2019 National Survey of Children's Health

Data Users Frequency Asked Questions (FAQs)

The 2019 NSCH data files were re-released in April 2024 with a number of enhancements (**NSCH Enhancement Technical Document**). This document has been updated to reflect those changes. Where changes are applicable, the original text is boxed in red and the revised text in green.

INTRODUCTION

This document identifies frequently asked questions (FAQs) and provides summarized answers for the 2019 National Survey of Children's Health (NSCH). In addition to the Data Users FAQs, the 2019 NSCH Methodology Report will be available in Fall 2020 to provide a detailed report on the design and operation of the survey.

The FAQs are organized by topic:
- Overview
- History
- 2019 Data Collection Design
- 2019 Data Collection Results
- 2019 Data Processing Methods
- Estimation, Hypothesis Testing, and Data Analysis
- Data Use

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 American children 0 - 17 years old. The survey collects information related to the health and well-being of children, including access to and utilization of health care, receipt of care in a medical home, 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 2019 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 the 2019 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)
- United States Department of Agriculture (USDA), Food and Nutrition Service

Who conducted the 2019 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 2019 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 demographics
- Physical and mental health status
- Child's health, including conditions and functional difficulties
- Health insurance status, type, and adequacy
- Access to and use of health care services
- Preventive medical and dental care, and specialty services received
- Medical home access
- Early childhood-specific information (0-5 years)
- Middle childhood- and adolescent-specific information (6-17 years)
- Transition to adult healthcare services (12-17 years)
- Family health and activities
- Impact of child's health on family
- Parental health status
- Parent's perceptions of neighborhood characteristics
- Access to community-based services

When and where will the new 2019 data be released?

The 2019 NSCH microdata files will be released in October 2020. Users can download SAS and STATA public use data files from 2016, 2017, 2018, and 2019 at https://census.gov/programs-surveys/nsch/data.html.

Where can I find additional resources about the NSCH?

Additional information about, and data from, the 2016, 2017, 2018, and 2019 NSCH is available on the HRSA MCHB or the Census Bureau survey pages.

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. More Information on the 2016 redesign is in the [2016 NSCH Methodology Report](#).

What happened to the National Survey of Children with Special Health Care Needs (NS-CSHCN)?

During the 2016 redesign of the NSCH, HRSA MCHB asked experts to consider the content of both the NSCH and the NS-CSHCN to support an annual fielding of a single survey. The revised NSCH contains the [Children with Special Health Care Needs (CSHCN) Screener](#) to support the continued availability of detailed, national and state-level estimates on the prevalence and impact of special health care needs among U.S. children and families. The [Data Resource Center for Child & Adolescent Health](#) provides information that can help users to compare content between the redesigned NSCH, previous NSCH, and previous NS-CSHCN. The NS-CSHCN was last administered as an independent survey in 2009-2010.

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 since 2016?

Seven items were added in 2017:
- COLOR ("Can this child identify the colors red, yellow, blue, and green by name?")
- MOLD ("DURING THE PAST 12 MONTHS, other than in a shower or bathtub, have you seen any mold, mildew or other signs of water damage on walls or other surfaces inside your home?")
- PESTICIDE ("DURING THE PAST 12 MONTHS, how often were pesticides used inside your residence to control for insects?")
- A1_ACTIVE/A2_ACTIVE ("Have you ever served on active duty in the U.S. Armed Forces, military Reserves, or the National Guard?")
- A1_DEPLSTAT/A2_DEPLSTAT ("Were you deployed at any time during (fill with SC_NAME)'s life?")

Eighteen items were added in 2018:
- TENURE ("Is this house, apartment, or mobile home")
- BLOOD_SCREEN ("Was this condition [blood disorder] identified through a blood test done shortly after birth?")
- CYSTFIB_SCREEN ("Was this condition [Cystic Fibrosis] identified through a blood test done shortly after birth?")
- GENETIC_SCREEN ("Was this [genetic] condition identified through a blood test done shortly after birth?")
- OVERWEIGHT ("Has a doctor or other health care provider ever told you that this child is overweight?")
- HOSPITALSTAY ("DURING THE PAST 12 MONTHS, was this child admitted to the hospital to stay for at least one night?")
- MEDHISTORY ("Did you and this child receive a summary of this child's medical history (for example, medical conditions, allergies, medications, immunizations)?"
- Eleven items were added to assess early language development, including:
  - ONEWORD ("Is this child able to do the following: Say at least one word, such as "hi" or "dog"?")
  - TWOWORDS ("Is this child able to do the following: Use 2 words together, such as "car go"?")
  - THREEWORDS ("Is this child able to do the following: Use 3 words together in a sentence, such as, "Mommy come now."?")
  - ASKQUESTION ("Is this child able to do the following: Ask questions like "who," "what" "when" "where"?")
  - ASKQUESTION2 ("Is this child able to do the following: Ask questions like "why" and "how"?")
  - TELLSTORY ("Is this child able to do the following: Tell a story with a beginning, middle, and end?")

