

Frequently Asked Questions

2011 - 2012 National Survey of Children's Health

The questions and answers below summarize key information about the 2011-2012 National Survey of Children's Health (NSCH). A detailed report on the design and operation of the survey is forthcoming and will be released online as soon as possible.

General information about the background and purpose of the survey, the approach to data collection, and the data editing procedures has been published online (<http://www.cdc.gov/nchs/slits/nsch.htm>) for the 2003 and 2007 NSCH. However, the design and administration of the 2011-2012 NSCH were enhanced and differ somewhat from those used previously. This document highlights many of those changes. Please read this document carefully and completely before analyzing the 2011-2012 data.

BACKGROUND

Who sponsored the 2011-2012 NSCH?

- Primary funder: United States Department of Health and Human Services (DHHS), Health Resources and Services Administration, Maternal and Child Health Bureau
- Additional funding for specific questions was provided by:
 - DHHS, Office of the Assistant Secretary for Planning and Evaluation
 - Centers for Disease Control and Prevention (CDC), National Center for Birth Defects and Developmental Disabilities

Who conducted the 2011-2012 NSCH?

- CDC's National Center for Health Statistics (NCHS), State and Local Area Integrated Telephone Survey program

What is the goal of the 2011-2012 NSCH?

- Assess the physical and emotional health of children aged 0 to 17 years, as well as factors that may relate to child well-being, including medical homes, family interactions, parental health, school and after-school experiences, and neighborhood characteristics
- For currently uninsured children, collect detailed information about the reasons why they are uninsured, including past enrollment and application information for public health insurance programs

SAMPLE DESIGN

What was the 2011-2012 sample design?

- Cross-sectional telephone survey of US households with at least one resident child aged 0 to 17 years at the time of the interview
- List-assisted random-digit-dial (RDD) sample of landline telephone numbers, supplemented with an independent RDD sample of cell-phone numbers
- Complex survey design, with stratification by state and sample type (landline or cell-phone)
- The NSCH used the same sampling frame as the CDC's National Immunization Survey (NIS) and immediately followed the NIS interview in selected households, using the NIS sample for efficiency and economy.

How was eligibility determined?

- Telephone numbers were called and screened for residential status and the presence in the household of children who were aged 0 to 17 years at the time of the call.
- In addition, for the cell-phone sample, various telephone status questions were asked. For sample released in the first calendar quarter of 2011, households contacted by cell phone were considered eligible only if they did not have a landline telephone or the respondents said they were unlikely to be reached through the landline if they had one.
- For sample released in April 2011 and beyond, a "take all" approach was implemented for cell phone cases; these cases were no longer screened for cell-only/mostly status. Instead, all cell phone respondents were selected for the interview if there was an eligible child in the household.

How many children were selected per household as the target of the interview?

- One child was randomly selected to be the subject of the detailed interview if more than one child lived in the household.
- In households with one child, that child was selected to be the subject of the detailed interview.

QUESTIONNAIRE

The English questionnaire can be found at: <http://www.cdc.gov/nchs/data/slits/2011NSCHQuestionnaire.pdf>.

The Spanish questionnaire is located at <http://www.cdc.gov/nchs/data/slits/2011NSCHQuexSpanish%20revised.pdf>.

What were the major additions to the content of the survey since 2007?

