD WAS BORN, have they ever been homeless or lived in a shelter?”
- Eleven items on early child development:

- SAMESOUND “How often can this child come up with words that start with the same sound?”
- READONEDIGIT “How often can this child read one-digit numbers?”
- SIMPLEADDITION “How often can this child correctly do simple addition?”
- GROUPOFOBJECTS “How often can this child tell which group of objects has more?”
- NAMEEMOTIONS “How often can this child recognize and name their own emotions?”
- WAITFORTURN “How often does this child have difficulty waiting for their turn?”
- SHARETOYS “How often does this child share toys or games with other children?”
- BOUNCEBALL “How well can this child bounce a ball for several seconds?”
- DRAWACIRCLE “How well can this child draw a circle?”
- DRAWAFACE “How well can this child draw a face with eyes and mouth?”
- DRAWAPERSON “How well can this child draw a person with a head, body, arms, and legs?”
- Six items on structural inequities:
 - INQ_RESSEG – Black-White residential segregation (PUMA)
 - INQ_HOME – Black-White homeownership inequity (PUMA)
 - INQ_EDUC – Black-White educational inequity (PUMA)
 - INQ_EMPLOY – Black-White employment inequity (PUMA)
 - INQ_INCOME – Black-White income inequity (PUMA)
- BMICLASS (ages 6-9); the age range for BMICLASS data has been extended to include 6-9 year-olds
- HEIGHT/WEIGHT (ages 6-17) – The child’s current height in centimeters and current weight in kilograms

Additional differences between the 2016 to 2022 NSCH data files are noted in the [NSCH codebook](#).

DATA COLLECTION

When were the data collected?

Data were collected from July 2022 to January 2023.

Who participated in the 2022 NSCH?

The NSCH is a national sample survey of households with children. A screener instrument identifies households with children and rosters up to 10 children in the household on the paper instrument and up to 99 children on the web instrument. One child is randomly selected from each household as the subject of a follow-up, topical questionnaire. The questionnaire is completed by an adult that is familiar with the health and health care of the selected child.

What was the 2022 NSCH sample design?

A sample of approximately 360,000 addresses was selected from the Census Master Address File (MAF).

The Census Bureau’s Center for Economic Studies developed an indicator based on multiple sources of administrative data to identify households with children under 18 years old. Addresses that were directly linked to a child under 18 years old using administrative data were assigned to stratum 1.

The remaining addresses were assigned a probability of child presence using administrative records and small-area geographic characteristics. Beginning with those addresses with the lowest probability of children presence, addresses were assigned to stratum 2b by state until the stratum represented at most 5% of households with children in that state, as estimated using the 2020 American Community Survey. All other addresses were assigned to stratum 2a, so strata 1 and 2a covered 95% of households with children in each state.

In 2021 and 2022, the Centers for Disease Control provided additional funding to increase representation of young children in the NSCH. To that end, addresses in stratum 1 were again divided into stratum 1a and stratum 1b, where stratum 1a addresses were those most likely to have young children (0 – 5 years old). Stratum 1a addresses were sampled at the highest rate, then stratum 1b addresses. Stratum 2a addresses were sampled at a lower rate, and addresses in stratum 2b were excluded from sampling. The sampling rates in strata 1a, 1b, and 2a were optimized in each state to maximize the representation of households with children, and young children in particular, in the sample without negatively impacting survey estimates.¹

State-level samples were allocated with the goal of producing an approximately equal number of completed questionnaires from each state and the District of Columbia. Nine states (California, Colorado, Nebraska, New York, Ohio, Oregon, Pennsylvania, Tennessee, and Wisconsin) and one metropolitan area (Atlanta, Georgia) funded [oversamples](#) to produce additional interviews in these locations.

From the sample of households with children, a child was subsampled as the subject of the topical questionnaire.

The sampled households received a screener questionnaire to determine if the address represented an occupied residence, and if there were eligible children ages 0-17 living at the sampled address. The screener questionnaire included a series of health questions used to determine whether each eligible child could be classified as having a special health care need. One eligible child from each completed screener questionnaire was subsampled. When subsampling:

- Children with Special Health Care Needs (CSHCN) were oversampled (at 80%)
- A secondary oversample of children aged 0-5 years (at 60%) was applied because younger children are often underrepresented in household surveys and administrative records.

