National Immunization Survey-Teen

A User's Guide for the 2012 Public-Use Data File

Centers for Disease Control and Prevention

National Center for Immunization and Respiratory Diseases

and

National Center for Health Statistics

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Convention for Bolding Text

The Data User's Guide uses **bold** font to highlight substantive changes in the methodology or study design from last year's Guide.

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1. Introduction

In 1992 the Childhood Immunization Initiative (CII) (CDC 1994) was established to 1) improve the delivery of vaccines to children; 2) reduce the cost of vaccines for parents; 3) enhance awareness, partnerships, and community participation; 4) improve vaccinations and their use; and 5) monitor vaccination coverage and occurrences of disease. Subsequently, the Healthy People 2020 objectives established the goal for adolescents aged 13–15 years of 80 percent coverage with 1 Tdap, 1 MenACWY, and 3 HPV (females) doses, and 90 percent coverage for 2 varicella vaccine doses. To fulfill the CII mandate of monitoring vaccination coverage and marking progress toward achieving those objectives, the National Immunization Survey (NIS) with a teen component called the NIS-Teen has been implemented by the National Center for Immunization and Respiratory Diseases (NCIRD) and the National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC) http://www.cdc.gov/nis.

The target population for the NIS-Teen is children aged 13–17 years living in non-institutionalized households in the United States at the time of the interview. The official coverage estimates reported from the NIS-Teen are rates of being up-to-date with respect to the recommended numbers of doses of all recommended and catch-up vaccines (CDC 2013). These vaccines and their recommended numbers of doses are:

- Tetanus-diphtheria-acellular-pertussis vaccine (Tdap) – 1 dose;
- Meningococcal vaccine (MenACWY) – 2 doses;
- Human papillomavirus vaccine (HPV) – 3 doses;
- Measles/mumps/rubella vaccine (MMR) – 2 doses;
- Hepatitis B vaccine (Hep B) – 3 doses;
- Varicella zoster (chicken pox) vaccine, – 2 doses;

- Hepatitis A vaccine (Hep A), 2 doses; and
- Seasonal influenza vaccine – 1 dose annually.

The NIS-Teen survey is conducted as an add-on to the National Immunization Survey (NIS), which seeks to estimate vaccination coverage rates among 19–35 month-old children. The NIS uses a random digit dialing (RDD) telephone survey to identify households containing children aged 19–35 months and interviews the adult who is most knowledgeable about the child's vaccinations. If such a household is identified and the NIS interview is completed, the household is then screened for the presence of 13–17 year-old children. Households that do not contain a 19–35 month old child are not administered the NIS interview but are immediately screened for the presence of 13–17 year-old children. If a household containing one or more children aged 13–17 years is identified, a 13–17 year-old child is randomly chosen and the adult who is most knowledgeable about the teen's vaccinations is interviewed. With consent of the teen's parent or guardian, the NIS-Teen also contacts (by mail) the teen's health care provider(s) to request information on vaccinations from the teen's medical records.

Samples of telephone numbers are drawn independently, for each calendar quarter, within selected geographical areas. **For the 2012 NIS-Teen, there are 57 geographic strata for which vaccine coverage levels can be estimated, including 6 primarily urban city/county areas (including the District of Columbia); the remaining 51 are either an entire state (including U.S. Virgin Islands) or a "rest of state" area. This design makes it possible to produce annual estimates of vaccination coverage levels within each of the 57 estimation areas with a specified degree of precision (a coefficient of variation of approximately 6.5 percent).** Further, by using the same data collection methodology and survey instruments in all estimation areas, the NIS-Teen produces comparable vaccination coverage levels among estimation areas and over time.

When the NIS-Teen was first conducted in Quarter 4 of 2006 and Quarter 4 of 2007, the survey was designed to produce estimates at the national level only. Starting in 2008, the NIS-Teen was expanded to

produce estimates in 56 areas, including the 50 states and 6 urban areas that receive federal Section 317 immunization grants (Bexar County, TX; Chicago, IL; District of Columbia; City of Houston, TX; New York City; Philadelphia County, PA). These areas are called *estimation areas*. **In 2012, the NIS-Teen included one additional estimation area, the U.S. Virgin Islands, for a total of 57 estimation areas in 2012.** As noted throughout this report, several of the sampling, data collection, and estimation procedures differed for the U.S. Virgin Islands when compared to the rest of the U.S., including the creation of separate survey weight variables for analysis that is to include the U.S. Virgin Islands.

In 2012, the NIS utilized a dual-frame sampling design with independent samples drawn from landline and cell-phone sampling frames. The cell-phone component was added to the survey in 2011 in order to address the rapid rise of cell-phone-only households. **Published estimates from the July-December 2012 National Health Interview Survey (NHIS) indicate that the number of households with only wireless telephones continues to increase. Approximately 45.0 percent of all children under 18 years of age—approximately 33 million children—live in households with only wireless telephones (Blumberg and Luke 2013). Several of the sampling, data collection and estimation procedures differ for the cell-phone sample as compared to the landline sample, as noted throughout this report. Cell-phone sample was not fielded in the U.S. Virgin Islands.**

For the 2012 NIS-Teen landline and cell-phone samples, household interviews began on January 5, 2012 and ended on February 18, 2013. Provider data collection extended from January 2012 through April 2013 for both sample sources. A total sample, including the U.S. Virgin Islands, of approximately 5.1 million telephone numbers (3.8 million landline and 1.3 million cell-phone) yielded household interviews for 32,825 teens (23,840 landline and 8,985 cell-phone), 19,746 of whom (14,680 landline and 5,066 cell-phone) had provider data adequate to determine whether the teen was up-to-date with respect to the recommended immunization schedule. The 2012 NIS-Teen public-use data file contains data for the 32,825 teens with completed household interviews, and more extensive data for the 19,746 teens with adequate provider data (including 60 zero-shot teens).

The weights included in this public-use file allow data analysts the capability of conducting several different types of analysis, depending on interests and aims. One can choose to analyze all teens with completed household interviews or only the subset of teens for whom the provider-reported data are adequate. CDC publishes estimates of vaccination coverage based on provider-reported vaccination histories using the subset of teens for whom the provider-reported data are adequate. Parental reported vaccination status is subject to recall error (Dorell 2011, Ojha 2013).Also, one can choose to include or exclude teens who reside in the U.S. Virgin Islands in the analysis. Previous NIS-Teen public-use files have provided analysts with these capabilities.

The 2011 Public-Use File included both single-frame and dual-frame weights; however the 2012 Public-Use File includes only dual-frame weights. The CDC has determined that the dual-frame estimates are the best estimates for 2012 in terms of minimizing any bias due to the incompleteness of the landline sampling frame. Section 6 of this user's guide provides information about the creation of the weight variables included in the 2012 NIS-Teen public-use file, and Section 8 provides guidance for their use.

Published tables of vaccination coverage estimates for 2012 will be available on the National Center for Immunization and Respiratory Diseases website, http://www.cdc.gov/vaccines/stats-surv/imz-coverage.htm#nisteen.

The accompanying code book (NCHS 2013) documents the contents of the 2012 NIS-Teen public-use data file, and Section 7 of this user's guide describes these contents in detail. For reference, Appendix D (Alphabetical Listing of Variables in the NIS-Teen Public-Use Data Files) provides a full list of variables in the 2012 public-use data file.

Additional information on the NIS-Teen is available at:

http://www.cdc.gov/nis/about_nis.htm#nis_teen

For additional information on the NIS-Teen public-use data file, please contact the NCHS Information Dissemination Staff:

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2. Sample Design

The NIS-Teen uses two phases of data collection to obtain vaccination information for a large national probability sample of teens: (1) an RDD telephone survey designed to identify households with children 13 to 17 years of age, followed by (2) the Provider Record Check, a mailed survey to teens' immunization providers. This section summarizes these two phases of data collection. Other descriptions of the sample design are given by Ezzati-Rice et al. (1995), Zell et al. (2000), Smith et al. (2001a, 2005), and Jain et al. (2009).

2.1. The NIS RDD Telephone Survey

The NIS-Teen RDD telephone survey phase uses independent, quarterly samples of telephone numbers. **Landline telephone and cell-phone numbers were sampled within estimation areas in each quarter of 2012.** Table E.1 (in Appendix E) lists the 57 estimation areas for the 2012 NIS-Teen by state and shows the estimated number of teens living in each state and estimation area in 2012.

Because the NIS-Teen is an add-on survey to the NIS, the NIS-Teen uses the same sampling frames and sampling methodology as the NIS. The NIS uses the list-assisted method of RDD (Lepkowski 1988) to sample landline telephone numbers. This method selects a random sample of telephone numbers from "banks" of 100 consecutive telephone numbers (e.g., 773-256-0000 to 773-256-0099) that contain at least one directory-listed residential telephone number. The sampling frame of telephone numbers is updated each quarter to reflect new telephone exchanges and area codes. Because directory listings are not available for cell phones, the NIS cell-phone sample did not use the list-assisted method of RDD, but rather used RDD without list-assistance. That is, the cell-phone sample was selected from all banks of cell-phone numbers, not just those containing at least one directory-listed residential telephone number. Directory listings were also unavailable for the U.S. Virgin Islands, so the sample lines for the U.S. Virgin Islands were likewise selected without list-assistance.

The target sample size of completed telephone interviews in each estimation area is designed to achieve an approximately equal coefficient of variation of 6.5 percent for an estimator of immunization coverage derived from provider-reported immunization histories, given a true coverage parameter of 50 percent. **Landline telephone sample sizes and cell-phone sample sizes were chosen such that they can be combined to meet the target coefficient of variation of 6.5 percent.**

In 2012, 60.2 percent of teens (61.6 percent of landline sample teens and 56.4 percent of cell-phone sample teens) with a completed household interview were determined to have adequate provider data. The phrase "adequate provider data" means that sufficient vaccination history information was obtained from the provider(s) to determine whether the teen is up-to-date with respect to the recommended vaccination schedule. **The percentage of teens with adequate provider data varies among estimation areas (51.8 percent in Maryland to 71.7 percent in North Dakota).** The definition of teens with adequate provider data includes unvaccinated teens. These are teens for whom the respondent reported, during the household interview, either that the teen had received no vaccinations and has no immunization providers; or that the teen has one or more immunization providers, but those providers all reported administering no vaccinations. The number of unvaccinated teens in the sample is very small (only 60 in 2012).

The design and implementation of the NIS-Teen landline sample involve four procedures. First, statistical models predict the number of sample telephone numbers needed in each estimation area to meet the target precision requirements, and, from among the entire NIS sample of telephone numbers, this number of telephone numbers are "flagged" to be part of the NIS-Teen sample. Second, the sample for an estimation area is divided into random sub-samples called replicates. By releasing replicates as needed, it is possible to spread the interviews for each sampling area evenly across the entire calendar quarter. Third, an automated procedure eliminates a portion of the non-working and non-residential telephone numbers from the sample before the interviewers dial them. Fourth, the sample telephone numbers are matched against a national database of residential landline telephone numbers in order to obtain usable mailing addresses for

as many sample households as possible. To promote participation in the NIS and NIS-Teen, an advance letter is sent to identifiable mailing addresses approximately two weeks prior to the household interview. (For U.S. Virgin Islands sample, mailing addresses were not obtained, and advance letters were not sent.)

The design and implementation of the cell-phone sample differs from that of the landline sample in two ways:

- There is no automated procedure to eliminate a portion of non-working and non-residential cell-phone numbers. All sample lines (i.e., numbers) were sent to the interviewers for dialing.
- Cell-phone numbers were not matched to an external database to obtain mailing addresses. Cell-phone sample cases were not sent any advance letters.

2.2. The NIS-Teen Provider Record Check Study

At the end of the household interview, consent to contact the teen's vaccination provider(s) is requested from the parent/guardian. When oral consent is obtained, each provider is mailed an immunization history questionnaire (IHQ). This mail survey portion of the NIS-Teen is the Provider Record Check Study. The Provider Record Check Study is conducted in the same manner for both landline and cell-phone sample cases.

The instructions ask vaccination providers to mail or fax the immunization history questionnaire back upon completion. Two weeks after the initial mailing, a telephone call is made to providers who have still not responded, to remind and encourage them to complete the form and either mail or fax the information back. In some instances, provider-reported vaccination histories are completed over the telephone. The data from the questionnaires are edited, entered, cleaned, and merged with the household information from the RDD survey to produce a teen-level record.

2.3. Summary of Data Collection

Table 1 presents selected operational results of NIS-Teen data collection for calendar year 2012 for the NIS-Teen sample. (To facilitate comparisons with prior NIS-Teen surveys, the numbers in Table 1 are presented separately for the landline and cell-phone samples. The statistics presented in Table 1 and discussed in this section exclude the U.S. Virgin Islands sample.) Children ages 13–17 years during 2012 data collection were born during January 1994 and February 2000.

The total landline RDD sample (in replicates that were released for use and excluding the U.S. Virgin Islands) consisted of 3,676,083 telephone numbers. Of those, 1,780,036 were eliminated before release to the telephone centers by the automated procedure as non-working, non-residential, cell telephone, or "take me off the list" numbers. The remaining 1,896,047 numbers were sent to the telephone centers to be dialed, and 474,801 households were identified, as shown in Rows C and F. Among the identified households, 403,165 (84.9 percent) were successfully screened. Of these, 373,596 did not contain an age-eligible teen, and 29,569 (7.3 percent) contained one or more age-eligible teens. Among these households, 22,853 (77.2 percent) completed the household interview.

The cell-phone sample (in replicates that were released for use and excluding the U.S. Virgin Islands) consisted of 1,274,436 telephone numbers. All of these were sent to the telephone centers to be dialed, and 262,183 active personal cell-phone numbers (APCNs) were identified, as shown in Row F. Among the identified APCNs, 185,065 (70.6 percent) were successfully screened. Of these, 14,036 (7.6 percent) were deemed eligible for the NIS-Teen survey. Respondents were eligible if the cell phone belonged to an adult living in a household with at least one age-eligible teen. Among the identified eligible households, 9,007 (64.2 percent) completed the household interview.

A standard approach for measuring response rates in telephone surveys has been defined by the Council of American Survey Research Organizations (CASRO 1982). The CASRO response rate is equivalent to

"RR3" of AAPOR Standard Definitions (AAPOR 2011). **In 2012, the CASRO response rate (Row J) for the landline sample was 55.1 percent. The NIS-Teen CASRO response rate equals the product of the resolution rate (84.0 percent, Row E), the screening completion rate (84.9 percent, Row G), and the interview completion rate among eligible households (77.2 percent, Row I).** The resolution rate is the percentage of the total telephone numbers selected that are classifiable as non-working, non-residential, or residential. The screening completion rate is the percentage of known households that are successfully screened for the presence of age-eligible teens. The interview completion rate is the percentage of households with one or more age-eligible teen that complete the household interview.

The CASRO response rate (Row J) for the cell-phone sample in 2012 was 23.6 percent. As with the landline sample, it equals the product of the resolution rate (52.0 percent, Row E), the screening completion rate (70.6 percent, Row G), and the interview completion rate among eligible households (64.2 percent, Row I).

Row K of Table 1 shows that household interviews were completed for 22,807 age-eligible teens in the landline sample and 8,985 teens in the cell-phone sample (or 31,792 age-eligible teens in total). Rows L through O give results for the Provider Record Check phase. Specifically, Row L gives the rate of obtaining oral consent from household respondents to contact their teen's vaccination providers – 72.9 percent for landline sample cases and 67.9 percent for cell-phone sample cases in 2012. The number of immunization history questionnaires mailed to vaccination providers exceeds the number of completed interviews for teens with consent because some teens have more than one vaccination provider.

Of the questionnaires mailed to providers of teens from the landline sample, 27,444 (95.0 percent, Row N) were returned. Among the landline-sample teens with completed household interviews, 14,133 (62.0 percent, Row O) had adequate vaccination histories based on provider reporting (14,098) or had no vaccinations based on household reporting (35). The other 38.0 percent of teens

lacked adequate provider data for a variety of reasons, such as the parent did not give consent to contact the teen's provider(s), or the provider(s) did not have medical records for the teen.

Of the questionnaires mailed to providers of teens from the cell-phone sample, 10,192 (94.7 percent, Row N) were returned. Among the cell-phone-sample teens with completed household interviews, 5,066 (56.4 percent, Row O) had adequate vaccination histories based on provider reporting (5,044) or had no vaccinations based on household reporting (22).

In 2012, data from the Health Insurance Module (HIM) were collected. **Among the age-eligible teens in the landline sample with completed household interviews, 17,125 (75.1 percent, Row P) completed the HIM. Among the age-eligible teens in the cell-phone sample with completed household interviews, 6,191 (68.9 percent, Row P) completed the HIM.**

For each estimation area and each state, Table E.1 (see Appendix E) shows the number of teens with completed household interviews and the number of teens with adequate provider data.

2.4. Informed Consent, Security, and Confidentiality of Information

The advance letter, introduction to the telephone survey, and oral consent assure the respondent of the confidentiality of his/her responses and the voluntary nature of the survey. Informed consent is obtained from the person in the household most knowledgeable about the eligible teen's immunization history (generally the parent or guardian of the teen). Informed consent to contact the teen's vaccination provider(s) is obtained at the end of the interview.

Information in the NIS-Teen is collected and processed under high security. To ensure privacy of the respondents and confidentiality of sensitive information, NCHS has established standards for release of data from all NCHS surveys. All CDC staff and contractor staff involved with the NIS-Teen sign the NCHS confidentiality agreement and follow instructions to prevent disclosure.

All information in the NIS-Teen is collected under strict confidentiality and can be used only for research [Section 308(d) of the Public Health Service Act, 42 U.S. Code 242m(d), the Privacy Act of 1974 (5 U.S. Code 552a), and the Confidential Information Protection and Statistical Efficiency Act (5 U.S. Code)]. Prior to public release, the contents of the public-use data file go through extensive review by the NCHS Disclosure Review Board to protect participant privacy as well as data confidentiality.

Table 1: Selected Operational Results of Q1/2012-Q4/2012 NIS-Teen Data Collection (Excluding U.S. Virgin Islands)

Row	Key Indicator	Landline Sample		Cell-Phone Sample		Formula
		Number	Percent	Number	Percent	
	Household Phase					
A	Total Selected Telephone Numbers in Released Replicates	3,676,083	--	1,274,436	--	--
B	Phone Numbers Resolved before Computer-Assisted Telephone Interviewing	1,780,036	48.42%	0	0.00%	B/A
C	Total Phone Numbers Released to Telephone Centers	1,896,047	--	1,274,436	--	A-B
D	Advance Letters Mailed	758,603	40.01%	0	0.00%	D/C
E	Resolved Phone Numbers[1] – *Resolution Rate*	3,086,732	83.97%	663,110	52.03%	E/A
F	Households Identified – *WRN/APCN Rate*[2]	474,801	15.38%	262,183	39.54%	F/E
G	Households Successfully Screened[3] – *Screener Completion Rate*	403,165	84.91%	185,065	70.59%	G/F
H	Eligible Households – *Eligibility Rate*[4]	29,596	7.34%	14,036	7.58%	H/G
I	Households with Completed Household Interviews – *Interview Completion Rate*	22,853	77.22%	9,007	64.17%	I/H
J	CASRO Response Rate[5]	--	55.06%	--	23.57%	E*G*I
K	Age-Eligible Teens with Completed Household Interviews[6]	22,807	--	8,985	--	--
	Provider Phase					
L	Teens with Consent to Contact Vaccination Providers	16,628	72.91%	6,100	67.89%	L/K
M	Immunization History Questionnaires Mailed to Providers	28,879	--	10,758	--	--
N	Immunization History Questionnaires Returned from Providers	27,444	95.03%	10,192	94.74%	N/M
O	Teens with Adequate Provider Data	14,133 (includes 35 unvaccinated teens)	61.97%	5,066 (includes 22 unvaccinated teens)	56.38%	O/K

Table 1: Selected Operational Results of Q1/2012-Q4/2012 NIS-Teen Data Collection (Excluding U.S.S. Virgin Islands)

Row	Key Indicator	Landline Sample		Cell-Phone Sample		Formula
		Number	Percent	Number	Percent	
	Modules					
P	Age-Eligible Teens with Completed Household Interview and Completed Health Insurance Module	17,125	75.09%	6,191	68.90%	P/K

[1] For landline sample, includes phone numbers resolved before CATI (Row B).
[2] For the landline sample, this is the working residential number (WRN) rate; for the cell-phone sample, it is the active personal cell-phone number (APCN) rate.
[3] For the landline sample, this is the age-eligibility screener; for the cell-phone sample, it is a combination of the screener for non-minor-only cell phone status and the age-eligibility screener.
[4] For the landline sample, this is the age-eligibility rate; for the cell-phone sample, it reflects a combination of the non-minor-only cell-phone rate and the age-eligibility rate.
[5] CASRO, Council of American Survey Research Organizations.
[6] Rows K-P reflect the removal of teens with an ineligible best date of birth.

3. Content of NIS-Teen Questionnaires

This section describes the questionnaires used in the 2012 NIS-Teen telephone interview of households and in the NIS-Teen Provider Record Check Study.

3.1. Content of the Household Questionnaire

The computer-assisted telephone interview (CATI) questionnaire used in the RDD phase of NIS-Teen data collection consists of two parts: a screener to identify households with children ages 13–17 years and an interview portion. The questionnaire is modeled on the Immunization Supplement to the National Health Interview Survey (NHIS) (NCHS 1999). The NIS-Teen CATI questionnaire has been translated into Spanish, and Language Line Services (formerly part of AT&T) is used for real-time translation into many other languages (Wall et al. 1995). Table 2 summarizes the content of each section of the NIS-Teen household interview. The CATI questionnaire is available at http://www.cdc.gov/nis/data_files_teen.htm.

The household is first screened for the presence of children ages 19–35 months. If the household contains such a child, the NIS interview is conducted before the household is screened for the NIS-Teen survey; if the household does not contain such a child, the household immediately proceeds to the NIS-Teen screener.

In the NIS-Teen screener, the purpose of the survey is explained to the respondent, and the ages of all the children in the household are obtained. If the household contains one or more children age 13–17 years, a 13–17 year-old child is randomly chosen to be the subject of the interview, this teen's date of birth is collected, and the respondent is asked whether he/she is the most knowledgeable person for this teen's vaccination history. If the respondent indicates that another person in the household is more knowledgeable, the interviewer asks to speak to him/her at that time. If that person is unavailable to be interviewed, the name of the most knowledgeable person is recorded, and a "callback" is scheduled for a

later date. For cell-phone sample, prior to screening for age-eligibility the household was screened to ensure that the cell-phone was used by an adult (i.e., to ensure it was not a minor-only cell phone).

Table 2: Content of the Household Interview, National Immunization Survey - Teen, 2012

Questionnaire Section	Content of Section
Section S	Screening questions to determine NIS eligibility
Teen Screener	Screening questions to roster children and to determine NIS-Teen eligibility and the availability of shot records
Section A	Vaccination history (asked if shot records are available)
Section B	Vaccination history (asked if shot records are not available)
Health	Teen and household health questions
Demographics	Demographic and socioeconomic questions
Provider	Provider information and request for consent to contact the teen's vaccination provider(s)
HIM	Health Insurance Module

During the screener section, the person being interviewed is also asked whether he/she has a written record (shot card) of the teen's vaccination history, and whether it is easily accessible. If a shot card is available, the respondent is asked to provide information directly from it in Section A. If the teen does not have a shot card or the shot card is not easily accessible, the interview proceeds with Section B, which asks the respondent to recall from memory information about the teen's vaccinations.

The Health Section collects information about the health of the selected teen, including recent doctor visits and history of chicken pox disease, asthma, and other health conditions. This section is asked of all respondents upon completion of Section A or Section B.

The Demographics Section obtains information that includes relationship of respondent to the teen, race of the teen, household income, educational attainment of the mother, and other information on the socioeconomic characteristics of the household and the teen. This section is asked of all respondents upon completion of the Health Section.

In the Provider Section of the NIS-Teen household interview, identifying information (such as name, address, and telephone number) for the teen's vaccination provider(s) is requested, as well as the full names of the teen and the respondent, so that NIS-Teen personnel can contact the provider(s) and identify the teen whose immunization information the NIS-Teen is requesting. After this information is obtained, consent to contact the teen's vaccination provider(s) is requested. When oral consent and sufficient identifying information are obtained, the immunization history questionnaire is mailed to the teen's vaccination provider(s).

A Health Insurance Module (HIM) is administered upon completion of the Provider Section to collect data regarding the types of medical insurance coverage the teen has had since age 11 years. If a respondent provided consent to contact medical providers and completed the Provider Section, he/she flowed directly into the HIM. If, however, consent or any other critical provider question was refused, the call was terminated; only upon callback on which consent was granted or a second refusal given within the Provider Section was the respondent asked the HIM. See Section 7.10 of this user's guide for information on the HIM variables included on the public-use data file.

3.2. Content of the Immunization History Questionnaire (IHQ)

The IHQ administered to the vaccination providers is designed to be simple and brief, to minimize provider burden and encourage survey participation. The structure and content of this form were initially derived from the National Immunization Provider Record Check Study (NHIS/NIPRCS), which collected and reconciled immunization data from the providers of respondents to the Immunization Supplement to the National Health Interview Survey. The IHQ consists of two double-sided pages. Page 1 includes space

for the label that gives the teen's name, date of birth, and gender. The remainder of page 1 contains questions about the facility and vaccination provider. Page 2 gives instructions for filling out the shot grid, which appears on page 3. Page 4 thanks the vaccination provider for providing the information, and lists websites and telephone numbers that can be used to obtain more information about the NIS-Teen and the National Center for Immunization and Respiratory Diseases. The IHQ is available at http://www.cdc.gov/nis/data_files_teen.htm.

4. Data Preparation and Processing Procedures

The household data collection and provider data collection in the NIS-Teen incorporate extensive data preparation and processing procedures. During the household interview, the CATI system supports reconciliation of critical errors as interviewers enter the data. After completion of interviewing for a quarter, post-CATI editing and data cleaning produce a final interview data file. The editing of the provider data begins with a manual review of returned immunization history questionnaires, data entry of the questionnaires, and cleaning of the provider data file. After the provider data are merged with the household interview data and responses from multiple providers for a teen are consolidated into a single vaccination history, the editing continues. A quality assurance check is performed based on the name, gender, and date of birth of the teen to ensure that the provider completed the questionnaire for the correct teen and to confirm age-eligibility (age 13–17 years at time of interview). Editing of the provider-reported vaccination dates then attempts to resolve specific types of discrepancies in the provider data. The end product is an analytic file containing household and provider data for use in estimating vaccination coverage.

4.1. Data Preparation

The editing and cleaning of NIS-Teen data involve several steps. First, the CATI system enables interviewers to reconcile potential errors while the respondent is on the telephone. Further cleaning and editing take place in a post-CATI clean-up stage, involving an extensive review of data values, cross tabulations, and the recoding of verbatim responses for race, ethnicity, and vaccinations. The next step involves the creation of numerous composite variables. Provider data are cleaned in a separate step. After these steps have been completed, imputations are performed for item non-response on selected variables, and weights are calculated. The procedures and rules of the National Health Interview Survey serve as the standard in all stages of data editing and cleaning (http://www.cdc.gov/nchs/nhis.htm).

4.1.1. Editing in the CATI System

The CATI software checks consistency across data elements and does not allow interviewers to enter invalid values. Catching potential errors early increases the efficiency of post-survey data cleaning and processing.

To prevent an overly complicated CATI system, out-of-range and inconsistent responses produce a warning screen, allowing the interviewer to correct errors in real time. This allows the interviewer to reconcile errors while the respondent is on the telephone. CATI warning screens focus on items critical to the survey, such as those that determine a teen's eligibility (e.g., date of birth).

A CATI system cannot simultaneously incorporate every possible type of error check and maximize system performance. To reconcile this trade-off, post-CATI edits are used to resolve problems that do not require access to the respondent, as well as unanticipated logic problems that appear in the data.