- Premature birth of the child
- Two new conditions (intellectual disability, cerebral palsy), as well as severity of all current conditions
- Age at first diagnosis for the following conditions: Intellectual disability; cerebral palsy; ADD/ADHD; behavioral or conduct problems; autism or Autism Spectrum Disorder (ASD); developmental delay; speech or other language problems; Tourette's Syndrome; vision problems that cannot be corrected with standard glasses or contact lenses
- For children ever diagnosed with autism or ASD, follow-up questions on that diagnosis
- Whether the cost of the child's medical bills caused financial problems for the family
- If respondent had been frustrated in efforts to obtain health care services for the child; if so, how often he/she was frustrated
- Recent medical and dental care of any kind
- Receipt of and location of age-appropriate vision screenings
- Home visitation by health professional(s)
- Receipt of therapy services for autism/ASD or developmental delay (ever received, age child began to receive services, current receipt)
- Flourishing (attachment/bonding, aspiration, happiness/joy, resilience)
- Amount of time spent using computers, cell phones, handheld video games, and other electronic devices
- If the child repeated any grades, and which specific grades were repeated
- Age of the oldest adult living in the household
- Adverse family experiences
- Presence of at least one adult mentor in the child's school, neighborhood, or community (apart from other adults at home) for the parent or guardian respondent to rely on for advice or guidance
- Highest grade or year of school completed among the adult respondent's parents or guardians
- Household receipt of WIC benefits
- For currently uninsured children only: Reasons for uninsurance, enrollment and application information for public health insurance programs (Medicaid/CHIP), parents' insurance coverage, availability of employer-sponsored insurance

What were the major deletions to the content of the survey since 2007?

- The following chronic conditions and condition severity for each: Hay fever or any kind of respiratory allergy; any kind of food or digestive allergy; eczema or any kind of skin allergy; migraine headaches; three or more ear infections
- Specification of problems with the child's bones, joints, or muscles
- Dental health (broken teeth, bleeding gums)
- If the child's conditions interfered with (his/her) ability to participate in play with other children; go on outings; make friends; attend school on a regular basis; or participate in sports, clubs, or other organized activities
- Immunizations (receipt of tetanus booster shot, meningitis shot, HPV vaccine shots, health care provider recommendation to receive HPV shots)
- Need for interpreter services to speak with the child's doctors or other health care provider
- Receipt of specific information to address learning, development, or behavior concerns
- Child care – receipt of child care for at least 10 hours per week in a non-relative setting and where this care occurred; receipt of child care for at least 10 hours per week from a relative other than parents/guardians and where this care occurred; recent need for child care for the sampled child; if the child's behavior or health limited the respondent's ability to find child care; how many times the respondent recently needed to make different arrangements for child care at the last minute due to circumstances beyond his/her control
- Injury

- Social competence (child shows respect for teachers and neighbors; gets along well with other children; is disobedient; is stubborn, sullen, or irritable; tries to understand other people's feelings; tries to resolve conflicts with classmates, family, or friends)
- Depressed mood (the child feels worthless or inferior; is withdrawn, and does not get involved with others)
- How often the mother, father, and respondent (if not the child's mother or father) exercised, played sports, or participated in physical activity for at least 20 minutes

DATA COLLECTION

When were the data collected?

- February 28, 2011 through June 25, 2012

Who was the respondent?

- A parent or guardian with knowledge of the health and health care of the sampled child in the household. For the completed NSCH interviews, 68.6% of the respondents were mothers (biological, step, foster, or adoptive), 24.2% were fathers (biological, step, foster, or adoptive), and 7.2% were other relatives or guardians.

What was the average interview length?

- The average interview length for landline sample was 33 minutes, 6 seconds, and the median time was 31 minutes, 43 seconds.
- The average interview length for cell phone sample cases was 34 minutes, 14 seconds, and the median time was 32 minutes, 54 seconds.
- The NSCH interview followed the NIS interview in NIS-eligible households. The length of the NSCH interview was shorter for these households because some demographic and household questions were administered as part of the NIS and not repeated during the NSCH. The times above are for households that were not eligible for the NIS.

How many interviews were completed?

- In the landline and cell samples, a total of 847,881 households in the 50 states and DC were screened for age-eligible children. Of these households, 187,422 reported age-eligible children living or staying in the household.
- From this sample of households with age-eligible children, we completed 95,677 detailed child-level interviews. The number of children with completed interviews per state ranged from 1,811 (South Dakota) to 2,200 (Texas) in the combined sample. The target number of completed interviews (1,800) was achieved and sometime exceeded in every state and DC.
- Of the 95,677 detailed completed interviews, 31,972 were completed with the cell-phone sample. The number of detailed interviews completed with cell-phone sample in each state ranged from 592 (Wisconsin) to 942 (Maryland). The target number of completed interviews with cell-phone sample (600) was not achieved in four states (Wisconsin [592], Alaska [595], and Utah and Washington [597]).
- In addition to the totals presented above, a total of 13,494 households in the United States Virgin Islands (USVI) were screened for age-eligible children using a landline sample. Of these households, 3,424 reported age-eligible children living or staying in the household. Detailed interviews were completed for 2,342 children in USVI. Data from USVI have not been included in the recently released data files and will not be considered further in this document.