More details on sampling and subsampling are available in the [2022 Methodology Report](#), *Frame, Sample, and Selected Child Subsample*.

How were the 2022 NSCH data collected?

Participants answered survey questions using a Screener Questionnaire and Topical Questionnaire.

The screener questionnaire ([NSCH-S1](#)) determined if the address represented an occupied residence, and if there were eligible children ages 0-17 living at the sampled address.

The topical questionnaire included detailed questions about one randomly selected child in the household. Households received one of the three age-specific topical questionnaires based on the age of the sampled child:

- [NSCH-T1](#) (or T1) for children aged 0-5 years,
- [NSCH-T2](#) (or T2) for children aged 6-11 years, or
- [NSCH-T3](#) (or T3) for children aged 12-17 years.

Households could complete the 2022 NSCH online, on paper, or over the phone.

Selected households were mailed instructions to complete the 2022 NSCH. Households had the option to complete the survey in English or Spanish. Non-responding addresses received follow-up mailings as reminders.

To complete the survey online, households received invitation letters in the mail with instructions for the web instrument. Respondents first completed the screener portion and were then directed into one of the three age-based topical questionnaires based on eligibility. The subsampling process was programmed to occur immediately after the

¹ To facilitate multi-year estimates and trend analyses, for purposes of standard error estimation, the 2021 and 2022 Screener and Topical Public-Use Microdata Files collapse stratum 1A and stratum 1B as stratum 1. Details on standard error estimation are available in the Methodology Report (<https://www.census.gov/programs-surveys/nsch/technical-documentation/complete-technical-documentation.html>). Collapsing survey design in Stratum 1 does not affect point estimation, but it can overestimate standard errors in some cases, producing slightly conservative confidence intervals.

screeener questions were completed.

To complete the survey on paper, households received a self-administered paper-and-pencil interviewing (PAPI) screener instrument. Respondents completed the screener questionnaire and mailed it back. For households with eligible children, the same household was mailed one of the three age-based topical questionnaires for the respondent to complete and mail back. Thirty percent (30%) of the sample determined to be most likely to respond by paper received paper questionnaires in the initial mailing. All addresses that required at least two non-response follow-up mailings also received paper questionnaires in the third and fourth follow-up mailings.

To complete the survey over the phone, respondents called a toll-free telephone questionnaire assistance (TQA) number that was listed on survey materials. Respondents completed interviews over the phone while TQA agents conducted the interviews using the web instrument.

Where can I find copies of the 2022 questionnaires?

You can find copies of the 2022 household screener and age-specific topical questionnaires here: <https://mchb.hrsa.gov/data/national-surveys/questionnaires-datasets-supporting-documents> and <https://www.census.gov/programs-surveys/nsch/technical-documentation/questionnaires.2022.html>

Did the 2022 NSCH use incentives to encourage participation?

Yes. An incentive experiment in the 2016 NSCH established the efficacy of unconditional cash incentives to improve response rates and reduce nonresponse bias, and similar treatments since 2016 were also productive. The 2022 NSCH used unconditional incentives (90% of sample, \$5 incentive) and a control group (10% of sample, no cash incentive) in the initial mailing to improve response rates while monitoring the effect of the incentive on sampled addresses.

Addresses that returned a paper screener questionnaire and listed children in the household received up to four topical invitations. An unconditional cash incentive was included in the initial topical mailing to each eligible address.

- 38% of households received a \$5 incentive
- 62% of households received a \$10 incentive

More information about incentives is found in the [Methodology Report](#).

DATA COLLECTION RESULTS

Who were the respondents to the 2022 NSCH?

A parent or other adult caregiver with knowledge of the sampled child's health and health care filled out the topical questionnaire.

- 62% of respondents were mothers (biological, step, foster, or adoptive)
- 29% were fathers (biological, step, foster, or adoptive)
- 6% were other relatives or caregivers
- 3% did not report a relationship to the child.

How long did it take to complete a questionnaire?

Based on web keystroke data, the estimated average survey length was:

- approximately 2 minutes for households without children.
- approximately 38 minutes for households with children.

How many questionnaires were completed?