4.1.2. Post-CATI Edits

The post-CATI editing process produces final, cleaned data files for each quarter. The steps in this process, implemented after all data collection activities for a quarter are completed, are described below.

Initial Post-CATI Edits and File Creation

After completion of interviewing each quarter, the raw data are extracted from the CATI data system and used to create two files: the sample file and the interview data file. The sample file contains one record for each sampled telephone number and summary information for telephone numbers and households. The interview data file contains one record for each eligible sampled teen and all vaccination data the household reported for the teen.

Following creation of these two files, a preliminary analysis of each file identifies out-of-range values and extraneous codes. The first check verifies the eligibility status of teens, based on date of birth and date of

interview. Once the required corrections are verified, invalid values are replaced with either an appropriate data value or a missing value code.

Frequency Review

After the pre-programmed edits are run, frequency distributions of all variables in each file are produced and reviewed. Each variable's range of values is examined for any invalid values or unusual distributions. If blank values exist for a variable, they are checked to see whether they are allowable and whether they occur in excessive numbers. Any problems are investigated and corrected as appropriate.

File Crosschecks

Crosscheck programs ensure that cases exist across files in a consistent manner. Specifically, checks ensure that each case in the interview data file is also present in the sample file and that each case in the sample file was released to the telephone centers. Checks also ensure that no duplicate households exist in the sample file and no duplicate teens exist in the interview data file.

When all checks have been performed, the final quarterly interview data file is created. Programmers and statisticians then create composite variables constructed from basic variables for each teen. Sampling weights (described in Section 6 of this Guide) are added to each record.

4.1.3. Editing of Provider Data

Six to eight weeks after the close of household data collection for a quarter, the majority of the immunization history questionnaires have been collected from providers. The data from the hard-copy questionnaires are entered and independently re-entered to provide 100 percent verification. The provider data file is cleaned, in a similar fashion to the household data file, for out-of-range values and consistency. A computer program back-codes all “other shot” verbatim responses into the proper vaccine category (e.g., Recombivax counts as Hep B). These translations come from a file that contains all such verbatim responses ever encountered in the NIS-Teen. Also, the provider data file is checked for duplicate

records, and exact duplicates are removed. If the provider data contain a date of birth of the teen, gender of the teen, or teen name that differs from the household interview for that teen, the questionnaire is re-examined to determine whether it may have been filled out for the incorrect teen. Provider data that appear to have been filled out for the wrong teen are removed from the provider database. When a teen has data from multiple providers, decision rules are applied to produce the most complete picture of the teen's immunization history.

Once these data have been cleaned, they are combined with the household data file. Information from up to eight providers can be added to a teen's record. If more than one provider reported vaccination data for the teen, the data from the multiple provider reports are combined into a single history for the teen, called the "synthesized provider-reported vaccination history". The determination of whether the teen is up-to-date for recommended vaccines and vaccine series is based on the teen's synthesized provider-reported vaccination history.

Many variables in the household data file are checked against or verified with the provider data file. For example, a teen's date of birth as recorded by the provider is checked against the date of birth as given by the household, to verify that the provider was reporting for that specific teen and to form a "best" date of birth for the teen. Vaccination dates are also compared, and any discrepancies are examined by hand. In most instances, the provider data are used in preference to the household data.

4.2. Limitations of Data Editing Procedures

Although data editing procedures were used for the NIS-Teen, the data user should be aware that some inconsistent data might remain in the public-use data file. The variables that indicate whether a teen is up-to-date on each vaccine or series (on which the estimates of vaccination coverage are based) are derived from provider-reported data. Hence, the household-reported vaccination dates (from interviews conducted with a shot card) are not edited for discrepancies beyond the built-in checks in the CATI system.

The NIS-Teen does not re-contact households or providers to attempt to reconcile potential discrepancies in provider-reported vaccination dates or to resolve date-of-birth reporting errors. However, the provider-reported data are manually reviewed and edited to correct specific reporting errors. Some children considered to have adequate provider data may have incomplete vaccination histories. These incomplete histories arise from three primary sources: 1) the household does not identify all vaccination providers, 2) some but not all providers respond with vaccination data, and 3) all identified providers respond with vaccination data but fail to list all the vaccinations in the teen's medical record. Even with these limitations, the NIS-Teen overall is a rich source of data for assessment of up-to-date status and age-appropriate immunization. Also, NIS-Teen is the only source to provide comparable vaccination data across states and local areas in the US.

4.3. Variable-Naming Conventions

The names of variables follow a systematic pattern as much as possible. The code book for the public-use data file groups the variables into ten broad categories according to the source of the data (household or provider) and the content of the variable (NCHS 2013). See Section 7 of this report for detailed information on the contents of the public-use data file.

4.4. Missing Value Codes

Missing value codes for each variable can be found in the code book (NCHS 2013). For household variables, the missing value codes usually are 77 for DON'T KNOW and 99 for REFUSED. Some household variables may also contain blanks, if the question was not asked. The variables developed from the immunization history questionnaire generally do not have specific missing value codes.

4.5. Imputation for Item Non-Response

The NIS-Teen uses imputation primarily to replace missing values in the socioeconomic and demographic variables used in weighting. Missing values of these variables are imputed for all teens with a completed household interview – i.e., all teens appearing on the public-use data file. A sequential hot-deck method is used to assign imputed values (Ford 1983). Class variables are used to separate respondents into cells. Donors and recipients must agree on the categories of the class variables, which include estimation area. Within the categories of the class variables, respondents are sorted by variables related to the variable to be imputed. The last case with an observed value is used as the donor for up to four recipients. The variable labels in the code book (NCHS 2013) identify variables that contain imputed values. These variables include the gender, Hispanic origin, and race of the teen, and the education level, age group, marital status, and mobility status of the mother.

4.6. Vaccine-Specific Recoding of Verbatim Responses

On the IHQ providers can list vaccinations in the "other" section of the IHQ shot grid. After data collection, these vaccinations are reclassified into the listed categories, if possible, using a vaccination recoding table. This table is reviewed by National Center for Immunization and Respiratory Diseases personnel to ensure the vaccinations are recoded into the appropriate category or categories (for combination vaccinations).

4.7. Sub-Sets of the NIS-Teen Data

The NIS-Teen public-use data file contains data for all children ages 13–17 years who have a completed household interview. An interview is considered complete if the respondent completed the Demographics Section of the questionnaire. As explained in Section 6 of this guide, each teen with a completed household interview is assigned a weight (**RDDWT_D for all U.S. proper teens including both**

landline and cell-phone sample teens; RDDWTVI_D for U.S. proper landline and cell-phone sample teens plus U.S. Virgin Islands landline sample teens) for use in estimation.

The NIS-Teen uses the synthesized provider-reported vaccination histories to form the estimates of vaccination coverage because the provider data are considered more accurate than household-reported data. Thus, the most important sub-set of the data consists of teens with adequate provider data. For these teens, one or more providers returned the immunization history questionnaire, and the vaccination information reported by those providers is deemed sufficient to determine whether the teen is up-to-date on the recommended vaccinations. Unvaccinated teens are also considered to have adequate provider data. As discussed in Section 7 below, the PDAT variable identifies the teens with adequate provider data (PDAT=1). These teens have a separate weight (**PROVWT_D for U.S. proper teens including both landline and cell-phone sample teens; PROVWTVI_D for U.S. proper landline and cell-phone sample teens plus U.S. Virgin Islands landline sample teens;**), which should be used to form estimates of vaccination coverage (see Section 6).

4.8. Confidentiality and Disclosure Avoidance

To prevent identification of participants in the NIS-Teen and the resulting disclosure of information, certain items from the questionnaires are not included in the public-use data file. In addition, some of the released variables either are top- or bottom-coded, or have their categories collapsed. Variable labels indicate which variables have been top-coded, bottom-coded, or collapsed.

5. Quality Control and Quality Assurance Procedures

A major contributor to NIS-Teen data quality is its sample management system, which in 2012 managed over 400 sample frame by estimation area by quarter samples and used a number of performance measures to track their progress toward completion. Important aspects of the quality assurance program for the RDD component of the NIS-Teen included on-line interviewer monitoring; on-line provider look-ups in a database system integrated with the CATI system, including names, addresses, and telephone numbers of vaccination providers; and automated range-edits and consistency checks. These and other quality assurance procedures contributed to a reduction in total data collection cost by minimizing interviewer labor and overall burden to respondents. Khare et al. (2000), Khare et al. (2001), and the *National Immunization Survey: Guide to Quality Control Procedures* (CDC 2002) address quality assurance procedures.

The Provider Record Check component used quality control measures at four junctions: prior to mailing packets to providers; during the telephone prompting effort; during the editing of returned questionnaires; and during and after their data entry. The final quality assurance activities were implemented during post-processing of the returned questionnaires or vaccination records. All returned questionnaires were examined to identify and correct any obvious errors prior to data entry and then key-entered with 100 percent verification. The keying error rate is estimated, by way of a second verification process, to be less than 1 percent.

6. Sampling Weights

The two phases (RDD-phase and provider-phase) of data collection result in a separate sampling weight for each teen that has data at that phase. The RDD-phase sampling weights permit analyses of data from teens with completed household interviews. Each teen with adequate provider data (the sub-set of teens with completed household interviews on which official estimates of vaccination coverage are based) has at least one provider-phase sampling weight. **In 2012, the RDD-phase sampling weights are called RDDWT_D for both landline and cell-phone sample interviews in the U.S. proper (i.e., set to missing for the U.S Virgin Islands), to be used to produce dual-frame estimates in the U.S. proper; and RDDWTVI_D for both landline and cell-phone sample interviews in the U.S. proper and landline interviews in the U.S Virgin Islands, to be used to produce dual-frame estimates in the U.S. proper and landline sample estimates in the U.S. Virgin Islands. The provider-phase sampling weights of teens with adequate provider data are called PROVWT_D for both landline and cell-phone sample interviews in the U.S. proper (i.e., set to missing for the U.S. Virgin Islands), to be used to produce dual-frame estimates in the U.S. proper; and PROVWTVI_D for both landline and cell-phone sample interviews in the U.S. proper and landline sample interviews in the U.S Virgin Islands, to be used to produce dual-frame estimates in the U.S. proper and landline sample estimates in the U.S. Virgin Islands. See Section 8 of this user's guide for more information about the weights included in the data file and the proper way to use them.**

A sampling weight may be interpreted as the approximate number of teens in the target population that a teen in the sample represents. Thus, for example, the sum of the sampling weights of teens that are up-to-date (on a particular vaccine or series of vaccines) yields an estimate of the total number of teens in the target population who are up-to-date. Dividing this sum by the total of the sampling weights for all teens gives an estimate of the corresponding vaccination coverage rate.

This section describes how these weights are developed and adjusted so as to achieve an accurate representation of the target population. The base weights reflect each telephone number's probability of being selected into the sample; the adjustments take into account non-resolution of residential/non-residential/non-working status of a telephone number, non-response to the screener, subsampling of one eligible teen in the household, non-response to the household interview, number of telephone lines in the household, combination of landline and cell-phone sample sources and non-coverage of households that do not have telephones, raking for differential coverage rates, non-response by providers, and a final raking adjustment. Note that when deriving dual-frame weights, initial adjustments are performed separately for the landline and cell-phones samples, and then both samples are combined and further adjustments are performed on the combined samples.

6.1. Base Sampling Weight

In each quarterly NIS-Teen sample, each teen with a completed household interview receives a base sampling weight. For all four quarters of the landline sample and cell-phone sample, the base sampling weight is equal to the total number of telephone numbers in the sampling frame for the estimation area divided by the total of telephone numbers that were randomly sampled from that sampling frame and released for interview during that quarter.

6.2. Adjustments for Non-Resolution of Telephone Numbers and Screener Non-Response

Non-response occurs in population-based surveys when respondents refuse to participate, are not available at the time of the interview, or could not be reached during the survey period. Thus, the sum of the base sampling weights of teens with completed household interviews will underestimate the size of the target population in the estimation area, because not all sampled households respond to all stages of data collection up to the household interview. As a result, the base sampling weights must be adjusted so

they can accurately reflect the number of teens in the target population that each sampled teen with a completed household interview represents.

Some sampled households with age-eligible teens fail to complete the household interview because of unit non-response; some telephone numbers are never determined to be residential despite multiple call attempts; and some households cannot be determined to have age-eligible teens. To compensate for these two types of unit non-response, the sampling weights of teens with a completed household interview are adjusted to account for the estimated number of age-eligible teens in households whose telephone numbers are never determined to be residential and the estimated number of age-eligible teens in households that fail to complete the screening interview. For the landline sample, each of these adjustments is carried out within estimation areas by forming weighting cells based on the residential directory-listed status of the sample telephone number, percent of the population that is white in the telephone exchange, and MSA status of the telephone exchange (e.g., weighting cells were formed from directory-listed versus non-directory-listed telephone number; by telephone exchanges with 75 percent or higher white population versus telephone exchanges with less than 75 percent white population; and MSA/non-MSA status). For the cell-phone sample, each of these adjustments is carried out within estimation area by forming weighting cells based on MSA/non-MSA status of the wire center associated with the cell-phone number. Each cell in each stage of adjustment is assured of having sufficient resolved/responding cases (usually 20) at that stage of adjustment. The cells with a deficient number of responding cases are collapsed with neighboring cells. The order of the variables in cell collapsing for the landline sample is MSA status, percent of population that is white, and directory listed status of the telephone number, and for the cell-phone sample, both MSA categories are collapsed if either of the cells have a deficient number of responding cases. Once the adjustment cells are formed, the weights of the unresolved/non-responding records from the previous adjustment step are distributed to the weights of the resolved/responding records within each cell.

6.3. Adjustment for Subsampling of One Teen per Household

In households with more than one teen, only one teen is selected randomly per household for the NIS-Teen interview. The non-response adjusted age screener weight is adjusted to account for the teens that are not selected. Each household's age screener weight is adjusted by multiplying it by the total number of eligible teens reported in the household (up to a maximum of 3). This adjustment is performed in an identical manner for both the landline and cell-phone samples.

6.4. Adjustment for Interview Non-Response

Some households that are determined to be eligible fail to complete the household interview for the selected teen. To compensate for this third type of unit non-response, the sampling weights of teens with a completed household interview are adjusted to account for teens who live in households that failed to complete the household interview. Similar to the first two types of unit non-response, for the landline sample, the adjustment is carried out within estimation areas by forming weighting cells based on the residential directory-listed status of the sample telephone number, percent of the population that is white in the telephone exchange, and MSA status of the telephone exchange. For the cell-phone sample, the adjustment is carried out within estimation area by forming weighting cells based on MSA status. Each cell is assured of having sufficient responding cases (usually 15). The cells with a deficient number of responding cases are collapsed with neighboring cells. The priority of the variables in cell collapsing for the landline sample is MSA status, percent of population that is white, and directory listed status of the telephone number, and for the cell-phone sample, both MSA categories are collapsed if either of the cells have a deficient number of responding cases. Once the adjustment cells are formed, the weights of the non-responding records from the previous adjustment step are distributed to the weights of the responding records within each cell.

6.5. Adjustment for Multiple Telephone Lines and Deriving Annual Weights

Once the non-response-adjusted interview weights for teens are computed, these weights are adjusted for additional telephone lines in the household. Because households with multiple telephone lines have a greater chance of being sampled, for the landline sample, each teen's household interview weight is adjusted by dividing it by the total number of residential telephone landlines reported in the household (up to a maximum of 3), and for the cell-phone sample, each teen's household interview weight is adjusted by dividing it by the total number of cell-phones used by parents or guardians (up to a maximum of 3).

Up to the previous step, the sampling weights are adjusted separately for each quarter and sample type (landline, cell-phone), and the weights in each quarter pertain to the target population. However, annual vaccination coverage estimates are obtained from data for four consecutive quarters, so the weights in each quarterly file are adjusted when the data from the four quarters of the landline and cell-phone samples are combined. The adjustment factor is proportional to the number of households with completed household interviews in each quarter within sample type (landline, cell-phone) and estimation area.

6.6. Post-Stratification

Survey weights for the cell-phone and landline samples must be combined to provide weights for the full target population of teens aged 13 to 17 years. Since the cell-phone sample is significantly smaller than the landline sample, in order to reduce the variability of the dual-frame weights, a subset of teens from the landline sample identified as being "similar" to teens in cell-phone only households are combined with teens in cell-phone only households (from the cell-phone sample), and are weighted to represent teens in cell-phone only households within each estimation area. Moreover, since the cell-phone and landline sampling frames overlap in coverage of teens in cell and landline dual use households, dual users from both samples are combined based on the number of teens with a completed household interview within

each sample type (landline, cell-phone), and are weighted to represent teens in dual use households within each estimation area. **(See published technical note: http://www.cdc.gov/vaccines/stats-surv/nis/dual-frame-sampling-08282012.htm.)** Similarly, teens in landline only households (from the landline sample) within each estimation area are weighted to represent teens in landline only households. Finally, since the dual-frame sample excludes teens in phoneless households, teens from the landline sample with an interruption in telephone service are weighted to represent teens in households without a telephone (either cell-phone or landline telephone). Note that teens from the landline sample identified as being "similar" to cell-phone only teens or having an interruption in telephone service, represent not only the cell-phone only and/or phoneless telephone domains, but also represent the actual telephone domains these teens are associated with (either dual use or landline only).

The control totals used for the NIS-Teen are derived from a combination of 2011 census population estimates and public-use 2009-11 American Community Survey (ACS) data. The proportion of teens by detailed telephone status (cell-phone only, cell and landline dual user, landline-only, phoneless) within each estimation area were derived using a similar small area modeling approach as described in Blumberg et al. 2012. These modeled telephone status estimates are applied to the control total for the estimation area to estimate the control totals by detailed telephone status within the estimation area.

To reduce sampling variability and improve the precision of estimation, extreme weights are trimmed within an estimation area. RDD sampling weight values exceeding the median weight plus six times the interquartile range of the weights within an estimation area are truncated to that threshold. This weight trimming prevents teens with unusually large weights from having an unusually large impact on vaccination coverage estimates.

The final step in adjusting the RDD sampling weights is a raking adjustment (Deming 1943) of the trimmed, telephone status adjusted weights. The raking procedure used estimation area-level control totals for maternal education categories, teen's race/ethnicity, age group of the teen, gender of the teen, and

telephone status. Raking makes it possible to incorporate additional variables into the weighting and to use more detailed categories for those variables. Briefly, raking takes each variable in turn and applies a proportional adjustment to the current weights of the teens who belong to the same category of the variable. After a number of iterations over all the variables, the raked weights have totals that match all the desired control totals. At this point, as before, the weights that exceed the median weight plus six times the interquartile range of the weights within an estimation area are truncated to that threshold. The raking step is applied again after the truncation of the weights and the weights are rechecked for extreme weights and truncated as before. The process is iterated until there is no extreme weight after raking.

The sampling weights after all the foregoing adjustments constitute the "RDD sampling weights" (RDDWT_D for U.S. proper dual-frame weights and RDDWTVI_D for the combination dual-frame and landline-sample weights for the U.S. proper plus the U.S. Virgin Islands).

6.7. Adjustment for Provider Non-Response

Among the 32,825 teens with a completed household interview from the landline and cell-phone samples (including U.S. Virgin Islands), 19,746 (60.2 percent) had adequate provider data. The definition of teens with adequate provider data includes unvaccinated teens. These are teens for whom the respondent reported during the household interview that the teen had received no vaccination and has no immunization providers, or for whom one or more immunization providers were reported but those providers reported administering no vaccinations. Among the 19,746 teens with adequate provider data, 60 were unvaccinated teens. Failure to obtain adequate provider data for the remaining 39.8 percent was attributable to:

- parent or guardian not giving consent to contact the teen's vaccination provider(s) (28.4 percent);

- teens with at most one identified provider but inadequate information to contact the provider, or the provider did not respond, or the provider responded but did not report any immunization information for the teen (6.5 percent); and
- teens with two or more identified providers but not all the providers responded, and responding providers did not report sufficient information to determine the teen's vaccination status (5.2 percent).

The 13,079 teens for whom a household interview was completed but adequate provider data were not obtained are classified as "partial non-responders" because they have only a partial response to the NIS-Teen as a whole.

Empirical results for the NIS-Child suggest that children with adequate provider data have characteristics believed to be associated with a greater likelihood of being up-to-date, compared with children who had missing provider data. Specifically, children with adequate provider data are more likely to live in households that have higher total family income, have a white mother, and live outside a central city of a Metropolitan Statistical Area. Also, a child with missing provider data is less likely to live in the state where the mother lived when the child was born and less likely to have a parent/guardian who could locate a shot card. These factors indicate a potential lack of continuity of health care, and are associated with lower vaccination rates (Coronado et al. 2000). An adjustment is made to the RDD sampling weights of the NIS-Child to account for these differences; otherwise, estimated vaccination coverage rates may be biased. A similar adjustment is also made to the RDD sampling weights of the NIS-Teen.

To reduce potential bias in estimators of vaccination coverage attributable to partial non-response, a weighting-class adjustment is used in each estimation area (NORC 2012; Brick and Kalton 1996). This adjustment involves three steps. In the first step, sampled teens are classified according to the quintile of their estimated probabilities of having adequate provider data. In the statistical literature these probabilities are called response propensities (Rosenbaum and Rubin 1983, 1984; Rosenbaum 1987).

Teens that have similar response propensities will also be similar with respect to variables that are strongly associated with the probability of having adequate provider data. In this important respect, teens in each class are comparable. Because of this comparability, any sub-sample of teens in a class may represent all teens in the class. Therefore, the weighting-class adjustment uses the teens with adequate provider data to represent all teens in the class.

In the second step of this weighting-class adjustment, within each class an adjustment factor redistributes the RDD sample weights of the teens with missing provider data to the weights of the teens that have adequate provider data. These adjusted sampling weights of teens with adequate provider data are initial non-response-adjusted provider-phase weights. The model for teens with adequate provider data includes significant main effects, and also, significant two-way interactions between sample type (landline, cell-phone) and all other variables.

Within an estimation area, the sums of non-response adjusted weights of teens with adequate provider data for the various levels of important socio-demographic variables (such as race/ethnicity) may not be equal to corresponding population totals. To reduce bias attributable to these differences, raking was used in the third step to adjust the non-response adjusted weights to match estimation area control totals. Control totals for these variables were estimated using the weighted totals from the sample of teens with completed household interviews. Smith et al. (2001b, 2005) describe the development of this approach in more detail. These raked weights of teens with adequate provider data are called "final provider-phase weights" (PROVWT_D for U.S. proper dual-frame weights and PROVWTVI_D for combination dual-frame and landline-sample weights in the U.S. proper and the U.S. Virgin Islands). Because of the comparability of teens within each weighting class, any estimate that uses data only from the teens with adequate provider data, along with their provider-phase sampling weights, will have less bias attributable to differences between teens with adequate provider data and teens with missing provider data.

Appendix B summarizes the distribution of the sampling weights in each estimation area.

6.8. Sampling Weights for the U.S. Virgin Islands

The NIS-Teen weighting process was followed as closely as possible for U.S. Virgin Islands. Due to using only a landline sampling frame and differences in the availability of external data sources for U.S. Virgin Islands, slight changes were necessary to accurately estimate vaccination rates for this area. These differences are stated below.

In steps 6.2 and 6.4, each of the non-response adjustments for U.S. Virgin Islands was done at the estimation area level. That is, no weighting cells were formed for U.S. Virgin Islands.

In step 6.6, for U.S. Virgin Islands, adjustment must be made to account for the landline sampling frame including only households that have landline telephones. The first step in adjusting for households without landline telephones involves a post-stratification adjustment where two cells within U.S. Virgin Islands are formed based on the interruption status in telephone service. Then the weights are adjusted to the control totals of the respective groups, defined below. The weights of the children with interruption in telephone service are adjusted to the control total representing themselves and the children in non-landline-telephone households, while the weights of the children without interruption in telephone service are adjusted to the control total representing themselves only, i.e., the children in households without interruption in telephone service.

The control total for children in non-landline-telephone households or in landline-telephone households with interruption are derived by estimating the percentage of children in non-landline-telephone households and the percentage of children in landline telephone households with interruption. For 2012, data in the 5-percent Public-Use Microdata Sample (PUMS) from the 2000 Census were used to develop an initial estimate of the percentage of target children with telephone coverage in U.S. Virgin Islands. This initial estimate is then ratio adjusted by the national (U.S. proper) CPS estimates for children in landline-telephone households for 2000 and 2012 to estimate the percentage of U.S. Virgin Islands children living in landline-telephone households in 2012. The estimate of the percentage of children in

landline-telephone households with interruption is obtained from the U.S. Virgin Islands sample itself. These two percentage estimates are applied to the control total for U.S. Virgin Islands to estimate the control totals for the two post-stratification cells.

The next step in the adjustment for U.S. Virgin Islands weights is a simple post-stratification that separates the sample of completed interviews into cells defined by characteristics related to non-coverage. The post-stratification variables are race/ethnicity of the teen, level of educational attainment of the teen's mother, and age group of the teen. In the next step, post-stratified sampling weight values exceeding the median weight plus six times the interquartile range of the weights are truncated to that threshold. Similar to the dual-frame weights for U.S. proper, the final step in adjusting the RDD sampling weights for U.S. Virgin Islands is a raking adjustment. The only difference in this adjustment between the dual-frame weights for U.S. proper and the landline sample weights for U.S. Virgin Islands is that telephone status is not included as a raking dimension for U.S. Virgin Islands.

The control totals for U.S. Virgin Islands were derived from different sources than the U.S proper due to the limited availability of public-use files for the U.S. Virgin Islands. The 2000 Census PUMS was used as the basis for determining accurate U.S. Virgin Islands population control totals for the simple post-stratification and raking steps. Trends in the population of children aged 13 to 17 years based on estimates from the 2010 Census totals for U.S. Virgin Islands and 2000 Census PUMS totals for U.S. Virgin Islands were applied to the 2000 Census PUMS totals for U.S. Virgin Islands to estimate population changes between 2000 and 2012.

Demographic distributions were based on the cohort of children aged 1 to 5 years in the 2000 Census PUMS in the U.S. Virgin Islands, which would equate to children aged 13 to 17 years in 2012. These distributions were then applied to the estimated number of children aged 13 to 17 years in 2012 to determine control totals.

The model used for creating the adequate provider propensity scores in step 6.7 was modified slightly. The standard model used for U.S. proper includes MSA status and two-way interactions between sample type (landline, cell-phone) and all other variables, while MSA status and two-way interactions are excluded in the model for U.S. Virgin Islands. Finally, similar to the raking adjustment of the RDD sampling weights for U.S. Virgin Islands, telephone status is not included as a raking dimension for the final provider-phase weights for U.S. Virgin Islands.

After sampling weights were calculated for all children in the 50 states, District of Columbia, and U.S. Virgin Islands, they were stored in the variables RDDWTVI_D and PROVWTVI_D. These weight variables permit one to conduct analysis of all estimation areas, including the U.S. Virgin Islands. The weight variables RDDWT_D and PROVWT_D are equal to RDDWTVI_D and PROVWTVI_D for all teens, except for teens in U.S. Virgin Islands, for whom the value of these weight variables is blank or missing. RDDWT_D and PROVWT_D permit one to conduct analysis of all estimation areas, excluding U.S. Virgin Islands.

7. Contents of the Public-Use Data File

The NIS-Teen public-use data file contains a record for each eligible teen for whom the demographics section of the household interview was completed, along with household-reported vaccination information and demographic information about the teen and the teen's mother. For teens with IHQs containing vaccination data returned by one or more providers, the file also contains provider characteristic variables, as well as variables based on the teen's synthesized provider-reported vaccination history: the age of the teen at each vaccination, the number of each type of vaccination received, and indicators of whether the teen is up-to-date with respect to various recommended vaccines and vaccine series.

The public-use data file consists of ten sections, the contents of which are described below in detail. For additional information, users are encouraged to consult the code book (NCHS 2013). The codebook is divided into the ten sections described below and contains variable names, labels, and response frequencies (for categorical variables). The code book also indicates the questionnaire item or items that serve as the ultimate source for each variable and, for selected variables, gives additional information about the variable in the "Notes" field.