- UNDERSTAND ("Is this child able to do the following: Understand the meaning of the word "no"?")
- DIRECTIONS ("Is this child able to do the following: Follow a verbal direction without hand gestures, such as "Wash your hands."?")
- POINT ("Is this child able to do the following: Point to things in a book when asked?")
- DIRECTIONS2 ("Is this child able to do the following: Follow 2-step directions, such as "Get your shoes and put them in the basket."?")
- UNDERSTAND2 ("Is this child able to do the following: Understand words such as "in," "on," and "under"?")

Three items were added in 2019:
- BIRTH_YR ("What year was this child born?")
- BIRTH_MO ("What month was this child born?")
- BIRTH_YR_F (A data quality flag for BIRTH_YR)

Additionally, the response option "Some other race" was removed from SC_RACE_R and C_RACE_R in 2019 to follow the standards of the Office of Management and Budget (OMB).

Height, Weight, and BMICLASS (ages 6-9): The NSCH has historically collected height and weight information for children ages 6-17, and released a calculated measure of BMICLASS for children ages 10-17. Based on updated analyses indicating overall consistency of the data collected with other sources, the age range for BMI data has been extended to include 6-9 year-olds. Height and weight are also included to provide data users with additional details.

SC_AIAN, SC_ASIAN, and SC_NHPI were added with the 2023 files enhancements. These flags report if the child is American Indian/Alaska Native alone or in combination with any other race, Asian alone or in combination, or Native Hawaiian/Pacific Islander alone or in combination, respectively.

A complete list of differences between the 2016, 2017, 2018, and 2019 NSCH data files can be found in the NSCH Crosswalk.

2019 DATA COLLECTION

When were the data collected?

Data were collected from June 2019 to January 2020.

Who participated in the 2019 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. 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 child.

What was the 2019 NSCH sample design?

A sample of approximately 180,000 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. Remaining addresses were assigned a probability of child presence using administrative records and small-area geographic characteristics. Addresses that were directly linked to a child under 18 years old (stratum 1) were oversampled. Among the remaining addresses, administrative records and small-area

geographic characteristics were used to assign a probability of child presence. Addresses with a higher probability of child presence (stratum 2a) were sampled at a lower rate than stratum 1, while addresses with a very low probability of child presence (stratum 2b) were excluded from sampling. Stratum 2b represents no more than 5% of households with children in each state.

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.

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 NSCH-S1 (or S1) 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. Eligible children from completed screener questionnaires were subsampled.
- 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 sampled child selection will be available in the 2019 Methodology Report, *Frame, Sample, and Selected Child Subsample*.

How were the 2019 NSCH data collected?

Participants answered survey questions using a Screener Questionnaire and Topical Questionnaire.
The screener questionnaire NSCH-S1 (or 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 2019 NSCH online, on paper, or over the phone.
Selected households were mailed instructions to complete the 2019 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 children eligibility. The subsampling process was programmed to occur immediately after the screener 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 initially received paper questionnaires. All addresses that required non-response follow-up mailings also received a paper questionnaire.

To complete the survey over the phone, respondent 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 2019 questionnaires?

You can find copies of the 2019 household screener and age-specific topical questionnaires here: https://mchb.hrsa.gov/data/national-surveys/questionnaires-datasets-supporting-documents and https://census.gov/programs-surveys/nsch/technical-documentation/questionnaires.2019.html

Did the 2019 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 in the 2017 and 2018 NSCH were also productive.[1] The 2019 NSCH used unconditional incentives and a control group to improve response rates while monitoring the effect of the incentive on sampled addresses. In the initial screener invitation, households received one of three incentive amounts:
- 45% of addresses received a $2 incentive
- 45% of addresses received a $5 incentive
- 10% of addresses represented the control group (no cash incentive)

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.
- 90% of households received a $5 incentive
- 10% of households were assigned to the control group (no incentive)

2019 DATA COLLECTION RESULTS

Who were the respondents to the 2019 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)
- 30% were fathers (biological, step, foster, or adoptive)
- 7% were other relatives or caregivers
- The remaining respondents were not identified by the relationship to the child.

How long did it take to complete a questionnaire?

Based on web keystroke data, the estimated average survey length was:
- less than 2 minutes for households without children.
- approximately 37 minutes for households with children.

How many questionnaires were completed?

36,196 screener questionnaires with children were completed.
From the approximately 180,000 sampled addresses in the 50 states and the District of Columbia, 38.1% households were screened for age-eligible children. 54.0% of the households reported age-eligible children living or staying in the household.