67,269 screener questionnaires with children were completed.

From the approximately 360,000 sampled addresses in the 50 states and the District of Columbia, 34.7% households were screened for age-eligible children. 55.9% of the households reported age-eligible children living or staying in the household.

54,103 detailed topical questionnaires were completed.

From the sample of households with age-eligible children, 88.3% of topical questionnaires were completed using the web instrument and 11.7% were completed using the paper instrument.

What were the response rates?

Four calculations are used to measure response to the NSCH: the weighted Screener Completion Rate, weighted Topical Completion Rate, weighted Interview Completion Rate, and weighted Overall Response Rate.

The weighted Screener Completion Rate was 44.8%.

The Screener Completion Rate is the estimated proportion of households (occupied residences) that completed a screener. A valid completed screener questionnaire must be a sampled address, and the questionnaire must either indicate no children in the household or provide a valid age for at least one child.

Of the households that returned a screener questionnaire:

- 54.2% were households with children that completed the screener instrument
- 44.1% were households without children
- 1.7% were households with children that did not complete the screener instrument

The status of most addresses is determined from a returned questionnaire or a return code from the United States Postal Service (e.g., vacant). The remaining addresses are unresolved. The proportion of unresolved addresses that are valid is estimated using the household rate from resolved addresses. Then, the proportion of unresolved addresses that are households with children is estimated using the valid address rate and the proportion of households that have children by state and stratum in the 2020 American Community Survey.

The weighted Topical Completion Rate is 30.9%.

The Topical Completion Rate is the estimated proportion of all households with children that submitted a detailed topical questionnaire, either complete or sufficient partial.

- Completed topical questionnaires have valid answers for at least 40 of 50 test questions. They must also have a valid answer for at least one item in Section K (family income, household, and family count) OR have been submitted online by the respondent. Approximately 97% of returned topical questionnaires were complete.
- Sufficient partial topical questionnaires have valid answers for at least 25 of 50 test questions. They must also have a valid answer for at least one item in Section H or beyond OR have been submitted online by the respondent. Approximately 3% of returned topical questionnaires were sufficient partials.

Of the households with children given a topical questionnaire, approximately 13,000 did not return a topical questionnaire or returned an insufficient partial topical questionnaire.

The weighted Interview Completion Rate is 78.5%.

The Interview Completion Rate is the probability that a household that initiates the survey will complete it. It is calculated as the product of the Screener Conversion Rate (the proportion of screeners that are completed) and the Topical Conversion Rate (the proportion of households that complete a detailed topical questionnaire after reporting children on a completed screener).

The weighted Overall Response Rate is 39.1%.

The Overall Response Rate is the probability that an address progresses through the three major stages of survey completion – resolution, screener, and topical questionnaire. The rate is calculated as the product of the Interview Completion Rate and the Resolution Rate (the proportion of addresses that are resolved – i.e., have sufficient information to determine if the address represents an occupied residence).

What was the potential impact of nonresponse bias on key survey estimates?

The NSCH survey design includes several strategies to minimize nonresponse bias, including incentives and other treatments to increase response. In addition, the data were evaluated for potential bias from nonresponse and changes in sample composition. This analysis considered differences between respondents and nonrespondents, and effectiveness of weighting adjustments to correct for those differences. The 2022 NSCH Nonresponse Bias Analysis located on the [Technical Documentation Page](#) did not find strong or consistent evidence of nonresponse bias.

How many complete questionnaires are included on the 2022 data files?

The screener level data file includes records for 67,269 households.

Each record contains general demographic information and special health care needs status for the resident children in sampled households. The file contains 127,726 age-eligible children (0- 17 years old) records. Only households with children that completed the screener instrument are included in the screener data file.

The detailed topical questionnaire data file includes records for 54,103 children.

Each record contains all data for the child and the household in which the child resides, including the child’s health, special health care need status, health care, family functioning, parental health, neighborhood and community characteristics, health insurance coverage, and demographics. One age-eligible child from each of the 67,269 households with children was selected for the detailed topical questionnaire. Both complete and sufficient partial topical questionnaires are included on the detailed topical questionnaire data file.

DATA PROCESSING METHODS

How were sample weights calculated?