What was the overall response rate?

- After it had been determined that a household was eligible, a child was randomly chosen from the household, and an attempt was made to conduct a full interview about the selected child. The interview was considered complete if Section 6 (for children 0 to 5 years old) or Section 7 (for children 6 to 17 years old) was completed.
- The response rate is the number of completed interviews as a proportion of the number of eligible units in the sample. Due to nonresponse prior to completion of the screener, the eligibility status is not observed for all sample units, and the number of eligible units in the sample must be estimated.

- Response rates can vary widely as a result of the assumptions used to estimate the number of eligible units among units with unknown eligibility. Response rates using different assumptions will be published in the forthcoming report on the survey design and operation.
- One common method to determine the eligibility status for telephone surveys divides the units with undetermined eligibility into groups, corresponding to nonresponse at different stages of the survey, and assumes a separate eligibility rate for each group. For instance, one eligibility rate would equal the observed working residential number rate among the resolved telephone numbers (used to estimate the number of households among telephone numbers not resolved as households or non-households), and another eligibility rate would equal the observed age-eligibility rate among the screened households (used to estimate the number of households with children among resolved households not completing the age-eligibility screener). Telephone numbers that resulted in no contact (i.e., those for which all call attempts resulted in rings with no answers or busy signals) were classified as unresolved. This approach yielded national response rates of 38.2% for the landline sample, 15.5% for the cell phone sample, and 23.0% for the combined dual-frame sample.
- The NSCH interview completion rate, defined as the proportion of households known to include children that completed all sections up to and including Section 6 (for children less than 6 years of age) or Section 7 (for children 6 to 17 years of age), was 54.1% for the landline sample and 41.2% for the cell-phone sample.

Do the differences in the response rates between the landline and cell-phone samples reflect large differences in the potential for nonresponse bias?

- No. Response rates are highly sensitive to the assumed rate of eligibility among the units for which the eligibility status has not been observed. They are also sensitive to definitions used to determine which cases are eligible or ineligible. The assumed rates of eligibility and the definitions to determine eligibility differed for the landline and cell-phone samples.

Were incentives to participate used?

- To improve the likelihood that eligible households would participate in the survey, a detailed incentive plan was implemented. Cases eligible for an incentive were known age-eligible households that had not completed the interview. The incentive effort combined a prepaid incentive of \$1 with a promised incentive of an additional \$10 upon completion of the interview for landline cases with an address match, or a promised incentive of \$11 for landline cases without an address match. Cell sample cases were promised up to \$15 upon completion of the interview. The maximum total value offered to any household was \$15.
- Of all age-eligible households, 32% became eligible for an incentive. A total of 18,728 households that completed the interview received an incentive.

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

Although incentive efforts did improve the response rate, there remained much nonresponse to the survey. Sampling weights were adjusted to account for nonresponse. An extensive nonresponse bias analysis (which will be detailed in the forthcoming Design and Operation report) was conducted to examine the extent to which nonresponse bias affected survey estimates and the extent to which nonresponse adjustment to the sampling weights corrected for such bias. Multiple methods were used to estimate bias. The results indicate that the interviewed population was more likely to live in rural and other areas with lower household density when compared with the nonresponding population. The interviewed population was also more likely to live in areas associated with higher levels of home ownership, lower home values, and a greater percentage of non-Hispanic white persons. In general, the analysis showed that response biases could have had a small impact on key survey estimates, but the nonresponse adjustment to the weights substantially reduced the potential magnitude of those biases. Of the seven key survey estimates examined, the maximum estimated bias was 1.14 percentage points. In each case, the maximum estimated bias was within the 95% confidence interval for the “biased” estimate, indicating that nonresponse bias was consistently smaller than potential sampling error. Bias estimates were so small that, for most of the key survey variables examined, changing the method used to estimate bias changed the estimated direction of the bias.