Before describing the sections of the public-use data file below, we first summarize the differences between the 2011 and 2012 public-use data files (PUF):

- **A new 2012 estimation area variable (ESTIAPT12) has been added and the 2011 estimation area variable (ESTIAPT11) has been dropped. (See Table 5.) Note that U.S. Virgin Islands teens are identified by ESTIAPT12=95.**
- **In addition to the usual estimation area variable, a new geographic variable has been added to the 2012 PUF. EST_GRANT identifies the 56 core grantee areas, which are New York City, NY; Philadelphia County, PA; District of Columbia; City of Chicago, IL; Bexar**

County, TX; and City of Houston, TX, plus the 50 remaining state and rest-of-state areas. EST_GRANT is set to missing for the U.S. Virgin Islands.

- **The 2011 PUF included both single-frame, landline sample weights and dual-frame weights because the NIS sample was still being drawn mostly from the landline sampling frame, and there were relatively few cell-phone cases. The 2012 PUF includes only the dual-frame household and provider-phase weights for the U.S. proper. However, no cell-phone sample was fielded in the U.S Virgin Islands in 2012, so the weights provided for the U.S. Virgin Island are single-frame landline weights. For the 2012 PUF, use RDDWT_D and PROVWT_D to produce dual-frame estimates in the U.S. proper (excluding the U.S. Virgin Islands), and use RDDWTVI_D and PROVWTVI_D to produce dual-frame estimates in the U.S. proper and single-frame estimates in the U.S. Virgin Islands. See Section 8 of this user's guide for more information about the appropriate weights to use for various analyses.**
- **STRATUM has been added to the PUF in 2012, and replaces STRATUM_D from the 2011 NIS-Teen public-use file. It is the stratum variable to use for all variance estimation and is a combination of the sample frame and estimation area.**
- **The variables TET_PLACE_10-TET_PLACE_12, which indicate three new response options for the place of the teen's most recent Td/Tdap vaccination, have been added to the PUF in addition to the existing TET_PLACE_1-TET_PLACE_9. Beginning in Q2/2012, open-ended responses were collected from respondents that indicated "other medically-related place" or "other non-medically-related place", so TET_PLACE_1-TET_PLACE_12 now reflect backcoding of open-ended responses for these quarters.**
- **As a result of changes made to the questionnaire in 2012, the variables HPVI_HEARD and HPVI_KNOW have been removed from the PUF.**

- **TEL_SAMPFRAME has been removed from the PUF. This variable identified whether a teen was sampled from the landline or the cell-phone sampling frame. It is no longer necessary because the 2012 PUF includes only dual-frame weights.**
- **The variable VFC_I was dropped in the 2012 PUF due to changes to Page 1 of the NIS-Teen IHQ. Entitlement to the Vaccines for Children (VFC) program is determined by a number of factors. A teen is entitled if 1) the teen is covered by Medicaid, 2) the teen is uninsured, 3) the teen is of American Indian or Alaska Native race, or 4) the teen is underinsured and has received vaccinations from a Federally Qualified Health Center (FQHC). The first three criteria are unaffected by the change to Page 1 of the IHQ. For the fourth criterion, the determination of whether a teen is underinsured is made in the same way as in previous years (the teen is covered by private insurance but this insurance does not cover all of the cost of vaccines). However, the approach for ascertaining if a provider was a FQHC was changed on the IHQ in 2012. Previously, a teen was considered to have received vaccinations from an FQHC if on Question 6 on the 2011 IHQ the provider identified the facility as a "Federally-qualified health center including community/migrant/rural/Indian health center" on at least one IHQ containing at least one reported vaccination for the teen. On 2011 and prior versions of the IHQ, Question 6 (describing provider facility) did not allow providers to choose more than one option (e.g., a private provider also qualified as a FQHC might choose the private provider box). Starting with the 2012 IHQ, a separate set of questions (5a, 5b) were asked about FQHC status, the FQHC box was removed from Question 6 (modified and renamed Question 5c on the 2012 IHQ), and Question 5c had expanded response options and allowed multiple responses to be checked. CDC is evaluating the accuracy of the provider-reported FQHC status and a variable identifying teens who had received vaccinations from a FQHC was not included on the 2012 PUF.**

Medicaid and uninsured components of VFC entitlement can be analyzed using health insurance module variables (see Section 7.10).

7.1. Section 1: ID, Weight, and Flag Variables

SEQNUMT is the unique teen identifier. (Because only one teen is selected per household, SEQNUMT is also a unique household identifier.) **PDAT** indicates which teens are considered to have adequate provider data. **As described in Section 6 of this report, RDDWTVI_D/RDDWT_D and PROVWTVI_D/PROVWT_D are the final household- and provider-phase weights, respectively. PROVWTVI_D/PROVWT_D should be used when analyzing the provider-reported data, i.e., the variables in Sections 7, 8, and 9 of the public-use data file.**

7.2. Section 2: Household-Reported Vaccination and Health Information

Respondents who have a shot card available for the selected teen are administered Section A of the household questionnaire; for each type of vaccine they are asked for the number of vaccinations listed on the shot card and the dates of those vaccinations. If no vaccinations of that type are on the shot card, or if there are fewer vaccinations on the shot card than the recommended number of doses of that type, the respondent is asked if he or she recalls the teen getting any vaccinations of that type that are not listed on the shot card and the number of such vaccinations.

Respondents who do not have a shot card available are administered Section B of the household questionnaire, where they are asked whether they recall the teen getting each type of vaccination and the number of such vaccinations.

Both Section A and Section B respondents are then administered the Health Section of the household interview, wherein information about health of the selected teen and the teen's family is collected.

Section 2 of the public-use data file contains all of the information collected in Section A, Section B, and the Health Section of the household questionnaire. Variable **SHOTCARD** indicates whether the respondent had a shot card available for the selected teen (i.e., SHOTCARD indicates whether Section A or Section B of the household questionnaire was administered). **SHOTCARD_ALL** indicates whether the respondent believes the shot card contains all of the vaccinations the teen has received, and **IMM_ANY** indicates whether the respondent reported that the teen has had a vaccination of any type. For each type of vaccine asked about in Sections A and B, a set of variables stores the information collected about that vaccine type; additional variables store the responses to the questions in the Health Section. Respondents are administered either Section A or Section B of the household questionnaire, but not both; in order to limit the number of variables on the public-use data file, the information collected in Sections A and B has been placed into the same variable where possible. In such instances, users should refer to variable SHOTCARD to tell whether Section A or Section B was administered for a particular teen.

The household-reported vaccination and health variables are described in more detail below.

7.2.1. Household-Reported Measles or MMR Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of Measles or MMR vaccinations on the shot card. Variable **MCV_ANY_SC** indicates whether there were any Measles or MMR vaccinations listed on the shot card and variable **MCV_NUM_SC** gives the number of Measles or MMR vaccinations on the shot card. If there are one or more Measles or MMR vaccinations on the shot card, the dates of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen in years at the time of the vaccinations listed on the shot card (**MCV_AGE_SC1 - MCV_AGE_SC8**). If the shot card shows fewer than two Measles or MMR vaccinations, the respondent is asked if he or she recalls the teen getting Measles or MMR vaccinations that are not on the shot card (**MCV_ANY_REC**), and if so, the respondent is asked for the number of Measles or MMR vaccinations not on the shot card (**MCV_NUM_REC**). Variable

MCV_NUM_TOT stores the total number of Measles or MMR vaccines reported by the respondent, both from the shot card and from recall.

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any Measles or MMR vaccinations (**MCV_ANY_REC**), and if so, they are asked for the number of Measles or MMR vaccinations they recall (**MCV_NUM_REC**).

7.2.2. Household-Reported Hepatitis B Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of Hepatitis B vaccinations on the shot card. Variable **HEPB_ANY_SC** indicates whether there were any Hepatitis B vaccinations listed on the shot card and variable **HEPB_NUM_SC** gives the number of Hepatitis B vaccinations on the shot card. If there are one or more Hepatitis B vaccinations on the shot card, the dates of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen in years at the time of the vaccinations listed on the shot card (**HEPB_AGE_SC1 - HEPB_AGE_SC8**). If the shot card shows fewer than three Hepatitis B vaccinations, the respondent is asked if he or she recalls the teen getting Hepatitis B vaccinations that are not on the shot card (**HEPB_ANY_REC**), and if so, the respondent is asked for the number of Hepatitis B vaccinations not on the shot card (**HEPB_NUM_REC**). Variable **HEPB_NUM_TOT** stores the total number of Hepatitis B vaccines reported by the respondent, both from the shot card and from recall.

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any Hepatitis B vaccinations (**HEPB_ANY_REC**), and if so, they are asked for the number of Hepatitis B vaccinations they recall (**HEPB_NUM_REC**).

All respondents reporting that the teen has received a Hepatitis B vaccination, either from the shot card or from recall, are then asked whether the teen received a Hepatitis B vaccination because of a school requirement (**HEPB_SCH**).

7.2.3. Household-Reported Hepatitis A Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of Hepatitis A vaccinations on the shot card. Variable **HEPA_ANY_SC** indicates whether there were any Hepatitis A vaccinations listed on the shot card and variable **HEPA_NUM_SC** gives the number of Hepatitis A vaccinations on the shot card. If there are one or more Hepatitis A vaccinations on the shot card, the dates of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen in years at the time of the vaccinations listed on the shot card (**HEPA_AGE_SC1 - HEPA_AGE_SC8**). If the shot card shows fewer than two Hepatitis A vaccinations, the respondent is asked if he or she recalls the teen getting Hepatitis A vaccinations that are not on the shot card (**HEPA_ANY_REC**), and if so, the respondent is asked for the number of Hepatitis A vaccinations not on the shot card (**HEPA_NUM_REC**). Variable **HEPA_NUM_TOT** stores the total number of Hepatitis A vaccines reported by the respondent, both from the shot card and from recall.

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any Hepatitis A vaccinations (**HEPA_ANY_REC**), and if so, they are asked for the number of Hepatitis A vaccinations they recall (**HEPA_NUM_REC**).

All respondents reporting that the teen has received a vaccination of any type (IMM_ANY=1), regardless of whether they reported the teen has received a Hepatitis A vaccination, are then asked whether a doctor or other health care professional has ever recommended that the teen receive Hepatitis A vaccinations (**HEPA_RECOM**).

7.2.4. Household-Reported Varicella Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of Varicella vaccinations on the shot card. Variable **VRC_ANY_SC** indicates whether there were any Varicella vaccinations listed on the shot card and variable **VRC_NUM_SC** gives the number of Varicella vaccinations on the shot card. If there are one or more Varicella vaccinations on the shot card, the dates of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen in years at the time of the vaccinations listed on the shot card (**VRC_AGE_SC1 - VRC_AGE_SC8**). If the shot card shows fewer than two Varicella vaccinations, the respondent is asked if he or she recalls the teen getting Varicella vaccinations that are not on the shot card (**VRC_ANY_REC**), and if so, the respondent is asked for the number of Varicella vaccinations not on the shot card (**VRC_NUM_REC**). Variable **VRC_NUM_TOT** stores the total number of Varicella vaccines reported by the respondent, both from the shot card and from recall.

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any Varicella vaccinations (**VRC_ANY_REC**), and if so, they are asked for the number of Varicella vaccinations they recall (**VRC_NUM_REC**).

7.2.5. Household-Reported Tetanus Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of Tetanus booster vaccinations on the shot card. Variable **TET_ANY_SC** indicates whether there were any Tetanus booster vaccinations listed on the shot card and variable **TET_NUM_SC** gives the number of Tetanus booster vaccinations on the shot card. If there are one or more Tetanus booster vaccinations on the shot card, the dates and types (**TET_TYPE1 - TET_TYPE8**) of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen in years at the time of the vaccinations listed on the shot card (**TET_AGE_SC1 - TET_AGE_SC8**). If there are no Tetanus booster vaccinations on the shot card, the respondent is asked if he or she recalls the teen getting Tetanus

booster vaccinations that are not on the shot card (**TET_ANY_REC**), and if so, the respondent is asked for the teen's age in years at the time of the most recent Tetanus booster vaccination (**TET_LAST_AGE**) and the type of that vaccination – Td vs. Tdap (**TET_LAST_TYPE**).

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any Tetanus booster vaccinations (**TET_ANY_REC**), and if so, they are asked for the teen's age in years at the time of the most recent Tetanus booster vaccination (**TET_LAST_AGE**) and the type of that vaccination – Td vs. Tdap (**TET_LAST_TYPE**).

All respondents reporting that the teen has not received any Tetanus booster vaccinations (both from the shot card and from recall), are then asked the reason the teen didn't receive Tetanus booster vaccinations. Variables **TET_REAS_1**-**TET_REAS_5**, **TET_REAS_7**, and **TET_REAS_10**-**TET_REAS_24** store the answers to this choose-all-that-apply question and reflect the coding of open-ended responses into the reason categories existing on the questionnaire as well as into newly-created reason categories.

All respondents reporting that the teen has received a vaccination of any type (IMM_ANY=1), regardless of whether they reported the teen has received an Tetanus booster vaccination, are then asked whether a doctor or other health care professional has ever recommended that the teen receive Tetanus booster vaccinations (**TET_RECOM**).

All respondents reporting that the teen has received a Tetanus booster vaccination, either from a shot card or from recall, are asked for the place or places that the Tetanus booster vaccination was given. Variables **TET_PLACE_1 - TET_PLACE_12** store the answers to this choose-all-that-apply question.

7.2.6. Household-Reported Meningitis Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of Meningitis vaccinations on the shot card. Variable **MEN_ANY_SC** indicates whether there were any Meningitis vaccinations listed on

the shot card and variable **MEN_NUM_SC** gives the number of Meningitis vaccinations on the shot card. If there are one or more Meningitis vaccinations on the shot card, the dates of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen in years at the time of the vaccinations listed on the shot card (**MEN_AGE_SC1 - MEN_AGE_SC8**). If there are no Meningitis vaccinations on the shot card, the respondent is asked if he or she recalls the teen getting Meningitis vaccinations that are not on the shot card (**MEN_ANY_REC**), and if so, the respondent is asked for the number of Meningitis vaccinations not on the shot card (**MEN_NUM_REC**). Variable **MEN_NUM_TOT** stores the total number of Meningitis vaccines reported by the respondent, both from the shot card and from recall.

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any Meningitis vaccinations (**MEN_ANY_REC**), and if so, they are asked for the number of Meningitis vaccinations they recall (**MEN_NUM_REC**).

All respondents reporting that the teen has not received any Meningitis vaccinations (both from the shot card and from recall), are then asked the reason the teen didn't receive Meningitis vaccinations. Variables **MEN_REAS_1-MEN_REAS_7** and **TET_REAS_10-TET_REAS_23** store the answers to this choose-all-that-apply question and reflect the coding of open-ended responses into the reason categories existing on the questionnaire as well as into newly-created reason categories.

7.2.7. Household-Reported Human Papillomavirus (HPV) Variables

Section A respondents (i.e., SHOTCARD=1) are asked for the number of HPV vaccinations on the shot card. Variable **HPVI_ANY_SC** indicates whether there were any HPV vaccinations listed on the shot card, and variable **HPVI_NUM_SC** gives the number of HPV vaccinations on the shot card. If there are one or more HPV vaccinations on the shot card, the dates of these vaccinations are requested. The dates of the vaccinations are used in conjunction with the teen's best date of birth to calculate the age of the teen

in years at the time of the vaccinations listed on the shot card (**HPVI_AGE_SC1 - HPVI_AGE_SC8**). If there are no HPV vaccinations on the shot card, the respondent is asked if he or she recalls the teen getting HPV vaccinations that are not on the shot card (**HPVI_ANY_REC**), and if so, the respondent is asked for the number of HPV vaccinations not on the shot card (**HPVI_NUM_REC**). Variable **HPVI_NUM_TOT** stores the total number of HPV vaccines reported by the respondent, both from the shot card and from recall.

Section B respondents (i.e., SHOTCARD=2) that said the teen has received a vaccination of any type (IMM_ANY=1) are asked whether they recall the teen getting any HPV vaccinations (**HPVI_ANY_REC**), and if so, they are asked for the number of HPV vaccinations they recall (**HPVI_NUM_REC**).

All respondents reporting for teens that reported fewer than three HPV vaccinations in total (both from shot card and from recall), are then asked how likely it is that the teen will receive HPV vaccinations in the next twelve months (variable not included on the public-use file). Those responding "Not too likely", "Not likely at all", or “not sure/don’t know” are asked the reason the teen won't receive HPV vaccinations in the next twelve months. Variables **HPVI_REAS_1**-**HPVI_REAS_3**, **HPVI_REAS_5**-**HPVI_REAS_6**, and **HPVI_REAS_9**-**HPVI_REAS_29** store the answers to this choose-all-that-apply question and reflect the coding of open-ended responses into the reason categories existing on the questionnaire as well as into newly-created reason categories.

All respondents reporting that the teen has received a vaccination of any type (IMM_ANY=1), regardless of whether they reported the teen has received an HPV vaccination, are then asked whether a doctor or other health care professional has ever recommended that the teen receive HPV vaccinations (**HPVI_RECOM**). **HPVI_INTENTR** indicates the likelihood that the teen will receive an HPV vaccination in the next 12 months, among those reported to have received 0 doses of HPV vaccine.

7.2.8. Household-Reported Health Variables

All respondents are asked whether the selected teen has ever had the chicken pox (**CPOX_HAD**) and, if so, they are asked the age of the teen in years at the time when the teen had the chicken pox (**CPOX_AGE**). Those unable to give an exact age are asked to report an age range (**CPOX_AGER**).

All respondents are then asked the age of the teen at the time of his or her last check-up (**CKUP_AGE**). If the teen's age at the last check-up was 13 years or more, the respondent is asked whether the teen had an 11-12 year old well-child exam (**CKUP_11_12**); if the respondent is unable or unwilling to answer this question he or she is asked whether or not the teen's last check-up was more than, exactly, or less than [age of teen - 12] years ago (**CKUP_LAST**).

All respondents are asked the number of times the teen has seen a health care professional in the last 12 months (**VISITS**); whether the teen has been told by a health professional that he or she has asthma (**ASTHMA**); whether the teen has ever been told by a health professional that he or she has a lung condition other than asthma, a heart condition, diabetes, a kidney condition, sickle cell anemia or other anemia, or a weakened immune system caused by a chronic illness or by medicines taken for a chronic illness (**RISK_EVER**); whether the teen currently has any of these conditions (**RISK_NOW**); and whether any other members of the teen's household currently have any of these conditions (**RISK_HH**). Finally, the respondent is asked the number of times in the past 12 months the teen has missed school due to illness or injury (**NOSCHOOLR**).

7.3. Section 3: Demographic, Socio-Economic, and Other Household/Teen Information

Section 3 of the public-use data file consists of information collected during the household screening interview and the demographics section of the household main interview. To protect confidentiality, many of these variables have been collapsed, top-coded, or bottom-coded from the original, fully-detailed

versions; the variable labels (see the public-use date file codebook) indicate which variables have had such actions taken.

AGE is the age of the selected teen in years based on the teen's best date of birth and the screener completion date, and **SEX** gives the gender of the selected teen, with missing values imputed. The language in which the interview was conducted is stored in variable **LANGUAGE**, and **C5R** gives the relationship of the respondent to the selected teen.

C1R and **CHILDNM** give the number of people and children, respectively, in the household.

The teen's Hispanic origin indicator, race with three categories, and race/ethnicity with four categories are presented in variables **I_HISP_K**, **RACE_K**, and **RACEETHK**, respectively; for each of these variables, missing values have been imputed. **EDUC_TR** gives the teen's grade in school at the time of the interview.

The age, education level, and marital status of the mother of the selected teen are stored in variables **AGEGRP_M_I**, **EDUC1**, and **MARITAL2 (married vs. not married)**, with missing values imputed.

The categorized total combined income for the teen's family is given by **INCQ298A**; **INCPOV1** gives the family's poverty status (at or above poverty, income > $75,000; at or above poverty, income <= $75,000; below poverty; unknown), and **INCPORAR** gives the ratio of the family's income to the poverty level. Household tenure is given by **RENT_OWN**.

The number of landline telephone numbers in the household, the number of working cell phones household members have available for personal use, and the number of these cell phones that are usually used by parents or guardians are given by **NUM_PHONE**, **NUM_CELLS_HH**, and **NUM_CELLS_PARENTS**, respectively.

Variable **CEN_REG** gives the census region of the respondent's current residence, and **MOBIL_I** indicates whether the mother's current state of residence is the same as her state of residence at the time of the teen's birth.

7.4. Section 4: Geographic Variables

Variables **ESTIAPT12** and **STATE** give the 2012 estimation area and state of residence, respectively, for each teen. **EST_GRANT** gives the 56 core NIS grantee geographical area of residence for the U.S. proper.

7.5. Section 5: Number of Providers Identified and Consent Variables

Variable **D7** indicates whether the respondent gave consent to contact the teen's providers. If D7=1, then consent was granted; if D7=2 then consent was explicitly denied; and if D7 is missing, consent was not granted because the respondent broke off the interview before being explicitly asked for consent.

Variable **D6R** gives the number of providers identified by the respondent. Note that sometimes respondents report erroneous provider counts and sometimes report the same provider more than one time, and D6R does not reflect the cleaning or de-duplication of the initially-reported provider count. Variable **NUM_PROVR** gives the number of providers identified for teens with consent to contact the providers and reflects the cleaning and de-duplication of the initially-reported provider count. For teens without consent, NUM_PROVR is set to 0.

7.6. Section 6: Number of Responding Providers Variables

Variable **N_PRVR** indicates the number of providers returning IHQs with vaccination information for the teen. That is, N_PRVR is the number of IHQs that were returned for the teen that contain information on the IHQ shot grid.

7.7. Section 7: Characteristics of Providers Variables

This section summarizes the information collected in IHQ questions 5c, 6, and 7 across the teen's providers who returned IHQs containing vaccination (i.e., shot grid) data.

FACILITY indicates the facility type of the teen's vaccination providers based on responses to IHQ question 5c. If all of the teen's providers that returned IHQs containing shot grid data (see Section 6 variable N_PRVR) reported their facility type to be:

- a federally-qualified health center or a public health department-operated clinic, then FACILITY=1 (all public facilities);
- a hospital, then FACILITY=2 (all hospital facilities);
- a private practice, then FACILITY=3 (all private facilities);
- an STD clinic, school clinic, teen clinic, or other type of facility, then FACILITY=4 (all STD/school/teen clinics or other facilities)

If the responses of providers that returned IHQs containing shot grid data fell into more than one of the above bulleted categories, FACILITY=5 (mixed); otherwise, if at least one of the teen's providers returned an IHQ containing shot grid data, FACILITY=6 (unknown). If none of the teen's providers returned an IHQ containing shot grid data, FACILITY is set to missing.

VFC_ORDER, based on responses to IHQ question 6, indicates whether the teen's vaccination providers order vaccines from a state or local health department to administer to children. If all of the teen's providers that returned IHQs containing shot grid data (see Section 6 variable N_PRVR) reported that they order vaccines from a state or local health department to administer to children, then VFC_ORDER=1 (all providers); if at least one of the teen's providers that returned an IHQ containing shot grid data reported that the practice orders vaccines from a state or local health department to administer to children and the teen's other providers that returned IHQs containing shot grid data reported

either that they did not order such vaccines or that they did not know whether or not they did, then VFC_ORDER=2 (some but possibly or definitely not all providers); if all of the teen's providers that returned IHQs containing shot grid data reported that they do not order vaccines from a state or local health department to administer to children, then VFC_ORDER=3 (no providers); if none of the conditions for VFC_ORDER=1, 2, or 3 was met but at least one of the teen's providers returned an IHQ containing shot grid data, VFC_ORDER=4 (unknown). If none of the teen's providers returned an IHQ containing shot grid data, VFC_ORDER is set to missing. Note that having a provider that orders VFC vaccine does not imply that the child is VFC-entitled; providers enrolled in the VFC program could also vaccinate privately insured children.

REGISTRY is based on responses to IHQ question 7 and indicates whether the teen's vaccination providers reported the teen's vaccinations to a community or state registry. If all of the teen's providers that returned IHQs containing shot grid data (see Section 6 variable N_PRVR) indicated that they reported to a registry, then REGISTRY=1 (all providers); if at least one of the teen's providers that returned an IHQ containing shot grid data indicated that the practice reported to a registry and the teen's other providers that returned IHQs containing shot grid data indicated that they did not report to a registry, that they did not know whether or not they reported to a registry, or that the question is not applicable, then REGISTRY=2 (some but possibly or definitely not all providers); if all of the teen's providers that returned IHQs containing shot grid data indicated that they did not report to a registry or that the question is not applicable, then REGISTRY=3 (no providers); if none of the conditions for REGISTRY=1, 2, or 3 was met but at least one of the teen's providers returned an IHQ containing shot grid data, REGISTRY=4 (unknown). If none of the teen's providers returned an IHQ containing shot grid data, REGISTRY is set to missing.

7.8. Section 8: Provider-Reported Up-To-Date Vaccination Variables

This section contains vaccination count and up-to-date variables based on the teen's synthesized provider-reported vaccination history. To facilitate data processing and to accommodate the large and continually growing number of vaccination types covered by the NIS-Teen, the provider-reported vaccination data are organized around the concept of vaccine categories and vaccine types within vaccine category. The vaccine categories correspond to the sections of the IHQ shot grid, and the vaccine types correspond to the type boxes on the IHQ shot grid. (For each vaccine category, an "unknown" vaccine type is created for vaccinations that are reported without a type box being checked. Also, a few vaccine types, such as Measles/Mumps, arise through the backcoding of shots initially reported in the "other" section of the IHQ shot grid.) Table 3 shows the vaccine categories and types for the 2012 NIS-Teen. Note that a single vaccination can fall into more than one vaccine category; for example, an MMR-Varicella vaccination is part of both the Measles-containing and Varicella-containing vaccine categories.

For each vaccine category, Section 8 of the public-use data file contains a variable named **P_NUM*YYY*** – where "YYY" is the vaccine category abbreviation given in Table 3 – that stores the number of vaccinations in that vaccine category in the teen's synthesized provider-reported vaccination history. For each vaccine category and type combination, Section 8 also contains a variable named **P_NUM*YYY_TT*** – where "YYY" is the vaccine category abbreviation and "TT" is the vaccine type code given in Table 3 – that stores the number of vaccinations in that vaccine category of that vaccine type in the teen's synthesized provider-reported vaccination history.

For each P_NUM*YYY* and P_NUM*YYY_TT* variable described above, there are corresponding variables of the form **P_N13*YYY*** and **P_N13*YYY_TT*** that count only vaccinations that the teen received prior to age 13 years.

This section of the public-use data file also contains up-to-date indicators for a variety of recommended vaccines and vaccine series. These variables' names begin with "**P_UTD**"; the variable labels indicate

what is needed to be considered up-to-date for each variable, and the "Notes" field in the code book shows the vaccine type codes (see Table 3) being included when determining whether the teen is up-to-date. For each "P_UTD" variable there is a corresponding variable whose name begins with "**P_U13**" that indicates whether the teen was up-to-date for the particular vaccine or vaccine series by age 13 years.

Note that it is possible that the administration of the NIS-Teen interview itself prompts some respondents to vaccinate their teens following the interview; to ensure that the vaccination rate estimates aren't artificially boosted because of this, the "P_NUM", "P_N13", "P_UTD", and "P_U13" variables in this section of the public-use data file count only vaccinations received before the date the household interview was completed.

This section also contains some additional UTD variables specific to human papillomavirus (HPV) vaccines. **P_UTDHPV11**, **P_UTDHPV12** and **P_UTDHPV13** are conditional up-to-date indicators showing whether a teen has received exactly 1, exactly 2, or 3 or more HPV vaccinations, given that the teen has received at least one. Teens that have received no HPV vaccinations will have missing values for these variables. **P_UTDHPV3C** is the conditional HPV vaccination series completion indicator. It indicates, among teens that have received at least one HPV vaccination, whether the teen completed the recommended series of three doses. This variable is limited to teens with at least one HPV vaccination where the interview completion date follows the date of the first HPV vaccination by at least 24 weeks, as 24 weeks is the recommended amount of time to complete the HPV vaccine series.