The Topical data file includes a single, child-level weight, FWC. The Screener data file includes a child-level weight, C_FWS, and a household-level weight, FWH. The weighting scheme begins with the base sampling weight (the inverse probability of the selection of the address) and then applies the following adjustments:

- An adjustment for screener nonresponse
- A raking that compares eligible children from the screener questionnaire cases to population controls from the 2021 American Community Survey
- An applied within-household subsampling factor for screener questionnaire cases
- An adjustment for detailed topical questionnaire nonresponse
- A raking adjustment that matched sample demographic estimates to various demographic controls

Raking the screener cases uses two analytical domains of interest.

- Dimension #1 – State by Child’s Race and Ethnicity
- Dimension #2 – State by Child’s Sex by Child’s Age Group

Raking the topical cases uses seven analytical domains of interest.

- Dimension #1 – State by Household Poverty Ratio
- Dimension #2 – State by Household Size
- Dimension #3 – State Groupings by Respondent’s Education
- Dimension #4 – State by Selected Child’s Race and Ethnicity
- Dimension #5 – State by Selected Child’s Age Group
- Dimension #6 – National Selected Child’s Race and Ethnicity
- Dimension #7 – National Selected Child’s Sex by Age

The 2022 NSCH used the 2021 American Community Survey (ACS) 1-year estimates to calculate population controls for raking.

The NSCH public-use file includes demographic detail that, in some cases, is partially adjusted in weighting. For any demographic characteristic not explicitly included in a post-stratification adjustment (i.e., the raking dimensions), the weights are not likely to sum to that specific population total. Along these lines, the strong state-level design of the NSCH means that median weights can differ significantly across states (i.e., larger weights for more populous states with a lower probability of selection given approximately equal state-level sample sizes). We recommend that data users apply caution and consider the impact of high-leverage cases when interpreting results for smaller population groups.

Additional information on limitations and data-use recommendations is available in the [Methodology Report](#).

2022 Imputation Revisions and Weighting Enhancement

Imputation and weighting by race and ethnicity were revised for the 2022 NSCH as part of multi-faceted efforts to improve consistency across federal surveys, specifically to address differences in race reporting options between the NSCH and ACS. These differences stem from the “Some other race” reporting option on the ACS, a reporting option that is not available on the NSCH. The net result of this difference is that respondents that would have reported “Some other race” to the ACS, the large majority of whom are Hispanic, instead selected one of the available race options on the NSCH (White, Black, American Indian/Alaska Native (AIAN), Asian, and Native Hawaiian or Other Pacific Islander (NHPI)). These respondents disproportionately reported NHPI; the NHPI response options are listed last on the NSCH race item.

Three steps were taken to address this discrepancy. First, we identified respondents who first tried to skip the race question and then selected a race option to satisfy a response requirement on the web-based survey instrument. These cases were then submitted for hot-deck imputation; a donor was selected based on other demographic characteristics and physical proximity to the household. Approximately 1.5% of cases have imputed race for this reason. Second, the race and ethnicity raking dimensions were redefined to emphasize definitions that are consistent between the NSCH and ACS. Specifically, Hispanic is now a mutually exclusive category from the non-Hispanic race categories in raking. Finally, population controls by race from the ACS were calculated with proportional re-distribution of “Some other race” across the remaining non-Hispanic categories that are available on the NSCH.

This change also allowed for more granularity in the non-Hispanic race categories; prior to 2022, NHPI, AIAN, multiple race and, prior to 2019, Some other race were collapsed into an “Other” race group for weighting, but NHPI, AIAN and multiple race are uniquely represented in weighting nationally and by state where feasible.² Additional information about this

² In practice, by state, multiple race is always collapsed with a NHPI or AIAN.

process is available in the [Methodology Report](#).

Similar enhancements will be made retroactively to the 2016-2021 NSCH data files. Public release of those files is anticipated beginning in October 2023.

How are missing data identified on the data files?

The Screener and Topical data files include special missing value codes to differentiate between different types of missing values.

- (.L) Legitimate skip— the item is not applicable to the respondent, as determined by a previous answer to a root question.
- (.M) Missing in error—the value is missing due to respondent or system errors, or the respondent did not provide a valid answer.
- (.N) Not in universe—the item was not included on the respondent’s age-specific topical questionnaire.
- (.D) Cannot Disclose— the value is suppressed in order to protect the privacy of the respondent/child.