What languages in addition to English were used to conduct the interviews?

- The NSCH questionnaire was professionally translated into Spanish, Mandarin, Cantonese, Vietnamese, and Korean.
- During data collection, 4,905 detailed interviews were completed by a Spanish-language interviewer and 229 detailed interviews were completed by an Asian-language interviewer.

DATA FILES

How many interviews were included on the final data file?

- A single interview file was released with data for 95,677 children (one record for each age-eligible child that was randomly selected to be the subject of the interview). Each record contains all interview data for the child and the household in which the child resides, including the child's health and health care, family functioning, parental health, neighborhood and community characteristics, health insurance coverage, and demographics.

Where can I find more information about variables suppressed to protect confidentiality and about derived variables?

- Until the release of the Design and Operation report for the 2011-2012 NSCH, please refer to the *Design and Operation of the National Survey of Children's Health, 2007*. Details about suppression and derived variables will be very similar for the 2007 and 2011-2012 data sets. The 2007 report is available at: http://www.cdc.gov/nchs/data/series/sr_01/sr01_055.pdf
- To protect the confidentiality of individual respondents and children, responses for the race variable were collapsed to three categories: white only, African American or black only, and other race. The "other race" category includes children with multiple race and children for whom only one of the other three categories (Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander) was reported.

SAMPLING WEIGHTS

How were the data weighted?

One child interview weight was produced. The weighting scheme began with a base sampling weight, which was the inverse of probability of the selection of the phone number. Adjustments to the base sampling weight included the following steps and calculations, and unless otherwise noted, were applied to the landline and cell-phone samples independently prior to their being combined:

- Derivation of annual sampling weight
- Adjustment for non-resolution of released telephone numbers
- Adjustment for incomplete cell phone-only/mainly screener (affects Calendar Quarter 1 (Q1)/2011 cell phone cases only)
- Adjustment for incomplete age-eligibility screener
- Adjustment for subsampling of children within household
- Adjustment for nonresponse to NSCH interview
- Adjustment for multiple cell phone lines
- Trimming of extreme weights
- Adjustment for combined landline and cell phone sample and non-covered children
- Raking adjustment of child weights

What was the source of independent population control totals for raking?

- 2011 American Community Survey

What is the final sampling weight variable?

- NSCHWT

ESTIMATION AND HYPOTHESIS TESTING

Whom does this sample represent?

- When survey weights are used, the resulting estimates are representative of all non-institutionalized children aged 0 to 17 years in the US and in each state.

- These weighted estimates do not generalize to the population of parents, mothers, or pediatric health care providers. Analysts are advised to avoid statement about the percent of parents.

Are special programs needed to analyze these data?

- Yes. For proper variance estimation, your program must be able to incorporate the complex sample design structure. Examples include SUDAAN, Stata, SPSS Complex Samples module, WesVar, the SAS SURVEY procedures, and the base program R with the separate SURVEY package.

How does the cell phone sample practically impact my data analyses?

- The specification of the complex sample design in programs capable of handling sample survey data has been slightly revised. The SAMPLE variable, which reflects the telephone sample type (landline or cell-phone), must be included when specifying the sample design. Additional programming statements (e.g., PSULEV in SUDAAN) may also be necessary.
- It is not possible to use the publicly released data file to create accurate estimates for the landline and cell-phone populations separately, and the data files cannot be used to compare children from cell-phone-only households to children from landline households. This is because households in the cell-phone sample include households that have landlines. Therefore, limiting the analysis to either the landline or cell-phone sample cases only will misrepresent the populations and give erroneous weighted estimates.

What variables should be used to estimate variance?