Finally, this section of the public-use data file contains variable **VRC_HIST**, which indicates whether the household respondent or any of the providers reported that the teen has had a history of chicken pox disease.

Table 3: Vaccine Categories and Vaccine Types, National Immunization Survey - Teen, 2012

Vaccine Category Abbreviation	Vaccine Category Description	Vaccine Type Code	Vaccine Type Description
TDP	Td/Tdap-containing, given after age 6 years	11	Td
		14	Tdap
		15	Td/Tdap-containing, unknown type
HEPB	Hepatitis B-containing	61	0.5 ml Recombivax
		62	1.0 ml Recombivax
		63	Engerix
		64	Hepatitis B-only, unknown type
		43	HepB-Hib
		HB	Hepatitis B-containing, unknown type
FLU	Seasonal influenza-containing	FZ	Fluzone
		FV	Fluvirin
		FN	Injected influenza, other/unknown type
		FM	Flumist
		FL	Influenza-containing, unknown type
H1N	Monovalent 2009 H1N1 influenza vaccine	1L	H1N1 flu, unknown type
		1M	H1N1 flu spray
		1N	Injected H1N1 flu
MCV	Measles-containing	30	MMR-only
		31	Measles-only
		32	Measles-Mumps (through backcoding)
		33	Measles-Rubella (through backcoding)
		VM	MMR-Varicella
		MM	Measles-containing, unknown type
VRC	Varicella-containing	VO	Varicella-only
		VM	MMR-Varicella
		VA	Varicella-containing, unknown type
HEPA	Hepatitis A-containing	HO	HepA-only (Havrix or Vaqta)
		HA	HepA-containing, unknown type
PPS	Pneumococcal Polysaccharide	-	-
MEN	Meningococcal-	80	MCV4 (Menactra)

Table 3: Vaccine Categories and Vaccine Types, National Immunization Survey - Teen, 2012

Vaccine Category Abbreviation	Vaccine Category Description	Vaccine Type Code	Vaccine Type Description
	containing	81	MPSV4 (Menomune)
		82	Meningococcal-containing, unknown type
HPV	Human Papillomavirus	CV	Cervarix
		GD	Gardasil
		HP	HPV, unknown type

7.9. Section 9: Provider-Reported Age-At-Vaccination Variables

This section contains variables storing the teen's age in years, months, and days at each vaccination in the synthesized provider-reported vaccination history, along with the vaccine types of those vaccinations.

For each vaccine category, variables ***YYY*_AGE1 - *YYY*_AGE9** store the age in years of the teen when the vaccination was administered for up to nine vaccinations in the child's synthesized provider-reported vaccination history, where "YYY" is the vaccine category abbreviation given in Table 3. Variables *YYY*_MAGE1 - *YYY*_MAGE9 store the age in months of the teen when each vaccination was administered. Variables *YYY*_DAGE1 - *YYY*_DAGE9 store the age in days of the teen when each vaccination was administered. For vaccine categories that contain multiple vaccine types, variables **X*YYY*TY1 - X*YYY*TY9** give the corresponding vaccine type code (see Table 3).

For synthesized provider-reported seasonal influenza vaccinations, in addition to FLU_AGE1 - FLU_AGE9 which give the age of the teen in years at the time of the vaccinations, variables **FLU_MONTH1 - FLU_MONTH9** and **FLU_YEAR1 - FLU_YEAR9** give the month and year for each vaccination, allowing users to assign a teen's seasonal influenza vaccinations to a particular flu season. Similarly **H1N_MONTH1** – **H1N_MONTH9** and **H1N_YEAR1** – **H1N_YEAR9** give the month and year for each monovalent 2009 H1N1 influenza vaccination.

Unlike the vaccination count and up-to-date variables in Section 8 of the public-use data file, the variables in Section 9 include vaccinations given both before and after the household interview was completed. If desired, users can limit the Section 9 variables to only those before the household interview date by examining the corresponding Section 8 "P_NUM" variable and limiting the analysis of the Section 9 variables to only the first *n* variables, where *n* is equal to the number of vaccinations in the vaccine category before the household interview date as indicated by the corresponding "P_NUM" variable.

Users of the NIS-Teen Public-Use file should be aware that the age-at-vaccination variables included in Section 9 may contain a small number of vaccination ages that are implausible according to the recommended immunization schedules (http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html). Such ages may arise if a medical provider inadvertently records an erroneous vaccination date or if a vaccination date is incorrectly transcribed onto an IHQ. The quality control procedures of the NIS-Teen address implausible ages to every extent possible. Suspicious dates are manually reviewed and corrected if there is evidence either from the household interview or from another provider that the date is incorrect. In rare cases, however, when there is no further information with which to correct the reported vaccination date, the vaccination is treated as having actually occurred and the implausible age at vaccination persists on the data file. The data user should consider these issues in deciding how to analyze the NIS-Teen data.

7.10. Section 10: Health Insurance Module Variables

The Health Insurance Module (HIM) gathers information on the health insurance coverage of the selected teen. Seven variables containing HIM data are included in the NIS-Teen public-use data file:

- **TIS_INS_1**: "Is the teen covered by health insurance provided through employer or union?";
- **TIS_INS_2**: "Is the teen covered by any MEDICAID plan?";
- **TIS_INS_3**: "Is the teen covered by S-CHIP?";

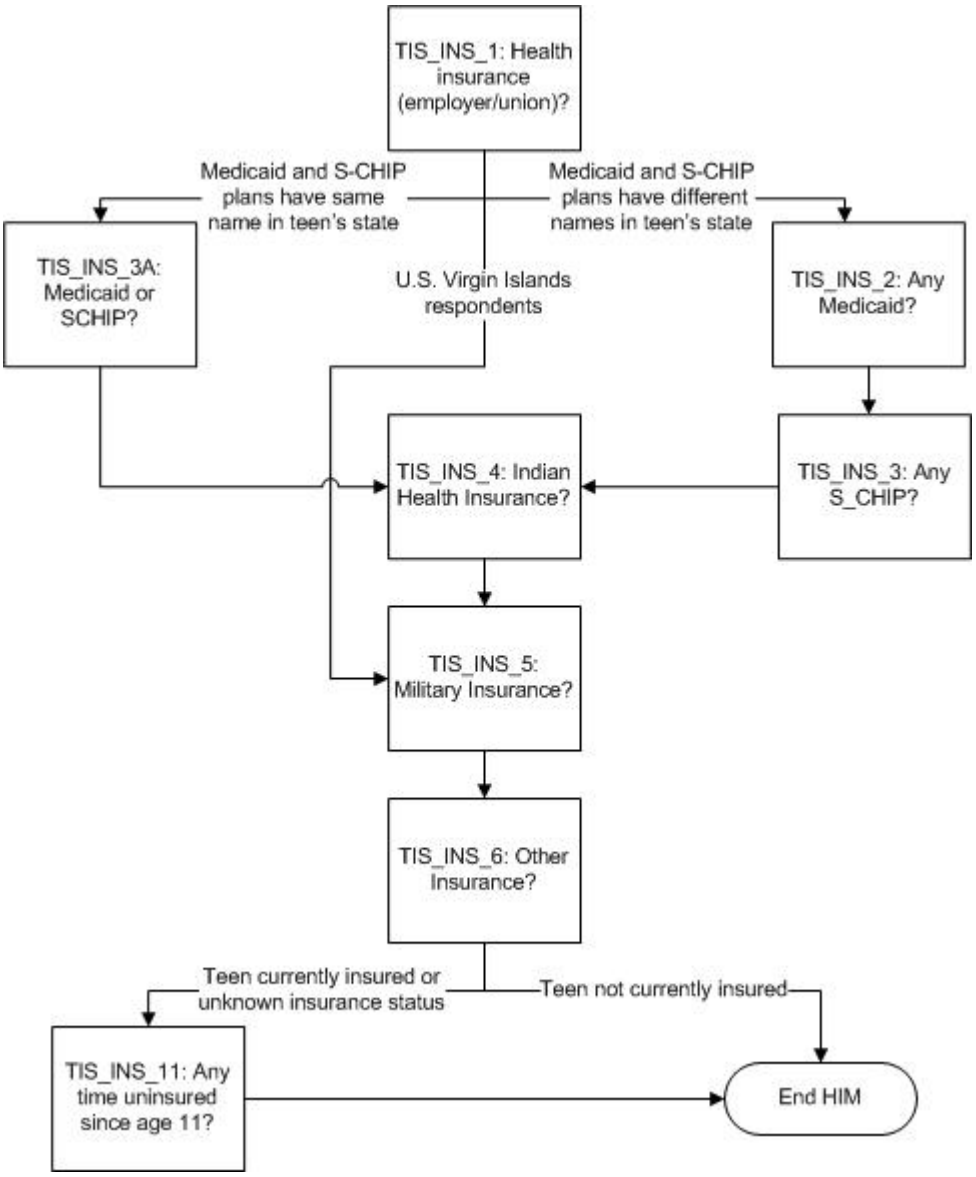
- **TIS_INS_3A**: “Is the teen covered by any MEDICAID plan or S-CHIP?”;
- **TIS_INS_4_5**: “Is the teen covered by Indian Health Service, Military Health Care, TRICARE, CHAMPUS, or CHAMP-VA?”;
- **TIS_INS_6**: “Is the teen covered by any other health insurance or health care plan?”; and
- **TIS_INS_11**: “Since age 11, was there any time when the teen was not covered by health insurance?”

Note that TIS_INS_4_5 combines the responses at questions TIS_INS_4 and TIS_INS_5. Each variable has “Yes”, “No”, “Don’t Know”, and “Refused” as response options. Also, users will encounter blanks or missing values in each variable. There are several reasons for the missingness. First, in order to reach the HIM section, the respondent must first finish Section D. Since the NIS-Teen public-use data file contains records for all respondents completing the demographics section, and because some of these demographics section respondents did not complete Section D, some records are for respondents who did not reach the HIM. Second, there is a possibility that the respondent began the HIM but broke off the interview before finishing. Finally, there are skip patterns in the module. That is, depending on the respondent's answers to previous questions, certain questions may be skipped. Figure 1 illustrates the flow of questions for the eight variables included in the NIS-Teen public-use data file.

The first question (TIS_INS_1) was asked of all respondents who reached the HIM. If the name of the Medicaid and S-CHIP programs were the same in the teen's state, the respondent skipped to TIS_INS_3A; if the names of the Medicaid and S-CHIP programs were different in the teen's state, the respondent was instead asked questions TIS_INS_2 and TIS_INS_3. (Note that U.S. Virgin Islands respondents were not asked about Medicaid and S-CHIP; such cases skipped TIS_INS_2, TIS_INS_3, and TIS_INS_3A.) Questions TIS_INS_4, TIS_INS_5, and TIS_INS_6 were asked of all U.S. proper HIM respondents. (U.S. Virgin Islands respondents were not asked about Indian Health Insurance at TIS_INS_4.) Based on the respondent's answers to previous HIM questions (some of which are not

included in the public-use file), if it was determined that the teen currently had health insurance or if the teen's insurance status was unknown, the respondent was asked if the teen was ever uninsured at question TIS_INS_11.

Figure 1. Question Flow for the Eight Health Insurance Variables Included in the Public Use File, National Immunization Survey - Teen, 2012



8. Analytic and Reporting Guidelines

Data from the NIS-Teen public-use data file can be used to produce national, state, and estimation-area estimates of vaccination coverage rates using the PROVWT_D weight to obtain dual-frame estimates (PROVWTVI_D if the U.S. Virgin Island landline sample is to be included). Information in the data file can also be used to calculate standard errors of the estimated vaccination coverage rates that reflect the complex sample design of the NIS-Teen. **The file includes estimation area and state identifiers (ESTIAPT12 and STATE) as well as a stratum identifier, STRATUM. The sample is stratified by a combination of the sample frame (landline, cell-phone) and the 57 estimation areas.** Demographic and socioeconomic variables in the file can be used to obtain national vaccination coverage rates for sub-groups of the population. Data users should, however, be aware that estimates for such sub-groups at the state or estimation area level will generally have large standard errors because of small sample sizes. The NCHS standard for precision of sub-group estimates is that the ratio of the standard error to the estimate should be less than or equal to 0.3, and each analytic cell should contain at least 30 respondents.

8.1. Use of NIS Sampling Weights

The NIS-Teen public-use data file contains two teen-level sets of weights. **The RDDWT_D variable gives the household-phase weight for all teens in the U.S. proper, including teens from both the landline and cell-phone sampling frames (RDDWTVI_D if the U.S. Virgin Island landline sample is to be included). Table 4 presents a summary of the appropriate weights and stratum variables to use for various types of analyses.**

These weights should be used to form estimates from teens with completed household interviews. The weights reflect the stratified sample design and also have been adjusted for unit non-response, for the selection of one teen per household, for the number of telephone lines in the household, for combining the landline and cell-phone samples, for post-stratification to population control totals, and for the exclusion

of non-telephone teens. **The weight variable PROVWT_D applies to teens with adequate provider data.** These weights should be used to form estimates of vaccination coverage using variables from Sections 7, 8, and 9 of the public-use data file (see Section 7 of this user's guide).

Table 4: Summary of Weights and Stratum Variables, NIS-Teen PUF, 2012

Weight Variable	Population[1]	Sample Frame	Strata	Stratum Variable
RDDWT_D	U.S. proper	Dual Frame (Landline/Cell)	Sample Frame by Estimation Area	STRATUM
RDDWTVI_D	U.S. proper plus USVI	Dual Frame for U.S. proper, landline-sample for USVI	Sample Frame by Estimation Area	STRATUM
PROVWT_D	U.S. proper, with adequate provider data	Dual Frame (Landline/Cell)	Sample Frame by Estimation Area	STRATUM
PROVWTVI_D	U.S. proper plus USVI, with adequate provider data	Dual Frame for U.S. proper, landline-sample for USVI	Sample Frame by Estimation Area	STRATUM

[1] Each weight will contain a missing value for all records that are not included in the population covered by the weight.

The NIS-Teen public-use data file does not contain any provider-level weights. The NIS-Teen does not sample providers directly; rather, they are included in the survey through the teens they vaccinate. A user of the file should not attempt provider-level analyses (e.g., estimate the percentage of providers in the U.S. that are private providers), because the NIS-Teen sample was not designed for that purpose.

8.2. Estimation and Analysis

8.2.1. Estimating Vaccination Coverage Rates

Vaccination coverage rates are ratio estimators, as described in the statistical literature on methods for complex sample surveys. Because of the adjustment to the sampling weights for provider-phase non-response, statistical analyses require only data from teens with adequate provider data (PDAT = 1), along

with their final provider sampling weights (**PROVWT_D/PROVWTVI_D**). To summarize the statistical methodology by which vaccination coverage rates and their standard errors are obtained from these data, let Y_{hi} be an indicator, for the *i*th teen with adequate provider data in the *h*th stratum of the NIS-Teen sampling design, equal to 1 if the teen is up-to-date according to the provider data and 0 otherwise. Also, let W_{hi} denote the value of **PROVWT_D/PROVWTVI_D** for this teen. Then, letting $\hat{Y}_h = \sum_{i=1}^{n_h} W_{hi} Y_{hi}$ and $\hat{T}_h = \sum_{i=1}^{n_h} W_{hi}$,

the national estimator of the vaccination coverage rate may be expressed as

$$\hat{\theta} = \frac{\sum_{h=1}^{L} \hat{Y}_h}{\sum_{h=1}^{L} \hat{T}_h}$$

where *L* denotes the number of strata, and n_h denotes the number of sampled teens with adequate provider data in the *h*th stratum.

Letting *L* instead denote the number of strata in a state, the above formula can also be used to calculate vaccination coverage rates for states (regardless of whether the state contains only one or more than one strata).

8.2.2. Estimating Standard Errors of Vaccination Coverage Rates

The Taylor-series method can be used to estimate the sampling variance of vaccination coverage rates for the U.S., the states, and estimation areas. Letting $Z_{hi} = \frac{W_{hi}(Y_{hi} - \hat{\theta})}{\sum_{h=1}^{L} \hat{T}_h}$ and $\overline{Z}_h = \frac{\sum_{i=1}^{n_h} Z_{hi}}{n_h}$

yields an estimator of the variance of the estimated vaccination coverage rate, $\hat{\theta}$, equal to

$$v(\hat{\theta}) = \sum_{h=1}^{L} \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} (Z_{hi} - \bar{Z}_h)^2 .$$

The standard error is the square root of the variance. The estimation of standard errors for estimates of vaccination coverage rates in the NIS-Teen can be implemented in specialized statistical software such as SUDAAN (Research Triangle Institute 2008), SAS (SAS Institute Inc. 2009), R (Lumley 2010), and Stata (Stata Corporation 2009). Appendix C gives several examples of the use of SAS, R, and SUDAAN to estimate vaccination coverage rates and their standard errors for estimation areas and states. For all procedures, the option of with-replacement sampling of primary sampling units within stratum is used, because the sampling fractions for households within an estimation area are all quite small. **For all estimates, the variable STRATUM is used as the stratum variable and the household/teen identifier (SEQNUMT) is used as the primary sampling unit identifier.** The data file should be sorted first on **STRATUM** and then on SEQNUMT within **STRATUM** before running the programs for SUDAAN and SAS.

8.3. Combining Multiple Years of NIS-Teen Data

8.3.1. Estimation of Multi-Year Means

With release of the 2012 NIS-Teen public-use data file, five years of NIS-Teen data are now available. The precision of estimates of vaccination coverage for sub-domains (e.g., by race/ethnicity of teen) within estimation areas or states can be improved by combining multiple years of NIS-Teen data. Data users should, however, be aware that estimates from combined years of NIS-Teen data represent an average over multiple years. Although combining multiple years of NIS-Teen data will yield a larger sample size for estimation areas and states, the composition of the population in a geographic area may change over time, making interpretation of the results difficult. Furthermore, if vaccination administration schedules or vaccination coverage changes over time, the estimate of vaccination coverage for the combined time

period applies to a hypothetical population that existed at the middle of the time period, making interpretation of the results even more difficult. Given the use of independent RDD samples in the NIS-Teen, it is also possible that a teen could appear in more than one public-use data file.

To estimate a multi-year mean for a given NIS-Teen variable, the weights in each participating file (RDD-phase weights RDDWT in 2008-2010 **and RDDWT_D in 2011-2012**; and provider-phase weights PROVWT in 2008-2010 **and PROVWT_D in 2011-2012**) should be divided by the number of years being combined. For example, if data for 2010, 2011, and 2012 for teens with adequate provider data are to be combined, then the weights in the three files – PROVWT in 2010 **and PROVWT_D in 2011-2012** – should be divided by 3 to obtain revised weights, which should be saved as a new variable, say NEWWT. It is necessary to use NEWWT in the analysis to obtain correct weighted estimates for teens ages 13 to 17 years. Furthermore, the teen ID numbers (SEQNUMT) in the files are unique only within a year, not across years. It is important for the user to create revised, unique ID numbers when combining data from multiple years.

The following SAS code can be used:

```
YRSEQT = 1 * (YEAR || SEQNUMT);
```

YEAR is the 4-digit year variable for the NIS-Teen data year (e.g., 2010).

To produce valid estimates of sampling variability and valid confidence intervals for multi-year coverage rates and other multi-year means, it is necessary to use specialized software such as SAS or SUDAAN.

There is an important complication for variance estimation when combining multiple years, because some estimation areas are removed and other new areas are added each year (see Section 2 above for more information about rotating estimation areas). **The variance strata for 2010-2012 are defined by the variables ESTIAPT10, STRATUM_D, and STRATUM, respectively, with STRATUM_D and STRATUM being a combination of the estimation area variable for that year and the sampling**

frame (landline or cell-phone). The estimation area variables ESTIAPT10, ESTIAPT11, and ESTIAPT12 define mutually exclusive and exhaustive geographic areas. However, they are not exactly the same areas. For example, **Dallas County, TX, and El Paso County, TX, were separate estimation areas in 2010-2011 but are not in 2012. Other areas, such as New York City and Rest of New York, are estimation areas in all years.**

To make inferences concerning multi-year means, the user must take two actions. First, he/she must define and save a new stratum variable with a common name for all years included in the analysis. Second, he/she must define a common set of estimation domains that can be supported by each of the files included in the multi-year analysis. To take these actions, the user should follow the following seven-step procedure (or its equivalent):

i. Compute and save the new, common variance-stratum variable for each year participating in the analysis. The variable should be defined by the equation

   STRATUMV = ESTIAPT10 , for children in the 2010 public-use data file
   = STRATUM_D , for children in the 2011 public-use data file
   = **STRATUM** , for children in the 2012 public-use data file

ii. Compute and save the new, common weight variable, NEWWT, as instructed above for each year participating in the analysis.

iii. Compute and save the new, unique teen identification numbers, YRSEQT, as instructed above for each year participating in the analysis.

iv. Compute and save a variable defining the common estimation domains to be studied for each year participating in the analysis. For example, one could use the LCDIAP (Least Common Denominator Estimation Area) variable set forth in Table 5 or states as geographic domains.

v. Merge the multiple files into one consolidated file in a format compatible with the specialized software to be used.

vi. Sort the consolidated file by YEAR, STRATUMV, and YRSEQT.

vii. Run the specialized software on the consolidated file, computing estimates, variance estimates, and confidence intervals. For SUDAAN users, sampling levels or stages may be specified by the statement

NEST YEAR STRATUMV YRSEQT / PSULEV = 3;

the specification of weights by

WEIGHT NEWWT;

and the specification of estimation domains, for example, by the two statements

CLASS YEAR LCDIAP STATE;
TABLES LCDIAP;

or

CLASS YEAR LCDIAP STATE;
TABLES STATE;

8.3.2. Estimation of Multi-Year Contrasts

Considerations similar to those for multi-year means arise in the estimation of contrasts between NIS-Teen years. For example, a typical contrast of interest would be the difference between the immunization coverage parameters in 2011 and in 2012.

To make inferences concerning a multi-year contrast, the user will need to work with the original weights reported on the files and store them in a common variable. One must not divide the original weights by the number of years included in the contrast. For the example, one may define the new, common weight variable as

NEWWT2 = PROVWT_D , if the child is in the 2011 PUF

= **PROVWT_D** , if the child is in the 2012 PUF.

The user should follow the seven-step procedure set forth in the section on multi-year means, using NEWWT2 in lieu of NEWWT. In SUDAAN, the user should also specify the contrast of interest through use of a CONTRAST statement or an appropriate regression model. For example, to compare the

Measles-containing vaccine up-to-date estimate from 2011 to the 2012 estimate, SUDAAN users can use the following WEIGHT, VAR, and CONTRAST statements:

```
WEIGHT NEWWT2;
VAR P_UTDMCV;
CONTRAST YEAR = (-1 1);
```

Table 5: Cross-Walk Between ESTIAPT08, ESTIAPT09, ESTIAPT10, ESTIAPT11, ESTIAPT12 and Least Common Denominator Estimation Area (LCDIAP), National Immunization Survey - Teen, 2012

LCDIAP	Area Name	ESTIAPT08 (2008)	ESTIAPT09 (2009)	ESTIAPT10 (2010)	ESTIAPT11 (2011)	ESTIAPT12 (2012)
20	Alabama	20	20	20	20	20
74	Alaska	74	74	74	74	74
66	Arizona	66	66	66	66	66
46	Arkansas	46	46	46	46	46
	California					
68	CA-Los Angeles County	68	69	68	68	68
68	CA-Rest of State	68	68	68	68	68
60	Colorado	60	60	60	60	60
1	Connecticut	1	1	1	1	1
13	Delaware	13	13	13	13	13
12	District of Columbia	12	12	12	12	12
22	Florida	22	22	22	22	22
25	Georgia	25	25	25	25	25
72	Hawaii	72	72	72	72	72
75	Idaho	75	75	75	75	75
	Illinois					
35	IL-City of Chicago	35	35	35	35	35
34	IL-Rest of State	34	34	34	34	34
	Indiana					
36	IN-Lake County	36	96	36	36	36
36	IN-Marion County	36	37	36	36	36
36	IN-Rest of State	36	36	36	36	36
56	Iowa	56	56	56	56	56
57	Kansas	57	57	57	57	57
27	Kentucky	27	27	27	27	27
47	Louisiana	47	47	47	47	47
4	Maine	4	4	4	4	4
14	Maryland	14	14	14	14	14

Table 5: Cross-Walk Between ESTIAPT08, ESTIAPT09, ESTIAPT10, ESTIAPT11, ESTIAPT12 and Least Common Denominator Estimation Area (LCDIAP), National Immunization Survey - Teen, 2012

LCDIAP	Area Name	ESTIAPT08 (2008)	ESTIAPT09 (2009)	ESTIAPT10 (2010)	ESTIAPT11 (2011)	ESTIAPT12 (2012)
2	Massachusetts	2	2	2	2	2
38	Michigan	38	38	38	38	38
40	Minnesota	40	40	40	40	40
28	Mississippi	28	28	28	28	28
58	Missouri	58	58	58	58	58
61	Montana	61	61	61	61	61
59	Nebraska	59	59	59	59	59
73	Nevada	73	73	73	73	73
5	New Hampshire	5	5	5	5	5
8	New Jersey	8	8	8	8	8
49	New Mexico	49	49	49	49	49
	New York					
11	NY-City of New York	11	11	11	11	11
10	NY-Rest of State	10	10	10	10	10
29	North Carolina	29	29	29	29	29
62	North Dakota	62	62	62	62	62
41	Ohio	41	41	41	41	41
50	Oklahoma	50	50	50	50	50
76	Oregon	76	76	76	76	76
	Pennsylvania					
17	PA-Philadelphia County	17	17	17	17	17
16	PA-Rest of State	16	16	16	16	16
6	Rhode Island	6	6	6	6	6
30	South Carolina	30	30	30	30	30
63	South Dakota	63	63	63	63	63
31	Tennessee	31	31	31	31	31
	Texas					
55	TX-Bexar County	55	55	55	55	55
54	TX-City of Houston	54	54	54	54	54
51	**TX-Dallas County**	**51**	**52**	**52**	**52**	**51**
51	**TX-El Paso County**	**51**	**53**	**53**	**53**	**51**
51	TX-Rest of State	51	51	51	51	51
64	Utah	64	64	64	64	64
7	Vermont	7	7	7	7	7
18	Virginia	18	18	18	18	18

Table 5: Cross-Walk Between ESTIAPT08, ESTIAPT09, ESTIAPT10, ESTIAPT11, ESTIAPT12 and Least Common Denominator Estimation Area (LCDIAP), National Immunization Survey - Teen, 2012

LCDIAP	Area Name	ESTIAPT08 (2008)	ESTIAPT09 (2009)	ESTIAPT10 (2010)	ESTIAPT11 (2011)	ESTIAPT12 (2012)
77	Washington	77	77	77	77	77
19	West Virginia	19	19	19	19	19
44	Wisconsin	44	44	44	44	44
65	Wyoming	65	65	65	65	65
-	U.S. Virgin Islands	-	95	95	95	95

9. Summary Tables

Appendix E contains eight tables. Appendix Table E.1 lists the 57 estimation areas for the 2012 NIS-Teen by state. For the U.S. and for each state and estimation area, it provides the estimated population total of teens 13 to 17 years of age in 2012 and (from 2012 NIS-Teen data collection) number of teens with completed household interviews and number of teens with adequate provider data.

Appendix Tables E.2 through E.5 summarize pairs of variables: age of teen by maternal education (Appendix Table E.2), age of teen by family poverty status (Appendix Table E.3), race/ethnicity of teen by family poverty status (Appendix Table E.4), age of teen by race/ethnicity of teen (Appendix Table E.5), and age of teen by gender of teen (Appendix Table E.6). Each of these tables gives the unweighted and weighted counts of teens for whom the household interview was completed and the unweighted and weighted counts of teens with adequate provider data.

Appendix Table E.7 presents unweighted counts of teens by shot card use by presence of adequate provider data.