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[1] Additional details about the use and impact of incentives are available in the annual methodology reports.

29,433 detailed topical questionnaires were completed.
From the sample of households with age-eligible children, 79.2% of topical questionnaires were completed using the web instrument and 20.8% were completed using the paper instrument. The number of children with completed questionnaires per state ranged from 474 (Hawaii) to 651 (Arkansas).

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 47.8%.
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:
- 52.8% were households with children that completed the screener instrument
- 46.0% were households without children
- 1.2% 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 2017 American Community Survey.

The weighted Topical Completion Rate is 35.3%.
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 and at least one item in Section K (family income, household and family count) or the respondent submitted the topical portion of the web instrument. Approximately 98% of returned topical questionnaires were complete.
- Sufficient partial topical questionnaires have valid answers for at least 25 of 50 test questions and at least one item in Section H or beyond or the respondent submitted the topical portion of the web instrument. Approximately 2% of returned topical questionnaires were sufficient partials.

Of the households with children given a topical questionnaire, approximately 6,800 did not return a topical questionnaire or returned an insufficient partial topical questionnaire.

The weighted Interview Completion Rate is 79.5%.
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 42.4%.
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 a number of strategies to minimize nonresponse bias, including incentives and other treatments to increase response and weights that account for differential nonresponse. Nonresponse Bias Analyses are available for the 2016, 2017, 2018, and 2019 NSCH survey years. Each indicate no systematic bias in estimates.

How many complete questionnaires are included on the 2019 data files?

The screener level data file includes records for 36,196 households.
Each record contains general demographic information and special health care needs status for the resident children in sampled households. The file contains 67,625 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 29,433 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 36,196 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.

2019 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 began with the base sampling weight (the inverse probability of the selection of the address) and then applied the following adjustments:
- An adjustment for screener nonresponse
- A raking that compared eligible children from the screener questionnaire cases to population controls from the 2018 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 used three analytical domains of interest.
- Dimension #1 – State by Child's Race
- Dimension #2 – State by Child's Ethnicity
- Dimension #3 – State by Child's Sex by Child's Age Group

Raking the topical cases used eight 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
- Dimension #5 – State by Selected Child's Ethnicity
- Dimension #6 – State by Selected Child's SHCN Status
- Dimension #7 – National Selected Child's Race by Ethnicity
- Dimension #8 – National Selected Child's Sex by Age

Raking the screener cases used three 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 used nine 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 by Ethnicity
- • Dimension #7 – National Selected Child's Sex by Age

The 2019 NSCH used the 2018 American Community Survey 1-year estimates and the screener data as the source of the independent population control totals for raking.

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, detailed (SC_RACE_R)
- • 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 (C_RACEAIAN)
- • 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 2019 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)	0.63%	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)	0.96% 1.77%	Flag for child's race (C_RACE_R_IF)
Child's Hispanic origin (C_HISPANIC_R)	0.83%	Flag for child's Hispanic origin (C_HISPANIC_R_IF)
Selected child's sex (SC_SEX)	0.14%	Flag for selected child's sex (SC_SEX_IF)
Selected child's race (SC_RACE_R)	0.68% 1.61%	Flag for selected child's race (SC_RACE_R_IF)
Selected child's Hispanic origin (SC_HISPANIC_R)	0.57%	Flag for selected child's Hispanic origin (SC_HISPANIC_R_IF)
Adult 1's highest completed year of school (A1_GRADE)	2.40%	Flag for adult 1's highest completed year of school (A1_GRADE_IF)
Household size (HHCOUNT)	2.48%	Flag for household size (HHCOUNT_IF)
Family poverty ratio (FPL)	17.60%	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 Reports](#) 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 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, if files are from the same series. Original data files released from 2016 to 2021 use the following naming convention: nsch_[yyyy]_[instrument], e.g., nsch_2021_topical. Re-released files use the following convention: nsch_[yyyy]e_[instrument], e.g., nsch_2021e_topical. Data files using the same naming convention can be combined.

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 2017-2019 weight, analysts must divide each individual survey weight by 3 (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 2019?

Yes, if files are from the same series. Original data files released from 2016 to 2021 use the following naming convention: nsch_[yyyy]_[instrument], e.g., nsch_2021_topical. Re-released files use the following convention: nsch_[yyyy]e_[instrument], e.g., nsch_2021e_topical. Data files using the same naming convention can be compared.

Beginning with the 2016 NSCH and going forward, individual and multiple years of data can be compared to identify significant differences over time. 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 2018-2019 versus 2016-2017 (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 (2016-2019) 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).

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 subsetted 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 (≈ 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.

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