- Stratum identifiers: STATE (state of residence) and SAMPLE (telephone sample type)
- Primary sampling unit (PSU) variable: IDNUMR (unique household identifier)
- 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 SAMPLE (2 levels) with STATE (51 levels). This new variable can then be used as the stratum variable. For example, Stata users can specify only one variable in the strata() option of svyset. This new variable (named here as STRATACROSS) can be created using the following statement:

```
EGEN STRATACROSS = GROUP (STATE SAMPLE)
```

- SUDAAN users can identify both STATE and SAMPLE 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 PSU. To properly identify the PSU variable, the PSULEV option must be invoked in the NEST statement as shown here:

```
NEST STATE SAMPLE IDNUMR / PSULEV = 3;
```

Can the data be subsetted before analysis?

- The procedure of keeping only select records and list-wise deleting other records is called subsetting the data. 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 should not subset the data, with one exception: Subsetting the survey data to a particular state does not compromise the design structure. 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).

WORKING WITH MISSING DATA

How are missing data identified on the data files?

- The SAS data files for the NSCH include special missing value codes for analysts who may wish to differentiate between different types of missing values.

- (.A) Added question—Variable is missing because this question was added after the start of data collection and the interview was conducted before the variable was added.
 - (.L) Legitimate skip—Variable is missing due to valid questionnaire paths based on a previous answer to a root question.
 - (.M) Missing in error—May indicate that the variable is missing due to interviewer or system errors. In addition, all missing values for derived variables (i.e., variables whose response was not directly provided by the respondent) receive a “.M” code regardless of the reason for the missing data.
 - (.N) Not in universe—Variable is missing because the child was not eligible for these questions (for example, children ages 0-5 were not eligible for section 7 and children ages 6-17 were not eligible for section 6).
 - (.P) Partially completed interview—Variable is missing because the respondent ended the interview after completing Sections 6 or 7 (depending on the age of the child) but before completing the full interview.
- Data missing because the respondent did not know the answer or refused to provide the answer have been treated differently. A numeric code was used to identify these responses. Typically, unknown answers are coded as “6,” “96,” or “996.” Refused responses are coded as “7,” “97,” or “997.” However, the codes may be different for specific variables; therefore, analysts are encouraged to consult the data documentation and frequency lists to identify the correct codes for each variable. Failure to do so may result in inappropriate calculations, especially for variables measured using ordinal, interval, or ratio scales.

Will missing data for demographic variables be imputed?

Nonresponse rates for questions on household income were relatively high in 2011-2012. A nonresponse analysis shows that missingness is related to several variables, including items pertaining to health, neighborhood and community characteristics, and demographics. Thus, the respondents cannot be treated as a random subsample of the original sample. It follows that the most common method handling missing data in software packages, “complete-case analysis” (also known as “listwise deletion”), will generally be biased because this method deletes cases that are missing any of the variables involved in the analysis. Imputation is a more appropriate approach to handle non-response. An additional SAS data file that includes multiply-imputed household income data (relative to the federal poverty level) has also been released, and can be found at http://www.cdc.gov/nchs/slaitis/imputed_data.htm. Analysts should only use these imputed data to examine household income.

GUIDELINES FOR DATA USE

The Confidential Information Protection and Statistical Efficiency Act (44 USC 3501 note) and the Public Health Service Act (42 USC 242m Section 308d) provide that these data collected by NCHS may be used only for the purpose of health statistical reporting and analysis. Any effort to determine the identity of any reported case is prohibited by these laws. NCHS takes 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 set. 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 this data set for statistical reporting and analysis only;
- Make no use of the identity of any person discovered, inadvertently or otherwise, and advise the Director, NCHS, of any such discovery (301-458-4500);
- Not link this data set with individually identifiable data from any other NCHS or non-NCHS data sets.

Use of the data set signifies users’ agreement to comply with the above-stated statutory-based requirements.

FURTHER INFORMATION

Whom do I contact if I have questions about the 2011 - 2012 NSCH after I read this document?

- We know this summary may not provide all the information that analysts need on the survey design and operation. If you have further questions, please send an email to slaitis@cdc.gov.

What is the suggested citation for this document?

- Centers for Disease Control and Prevention, National Center for Health Statistics, State and Local Area Integrated Telephone Survey. 2011-2012 National Survey of Children's Health Frequently Asked Questions. March 2013. Available from URL: <http://www.cdc.gov/nchs/slaitns/nch.htm>