Appendix Table E.8 presents estimates of vaccination coverage and 95-percent confidence intervals obtained from SAS. The data user should obtain the same estimates from the 2012 public-use data file.

Appendix G contains three tables and three time-series charts**.** Table G.1 and Figure G.1 show key components of the NIS-Teen landline sample response rates and the overall CASRO response rates by year of the survey. Table G.2 and Figure G.2 show key components of the NIS-Teen cell-phone sample response rates and the overall CASRO response rates. Table G.3 and Figure G.3 show vaccination coverage rate estimates since 2006.

10. Limitations

The findings in this report are subject to at least three limitations. First, because NIS-Teen is a telephone survey, results are weighted to be representative of all children aged 13–17 years. Although statistical adjustments were made to account for non-response and households without telephones, some bias might remain. Second, comparisons of estimates by data years that span 2010, 2011 and 2012 are potentially biased to some extent by the expansion to a dual landline and cellular sample frame starting in 2011, and increased share of the sample from a cellular telephone sampling frame from 2011 to 2012. Third, underestimates of vaccination coverage might have resulted from the exclusive use of provider-reported vaccination histories because completeness of these records is unknown. Finally, although national estimates of vaccination coverage are precise, estimates for state and local areas should be interpreted with caution because their sample sizes are smaller and their confidence intervals generally are wider than those for national estimates.

11. Citations for NIS-Teen Data

In publications please acknowledge the original data source. The citation for the 2012 NIS-Teen public-use data file is:

> U.S. Department of Health and Human Services (DHHS). National Center for Health Statistics. The 2012 National Immunization Survey - Teen, Hyattsville, MD: Centers for Disease Control and Prevention, 2013.

Information about the NIS-Teen is located at http://www.cdc.gov/nis/about_nis.htm#nis_teen.

The NIS-Teen public-use data file is located at http://www.cdc.gov/nis/data_files_teen.htm.

Please place the acronym "NIS-Teen" in the titles, keywords, or abstracts of journal articles and other publications in order to facilitate retrieval of such materials in bibliographic searches.

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Appendix A: Glossary of Abbreviations and Terms

1:3:2:1	The series of 1 or more Td/Tdap vaccinations, 3 or more Hep B vaccinations (or 2 or more Hep B 1.0 ml Recombivax vaccinations), 2 or more MMR vaccinations, and 1 or more VRC vaccinations (or a history of chicken pox disease)
1:3:2:1:2	The series of 1 or more Td/Tdap vaccinations, 3 or more Hep B vaccinations (or 2 or more Hep B 1.0 ml Recombivax vaccinations), 2 or more MMR vaccinations, 1 or more MEN vaccinations, and 2 or more VRC vaccinations (or a history of chicken pox disease)
AAPOR	American Association for Public Opinion Research
ACS	American Community Survey
APCN	Active Personal Cell-Phone Number
CASRO	Council of American Survey Research Organizations
CATI	Computer-assisted telephone interviewing
CDC	Centers for Disease Control and Prevention
CII	Childhood Immunization Initiative
CPS	Current Population Survey
DHHS	U.S. Department of Health and Human Services
DOB	Date of birth
FLU	Seasonal influenza vaccine
H1N1	Monovalent 2009 H1N1 Influenza Vaccine
Hep A	Hepatitis A vaccine
Hep B	Hepatitis B vaccine
HIM	Health insurance module
HPV	Human papillomavirus vaccine
IAP	Immunization Action Plan
IHQ	Immunization history questionnaire
MCV	Measles-containing vaccine
MEN	Meningococcal vaccine

MMR	Measles, mumps, and rubella vaccine
MSA	Metropolitan Statistical Area
NCHS	National Center for Health Statistics
NCIRD	National Center for Immunization and Respiratory Diseases
NIPRCS	National Immunization Provider Record Check Study
NIS	National Immunization Survey
NIS-Teen	National Immunization Survey - Teen
NHIS	National Health Interview Survey
NIP	National Immunization Program
PPS	Pneumococcal polysaccharide vaccine
PRC	Provider Record Check Study
PUF	Public-use file
PUMS	Public-Use Microdata Sample
RDD	Random digit dialing
SC	Shot card
Td	Tetanus and diphtheria vaccine
Tdap	Tetanus, diphtheria, and acellular pertussis vaccine
UTD	Up-to-date
WRN	Working Residential Number
VFC	Vaccines for Children program
VRC	Varicella vaccine

Appendix B: Summary Statistics for Sampling Weights by Estimation Area

Table B.1: Distribution of Dual-Frame[1] Sampling Weights for Teens with Completed Household Interviews, National Immunization Survey - Teen, 2012

State/Estimation Area	n	Sum	Minimum	Maximum	Mean	Coefficient of Variation
Total U.S.[2]	31,792	20,787,057.19	2.11	18,835.44	653.85	149.46
Alabama	504	321,732.34	32.09	3,418.85	638.36	83.81
Alaska	554	50,238.29	18.59	390.89	90.68	62.75
Arizona	636	449,634.44	28.30	3,810.67	706.97	79.03
Arkansas	527	197,472.82	40.35	2,130.20	374.71	88.26
California	719	2,630,411.33	21.97	18,835.44	3,658.43	80.27
Colorado	524	333,385.55	32.68	4,126.00	636.23	95.56
Connecticut	499	242,777.67	54.55	2,236.74	486.53	73.43
Delaware	554	57,081.48	11.59	481.63	103.04	69.68
District of Columbia	541	25,691.55	2.11	263.00	47.49	89.60
Florida	578	1,160,414.05	2.75	10,509.62	2,007.64	93.56
Georgia	525	688,649.31	4.11	7,010.95	1,311.71	91.65
Hawaii	559	82,378.69	26.67	743.92	147.37	75.72
Idaho	601	116,331.85	12.95	1,005.10	193.56	78.59
Illinois	1,125	872,102.01	11.28	5,154.64	775.20	113.03
IL-City of Chicago	516	170,993.35	38.57	1,846.48	331.38	80.35
IL-Rest of State	609	701,108.67	11.28	5,154.64	1,151.25	89.03
Indiana	528	452,701.45	31.49	4,444.64	857.39	77.53
Iowa	501	202,458.33	48.91	1,904.87	404.11	77.46
Kansas	536	198,734.74	37.92	1,895.09	370.77	88.83
Kentucky	513	284,736.39	63.95	3,087.38	555.04	83.66
Louisiana	615	308,850.11	14.94	2,422.77	502.20	82.96
Maine	475	79,927.74	33.19	796.18	168.27	71.97
Maryland	627	385,100.67	12.62	4,020.03	614.20	92.46
Massachusetts	535	414,153.95	4.72	3,459.26	774.12	65.65
Michigan	550	679,894.58	22.19	6,199.53	1,236.17	87.58
Minnesota	463	357,782.08	7.97	4,055.06	772.75	87.28
Mississippi	567	207,626.11	46.99	2,275.99	366.18	86.99
Missouri	531	399,970.38	34.34	4,154.06	753.24	87.84
Montana	516	62,190.01	17.84	639.42	120.52	71.23

Table B.1: Distribution of Dual-Frame[1] Sampling Weights for Teens with Completed Household Interviews, National Immunization Survey - Teen, 2012

State/Estimation Area	n	Sum	Minimum	Maximum	Mean	Coefficient of Variation
Nebraska	505	122,249.53	42.77	1,227.09	242.08	76.93
Nevada	603	183,248.32	33.67	1,627.53	303.89	75.90
New Hampshire	460	86,603.14	27.50	947.66	188.27	64.20
New Jersey	574	592,555.01	10.36	5,219.24	1,032.33	71.83
New Mexico	544	143,106.24	16.90	1,420.84	263.06	84.69
New York	1,096	1,216,700.62	4.40	6,851.85	1,110.13	75.53
NY-City of New York	576	468,432.74	18.16	3,880.01	813.25	60.55
NY-Rest of State	520	748,267.88	4.40	6,851.85	1,438.98	69.79
North Carolina	553	633,720.09	19.35	5,918.88	1,145.97	73.17
North Dakota	452	40,425.47	22.19	450.10	89.44	72.04
Ohio	553	774,235.82	61.39	6,557.79	1,400.06	78.08
Oklahoma	516	257,164.52	99.57	2,402.53	498.38	72.44
Oregon	558	243,915.83	20.53	2,311.12	437.13	76.49
Pennsylvania	1,215	798,314.25	7.05	5,364.65	657.05	120.45
PA-Philadelphia County	560	90,416.27	7.05	923.84	161.46	85.86
PA-Rest of State	655	707,897.98	31.50	5,364.65	1,080.76	80.46
Rhode Island	491	65,020.34	31.98	619.41	132.42	73.20
South Carolina	564	298,113.44	5.00	2,584.82	528.57	90.18
South Dakota	514	54,368.19	20.46	469.14	105.77	68.49
Tennessee	553	420,423.03	13.70	3,952.72	760.26	88.51
Texas	2,927	1,845,560.04	7.68	5,619.81	630.53	132.59
TX-Bexar County	615	126,928.29	18.78	1,303.68	206.39	99.75
TX-City of Houston	723	137,592.20	19.17	1,384.00	190.31	93.26
TX-Rest of State	1,589	1,581,039.55	7.68	5,619.81	994.99	98.80
Utah	574	226,328.93	13.80	1,786.05	394.30	82.51
Vermont	464	38,718.16	18.32	368.56	83.44	67.50
Virginia	577	517,148.25	2.31	4,719.40	896.27	87.73
Washington	589	442,299.76	30.00	3,612.58	750.93	81.01
West Virginia	503	110,441.51	38.79	1,045.22	219.57	77.14
Wisconsin	469	377,456.77	75.68	4,267.95	804.81	80.93
Wyoming	535	36,511.98	12.96	337.65	68.25	68.42
U.S. Virgin Islands[3]	1,033	7,499.00	1.39	28.80	7.26	57.49

Table B.1: Distribution of Dual-Frame[1] Sampling Weights for Teens with Completed Household Interviews, National Immunization Survey - Teen, 2012

State/Estimation Area	n	Sum	Minimum	Maximum	Mean	Coefficient of Variation

[1] Distribution of RDDWTVI_D.
[2] 'Total U.S.' figures exclude U.S. Virgin Islands.
[3] U.S. Virgin Islands weights are single-frame, landline-sample weights. There was no cell-phone sample in U.S. Virgin Islands.

Table B.2: Distribution of Dual-Frame[1] Sampling Weights for Teens with Adequate Provider Data, National Immunization Survey - Teen, 2012

State/Estimation Area	n	Sum	Minimum	Maximum	Mean	Coefficient of Variation
Total U.S.[2]	19,199	20,787,057.19	2.78	32,743.36	1,082.72	153.95
Alabama	317	321,732.34	162.89	5,161.17	1,014.93	85.91
Alaska	340	50,238.29	30.43	661.71	147.76	62.14
Arizona	360	449,634.44	55.30	5,851.32	1,248.98	80.93
Arkansas	322	197,472.82	81.21	3,080.80	613.27	84.52
California	430	2,630,411.33	49.02	32,743.36	6,117.24	80.77
Colorado	311	333,385.55	87.52	6,682.81	1,071.98	109.75
Connecticut	323	242,777.67	113.71	3,526.35	751.63	79.44
Delaware	341	57,081.48	21.37	774.64	167.39	77.29
District of Columbia	342	25,691.55	3.91	392.13	75.12	89.34
Florida	325	1,160,414.05	7.90	19,614.75	3,570.50	99.38
Georgia	328	688,649.31	71.01	12,348.08	2,099.54	94.89
Hawaii	342	82,378.69	37.92	1,342.60	240.87	81.31
Idaho	357	116,331.85	22.90	1,477.60	325.86	77.49
Illinois	632	872,102.01	88.38	9,157.28	1,379.91	117.99
IL-City of Chicago	287	170,993.35	88.38	3,340.45	595.80	84.57
IL-Rest of State	345	701,108.67	177.50	9,157.28	2,032.20	94.81
Indiana	341	452,701.45	66.97	6,312.65	1,327.57	80.80
Iowa	325	202,458.33	77.87	2,901.63	622.95	78.98
Kansas	340	198,734.74	53.40	3,067.37	584.51	92.40
Kentucky	333	284,736.39	104.22	4,404.01	855.06	84.72
Louisiana	370	308,850.11	21.84	3,973.65	834.73	81.36
Maine	319	79,927.74	49.63	1,131.88	250.56	71.48
Maryland	325	385,100.67	58.70	6,700.56	1,184.93	96.82
Massachusetts	347	414,153.95	8.00	5,488.02	1,193.53	66.05

Table B.2: Distribution of Dual-Frame[1] Sampling Weights for Teens with Adequate Provider Data, National Immunization Survey - Teen, 2012

State/Estimation Area	n	Sum	Minimum	Maximum	Mean	Coefficient of Variation
Michigan	368	679,894.58	27.45	9,808.66	1,847.54	85.61
Minnesota	322	357,782.08	9.67	5,655.65	1,111.12	89.30
Mississippi	321	207,626.11	83.33	3,988.57	646.81	89.37
Missouri	292	399,970.38	120.38	7,409.02	1,369.76	89.70
Montana	325	62,190.01	30.89	750.31	191.35	71.61
Nebraska	328	122,249.53	56.39	1,974.16	372.71	85.00
Nevada	329	183,248.32	112.06	3,034.38	556.99	73.22
New Hampshire	278	86,603.14	39.99	1,381.29	311.52	61.78
New Jersey	330	592,555.01	18.94	9,016.09	1,795.62	73.83
New Mexico	331	143,106.24	28.03	2,424.22	432.35	82.82
New York	627	1,216,700.62	31.87	10,975.31	1,940.51	73.27
NY-City of New York	312	468,432.74	163.98	7,678.34	1,501.39	62.31
NY-Rest of State	315	748,267.88	31.87	10,975.31	2,375.45	70.21
North Carolina	347	633,720.09	38.27	9,887.84	1,826.28	78.32
North Dakota	324	40,425.47	28.80	601.24	124.77	79.83
Ohio	327	774,235.82	300.09	11,808.48	2,367.69	87.40
Oklahoma	322	257,164.52	108.66	4,451.70	798.65	73.57
Oregon	381	243,915.83	145.29	3,494.06	640.20	76.30
Pennsylvania	741	798,314.25	10.96	9,144.54	1,077.35	121.36
PA-Philadelphia County	348	90,416.27	10.96	1,569.79	259.82	91.87
PA-Rest of State	393	707,897.98	162.31	9,144.54	1,801.27	79.64
Rhode Island	327	65,020.34	38.77	964.83	198.84	74.74
South Carolina	310	298,113.44	10.34	4,646.09	961.66	86.28
South Dakota	298	54,368.19	28.51	885.00	182.44	69.77
Tennessee	331	420,423.03	74.43	6,247.81	1,270.16	91.72
Texas	1,594	1,845,560.04	20.87	10,603.81	1,157.82	133.92
TX-Bexar County	346	126,928.29	20.87	2,232.34	366.84	108.27
TX-City of Houston	393	137,592.20	28.27	2,307.64	350.11	99.29
TX-Rest of State	855	1,581,039.55	43.97	10,603.81	1,849.17	98.73
Utah	345	226,328.93	30.90	3,365.51	656.03	86.60
Vermont	322	38,718.16	27.46	550.87	120.24	70.04
Virginia	334	517,148.25	2.78	7,695.65	1,548.35	91.46

Table B.2: Distribution of Dual-Frame[1] Sampling Weights for Teens with Adequate Provider Data, National Immunization Survey - Teen, 2012

State/Estimation Area	n	Sum	Minimum	Maximum	Mean	Coefficient of Variation
Washington	353	442,299.76	44.03	6,154.64	1,252.97	88.49
West Virginia	282	110,441.51	69.92	1,977.39	391.64	80.21
Wisconsin	307	377,456.77	101.24	6,468.66	1,229.50	85.45
Wyoming	333	36,511.98	17.14	530.14	109.65	74.80
U.S. Virgin Islands[3]	547	7,499.00	1.71	58.82	13.71	59.87

[1] Distribution of PROVWTVI_D.

[2] 'Total U.S.' figures exclude U.S. Virgin Islands.

[3] U.S. Virgin Islands weights are single-frame, landline-sample weights. There was no cell-phone sample in U.S. Virgin Islands.

Appendix C: Programs for Estimation: Examples of the Use of SUDAAN, SAS, and R to Estimate Vaccination Coverage Rates and Their Standard Errors, and Example of the Production of a Cross-Tabulation and Chart

I. SUDAAN

```
*************************************************************************
**;
title1 'SUD_IAP.SAS';
*************************************************************************
**
THIS PROGRAM WILL PRODUCE ESTIMATION AREA ESTIMATES AND STANDARD
ERRORS
FOR 2+ MMR VACCINATIONS (P_UTDMMR) USING SAS CALLABLE SUDAAN.
SUDAAN NOTES:
1. ALL VARIABLES USED MUST BE NUMERIC.
2. VARIABLES IN THE SUBGROUP STATEMENT MUST HAVE VALUES 1,2,..K
WHERE K IS THE NUMBER OF LEVELS FOR EACH VARIABLE.
3. DATA MUST BE SORTED ACCORDING TO THE SAMPLE DESIGN VARIABLES
(STRATUM AND PRIMARY SAMPLING UNIT), SPECIFIED IN THE
NEST STATEMENT.
*************************************************************************
**;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;

*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;
%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION AREA VARIABLE TO USE ---*;
%let wt=provwt_d; * --- WEIGHT TO USE (PROVWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use PROVWTVI_D to include U.S.
Virgin Islands) ---*;
```

```
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimates.) ---*;

Proc format;
/*
THE FOLLOWING FORMAT WILL BE USED FOR P_UTDMMR.
ORIGINAL VALUES OF P_UTDMMR ARE 1,0.
MUST BE CONVERTED TO 1,2 IN SUDAAN.
*/
value p_utdmmrf
1='2+ MMR Up-to-Date'
2='Not 2+ MMR Up-to-Date';

/*
THE FOLLOWING FORMAT WILL BE USED FOR THE ESTIMATION AREA.
*/
value estiapf
. = "Missing"
0 = "US Total"
1 = "CT"
2 = "MA"
4 = "ME"
5 = "NH"
6 = "RI"
7 = "VT"
8 = "NJ"
10 = "NY-Rest of State"
11 = "NY-City of New York"
12 = "DC"
13 = "DE"
14 = "MD"
16 = "PA-Rest of State"
17 = "PA-Philadelphia County"
18 = "VA"
19 = "WV"
20 = "AL"
22 = "FL"
25 = "GA"
27 = "KY"
28 = "MS"
29 = "NC"
30 = "SC"
31 = "TN"
34 = "IL-Rest of State"
35 = "IL-City of Chicago"
36 = "IN"
38 = "MI"
40 = "MN"
41 = "OH"
44 = "WI"
46 = "AR"
```

```
47 = "LA"
49 = "NM"
50 = "OK"
51 = "TX-Rest of State"
54 = "TX-City of Houston"
55 = "TX-Bexar County"
56 = "IA"
57 = "KS"
58 = "MO"
59 = "NE"
60 = "CO"
61 = "MT"
62 = "ND"
63 = "SD"
64 = "UT"
65 = "WY"
66 = "AZ"
68 = "CA"
72 = "HI"
73 = "NV"
74 = "AK"
75 = "ID"
76 = "OR"
77 = "WA"
95 = "U.S. Virgin Islands"
;
Run;

data sud_file;
set &in_file. (keep= SEQNUMT P_UTDMMR &estiap. &wt. &strat.);
if P_UTDMMR=0 then P_UTDMMR=2; *--- CONVERT P_UTDMMR=0 TO P_UTDMMR=2
---*;
NSEQNUMT=1*SEQNUMT; *---CONVERT TEEN ID SEQNUMT FROM CHARACTER TO
NUMERIC ---*;
run;

*=== SORT BY NEST VARIABLES: ESTIAP (STRATUM) NSEQNUMT (PRIMARY
SAMPLING UNIT) ===*;
proc sort data=sud_file;
by &strat. nseqnumt;
run;
proc crosstab data=sud_file filetype=sas design=wr;
weight &wt.;
nest &strat. nseqnumt;
subgroup &estiap. P_UTDMMR ;
levels 100 2 ;
tables &estiap. * P_UTDMMR ;
print nsum wsum rowper serow/style=nchs ;
rtitle "2+ MMR Estimates by Estimation Area";
rformat &estiap. estiapf.;
rformat P_UTDMMR p_utdmmrf.;
```

```
output rowper serow/filename=sud_est filetype=sas;
run;
proc print data=sud_est(where=(P_UTDMMR=1 and rowper ne .)) noobs
label;
format &estiap. estiapf.;
var &estiap. rowper serow ;
label
rowper='Percent 2+ MMR Up-to-Date'
serow='Standard Error'
;
title "2+ MMR Estimates by Estimation Area";
run;


**********************;
title1 'SUDSTATE.SAS';
*********************************************************************
*****
THIS PROGRAM WILL PRODUCE STATE ESTIMATES AND STANDARD ERRORS
FOR 2+ MMR VACCINATIONS (P_UTDMMR) USING SAS CALLABLE SUDAAN.
NOTE : THE STATE VARIABLE IS BASED ON STATE FIPS CODES. THERE ARE
NO STATES WITH FIPS CODES 3,7,14,43,52,57-77.
SUDAAN NOTES:
1. ALL VARIABLES USED MUST BE NUMERIC.
2. VARIABLES IN THE SUBGROUP STATEMENT MUST HAVE VALUES 1,2,..K
WHERE K IS THE NUMBER OF LEVELS FOR EACH VARIABLE.
3. DATA MUST BE SORTED ACCORDING TO THE SAMPLE DESIGN VARIABLES
(STRATUM AND PRIMARY SAMPLING UNIT), SPECIFIED IN THE
NEST STATEMENT.
*********************************************************************
*****;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;

*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;
%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION AREA VARIABLE TO USE ---*;
%let wt=provwt_d; * --- WEIGHT TO USE (PROVWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use PROVWTVI_D to include U.S.
Virgin Islands) ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimates) ---*;

PROC FORMAT;
/*
THE FOLLOWING FORMAT WILL BE USED FOR P_UTDMMR.
ORIGINAL VALUES OF P_UTDMMR ARE 1,0.
```

```
MUST BE CONVERTED TO 1,2 IN SUDAAN.
*/
value putmmrf
1='2+ MMR Up-to-Date'
2='Not 2+ MMR Up-to-Date'
;

/*
THE FOLLOWING FORMAT WILL BE USED FOR STATE.
*/
value statef
0 ='U.S. Total'
1 ='Alabama '
2 ='Alaska '
4 ='Arizona '
5 ='Arkansas '
6 ='California '
8 ='Colorado '
9 ='Connecticut '
10 ='Delaware '
11 ='District of Columbia'
12 ='Florida '
13 ='Georgia '
15 ='Hawaii '
16 ='Idaho '
17 ='Illinois '
18 ='Indiana '
19 ='Iowa '
20 ='Kansas '
21 ='Kentucky '
22 ='Louisiana '
23 ='Maine '
24 ='Maryland '
25 ='Massachusetts '
26 ='Michigan '
27 ='Minnesota '
28 ='Mississippi '
29 ='Missouri '
30 ='Montana '
31 ='Nebraska '
32 ='Nevada '
33 ='New Hampshire '
34 ='New Jersey '
35 ='New Mexico '
36 ='New York '
37 ='North Carolina '
38 ='North Dakota '
39 ='Ohio '
40 ='Oklahoma '
41 ='Oregon '
42 ='Pennsylvania '
```

```
44 ='Rhode Island '
45 ='South Carolina '
46 ='South Dakota '
47 ='Tennessee '
48 ='Texas '
49 ='Utah '
50 ='Vermont '
51 ='Virginia '
53 ='Washington '
54 ='West Virginia '
55 ='Wisconsin '
56 ='Wyoming '
78 ='U.S. Virgin Islands '
;
run;
data sud_file;
set &in_file. (keep= SEQNUMT P_UTDMMR &estiap. STATE &wt. &strat.);
if P_UTDMMR=0 then P_UTDMMR=2; *** CONVERT P_UTDMMR=0 TO P_UTDMMR=2
***;
NSEQNUMT=1*SEQNUMT; *** CONVERT TEEN ID SEQNUMT FROM CHARACTER TO
NUMERIC ***;
run;

*=== SORT BY NEST VARIABLES: ESTIAP (STRATUM) NSEQNUMT (PRIMARY
SAMPLING UNIT) ===*;
proc sort data=sud_file;
by &strat. nseqnumt;
run;

proc crosstab data=sud_file filetype=sas design=wr;
weight &wt.;
nest &strat. nseqnumt;
subgroup state P_UTDMMR ;
levels 78 2 ;
tables state * P_UTDMMR ;
print nsum wsum rowper serow/style=nchs ;
rtitle "2+ MMR ESTIMATES BY STATE";
rformat state statef.;
rformat P_UTDMMR p_utdmmrf.;
output rowper serow / filename=sud_est2 filetype=sas;
run;

*** EXCLUDE 3,7,14,43,52,57-77 THERE ARE NO STATES WITH THESE FIPS
CODES *** ;
proc print data=sud_est2(where=(P_UTDMMR=1 and state notin
(3,7,14,43,52) and not(57<=STATE<=77))) label noobs;
format state statef.;
var state rowper serow ;
label
rowper='Percent 2+ MMR Up-to-Date'
serow='Standard Error'
```

```
;
title "2+ MMR ESTIMATES BY STATE";
run;


**********************;
title1 'PROG_3.SAS';
*********************************************************************
*****
THIS PROGRAM WILL PRODUCE A TABLE OF HOUSEHOLD REPORT OF
THE TEEN HAVING ASTHMA BY STATE FOR ALL HOUSEHOLD COMPLETES USING
RDDWT.
THE PROGRAM USES SAS CALLABLE SUDAAN.
SUDAAN NOTES:
1. ALL VARIABLES USED MUST BE NUMERIC.
2. VARIABLES IN THE SUBGROUP STATEMENT MUST HAVE VALUES 1,2,..K
WHERE K IS THE NUMBER OF LEVELS FOR EACH VARIABLE.
3. DATA MUST BE SORTED ACCORDING TO THE SAMPLE DESIGN VARIABLES
(STRATUM AND PRIMARY SAMPLING UNIT), SPECIFIED IN THE
NEST STATEMENT.
*********************************************************************
*****;
options ps=78 ls=90 obs= max;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;

*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;
%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION VARIABLE TO USE ---*;
%let wt=rddwt_d; * --- WEIGHT TO USE (RDDWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use RDDWTVI_D to include U.S.
Virgin Islands) ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimation) ---*;

PROC FORMAT;
/*
THE FOLLOWING FORMAT WILL BE USED FOR ASTHMA.
*/
value asthmaf
1='Yes'
2='No'
;
/*
THE FOLLOWING FORMAT WILL BE USED FOR STATE.
*/
value statef
```

```
0 ='U.S. Total '
1 ='Alabama '
2 ='Alaska '
4 ='Arizona '
5 ='Arkansas '
6 ='California '
8 ='Colorado '
9 ='Connecticut '
10 ='Delaware '
11 ='District of Columbia'
12 ='Florida '
13 ='Georgia '
15 ='Hawaii '
16 ='Idaho '
17 ='Illinois '
18 ='Indiana '
19 ='Iowa '
20 ='Kansas '
21 ='Kentucky '
22 ='Louisiana '
23 ='Maine '
24 ='Maryland '
25 ='Massachusetts '
26 ='Michigan '
27 ='Minnesota '
28 ='Mississippi '
29 ='Missouri '
30 ='Montana '
31 ='Nebraska '
32 ='Nevada '
33 ='New Hampshire '
34 ='New Jersey '
35 ='New Mexico '
36 ='New York '
37 ='North Carolina '
38 ='North Dakota '
39 ='Ohio '
40 ='Oklahoma '
41 ='Oregon '
42 ='Pennsylvania '
44 ='Rhode Island '
45 ='South Carolina '
46 ='South Dakota '
47 ='Tennessee '
48 ='Texas '
49 ='Utah '
50 ='Vermont '
51 ='Virginia '
53 ='Washington '
54 ='West Virginia '
55 ='Wisconsin '
```