Are any missing data imputed?

The following demographic variables were imputed for raking during weighting procedures.

- Household Tenure (TENURE)
- Child’s sex (C_SEX)
- Child’s race, detailed (C_RACE_R)
- Variables derived from C_RACE_R
 - Child’s race, recoded (C_RACER)
 - Child’s race, recode, Asian included (C_RACEASIA)
 - Child’s race, recode, American Indian/Alaska Native included (C_RACEAIAN)
- Child’s Hispanic origin (C_HISPANIC_R)
- Selected child’s sex (SC_SEX)
- Selected child’s race (SC_RACE_R, SC_AIAN, SC_ASIAN, SC_NHPI)
- Variables derived from SC_RACE_R
 - Selected child’s race, recoded (SC_RACER)
 - Selected child’s race, recode, Asian included (SC_RACEASIA)
 - Selected child’s race, recode, American Indian/Alaska Native included (SC_RACEAIAN)
 - Selected child’s race, Asian alone or in combination with another race (SC_ASIAN)
 - Selected child’s race, American Indian/Alaska Native alone or in combination with another race (SC_AIAN)
 - Selected child’s race, Native Hawaiian or other Pacific Islander alone or in combination with another race (SC_NHPI)
- Selected child’s Hispanic origin (SC_HISPANIC_R)
- Adult 1 highest completed year of school (A1_GRADE)
- Household size (HHCOUNT)
- Poverty ratio (FPL_I1-FPL_I6)

The child demographic variables and household tenure were imputed using hot-deck imputation. Adult 1 education, household size, and poverty ratio were imputed using sequential regression imputation methods. The topical data file includes one implicate for Adult 1 education and household size and six implicates for poverty ratio. Guidance for the analysis of multiply imputed poverty data is available in the [Guide to Multiply Imputed Data Analysis](#).

The 2022 NSCH data files flag missing or imputed variables.

The public use files include flag variables to identify imputed values. The missing rate for each variable before imputation is listed below:

Variable	Variable Missing Rates	Imputation Flag Variable
Household tenure (TENURE)	1.45%	Flag for Household Tenure (TENURE_IF)
Child's sex (C_SEX)	0.19%	Flag for child's sex (C_SEX_IF)
Child's race (C_RACE_R)	2.01% ²	Flag for child's race (C_RACE_R_IF)
Child's Hispanic origin (C_HISPANIC_R)	0.48%	Flag for child's Hispanic origin (C_HISPANIC_R_IF)
Selected child's sex (SC_SEX)	0.09%	Flag for selected child's sex (SC_SEX_IF)
Selected child's race (SC_RACE_R)	1.73% ³	Flag for selected child's race (SC_RACE_R_IF)
Selected child's Hispanic origin (SC_HISPANIC_R)	0.29%	Flag for selected child's Hispanic origin (SC_HISPANIC_R_IF)
Adult 1's highest completed year of school (A1_GRADE)	3.44%	Flag for adult 1's highest completed year of school (A1_GRADE_IF)
Household size (HHCOUNT)	3.08%	Flag for household size (HHCOUNT_IF)
Family poverty ratio (FPL)	19.53%	Flag for family poverty ratio (FPL_IF)

Where can I find more information about NSCH data files, including derived variables and data suppression?

The [NSCH Codebook](#) details the variables names, definitions, and values included on the Screener and Topical data files. The [Methodology Report](#) also document the variables and values that are collapsed or suppressed to protect the confidentiality of the individual respondents and children.

ESTIMATION, HYPOTHESIS TESTING, AND DATA ANALYSIS

Are special programs needed to analyze these data?

Yes. For proper estimation and hypothesis testing, programs must be able to account for the complex sample design. Examples include SUDAAN, Stata, SPSS Complex Samples module, WesVar, the SAS SURVEY procedures, and the base

³ The 2022 NSCH required an additional imputation of SC_RACE_R due to anomalies in data collection requirements within the web-based instrument. For more information, see "2022 Weighting Revisions" on page 10 and the [2022 NSCH Methodology Report](#).

program R with the separate SURVEY package.