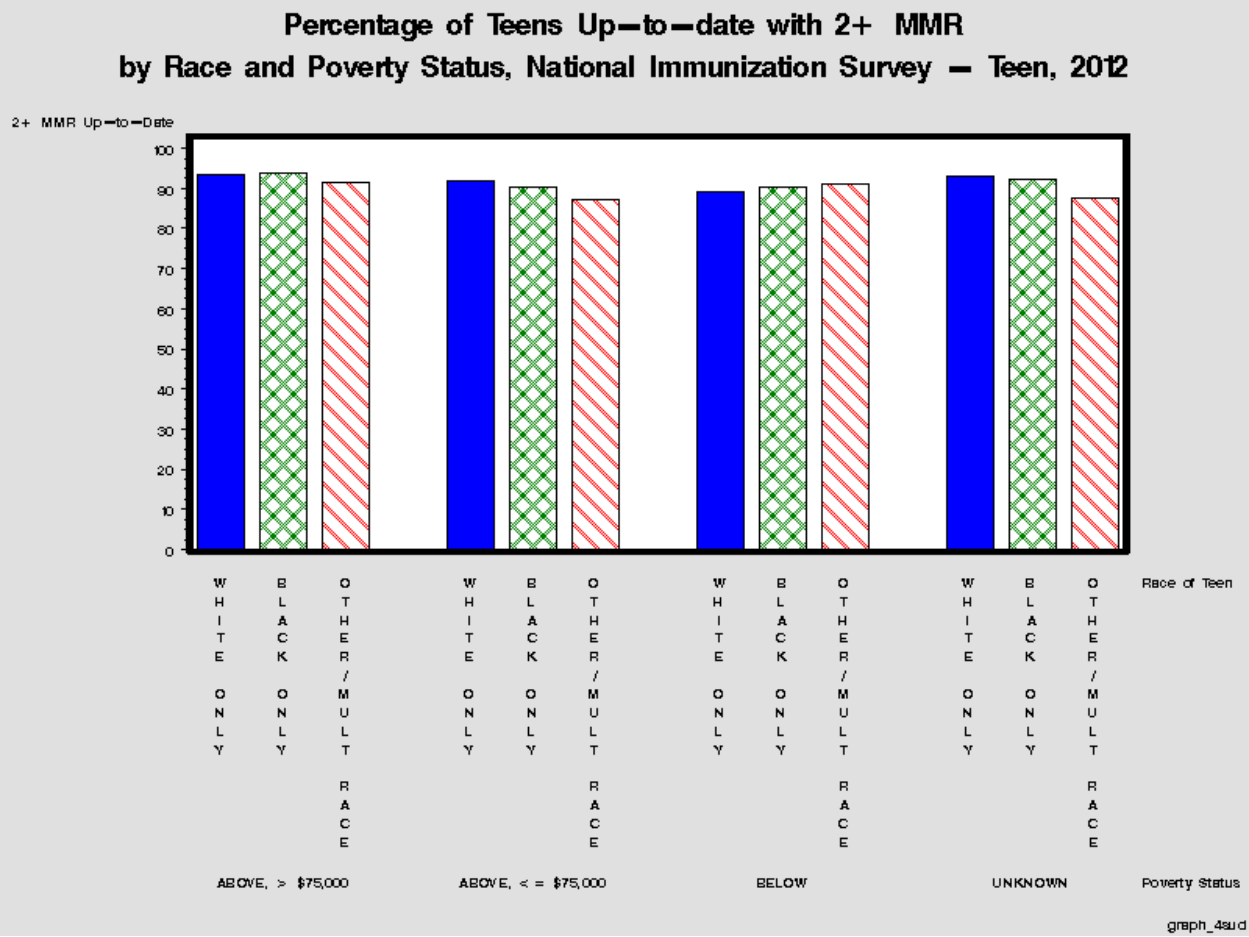
```
56 ='Wyoming '
78 ='U.S. Virgin Islands '
;
run;

data sud_file;
set &in_file. (keep= SEQNUMT &estiap. STATE ASTHMA &wt. &strat.);
where ASTHMA in (1,2); *** KEEP ONLY CASES WITH NON-MISSING VALUES
FOR ASTHMA ***;
NSEQNUMT=1*SEQNUMT; *** CONVERT TEEN ID SEQNUMT FROM CHARACTER TO
NUMERIC ***;
run;

*=== SORT BY NEST VARIABLES: ESTIAP (STRATUM) NSEQNUMT (PRIMARY
SAMPLING UNIT) ===*;
proc sort data=sud_file;
by &strat. NSEQNUMT;
run;

proc crosstab data=sud_file filetype=sas design=wr;
weight &wt.;
nest &strat. NSEQNUMT;
subgroup STATE ASTHMA ;
levels 78 2 ;
tables STATE * ASTHMA ;
print nsum wsum rowper serow/style=nchs ;
rtitle "ASTHMA ESTIMATES BY STATE";
rtitle "WEIGHT = &WT.";
rformat STATE statef.;
rformat ASTHMA asthmaf.;
output rowper serow / filename=sud_est3 filetype=sas;
run;

*** EXCLUDE 3,7,14,43,52,57-77 THERE ARE NO STATES WITH THESE FIPS
CODES *** ;
proc print data=sud_est3(where=(ASTHMA=1 and STATE notin
(3,7,14,43,52) and not(57<=STATE<=77))) label noobs;
format STATE statef.;
var STATE rowper serow ;
label
rowper='Percent ASTHMA = Yes'
serow='Standard Error'
;
title "HH REPORT OF TEEN HAVING ASTHMA BY STATE";
run;


**********************;
title1 'PROG_4.SAS';
**********************************************************************
*****
```

```
TABLE OF P_UTDMMR BY INCPOV1 BY RACE_K. SAVE % UTD
ESTIMATES (NOT S.E.'S) FOR USE IN THE PROGRAM CHART_4.
THIS PROGRAM WILL PRODUCE ESTIMATES USING SAS CALLABLE SUDAAN.
SUDAAN NOTES:
1. ALL VARIABLES USED MUST BE NUMERIC.
2. VARIABLES IN THE SUBGROUP STATEMENT MUST HAVE VALUES 1,2,..K
WHERE K IS THE NUMBER OF LEVELS FOR EACH VARIABLE.
3. DATA MUST BE SORTED ACCORDING TO THE SAMPLE DESIGN VARIABLES
(STRATUM AND PRIMARY SAMPLING UNIT), SPECIFIED IN THE
NEST STATEMENT.
*****************************************************************
*****;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;

*--- SPECIFY THE PATH FOR WHERE YOU WANT THE CHART OUTPUT TO GO ---
*;
libname out 'c:\nisteenpuf12';

%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION VARIABLE TO USE ---*;
%let wt=provwt_d; * --- WEIGHT TO USE (PROVWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use PROVWTVI_D to include U.S.
Virgin Islands) ---*;
%let qtr_lab=Q1/2012 - Q4/2012; *--- NIS-TEEN 4 QUARTER PERIOD ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimation) ---*;

PROC FORMAT;
/*
THE FOLLOWING FORMAT WILL BE USED FOR P_UTDMMR.
ORIGINAL VALUES OF P_UTDMMR ARE 1,0.
MUST BE CONVERTED TO 1,2 IN SUDAAN.
*/
value p_utdmmrf
1='2+ MMR Up-to-date'
2='Not 2+ MMR Up-to-date'
;
/*
THE FOLLOWING FORMAT WILL BE USED FOR RACE_K.
*/
VALUE RACE_KF
1 = "WHITE ONLY"
2 = "BLACK ONLY"
3 = "OTHER AND MULTIPLE RACE"
;
/*
THE FOLLOWING FORMAT WILL BE USED FOR INCPOV1.
```

```
*/
VALUE INCPVR2F
1 = "ABOVE, > $75,000"
2 = "ABOVE, <= $75,000"
3 = "BELOW"
4 = "UNKNOWN"
;
run;

data sud_file;
set &in_file. (keep= SEQNUMT P_UTDMMR &estiap. RACE_K INCPOV1 PDAT
&wt. &strat.);
NSEQNUMT=1*SEQNUMT; *** CONVERT TEEN ID SEQNUMT FROM CHARACTER TO
NUMERIC ***;
if P_UTDMMR=0 then P_UTDMMR=2; *** CONVERT P_UTDMMR=0 TO P_UTDMMR=2
***;
run;

*=== SORT BY NEST VARIABLES: ESTIAP (STRATUM) NSEQNUMT (PRIMARY
SAMPLING UNIT) ===*;
proc sort data=sud_file;
by &strat. NSEQNUMT;
run;

proc freq data=sud_file;
where PDAT=1;
tables P_UTDMMR INCPOV1 RACE_K;
title3 "Table 4A. &qtr_lab.: Unweighted Frequencies";
run;

proc crosstab data=sud_file filetype=sas design=wr;
weight &wt.;
nest &strat. NSEQNUMT;
subgroup INCPOV1 RACE_K P_UTDMMR ;
levels 4 3 2 ;
tables (INCPOV1 * RACE_K * P_UTDMMR) ;
print nsum wsum rowper="2+ MMR Up-to-Date (ROWPER)"
serow="Standard Error (SEROW)" /style=nchs ;
rtitle "Table 4B. &qtr_lab., Percent 2+ MMR Up-to-Date and Estimated
Standard Errors";
rtitle "WEIGHT = &WT.";
rformat P_UTDMMR p_utdmmrf.;
rformat INCPOV1 incpvr2f.;
rformat RACE_K race_kf.;
output rowper serow / filename=sud_est4 filetype=sas;
run;

data out.sud_est4;
set sud_est4 (where=(P_UTDMMR=1 and INCPOV1 > 0 and RACE_K > 0));
keep INCPOV1 RACE_K rowper serow;
label      rowper='2+ MMR Up-to-Date'
```

```
           serow='Standard Error';
format     rowper 5.2
           serow 5.2;
run;

proc print data=out.sud_est4 label;
format RACE_K race_kf.;
format INCPOV1 incpvr2f.;
title "& Table 4B. qtr_lab.: 2+ MMR ESTIMATES BY INCPOV1 BY RACE_K";
run;


**********************;
title1 'SAS_GRAPH_4.SAS';
*****************************************************************
*****
THIS PROGRAM BUILDS OFF OF THE PROGRAM SAS_PROG_4. IT PRODUCES A
CHART OF
P_UTDMMR BY INCPOV1 BY RACE_K. IT CREATES A BAR CHART IN SAS GRAPH
FOR
THE 4X3 = 12 CELLS. THE OUTPUT OF THE FOLLOWING EXAMPLE IS ATTACHED
AT THE
END.
*****************************************************************
*****;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;

%let out='c:\nisteenpuf12'; *--- SPECIFY THE PATH FOR WHERE YOU WANT
THE CHART OUTPUT TO GO ---*;

%let in_file=dd.sud_est4; *--- NAME OF SAS DATASET OUTPUT FROM
PROG_4 ---*;
%let qtr_lab=Q1/2012 - Q4/2012; *--- NIS-TEEN 4 QUARTER PERIOD ---*;

PROC FORMAT;
VALUE INCPVR2F
1 = "ABOVE, > $75,000"
2 = "ABOVE, <= $75,000"
3 = "BELOW"
4 = "UNKNOWN"
;
VALUE RACE_KF
1 = "WHITE ONLY"
2 = "BLACK ONLY"
3 = "OTHER/MULT RACE"
;
run;

data sud_est4;
```

```
set &in_file.;
format rowper 3.
RACE_K race_kf.
INCPOV1 incpvr2f.
;
label
RACE_K = 'Race of Teen'
INCPOV1 = 'Poverty Status'
;
filename odsout &out.;
ods listing close;
/* SET THE GRAPHICS ENVIRONMENT */
goptions reset=global gunit=pct border
ftext=swissb htitle=4 htext=1.5
device=gif
;
ods html body='graph_4_sud.html' path=odsout;
TITLE1 HEIGHT=3 "Percentage of Teens Up-to-date with 2+ MMR";
TITLE2 HEIGHT=3 "by Race and Poverty Status, National Immunization
Survey - Teen, 2012";
footnote j=r 'graph_4sud';
pattern1 value = solid color = blue;
pattern2 value = x3 color = green;
pattern3 value = l3 color = red;
pattern4 value = empty color = lib;
axis width = 3;
run;

proc gchart data=sud_est4;
vbar RACE_K
/frame
discrete
sumvar=rowper
group=incpov1
gspace = 5
gaxis = axis
raxis = axis
name = 'graph_4_sud'
patternid = midpoint
;
run;
quit;
ods html close;
ods listing;
ods html close;
ods listing;
```


Percentage of Teens Up−to−date with 2+ MMR
by Race and Poverty Status, National Immunization Survey − Teen, 2012
2+ MMR Up−to−Date
100
90
80
70
60
50
40
30
20
10
0
WHITE ONLY
BLACK ONLY
OTHER/MULT RACE
ABOVE, > $75,000
ABOVE, < = $75,000
BELOW
UNKNOWN
Race of Teen
Poverty Status
graph_4sud

II. SAS

```
**********************;
title1 'SAS_IAP.SAS';
*********************************************************************
**
THIS PROGRAM WILL PRODUCE ESTIMATION AREA ESTIMATES AND STANDARD
ERRORS
FOR 2+ MMR VACCINATIONS (P_UTDMMR) USING SAS.
*********************************************************************
**;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;

*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;
%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION AREA VARIABLE TO USE ---*;
%let wt=provwt_d; * --- WEIGHT TO USE (PROVWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use PROVWTVI_D to include U.S.
Virgin Islands) ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimation) ---*;

proc format;
value p_utdmmrf
0='Not 2+ MMR Up-To-Date'
1='2+ MMR Up-To-Date';

value estiapf
. = "Missing"
0 = "US Total"
1 = "CT"
2 = "MA"
4 = "ME"
5 = "NH"
6 = "RI"
7 = "VT"
8 = "NJ"
10 = "NY-Rest of State"
11 = "NY-City of New York"
12 = "DC"
13 = "DE"
14 = "MD"
16 = "PA-Rest of State"
17 = "PA-Philadelphia County"
```

```
18 = "VA"
19 = "WV"
20 = "AL"
22 = "FL"
25 = "GA"
27 = "KY"
28 = "MS"
29 = "NC"
30 = "SC"
31 = "TN"
34 = "IL-Rest of State"
35 = "IL-City of Chicago"
36 = "IN"
38 = "MI"
40 = "MN"
41 = "OH"
44 = "WI"
46 = "AR"
47 = "LA"
49 = "NM"
50 = "OK"
51 = "TX-Rest of State"
54 = "TX-City of Houston"
55 = "TX-Bexar County"
56 = "IA"
57 = "KS"
58 = "MO"
59 = "NE"
60 = "CO"
61 = "MT"
62 = "ND"
63 = "SD"
64 = "UT"
65 = "WY"
66 = "AZ"
68 = "CA"
72 = "HI"
73 = "NV"
74 = "AK"
75 = "ID"
76 = "OR"
77 = "WA"
95 = "U.S. Virgin Islands"
;
run;

data sas_file;
set &in_file. (keep= SEQNUMT P_UTDMMR &estiap. &wt. &strat.);
run;

proc sort data = sas_file;
```

```
by &estiap.;
run;

title1 '2+ MMR Estimates by Estimation Area';
ods output Statistics=sas_est;
proc surveymeans data = sas_file nobs sum mean stderr;
stratum &strat.;
cluster SEQNUMT;
weight &wt.;
class P_UTDMMR;
var P_UTDMMR;
by &estiap.;
format P_UTDMMR p_utdmmrf.;
format &estiap. estiapf.;
run;

data sas_est;
set sas_est;
mean = mean*100; *CONVERT TO PERCENT ESTIMATES;
stderr = stderr*100;
run;

proc print data=sas_est(where=(varlevel='2+ MMR Up-To-Date')) noobs
label;
format &estiap. estiapf.;
format mean stderr 5.2;
var &estiap. mean stderr;
label
mean='Percent 2+ MMR Up-to-Date'
stderr='Standard Error';
title "2+ MMR Estimates by Estimation Area";
run;


**********;
title1 'SASSTATE.SAS';
*****************************************************************
**
THIS PROGRAM WILL PRODUCE STATE ESTIMATES AND STANDARD ERRORS
FOR 2+ MMR VACCINATIONS (P_UTDMMR) USING SAS.
NOTE : THE STATE VARIABLE IS BASED ON STATE FIPS CODES. THERE ARE
NO STATES WITH FIPS CODES 3,7,14,43,52,57-77.
*****************************************************************
**;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;
*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;
```

```
%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION AREA VARIABLE TO USE ---*;
%let wt=provwt_d; * --- WEIGHT TO USE (PROVWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use PROVWTVI_D to include U.S.
Virgin Islands) ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimation) ---*;

proc format;
value p_utdmmrf
0='Not 2+ MMR Up-To-Date'
1='2+ MMR Up-To-Date';

value statef
. ="Missing"
0 ='U.S. Total '
1 ='Alabama '
2 ='Alaska '
4 ='Arizona '
5 ='Arkansas '
6 ='California '
8 ='Colorado '
9 ='Connecticut '
10 ='Delaware '
11 ='District of Columbia'
12 ='Florida '
13 ='Georgia '
15 ='Hawaii '
16 ='Idaho '
17 ='Illinois '
18 ='Indiana '
19 ='Iowa '
20 ='Kansas '
21 ='Kentucky '
22 ='Louisiana '
23 ='Maine '
24 ='Maryland '
25 ='Massachusetts '
26 ='Michigan '
27 ='Minnesota '
28 ='Mississippi '
29 ='Missouri '
30 ='Montana '
31 ='Nebraska '
32 ='Nevada '
33 ='New Hampshire '
34 ='New Jersey '
35 ='New Mexico '
36 ='New York '
37 ='North Carolina '
```

```
38 ='North Dakota '
39 ='Ohio '
40 ='Oklahoma '
41 ='Oregon '
42 ='Pennsylvania '
44 ='Rhode Island '
45 ='South Carolina '
46 ='South Dakota '
47 ='Tennessee '
48 ='Texas '
49 ='Utah '
50 ='Vermont '
51 ='Virginia '
53 ='Washington '
54 ='West Virginia '
55 ='Wisconsin '
56 ='Wyoming '
78 ='U.S. Virgin Islands '
;
run;

data sas_file;
set &in_file. (keep= SEQNUMT P_UTDMMR &estiap. STATE &wt. &strat.);
run;

proc sort data = sas_file;
by state;
run;

title1 '2+ MMR ESTIMATES BY STATE';
ods output Statistics=sas_est2;
proc surveymeans data = sas_file nobs sum mean stderr;
stratum &strat.;
cluster SEQNUMT;
weight &wt.;
class P_UTDMMR;
var P_UTDMMR;
by STATE;
format P_UTDMMR p_utdmmrf.;
format STATE statef.;
run;

data sas_est2;
set sas_est2;
mean = mean*100; *CONVERT TO PERCENT ESTIMATES;
stderr = stderr*100;
run;

proc print data=sas_est2(where=(varlevel='2+ MMR Up-To-Date')) noobs
label;
format STATE statef.;
```

```
format mean stderr 5.2;
var STATE mean stderr;
label
mean='Percent 2+ MMR Up-to-Date'
stderr='Standard Error';
title "2+ MMR ESTIMATES BY STATE";
run;


**********************;
title1 'SAS_PROG_3.SAS';
*********************************************************************
*****
THIS PROGRAM WILL PRODUCE A TABLE OF HOUSEHOLD REPORT OF
THE TEEN HAVING ASTHMA BY STATE FOR ALL HOUSEHOLD
COMPLETES USING RDDWT. THE PROGRAM USES SAS.
*********************************************************************
*****;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;
*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;

%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION VARIABLE TO USE ---*;
%let wt=rddwt_d; * --- WEIGHT TO USE (RDDWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use RDDWTVI_D to include U.S.
Virgin Islands) ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimation) ---*;

PROC FORMAT;
value asthmaf
1='Yes'
2='No'
;
value statef
0 ='U.S. Total '
1 ='Alabama '
2 ='Alaska '
4 ='Arizona '
5 ='Arkansas '
6 ='California '
8 ='Colorado '
9 ='Connecticut '
10 ='Delaware '
11 ='District of Columbia'
12 ='Florida '
```

```
13 ='Georgia '
15 ='Hawaii '
16 ='Idaho '
17 ='Illinois '
18 ='Indiana '
19 ='Iowa '
20 ='Kansas '
21 ='Kentucky '
22 ='Louisiana '
23 ='Maine '
24 ='Maryland '
25 ='Massachusetts '
26 ='Michigan '
27 ='Minnesota '
28 ='Mississippi '
29 ='Missouri '
30 ='Montana '
31 ='Nebraska '
32 ='Nevada '
33 ='New Hampshire '
34 ='New Jersey '
35 ='New Mexico '
36 ='New York '
37 ='North Carolina '
38 ='North Dakota '
39 ='Ohio '
40 ='Oklahoma '
41 ='Oregon '
42 ='Pennsylvania '
44 ='Rhode Island '
45 ='South Carolina '
46 ='South Dakota '
47 ='Tennessee '
48 ='Texas '
49 ='Utah '
50 ='Vermont '
51 ='Virginia '
53 ='Washington '
54 ='West Virginia '
55 ='Wisconsin '
56 ='Wyoming '
78 ='U.S. Virgin Islands '
;
run;

data sas_file;
set &in_file. (keep= SEQNUMT &estiap. STATE ASTHMA &wt. &strat.);
where ASTHMA in (1,2); *** KEEP ONLY CASES WITH NON-MISSING VALUES
FOR ASTHMA ***;
run;
```

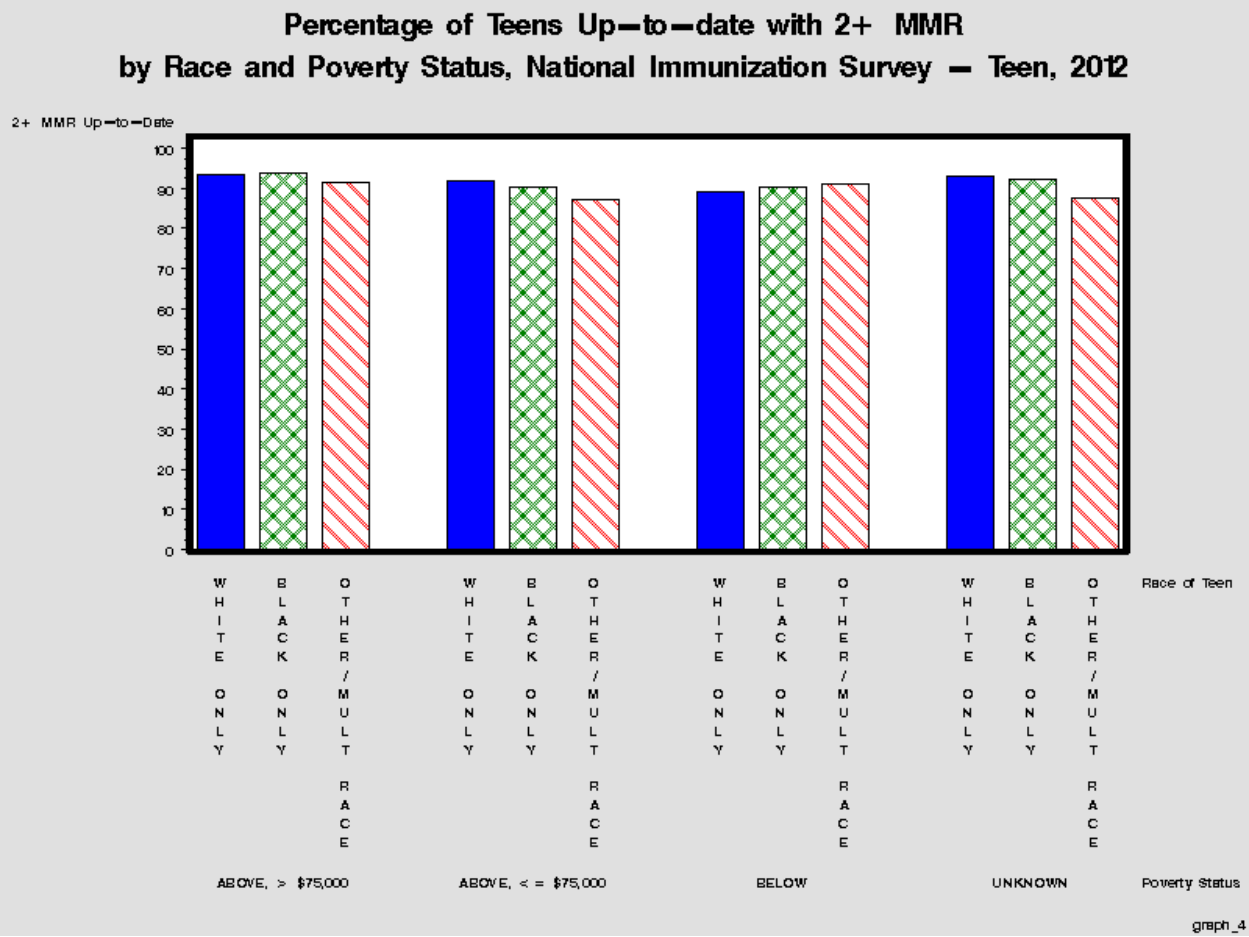
```
proc sort data = sas_file;
by state;
run;

title1 'ASTHMA ESTIMATES BY STATE';
ods output Statistics=sas_est3;
proc surveymeans data = sas_file nobs sum mean stderr;
stratum &strat.;
cluster SEQNUMT;
weight &wt.;
class ASTHMA;
var ASTHMA;
by STATE;
format ASTHMA asthmaf.;
format state statef.;
run;

data sas_est3;
set sas_est3;
mean = mean*100; *CONVERT TO PERCENT ESTIMATES;
stderr = stderr*100;
run;

proc print data=sas_est3(where=(varlevel='Yes')) noobs label;
format STATE statef.;
format mean stderr 5.2;
var STATE mean stderr;
label
mean='Percent ASTHMA = Yes'
stderr='Standard Error';
title "HH REPORT OF TEEN HAVING ASTHMA BY STATE";
run;


**********************;
title1 'SAS_PROG_4.SAS';
*****************************************************************
*****
TABLE OF P_UTDMMR BY INCPOV1 BY RACE_K. SAVE % UTD
ESTIMATES (NOT S.E.'S) FOR USE IN THE PROGRAM SAS_GRAPH_4.
THIS PROGRAM WILL PRODUCE ESTIMATES USING SAS.
*****************************************************************
*****;
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nisteenpuf12'; *--- IF DATASET WAS CREATED WITH
FORMATS STORED ---*;
*--- PERMANENTLY SPECIFY PATH TO LIBRARY ---*;
*--- OTHERWISE COMMENT THIS STATEMENT OUT ---*;
```

```
libname out 'c:\nisteenpuf12'; *--- SPECIFY THE PATH FOR WHERE YOU
WANT THE CHART OUTPUT TO GO ---*;

%let in_file=dd.nisteenpuf12; *--- NAME OF SAS DATASET ---*;
%let estiap=estiapt12; * --- ESTIMATION VARIABLE TO USE ---*;
%let wt=provwt_d; * --- WEIGHT TO USE (PROVWT_D is the dual-frame
weight excluding U.S. Virgin Islands. Use PROVWTVI_D to include U.S.
Virgin Islands) ---*;
%let strat=stratum; * --- STRATUM VARIABLE TO USE FOR VARIANCE
ESTIMATION (Use STRATUM for all estimation) ---*;
%let qtr_lab=Q1/2012 - Q4/2012; *--- NIS-TEEN 4 QUARTER PERIOD ---*;

PROC FORMAT;
value p_utdmmrf
0='Not 2+ MMR Up-To-Date'
1='2+ MMR Up-To-Date'
;
VALUE RACE_KF
1 = "WHITE ONLY"
2 = "BLACK ONLY"
3 = "OTHER AND MULTIPLE RACE"
;
VALUE INCPVR2F
1 = "ABOVE, > $75,000"
2 = "ABOVE, <= $75,000"
3 = "BELOW"
4 = "UNKNOWN"
;
run;

data sas_file;
set &in_file. (keep= SEQNUMT P_UTDMMR &estiap. RACE_K INCPOV1 &wt.
&strat. PDAT);
run;

proc sort data = sas_file;
by incpov1 race_k;
run;

proc freq;
where PDAT=1;
tables P_UTDMMR INCPOV1 RACE_K;
title1 "Table 4A. &qtr_lab.: Unweighted Frequencies";
run;

proc surveymeans data = sas_file nobs sum mean stderr;
ods output Domain=sas_est4;
stratum &strat.;
cluster SEQNUMT;
weight &wt.;
class P_UTDMMR;
```

```
var P_UTDMMR;
domain INCPOV1*RACE_K;
format P_UTDMMR p_utdmmrf.;
run;

data sas_est4;
set sas_est4 (rename=(INCPOV1=INCPOV1_char RACE_K=RACE_K_char));

*CONVERT TO PERCENT ESTIMATES;
mean = mean*100;
stderr = stderr*100;

*CONVERT BACK TO NUMERIC;
INCPOV1=1*INCPOV1_char;
RACE_K=1*RACE_K_char;

run;

proc print data=sas_est4(where=(varlevel='2+ MMR Up-To-Date')) noobs
label;
format INCPOV1 incpvr2f.;
format RACE_K race_kf.;
format mean stderr 5.2;
var INCPOV1 RACE_K mean stderr;
label
mean='2+ MMR Up-To-Date'
stderr='Standard Error';
title1 "Table 4B. &qtr_lab.: 2+ MMR ESTIMATES BY INCPOV1 BY RACE_K";
run;

data out.sas_est4;
set sas_est4(where=(varlevel='2+ MMR Up-To-Date'));
keep INCPOV1 RACE_K mean;
label mean='2+ MMR Up-to-Date';
format mean 5.2;
run;


**********************;
title1 'SAS_GRAPH_4.SAS';
*******************************************************************
*****
THIS PROGRAM BUILDS OFF OF THE PROGRAM SAS_PROG_4. IT PRODUCES A
CHART OF
P_UTDMMR BY INCPOV1 BY RACE_K. IT CREATES A BAR CHART IN SAS GRAPH
FOR
THE 4X3 = 12 CELLS. THE OUTPUT OF THE FOLLOWING EXAMPLE IS ATTACHED
AT THE
END.
*******************************************************************
*****;
```

```
options ps=78 ls=90 obs= max;

libname dd 'c:\nisteenpuf12'; *--- SPECIFY PATH TO SAS DATASET ---*;

%let out='c:\nisteenpuf12'; *--- SPECIFY THE PATH FOR WHERE YOU WANT
THE CHART OUTPUT TO GO ---*;

%let in_file=dd.sas_est4; *--- NAME OF SAS DATASET OUTPUT FROM
PROG_4 ---*;
%let qtr_lab=Q1/2012 - Q4/2012; *--- NIS-TEEN 4 QUARTER PERIOD ---*;

PROC FORMAT;
VALUE INCPVR2F
1 = "ABOVE, > $75,000"
2 = "ABOVE, <= $75,000"
3 = "BELOW"
4 = "UNKNOWN"
;
VALUE RACE_KF
1 = "WHITE ONLY"
2 = "BLACK ONLY"
3 = "OTHER/MULT RACE"
;
run;

data sas_est4;
set &in_file.;
format mean 3.
RACE_K race_kf.
INCPOV1 incpvr2f.
;
label
RACE_K = 'Race of Teen'
INCPOV1 = 'Poverty Status'
;
filename odsout &out.;
ods listing close;
/* SET THE GRAPHICS ENVIRONMENT */
goptions reset=global gunit=pct border
ftext=swissb htitle=4 htext=1.5
device=gif
;
ods html body='graph_4.html' path=odsout;
TITLE1 HEIGHT=3 "Percentage of Teens Up-to-date with 2+ MMR";
TITLE2 HEIGHT=3 "by Race and Poverty Status, National Immunization
Survey - Teen, 2012";
footnote j=r 'graph_4';
pattern1 value = solid color = blue;
pattern2 value = x3 color = green;
pattern3 value = l3 color = red;
pattern4 value = empty color = lib;
```

```
axis width = 3;
run;

proc gchart data=sas_est4;
vbar RACE_K
/frame
discrete
sumvar=mean
group=INCPOV1
gspace = 5
gaxis = axis
raxis = axis
name = 'graph_4'
patternid = midpoint
;
run;
quit;
ods html close;
ods listing;
```


Percentage of Teens Up-to-date with 2+ MMR
by Race and Poverty Status, National Immunization Survey - Teen, 2012
2+ MMR Up-to-Date
100
90
80
70
60
50
40
30
20
10
0
WHITE ONLY
BLACK ONLY
OTHER/MULT RACE
ABOVE, > $75,000
ABOVE, < = $75,000
BELOW
UNKNOWN
Race of Teen
Poverty Status
graph_4

III. ‘R’

```
#####################
title <- "R_IAP.R"
#########################################################################
#THIS PROGRAM WILL PRODUCE ESTIMATION AREA ESTIMATES AND STANDARD ERRORS
#FOR 2+ MMR VACCINATIONS (P_UTDMMR) USING R.
#
#R NOTES:
#1. R IS CASE SENSITIVE.
#2. A FILE PATH IS SEPERATED BY SLASH(/)
#########################################################################
library(survey) #TO USE svydesign(), svymean(), and svyby()
library(Hmisc) #TO USE prn()

dd <- "c:/nisteenpuf12" #"path-to-dataset"

#--- NAME OF R DATASET ---#
in.file <- paste(dd,"/NISTEENPUF12.RData",sep="")
#---READ R DATASET---#
load(in.file)
#---FORMAT---#
UTDMMRlevels=c(0,1)
UTDMMRlabels=c("NOT 2+ MMR UTD", "2+ MMR UTD")
ESTIAPlevels=c(1, 10, 11, 12, 13, 14, 16, 17, 18, 19, 2, 20, 22, 25, 27, 28, 29, 30, 31, 34, 35, 36, 38, 4, 40, 41, 44, 46, 47,
49, 5, 50, 51, 54, 55, 56, 57, 58, 59, 6, 60, 61, 62, 63, 64, 65, 66, 68, 7, 72, 73, 74, 75, 76, 77, 8, 95)
ESTIAPlabels=c("CT", "NY-Rest of State", "NY-City of New York", "DC", "DE", "MD", "PA-Rest of State", "PA-
Philadelphia County", "VA", "WV", "MA", "AL", "FL", "GA", "KY", "MS", "NC", "SC", "TN", "IL-Rest of State", "IL-
City of Chicago", "IN", "MI", "ME", "MN", "OH", "WI", "AR", "LA", "NM", "NH", "OK", "TX-Rest of State", "TX-City
of Houston", "TX-Bexar County", "IA", "KS", "MO", "NE", "RI", "CO", "MT", "ND", "SD", "UT", "WY", "AZ", "CA",
"VT", "HI", "NV", "AK", "ID", "OR", "WA", "NJ", "U.S. Virgin Islands")

#---PROVWT_D WILL BE USED AS A WEIGHT (PROVWT_D IS THE DUAL-FRAME WEIGHT EXCLUDING U.S.
VIRGIN ISLANDS; USE PROVWTVI_D TO INCLUDE U.S. VIRGIN ISLANDS---#
#---STRATUM WILL BE USED AS A STRATUM VARIABLE FOR VARIANCE ESTIMATION (USE STRATUM FOR
ALL ESTIMATION ---#
R_FILE <- subset(NISTEENPUF12, select=c(SEQNUMT, P_UTDMMR, ESTIAPT12, PROVWT_D, STRATUM))
names(R_FILE) <- c("SEQNUMT", "P_UTDMMR", "ESTIAP", "WT", "STRATUM")
R_FILE <- na.omit(R_FILE)
#---ASSIGN LABELS---#
R_FILE$P_UTDMMR <- factor(R_FILE$P_UTDMMR, levels=UTDMMRlevels, labels=UTDMMRlabels)
R_FILE$ESTIAP <- factor(R_FILE$ESTIAP, levels=ESTIAPlevels, labels=ESTIAPlabels)

#---SPECIFY A SAMPLING DESIGN---#
svydsg <- svydesign(id=~SEQNUMT, strata=~STRATUM, weights=~WT, data=R_FILE)

#---U.S. TOTAL ESTIMATES AND STANDARD ERRORS---#
r_nation <- svymean(~P_UTDMMR, svydsg)
PERCENT_UTD <- round(r_nation*100,2) #CONVERT INTO PERCENT ESTIMATES(MEAN)
SE_UTD <- round(SE(r_nation)*100,2) #CONVERT INTO PERCENT ESTIMATES(SE)
r_nation_est <- cbind(PERCENT_UTD, SE_UTD)
title <- "PERCENT 2+ MMR ESTIMATES AT A NATIONWIDE LEVEL"
prn(r_nation_est, title)

#---ESTIMATION AREA ESTIMATES AND STANDARD ERRORS---#
r_est <- svyby(~P_UTDMMR, ~ESTIAP, svydsg, svymean)
r_est[,-c(1)] <- round(r_est[,-c(1)]*100,2) #CONVERT INTO PERCENT ESTIMATES
r_est <- subset(r_est, select=c(1,3,5))
```

```
#SELECT ESTIMATES FOR UP-TO-DATE CASES
names(r_est) <- c("ESTIMATION AREA", "PERCENT 2+ MMR UTD", "STANDARD ERROR UTD")
title <- "PERCENT 2+ MMR ESTIMATES BY ESTIMATION AREA"
prn(r_est, title)


######################
title <- "R_STATE.R"
#############################################################################
#THIS PROGRAM WILL PRODUCE STATE ESTIMATES AND STANDARD ERRORS
#FOR 2+ MMR VACCINATIONS (P_UTDMMR) USING R.
#
#NOTE : THE STATE VARIABLE IS BASED ON STATE FIPS CODES. THERE ARE
#NO STATES WITH FIPS CODES 3,7,14,43,52,57-77.
#
#R NOTES:
#1. R IS CASE SENSITIVE.
#2. A FILE PATH IS SEPERATED BY SLASH(/)
#############################################################################
library(survey) #TO USE svydesign(), svymean(), and svyby()
library(Hmisc) #TO USE prn()

dd <- "c:/nisteenpuf12" #"path-to-data"

#--- NAME OF R DATASET ---#
in.file <- paste(dd,"/NISTEENPUF12.RData",sep="")
#---READ R DATASET---#
load(in.file)
#---FORMAT---#
UTDMMRlevels=c(0,1)
UTDMMRlabels=c("NOT 2+ MMR UTD", "2+ MMR UTD")
STATElevels=c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,
18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35,
36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53,
54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71,
72, 73, 74, 75, 76, 77, 78)
STATElabels=c(
"ALABAMA",
"ALASKA",
" ",
"ARIZONA",
"ARKANSAS",
"CALIFORNIA",
" ",
"COLORADO",
"CONNECTICUT",
"DELAWARE",
"DISTRICT OF COLUMBIA",
"FLORIDA",
"GEORGIA",
" ",
"HAWAII",
"IDAHO",
"ILLINOIS",
"INDIANA",
"IOWA",
"KANSAS",
"KENTUCKY",
"LOUISIANA",
"MAINE",
"MARYLAND",
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"MASSACHUSETTS",
"MICHIGAN",
"MINNESOTA",
"MISSISSIPPI",
"MISSOURI",
"MONTANA",
"NEBRASKA",
"NEVADA",
"NEW HAMPSHIRE",
"NEW JERSEY",
"NEW MEXICO",
"NEW YORK",
"NORTH CAROLINA",
"NORTH DAKOTA",
"OHIO",
"OKLAHOMA",
"OREGON",
"PENNSYLVANIA",
" ",
"RHODE ISLAND",
"SOUTH CAROLINA",
"SOUTH DAKOTA",
"TENNESSEE",
"TEXAS",
"UTAH",
"VERMONT",
"VIRGINIA",
" ",
"WASHINGTON",
"WEST VIRGINIA",
"WISCONSIN",
"WYOMING",
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" ",
"U.S. VIRGIN ISLANDS"
)
#--- PROVWT_D WILL BE USED AS A WEIGHT (PROVWT_D IS THE DUAL-FRAME WEIGHT EXCLUDING U.S.
VIRGIN ISLANDS; USE PROVWTVI_D TO INCLUDE U.S. VIRGIN ISLANDS ---#
#---STRATUM WILL BE USED AS A STRATUM VARIABLE FOR VARIANCE ESTIMATION (USE STRATUM FOR
ALL ESTIMATION ---#
R_FILE <- subset(NISTEENPUF12, select=c(SEQNUMT, P_UTDMMR, ESTIAPT12, STATE, PROVWT_D,
STRATUM))
```

```
names(R_FILE) <- c("SEQNUMT", "P_UTDMMR", "ESTIAP", "STATE", "WT", "STRATUM")
R_FILE <- na.omit(R_FILE)
#---ASSIGN LABELS---#
R_FILE$P_UTDMMR <- factor(R_FILE$P_UTDMMR, levels=UTDMMRlevels, labels=UTDMMRlabels)
R_FILE$STATE <- factor(R_FILE$STATE, levels=STATElevels,
labels=STATElabels)
#---SPECIFY A SAMPLING DESIGN---#
svydsg <- svydesign(id=~SEQNUMT, strata=~STRATUM, weights=~WT, data=R_FILE)
#---STATE ESTIMATES AND STANDARD ERRORS---#
r_est2 <- svyby(~P_UTDMMR, ~STATE, svydsg, svymean)
r_est2[,-c(1)] <- round(r_est2[,-c(1)]*100,2) #CONVERT INTO PERCENT ESTIMATES
r_est2 <- subset(r_est2, select=c(1,3,5)) #SELECT ESTIMATES FOR UP-TO-DATE CASES
names(r_est2) <- c("STATE", "PERCENT 2+ MMR UTD", "STANDARD ERROR UTD")
prn(r_est2, '2+ MMR ESTIMATES BY STATE')


######################
title <- "R_PROG_3.R"
#########################################################################
#THIS PROGRAM WILL PRODUCE A TABLE OF TEEN HAVING ASTHMA BY STATE FOR
#ALL HOUSEHOLD COMPLETES USING RDDWT. THE PROGRAM USES R.
#
#R NOTES:
#1. R IS CASE SENSITIVE.
#2. A FILE PATH IS SEPERATED BY SLASH(/)
#########################################################################
library(survey) #TO USE svydesign(), svymean(), and svyby()
library(Hmisc) #TO USE prn()
library(prettyR) #TO USE freq()

dd <- "c:/nisteenpuf12" #"path-to-dataset"

#--- NAME OF R DATASET ---#
in.file <- paste(dd,"/NISTEENPUF12.RData",sep="")
#---READ R DATASET---#
load(in.file)
#---FORMAT---#
ASTHMAlevels=c(1,2,77,99)
ASTHMAlabels=c("YES", "NO", "DON'T KNOW", "REFUSED")
STATElevels=c(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,
18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35,
36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53,
54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71,
72, 73, 74, 75, 76, 77, 78)
STATElabels=c(
"ALABAMA",
"ALASKA",
" ",
"ARIZONA",
"ARKANSAS",
"CALIFORNIA",
" ",
"COLORADO",
"CONNECTICUT",
"DELAWARE",
"DISTRICT OF COLUMBIA",
"FLORIDA",
"GEORGIA",
" ",
"HAWAII",
"IDAHO",
```

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"ILLINOIS",
"INDIANA",
"IOWA",
"KANSAS",
"KENTUCKY",
"LOUISIANA",
"MAINE",
"MARYLAND",
"MASSACHUSETTS",
"MICHIGAN",
"MINNESOTA",
"MISSISSIPPI",
"MISSOURI",
"MONTANA",
"NEBRASKA",
"NEVADA",
"NEW HAMPSHIRE",
"NEW JERSEY",
"NEW MEXICO",
"NEW YORK",
"NORTH CAROLINA",
"NORTH DAKOTA",
"OHIO",
"OKLAHOMA",
"OREGON",
"PENNSYLVANIA",
" ",
"RHODE ISLAND",
"SOUTH CAROLINA",
"SOUTH DAKOTA",
"TENNESSEE",
"TEXAS",
"UTAH",
"VERMONT",
"VIRGINIA",
" ",
"WASHINGTON",
"WEST VIRGINIA",
"WISCONSIN",
"WYOMING",
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```
"U.S. VIRGIN ISLANDS"
)

#--- RDDWT_D WILL BE USED AS A WEIGHT (RDDWT_D IS THE DUAL-FRAME WEIGHT EXCLUDING U.S.
VIRGIN ISLANDS; USE RDDWTVI_D TO INCLUDE U.S. VIRGIN ISLANDS ---#
#---STRATUM WILL BE USED AS A STRATUM VARIABLE FOR VARIANCE ESTIMATION (USE STRATUM FOR
ALL ESTIMATION ---#
R_FILE <- subset(NISTEENPUF12, select=c(SEQNUMT, ESTIAPT12, STATE, ASTHMA, RDDWT_D, STRATUM))
names(R_FILE) <- c("SEQNUMT", "ESTIAP", "STATE", "ASTHMA", "WT", "STRATUM")

#LIMIT FILE TO CASES WITH NON-MISSING VALUES OF ASTHMA
R_FILE <- subset(R_FILE, ASTHMA %in% c(1,2))

#---ASSIGN LABELS---#
R_FILE$ASTHMA <- factor(R_FILE$ASTHMA, levels=ASTHMAlevels, labels=ASTHMAlabels)
R_FILE$STATE <- factor(R_FILE$STATE, levels=STATElevels, labels=STATElabels)
R_FILE <- na.omit(R_FILE)
summary(R_FILE$ASTHMA)

#---SPECIFY A SAMPLING DESIGN---#
svydsg <- svydesign(id=~SEQNUMT, strata=~STRATUM, weights=~WT, data=R_FILE)

#---U.S. TOTAL ESTIMATES AND STANDARD ERRORS---#
r_nation <- svymean(~ASTHMA, svydsg)
PERCENT_UTD <- round(r_nation*100,2) #CONVERT INTO PERCENT ESTIMATES(MEAN)
SE_UTD <- round(SE(r_nation)*100,2) #CONVERT INTO PERCENT ESTIMATES(SE)
r_nation_est3 <- cbind(PERCENT_UTD, SE_UTD)
prn(r_nation_est3, "PERCENT ASTHMA = YES ESTIMATES AT A NATIONWIDE LEVEL\n")

#---ASTHMA = YES ESTIMATES BY STATE---#
r_est3 <- svyby(~ASTHMA, ~STATE, svydsg, svymean)
r_est3[,-c(1)] <- round(r_est3[,-c(1)]*100,2) #CONVERT INTO PERCENT ESTIMATES
r_est3 <- subset(r_est3, select=c(1,2,6)) #SELECT ESTIMATES FOR ASTHMA=YES
names(r_est3) <- c("STATE", "PERCENT ASTHMA=YES", "STANDARD ERROR ASTHMA=Y")
prn(r_est3, 'PERCENT ASTHMA ESTIMATES BY STATE')


######################
title <- "PROG_4.R"
#############################################################################
#TABLE OF P_UTDMMR BY INCPOV1 BY RACE_K. SAVE % UTD
#ESTIMATES (NOT S.E.'S) FOR USE IN THE PROGRAM GRAPH_4.
#
#THIS PROGRAM WILL PRODUCE ESTIMATES USING R.
#
#R NOTES:
#1. R IS CASE SENSITIVE.
#2. A FILE PATH IS SEPERATED BY SLASH(/)
#############################################################################
library(survey) #TO USE svydesign(), svymean(), and svyby()
library(Hmisc) #TO USE prn()

dd <- "c:/nisteenpuf12" #"path-to-dataset"

out <-"c:/nisteenpuf12" #"path where output will go"

#--- NAME OF R DATASET ---#
in.file <- paste(dd,"/NISTEENPUF12.RData",sep="")
#---READ R DATASET---#
load(in.file)
#---FORMAT---#
```

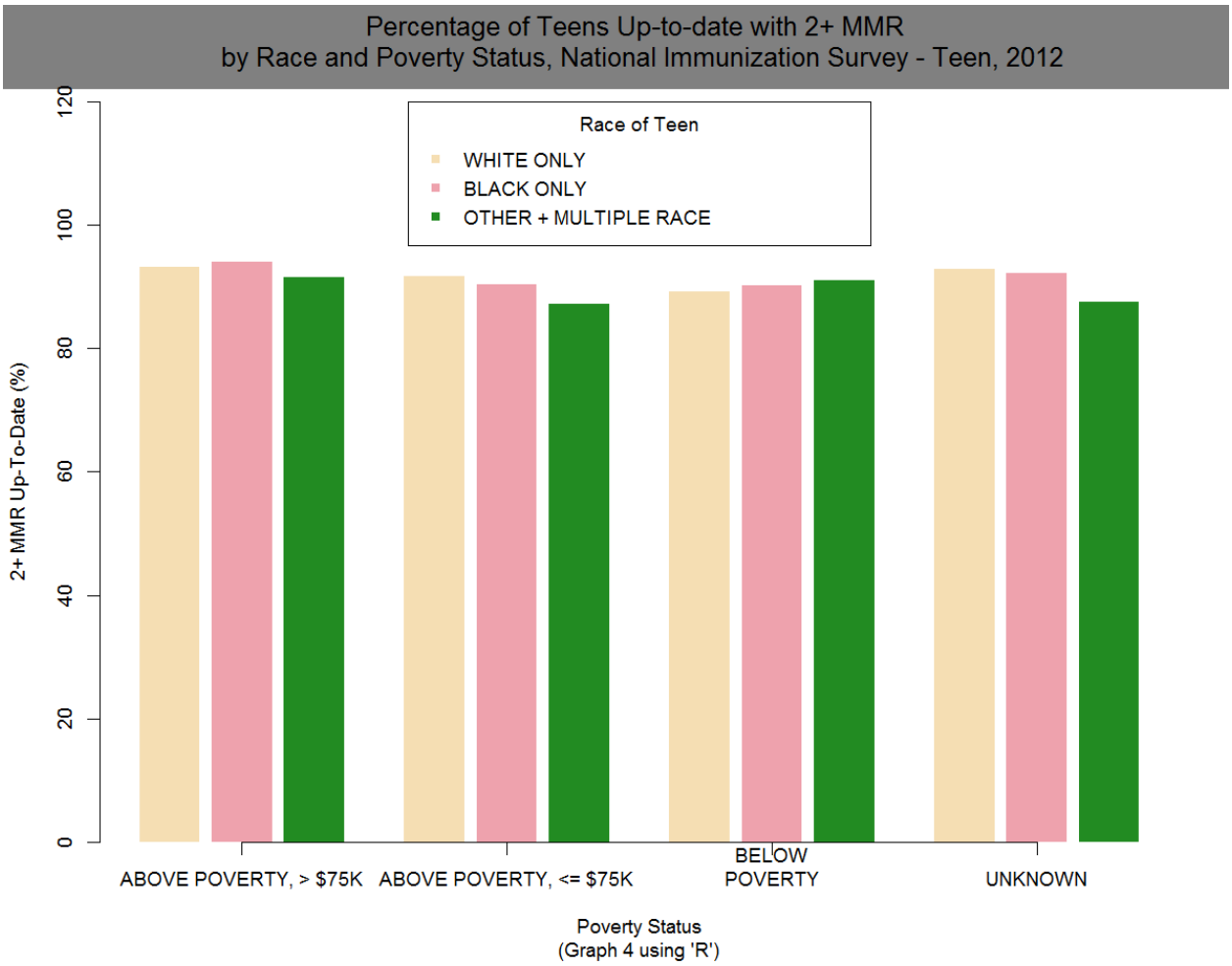
```
UTDMMRlevels=c(0,1)
UTDMMRlabels=c("NOT 2+ MMR UTD", "2+ MMR UTD")
RACE_PUFlevels=c(1,2,3)
RACE_PUFlabels=c("WHITE ONLY", "BLACK ONLY", "OTHER + MULTIPLE RACE")
INCPOVlevels=c(1,2,3,4)
INCPOVlabels=c("ABOVE POVERTY, > $75K", "ABOVE POVERTY, <= $75K", "BELOW
POVERTY", "UNKNOWN")
#--- PROVWT_D WILL BE USED AS A WEIGHT (PROVWT_D IS THE DUAL-FRAME WEIGHT EXCLUDING U.S.
VIRGIN ISLANDS; USE PROVWTVI_D TO INCLUDE U.S. VIRGIN ISLANDS ---#
#---STRATUM WILL BE USED AS A STRATUM VARIABLE FOR VARIANCE ESTIMATION (USE STRATUM FOR
ALL ESTIMATION ---#
R_FILE <- subset(NISTEENPUF12, select=c(SEQNUMT, P_UTDMMR, ESTIAPT12, RACE_K, INCPOV1,
PROVWT_D, STRATUM, PDAT))
names(R_FILE) <- c("SEQNUMT", "P_UTDMMR", "ESTIAP", "RACE_K", "INCPOV1", "WT", "STRATUM", "PDAT")
#---ASSIGN LABELS---#
R_FILE$P_UTDMMR <- factor(R_FILE$P_UTDMMR, levels=UTDMMRlevels, labels=UTDMMRlabels,
exclude=NULL)
R_FILE$RACE_K <- factor(R_FILE$RACE_K, levels=RACE_PUFlevels, labels=RACE_PUFlabels, exclude=NULL)
R_FILE$INCPOV1 <- factor(R_FILE$INCPOV1, levels=INCPOVlevels,labels=INCPOVlabels, exclude=NULL)
#---UNWEIGHTED FREQUENCIES---#
unwt_freq <- function(UNWT.VAR){#FUNCTION TO PRINT UNWEIGHTED FREQUENCIES
unwt.tab <- wtd.table(UNWT.VAR, weights= NULL, type='table')
unwtd.freq <- data.frame(cbind(
unwt.tab, round(unwt.tab/sum(unwt.tab)*100,2),
cumsum(unwt.tab), cumsum(round(unwt.tab/sum(unwt.tab)*100,2))))
names(unwtd.freq) <- c("Frequency", "Percent", "Cumulative Frequency", "Cumulative Percent")
unwtd.title <- paste('Table 4A. Q1/2011 - Q4/2011', 'UNWEIGHTED FREQUENCIES', label(UNWT.VAR), sep="\n")
label(unwtd.freq) <- unwtd.title
print(unwtd.freq)
}
unwt_freq(R_FILE$P_UTDMMR[R_FILE$PDAT == 1])
unwt_freq(R_FILE$INCPOV1[R_FILE$PDAT == 1])
unwt_freq(R_FILE$RACE_K[R_FILE$PDAT == 1])
R_FILE <- na.omit(R_FILE)
#---SPECIFY A SAMPLING DESIGN---#
svydsg <- svydesign(id=~SEQNUMT, strata=~STRATUM, weights=~WT, data=R_FILE)
#---PERCENT 2+ MMR UP-TO-DATE AND ESTIMATED STANDARD ERRORS---#
r_est4 <- svyby(~P_UTDMMR, ~RACE_K+INCPOV1, svydsg, svymean)
r_est4[,-c(1,2)] <- round(r_est4[,-c(1,2)]*100,2) #CONVERT INTO PERCENT ESTIMATES
r_est4 <- subset(r_est4, select=c(1,2,4,6)) #SELECT ESTIMATES FOR UP-TO-DATE CASES
names(r_est4) <- c("RACE", "INCOME", "PERCENT_UTD", "STANDARD_ERROR_UTD")
title <- "Table 4B. Q1/2012 - Q4/2012, 2+ MMR ESTIMATES BY INCPOV1 BY RACE_K"
prn(r_est4, title)
#---SAVE PERCENT UP-TO-DATE ESTIMATES FOR USE IN THE PROGRAM GRAPH_4---#
r_est4 <- subset(r_est4, select=c(RACE, INCOME, PERCENT_UTD))
save(r_est4, file=paste(out, "/r_est4_12", sep=""))