Whom does this sample represent?

Weighted estimates represent all non-institutionalized children aged 0 to 17 years in the U.S., and in each state and the District of Columbia residing in housing units. These estimates do not generalize to the population of parents, mothers, or pediatric health care providers. Analysts should avoid statements such as the “percent of parents”

Can I combine data from different years of the redesigned survey?

Yes, when data sets are using the same weighting methodology. Starting in 2022, the processes for imputation and weighting by race and ethnicity were revised as part of multi-faceted efforts to improve consistency across federal surveys. Similar enhancements will be made retroactively to the 2016-2021 NSCH data files. Public release of those files is anticipated beginning in October 2023. Data users should utilize those re-released files for combination with the 2022 NSCH data.

With that condition satisfied, the data sets can be combined (appended) to derive multi-year estimates, though the survey weights should be adjusted. To adjust the multi-year estimates to represent the population of children residing in households, divide each weight by the number of years being combined to derive multi-year estimates with an average annual or midpoint population size.

For example, to calculate the combined 2018-2022 weight, analysts must divide each individual survey weight by 5 (i.e., number of survey years being combined; see the [Guide to Multi-Year Analysis](#)).

The redesigned NSCH uses two state-level strata in sampling. The naming convention for these strata changed after the 2016 NSCH. We recommend that data users replace values for the variable STRATUM from ‘2a’ to ‘2’. This change is necessary so the combined file is correctly treated as having two mutually exclusive sampling strata rather than three for design-adjusted standard error calculations.

Is it possible to conduct time-series trend analyses with NSCH data from 2016 to 2022?

Yes, when data sets are using the same weighting methodology. Starting in 2022, the processes for imputation and weighting by race and ethnicity were revised as part of multi-faceted efforts to improve consistency across federal surveys. Similar enhancements will be made retroactively to the 2016-2021 NSCH data files. Public release of those files is anticipated beginning in October 2023. Data users should utilize those re-released files to identify significant differences over time up to 2022.

With that condition satisfied, significance testing of estimates with non-overlapping samples can be done using standard two-sample methods. For example, these methods could be used to determine whether there is a statistically significant difference in the percent of CSHCN in 2020-2021 versus 2018-2019 (note the exclusive, non-overlapping samples). Changes over time should be sustained over multiple assessments to confirm a change versus a single fluctuation or random error.

For more information, see the [Guide to Multi-Year Analysis](#).

Is it possible to conduct time-series trend analyses with NSCH data prior to 2016?

It is not possible to conduct trend analyses using data from the revised NSCH (2016-2022) and NSCH surveys conducted prior to 2016. Changes in the survey’s mode of data collection, sampling frame, and questionnaire content mean it is NOT

possible to compare estimates from the redesigned survey (post-2016) to those from previous iterations of the NSCH or NS-CSHCN (pre-2016), or to conduct related trend analyses.

Is it possible to link the screener and detailed topical questionnaire data files?

To protect the privacy of respondents, it is not possible to link the screener file and detailed topical questionnaire file. Relevant variables from the screener, such as child's age, sex, and special health care need status, are included on the topical questionnaire file. Furthermore, there are variables on the topical questionnaire file that provide data users with information about the family and household.

What analyses should utilize the Screener file?

The Screener data file must be used to estimate the proportion of households with Children with Special Health Care Needs (CSHCN) at the state and national levels. It can also be used to estimate the prevalence of CSHCN at the state and national levels; data users should indicate the source (screener or topical file) of the prevalence estimates.

The Screener data file includes two weights. C_FWS is a child-level weight and is used for child-level estimates (e.g., the percent of children with special health care needs). FWH is a household-level weight and is used for household-level estimates (e.g., proportion of households with at least one child with special health care needs). Each row on the Screener data file represents a rostered child. When calculating household-level estimates, households should be collapsed to a single row (using HHIDS as the household ID) or should select a single row from each household (e.g., LINENUM = 1).

How do I estimate variance?

The following variables contain survey design information that is needed to correctly estimate variance:

- Stratum identifiers: state of residence (FIPSST) and sampling stratum (STRATUM)
- Primary sampling unit: household ID for the Topical data file (HHID) or household ID for the Screener data file (HHIDS)

Some analysts may be using statistical programs that only permit the specification of a single stratum variable. These users should define a new variable with 102 levels by crossing STRATUM (2 levels) with FIPSST (51 levels). Use this new variable as the single stratum variable.

- Stata users can specify only one variable in the strata() option of svyset. They will need to create a single variable (named STRATACROSS for this example) that crosses FIPSST and STRATUM: EGEN STRATACROSS = GROUP (FIPSST STRATUM).
- SUDAAN users can identify both FIPSST and STRATUM in the NEST statement. However, SUDAAN users should note that the first variable listed after the word NEST is assumed to be the stratum variable, and the second variable listed is assumed to be the primary sampling unit (PSU). To properly identify the PSU variable, the PSULEV option must be invoked in the NEST statement: NEST FIPSST STRATUM HHID / PSULEV = 3.

Can the data be used for subgroup analysis?

Subsetting data is the procedure of keeping only select records and list-wise deleting others. Most software packages that analyze complex survey data will incorrectly compute standard errors for subsetting data, because subsetting the data can delete important design information needed for variance estimation. Analysts interested in examining specific population subgroups (such as children living in poverty) must use the appropriate options in their software package (e.g., SUBPOPN in SUDAAN). Subsetting by state does not compromise variance estimation.

Sub-groups with small sample sizes may produce unstable estimates.

In both individual year and multi-year analyses, the NSCH sample size may be limited for smaller populations (e.g., American Indian or Alaska Native) and state-level subgroups or rare outcomes (e.g., adolescent CSHCN or autism in a particular state). To minimize misinterpretation, we recommend only presenting statistics with a sample size or unweighted denominator of 30 or more.

Furthermore, if the 95% confidence interval width exceeds 20 percentage points or 1.2 times the estimate (\approx relative standard error $>30\%$), data should be flagged for poor reliability and/or present a measure of statistical reliability (e.g., confidence intervals or statistical significance testing) to promote appropriate interpretation.

State-level estimates may be compared to national estimates.

Analysts can use a nested z-test to identify significant differences at a given alpha or Type 1 error level (e.g., 0.05, 0.01). The formula for this is as follows:

$$Z = \frac{\bar{X}_i - \bar{X}_j}{\sqrt{SE_i^2 + SE_j^2 - 2P * SE_j^2}}$$

Where j is a subset of i (e.g., Alabama as part of the Total US), \bar{X} the mean or proportion, SE is the standard error, and P is the proportion of the weighted denominator for a given indicator that is specific to j (e.g., Alabama weighted denominator divided by the Total US weighted denominator). An independent Z-test would be a more conservative test that may increase Type II error—the probability of failing to reject the null of no difference when there is a difference.

DATA USE

The United States Census Bureau conducts the NSCH on behalf of HHS under Title 13, United States Code, Section (b), which allows the Census Bureau to conduct surveys on behalf of other agencies. Title 42 U.S.C. Section 701(a)(2) allows HHS to collect information for the purpose of understanding the health and well-being of children in the U.S. The data collected under this agreement are confidential under 13 U.S.C. Section 9. All access to Title 13 data from this survey is restricted to Census Bureau employees and those holding Census Bureau Special Sworn Status pursuant to 13 U.S.C. Section 23(c).

Any effort to determine the identity of any reported case is prohibited. The Census Bureau and HRSA MCHB take extraordinary measures to assure that the identity of survey subjects cannot be disclosed. All direct identifiers, as well as characteristics that might lead to identification, have been omitted from the data files. Any intentional identification or disclosure of a person or establishment violates the assurances of confidentiality given to the providers of the information. Therefore, users must:

- Use the data in these data files for statistical reporting and analysis only;
- Make no use of the identity of any person discovered, inadvertently or otherwise;
- Not link these data files with individually identifiable data from any other Census Bureau or non-Census Bureau data sets.

Use of the data files signifies users' agreement to comply with the above-stated statutory-based requirements. Before releasing any statistics to the public, the Census Bureau reviews them to make sure none of the information or characteristics could identify someone. For more information about the Census Bureau's privacy and confidentiality protections, contact the Policy Coordination Office toll-free at 1-800-923-8282.

How do I cite this document?

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