######################
title <- "GRAPH_4.R"
#############################################################################
#THIS PROGRAM BUILDS OFF OF THE PROGRAM PROG_4. IT PRODUCES A CHART OF
#P_UTDMMR BY INCPOV1 BY RACE_K. IT CREATES A BAR GRAPH IN R
#FOR THE 4X3 = 12 CELLS.
#R NOTES:
#1. R IS CASE SENSITIVE.
#2. A FILE PATH IS SEPERATED BY SLASH(/)
#############################################################################
library(survey) #TO USE svydesign(), svymean(), and svyby()
library(Hmisc) #TO USE prn()
```

```
dd <- "c:/nisteenpuf12" #---SPECIFY PATH TO R DATASET THAT WAS THE OUTPUT OF R_PROG_4---#

out <- "c:/nisteenpuf12" #---SPECIFY THE PATH FOR WHERE YOU WANT THE CHART OUTPUT TO GO---#

#---NAME OF R DATASET OUTPUT FROM R_PROG_4---#
in.file <- paste(dd,"/r_est4_12",sep="")
#---READ R DATASET---#
load(in.file)
#---BARCHART---#
#NOTE:R DOES NOT SUPPORT CREATING A HTML FILE CONTAINING A BARCHART#
#CREATE A DATA MATRIX FOR DRAWING A BARCHART#
utdmmr <- matrix(r_est4$PERCENT_UTD, nrow=3, ncol=4, byrow=F, dimnames=list(levels(r_est4$RACE),
levels(r_est4$INCOME)))
#CREATE GRAPH_4.GIF#
barplot(utdmmr, beside=TRUE, space=c(0.2,1),
col = c("wheat", "lightpink2", "forestgreen"),
axis.lty = 1,
sub="(Graph 4 using 'R')", cex.sub=1, ylim=c(0,120),
xlab="Poverty Status",
ylab="2+ MMR Up-To-Date (%)", cex=1, cex.names=1, border=NA)
legend("top", rownames(utdmmr), col=c("wheat", "lightpink2",
"forestgreen"), title="Race of Teen", pch=15, cex=1)
title1 <- "Percentage of Teens Up-to-date with 2+ MMR \n"
title2 <- "by Race and Poverty Status, National Immunization Survey - Teen, 2012\n"
mtext(paste(title1,title2), cex=1.3)
```


Percentage of Teens Up-to-date with 2+ MMR
by Race and Poverty Status, National Immunization Survey - Teen, 2012
Race of Teen
WHITE ONLY
BLACK ONLY
OTHER + MULTIPLE RACE
2+ MMR Up-To-Date (%)
0
20
40
60
80
100
120
ABOVE POVERTY, > $75K
ABOVE POVERTY, <= $75K
BELOW POVERTY
UNKNOWN
Poverty Status
(Graph 4 using 'R')

Appendix D: Alphabetical Listing of Variables in the NIS-Teen Public-Use Data Files

Table D.1 Alphabetical Listing of Variables in the NIS-Teen Public-Use Data Files, 2008-2012

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
AGE	AGE IN YEARS OF SELECTED TEEN	Y	Y	Y	Y	Y	
AGEGRP_M_I	MOTHER'S AGE CATEGORIES (RECODE)	Y	Y	Y	Y	Y	
ASTHMA	HAS TEEN BEEN TOLD BY DOCTOR OR OTHER HEALTH PROFESSIONAL THAT HE/SHE HAS ASTHMA?	Y	Y	Y	Y	Y	
C1R	NUMBER OF PEOPLE IN HOUSEHOLD (RECODE)	Y	Y	Y	Y	Y	
C5R	RELATIONSHIP OF RESPONDENT TO TEEN (RECODE)	Y	Y	Y	Y	Y	
CEN_REG	CENSUS REGION BASED ON TRUE STATE OF RESIDENCE	Y	Y	Y	Y	Y	
CHILDNM	NUMBER OF CHILDREN UNDER 18 YEARS OF AGE IN HH (RECODE)	Y	Y	Y	Y	Y	
CKUP_11_12	DID TEEN HAVE AN 11-12 YEAR OLD WELL-CHILD EXAM OR CHECK-UP?	Y	Y	Y	Y	Y	
CKUP_AGE	AGE IN YEARS AT LAST CHECK-UP	Y	Y	Y	Y	Y	
CKUP_LAST	WAS TEEN'S LAST CHECK-UP MORE OR LESS THAN (AGE - 12) YEARS AGO?	Y	Y	Y	Y	Y	
CPOX_AGE	AGE IN YEARS WHEN HAD CHICKEN POX DISEASE	Y	Y	Y	Y	Y	
CPOX_AGER	AGE RANGE WHEN HAD CHICKEN POX DISEASE	Y	Y	Y	Y	Y	
CPOX_HAD	TEEN EVER HAD CHICKEN POX DISEASE?	Y	Y	Y	Y	Y	
D6R	NUMBER OF PROVIDERS IDENTIFIED BY RESPONDENT (NOT DE-DUPLICATED) (RECODE)	Y	Y	Y	Y	Y	
D7	CONSENT TO OBTAIN VACCINATION RECORDS FROM PROVIDERS	Y	Y	Y	Y	Y	
EDUC_TR	TEEN'S CURRENT GRADE IN SCHOOL (RECODE)	Y	Y	Y	Y	Y	
EDUC1	EDUCATION LEVEL OF MOTHER WITH 4 CATEGORIES (RECODE)	Y	Y	Y	Y	Y	
ESTIAPT08	ESTIMATION AREA OF RESIDENCE	Y					
ESTIAPT09	ESTIMATION AREA OF RESIDENCE		Y				
ESTIAPT10	ESTIMATION AREA OF RESIDENCE			Y			
ESTIAPT11	**ESTIMATION AREA OF RESIDENCE**				**Y**		
ESTIAPT12	**ESTIMATION AREA OF RESIDENCE**					**Y**	
EST_GRANT	**NIS CORE GRANTEE ESTIMATION AREA**					**Y**	**Added in 2012. Includes the 56 core NIS grantee areas.**
FACILITY	FACILITY TYPES FOR TEEN'S PROVIDERS	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
FLU_AGE	AGE OF TEEN IN YEARS AT HH-REPORTED INFLUENZA VACCINATION RECEIVED MOST RECENTLY	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_AGE1	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #1	Y	Y	Y	Y	Y	
FLU_AGE2	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #2	Y	Y	Y	Y	Y	
FLU_AGE3	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #3	Y	Y	Y	Y	Y	
FLU_AGE4	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #4	Y	Y	Y	Y	Y	
FLU_AGE5	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #5	Y	Y	Y	Y	Y	
FLU_AGE6	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #6	Y	Y	Y	Y	Y	
FLU_AGE7	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #7	Y	Y	Y	Y	Y	
FLU_AGE8	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #8	Y	Y	Y	Y	Y	
FLU_AGE9	AGE IN YEARS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #9	Y	Y	Y	Y	Y	
FLU_ANY_REC	HH-REPORT: HAS TEEN RECEIVED ANY INFLUENZA VACCINATIONS IN PAST 12 MONTHS? (RECALL)	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_ANY_SC	HH-REPORT: HAS TEEN RECEIVED ANY INFLUENZA VACCINATIONS IN PAST 12 MONTHS? (SHOTCARD)	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_DAGE1	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #1				Y	Y	
FLU_DAGE2	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #2				Y	Y	
FLU_DAGE3	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #3				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
FLU_DAGE4	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #4				Y	Y	
FLU_DAGE5	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #5				Y	Y	
FLU_DAGE6	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #6				Y	Y	
FLU_DAGE7	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #7				Y	Y	
FLU_DAGE8	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #8				Y	Y	
FLU_DAGE9	AGE IN DAYS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #9				Y	Y	
FLU_MAGE1	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #1				Y	Y	
FLU_MAGE2	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #2				Y	Y	
FLU_MAGE3	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #3				Y	Y	
FLU_MAGE4	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #4				Y	Y	
FLU_MAGE5	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #5				Y	Y	
FLU_MAGE6	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #6				Y	Y	
FLU_MAGE7	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #7				Y	Y	
FLU_MAGE8	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #8				Y	Y	
FLU_MAGE9	AGE IN MONTHS OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #9				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
FLU_MONTH	MONTH OF HH-REPORTED INFLUENZA VACCINATION RECEIVED MOST RECENTLY	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_MONTH1	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #1	Y	Y	Y	Y	Y	
FLU_MONTH2	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #2	Y	Y	Y	Y	Y	
FLU_MONTH3	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #3	Y	Y	Y	Y	Y	
FLU_MONTH4	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #4	Y	Y	Y	Y	Y	
FLU_MONTH5	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #5	Y	Y	Y	Y	Y	
FLU_MONTH6	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #6	Y	Y	Y	Y	Y	
FLU_MONTH7	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #7	Y	Y	Y	Y	Y	
FLU_MONTH8	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #8	Y	Y	Y	Y	Y	
FLU_MONTH9	MONTH OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #9	Y	Y	Y	Y	Y	
FLU_PLACE	KIND OF PLACE TEEN RECEIVED MOST RECENT FLU SHOT OR SPRAY	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_TYPE	TYPE OF HH-REPORTED INFLUENZA VACCINATION RECEIVED MOST RECENTLY	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_YEAR	YEAR OF HH-REPORTED INFLUENZA VACCINATION RECEIVED MOST RECENTLY	Y					Dropped in 2009 due to mid-year questionnaire changes.
FLU_YEAR1	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #1	Y	Y	Y	Y	Y	
FLU_YEAR2	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #2	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
FLU_YEAR3	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #3	Y	Y	Y	Y	Y	
FLU_YEAR4	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #4	Y	Y	Y	Y	Y	
FLU_YEAR5	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #5	Y	Y	Y	Y	Y	
FLU_YEAR6	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #6	Y	Y	Y	Y	Y	
FLU_YEAR7	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #7	Y	Y	Y	Y	Y	
FLU_YEAR8	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #8	Y	Y	Y	Y	Y	
FLU_YEAR9	YEAR OF PROV-REPORTED SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #9	Y	Y	Y	Y	Y	
H1N_AGE1	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #1			Y	Y	Y	
H1N_AGE2	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #2			Y	Y	Y	
H1N_AGE3	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #3			Y	Y	Y	
H1N_AGE4	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #4			Y	Y	Y	
H1N_AGE5	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #5			Y	Y	Y	
H1N_AGE6	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #6			Y	Y	Y	
H1N_AGE7	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #7			Y	Y	Y	
H1N_AGE8	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #8			Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
H1N_AGE9	AGE IN YEARS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #9			Y	Y	Y	
H1N_DAGE1	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #1				Y	Y	
H1N_DAGE2	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #2				Y	Y	
H1N_DAGE3	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #3				Y	Y	
H1N_DAGE4	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #4				Y	Y	
H1N_DAGE5	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #5				Y	Y	
H1N_DAGE6	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #6				Y	Y	
H1N_DAGE7	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #7				Y	Y	
H1N_DAGE8	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #8				Y	Y	
H1N_DAGE9	AGE IN DAYS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #9				Y	Y	
H1N_MAGE1	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #1				Y	Y	
H1N_MAGE2	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #2				Y	Y	
H1N_MAGE3	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #3				Y	Y	
H1N_MAGE4	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #4				Y	Y	
H1N_MAGE5	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #5				Y	Y	
H1N_MAGE6	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #6				Y	Y	
H1N_MAGE7	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #7				Y	Y	
H1N_MAGE8	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #8				Y	Y	
H1N_MAGE9	AGE IN MONTHS OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #9				Y	Y	
H1N_MONTH1	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #1			Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
H1N_MONTH2	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #2			Y	Y	Y	
H1N_MONTH3	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #3			Y	Y	Y	
H1N_MONTH4	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #4			Y	Y	Y	
H1N_MONTH5	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #5			Y	Y	Y	
H1N_MONTH6	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #6			Y	Y	Y	
H1N_MONTH7	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #7			Y	Y	Y	
H1N_MONTH8	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #8			Y	Y	Y	
H1N_MONTH9	MONTH OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #9			Y	Y	Y	
H1N_YEAR1	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #1			Y	Y	Y	
H1N_YEAR2	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #2			Y	Y	Y	
H1N_YEAR3	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #3			Y	Y	Y	
H1N_YEAR4	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #4			Y	Y	Y	
H1N_YEAR5	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #5			Y	Y	Y	
H1N_YEAR6	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #6			Y	Y	Y	
H1N_YEAR7	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #7			Y	Y	Y	
H1N_YEAR8	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #8			Y	Y	Y	
H1N_YEAR9	YEAR OF PROV-REPORTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #9			Y	Y	Y	
HEPA_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS A SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_AGE1	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #1	Y	Y	Y	Y	Y	
HEPA_AGE2	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #2	Y	Y	Y	Y	Y	
HEPA_AGE3	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #3	Y	Y	Y	Y	Y	
HEPA_AGE4	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #4	Y	Y	Y	Y	Y	
HEPA_AGE5	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #5	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HEPA_AGE6	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #6	Y	Y	Y	Y	Y	
HEPA_AGE7	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #7	Y	Y	Y	Y	Y	
HEPA_AGE8	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #8	Y	Y	Y	Y	Y	
HEPA_AGE9	AGE IN YEARS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #9	Y	Y	Y	Y	Y	
HEPA_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY HEPATITIS A SHOTS? (RECALL)	Y	Y	Y	Y	Y	
HEPA_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY HEPATITIS A SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_DAGE1	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #1				Y	Y	
HEPA_DAGE2	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #2				Y	Y	
HEPA_DAGE3	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #3				Y	Y	
HEPA_DAGE4	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #4				Y	Y	
HEPA_DAGE5	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #5				Y	Y	
HEPA_DAGE6	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #6				Y	Y	
HEPA_DAGE7	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #7				Y	Y	
HEPA_DAGE8	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #8				Y	Y	
HEPA_DAGE9	AGE IN DAYS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #9				Y	Y	
HEPA_MAGE1	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #1				Y	Y	
HEPA_MAGE2	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #2				Y	Y	
HEPA_MAGE3	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #3				Y	Y	
HEPA_MAGE4	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #4				Y	Y	
HEPA_MAGE5	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #5				Y	Y	
HEPA_MAGE6	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #6				Y	Y	
HEPA_MAGE7	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #7				Y	Y	
HEPA_MAGE8	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #8				Y	Y	
HEPA_MAGE9	AGE IN MONTHS OF PROV-REPORTED HEPATITIS A-CONTAINING SHOT #9				Y	Y	
HEPA_NUM_REC	NUMBER OF HH-REPORTED HEPATITIS A SHOTS RECEIVED (RECALL)	Y	Y	Y	Y	Y	
HEPA_NUM_SC	NUMBER OF HH-REPORTED HEPATITIS A SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	
HEPA_NUM_TOT	NUMBER OF HH-REPORTED HEPATITIS A SHOTS RECEIVED (TOTAL)	Y	Y	Y	Y	Y	
HEPA_RECOM	HAD OR HAS DOCTOR OR OTHER HEALTH CARE PROFESSIONAL EVER RECOMMENDED HEPATITIS A SHOTS?	Y	Y	Y	Y	Y	
HEPB_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HEPB_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED HEPATITIS B SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_AGE1	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #1	Y	Y	Y	Y	Y	
HEPB_AGE2	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #2	Y	Y	Y	Y	Y	
HEPB_AGE3	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #3	Y	Y	Y	Y	Y	
HEPB_AGE4	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #4	Y	Y	Y	Y	Y	
HEPB_AGE5	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #5	Y	Y	Y	Y	Y	
HEPB_AGE6	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #6	Y	Y	Y	Y	Y	
HEPB_AGE7	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #7	Y	Y	Y	Y	Y	
HEPB_AGE8	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #8	Y	Y	Y	Y	Y	
HEPB_AGE9	AGE IN YEARS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #9	Y	Y	Y	Y	Y	
HEPB_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY HEPATITIS B SHOTS? (RECALL)	Y	Y	Y	Y	Y	
HEPB_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY HEPATITIS B SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_DAGE1	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #1				Y	Y	
HEPB_DAGE2	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #2				Y	Y	
HEPB_DAGE3	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #3				Y	Y	
HEPB_DAGE4	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #4				Y	Y	
HEPB_DAGE5	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #5				Y	Y	
HEPB_DAGE6	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #6				Y	Y	
HEPB_DAGE7	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #7				Y	Y	
HEPB_DAGE8	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #8				Y	Y	
HEPB_DAGE9	AGE IN DAYS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #9				Y	Y	
HEPB_MAGE1	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #1				Y	Y	
HEPB_MAGE2	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #2				Y	Y	
HEPB_MAGE3	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #3				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HEPB_MAGE4	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #4				Y	Y	
HEPB_MAGE5	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #5				Y	Y	
HEPB_MAGE6	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #6				Y	Y	
HEPB_MAGE7	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #7				Y	Y	
HEPB_MAGE8	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #8				Y	Y	
HEPB_MAGE9	AGE IN MONTHS OF PROV-REPORTED HEPATITIS B-CONTAINING SHOT #9				Y	Y	
HEPB_NUM_REC	NUMBER OF HH-REPORTED HEPATITIS B SHOTS RECEIVED (RECALL)	Y	Y	Y	Y	Y	
HEPB_NUM_SC	NUMBER OF HH-REPORTED HEPATITIS B SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	
HEPB_NUM_TOT	NUMBER OF HH-REPORTED HEPATITIS B SHOTS RECEIVED (TOTAL)	Y	Y	Y	Y	Y	
HEPB_SCH	DID TEEN RECEIVE HEPATITIS B SHOTS BECAUSE OF SCHOOL REQUIREMENT?	Y	Y	Y	Y	Y	
HH_FLU	HH REPORT OF NUMBER OF SEASONAL INFLUENZA-CONTAINING VACCINATIONS RECEIVED IN THE 12 MONTHS PRIOR TO INTERVIEW			Y			
HH_H1N	HH REPORT OF NUMBER OF MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS RECEIVED IN THE TWELVE MONTHS PRIOR TO INTERVIEW			Y			
HPV_AGE1	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #1	Y	Y	Y	Y	Y	
HPV_AGE2	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #2	Y	Y	Y	Y	Y	
HPV_AGE3	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #3	Y	Y	Y	Y	Y	
HPV_AGE4	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #4	Y	Y	Y	Y	Y	
HPV_AGE5	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #5	Y	Y	Y	Y	Y	
HPV_AGE6	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #6	Y	Y	Y	Y	Y	
HPV_AGE7	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #7	Y	Y	Y	Y	Y	
HPV_AGE8	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #8	Y	Y	Y	Y	Y	
HPV_AGE9	AGE IN YEARS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #9	Y	Y	Y	Y	Y	
HPV_DAGE1	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #1				Y	Y	
HPV_DAGE2	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #2				Y	Y	
HPV_DAGE3	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #3				Y	Y	
HPV_DAGE4	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #4				Y	Y	
HPV_DAGE5	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #5				Y	Y	
HPV_DAGE6	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #6				Y	Y	
HPV_DAGE7	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #7				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HPV_DAGE8	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #8				Y	Y	
HPV_DAGE9	AGE IN DAYS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #9				Y	Y	
HPV_MAGE1	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #1				Y	Y	
HPV_MAGE2	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #2				Y	Y	
HPV_MAGE3	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #3				Y	Y	
HPV_MAGE4	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #4				Y	Y	
HPV_MAGE5	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #5				Y	Y	
HPV_MAGE6	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #6				Y	Y	
HPV_MAGE7	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #7				Y	Y	
HPV_MAGE8	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #8				Y	Y	
HPV_MAGE9	AGE IN MONTHS OF PROV-REPORTED HUMAN PAPILLOMAVIRUS SHOT #9				Y	Y	
HPVI_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED HUMAN PAPILLOMAVIRUS SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY HUMAN PAPILLOMAVIRUS SHOTS? (RECALL)	Y	Y	Y	Y	Y	
HPVI_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY HUMAN PAPILLOMAVIRUS SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HPVI_HEARD	**HAVE YOU EVER HEARD OF HUMAN PAPILLOMAVIRUS?**	**Y**	**Y**	**Y**	**Y**		**Dropped in 2012 due to questionnaire changes.**
HPVI_INTENTR	HOW LIKELY IS IT TEEN WILL RECEIVE HPV SHOTS IN NEXT 12 MONTHS?			Y	Y	Y	
HPVI_KNOW	**HAVE YOU EVER HEARD OF THE CERVICAL CANCER VACCINE, HPV SHOT, OR GARDASIL?**	**Y**	**Y**	**Y**	**Y**		**Dropped in 2012 due to questionnaire changes.**
HPVI_NUM_REC	NUMBER OF HH-REPORTED HUMAN PAPILLOMAVIRUS SHOTS RECEIVED (RECALL)	Y	Y	Y	Y	Y	
HPVI_NUM_SC	NUMBER OF HH-REPORTED HUMAN PAPILLOMAVIRUS SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	
HPVI_NUM_TOT	NUMBER OF HH-REPORTED HUMAN PAPILLOMAVIRUS SHOTS RECEIVED (TOTAL)	Y	Y	Y	Y	Y	
HPVI_REAS_1	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NOT RECOMMENDED	Y	Y	Y	Y	Y	
HPVI_REAS_10	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: COSTS	Y	Y	Y	Y	Y	
HPVI_REAS_11	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: SAFETY CONCERN/SIDE EFFECTS	Y	Y	Y	Y	Y	
HPVI_REAS_12	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: EFFECTIVENESS CONCERN	Y	Y	Y	Y	Y	
HPVI_REAS_13	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: CHILD FEARFUL	Y	Y	Y	Y	Y	
HPVI_REAS_14	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: CHILD SHOULD MAKE DECISION	Y	Y	Y	Y	Y	
HPVI_REAS_15	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: COLLEGE SHOT	Y	Y	Y	Y	Y	
HPVI_REAS_16	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: DON'T BELIEVE IN IMMUNIZATIONS	Y	Y	Y	Y	Y	
HPVI_REAS_17	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: FAMILY/PARENTAL DECISION	Y	Y	Y	Y	Y	
HPVI_REAS_18	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: HANDICAPPED/SPECIAL NEEDS/ILLNESS	Y	Y	Y	Y	Y	
HPVI_REAS_19	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: RELIGION/ORTHODOX	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HPVI_REAS_2	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NOT NEEDED OR NOT NECESSARY	Y	Y	Y	Y	Y	
HPVI_REAS_20	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: TIME	Y	Y	Y	Y	Y	
HPVI_REAS_21	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: MORE INFO/NEW VACCINE	Y	Y	Y	Y	Y	
HPVI_REAS_22	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: ALREADY UP-TO-DATE	Y	Y	Y	Y	Y	
HPVI_REAS_23	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NOT AVAILABLE	Y	Y	Y	Y	Y	
HPVI_REAS_24	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NOT A SCHOOL REQUIREMENT	Y	Y	Y	Y	Y	
HPVI_REAS_25	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: INCREASED SEXUAL ACTIVITY CONCERN	Y	Y	Y	Y	Y	
HPVI_REAS_26	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NO OB/GYN	Y	Y	Y	Y	Y	
HPVI_REAS_27	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: ALREADY SEXUALLY ACTIVE	Y	Y	Y	Y	Y	
HPVI_REAS_28	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NO DOCTOR OR DOCTOR'S VISIT NOT SCHEDULED	Y	Y	Y	Y	Y	
HPVI_REAS_29	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: CHILD IS MALE			Y	Y	Y	
HPVI_REAS_3	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: LACK OF KNOWLEDGE	Y	Y	Y	Y	Y	
HPVI_REAS_5	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NOT SEXUALLY ACTIVE	Y	Y	Y	Y	Y	
HPVI_REAS_6	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: NOT APPROPRIATE AGE	Y	Y	Y	Y	Y	
HPVI_REAS_9	MAIN REASON TEEN WILL NOT RECEIVE HUMAN PAPILLOMAVIRUS SHOTS IN THE NEXT 12 MONTHS: OTHER REASON	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
HPVI_RECOM	HAD OR HAS DOCTOR OR OTHER HEALTH CARE PROFESSIONAL EVER RECOMMENDED THAT TEEN RECEIVE HPV SHOTS?	Y	Y	Y	Y	Y	
I_HISP_K	IS TEEN HISPANIC OR LATINO?	Y	Y	Y	Y	Y	
IMM_ANY	HH-REPORT: HAS TEEN EVER RECEIVED ANY VACCINATIONS?	Y	Y	Y	Y	Y	
INCPORAR	INCOME TO POVERTY RATIO (RECODE)	Y	Y	Y	Y	Y	
INCPOV1	POVERTY STATUS	Y	Y	Y	Y	Y	
INCQ298A	FAMILY INCOME CATEGORIES (RECODE)	Y	Y	Y	Y	Y	
LANGUAGE	LANGUAGE IN WHICH INTERVIEW WAS CONDUCTED	Y	Y	Y	Y	Y	
MARITAL	MARITAL STATUS OF MOTHER: IMPUTED (COLLAPSED)	Y					Replaced by MARITAL2 starting 2009.
MARITAL2	MARITAL STATUS OF MOTHER (RECODE)		Y	Y	Y	Y	Replaces MARITAL2 starting 2009.
MCV_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED MEASLES OR MMR SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_AGE1	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #1	Y	Y	Y	Y	Y	
MCV_AGE2	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #2	Y	Y	Y	Y	Y	
MCV_AGE3	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #3	Y	Y	Y	Y	Y	
MCV_AGE4	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #4	Y	Y	Y	Y	Y	
MCV_AGE5	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #5	Y	Y	Y	Y	Y	
MCV_AGE6	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #6	Y	Y	Y	Y	Y	
MCV_AGE7	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #7	Y	Y	Y	Y	Y	
MCV_AGE8	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #8	Y	Y	Y	Y	Y	
MCV_AGE9	AGE IN YEARS OF PROV-REPORTED MEASLES-CONTAINING SHOT #9	Y	Y	Y	Y	Y	
MCV_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY MMR/MEASLES SHOTS? (RECALL)	Y	Y	Y	Y	Y	
MCV_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY MMR/MEASLES SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_DAGE1	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #1				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
MCV_DAGE2	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #2				Y	Y	
MCV_DAGE3	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #3				Y	Y	
MCV_DAGE4	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #4				Y	Y	
MCV_DAGE5	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #5				Y	Y	
MCV_DAGE6	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #6				Y	Y	
MCV_DAGE7	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #7				Y	Y	
MCV_DAGE8	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #8				Y	Y	
MCV_DAGE9	AGE IN DAYS OF PROV-REPORTED MEASLES-CONTAINING SHOT #9				Y	Y	
MCV_MAGE1	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #1				Y	Y	
MCV_MAGE2	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #2				Y	Y	
MCV_MAGE3	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #3				Y	Y	
MCV_MAGE4	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #4				Y	Y	
MCV_MAGE5	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #5				Y	Y	
MCV_MAGE6	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #6				Y	Y	
MCV_MAGE7	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #7				Y	Y	
MCV_MAGE8	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #8				Y	Y	
MCV_MAGE9	AGE IN MONTHS OF PROV-REPORTED MEASLES-CONTAINING SHOT #9				Y	Y	
MCV_NUM_REC	NUMBER OF HH-REPORTED MMR/MEASLES SHOTS RECEIVED (RECALL)	Y	Y	Y	Y	Y	
MCV_NUM_SC	NUMBER OF HH-REPORTED MMR/MEASLES SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	
MCV_NUM_TOT	NUMBER OF HH-REPORTED MMR/MEASLES SHOTS RECEIVED (TOTAL)	Y	Y	Y	Y	Y	
MEN_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED MENINGOCOCCAL SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_AGE1	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #1	Y	Y	Y	Y	Y	
MEN_AGE2	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #2	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
MEN_AGE3	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #3	Y	Y	Y	Y	Y	
MEN_AGE4	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #4	Y	Y	Y	Y	Y	
MEN_AGE5	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #5	Y	Y	Y	Y	Y	
MEN_AGE6	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #6	Y	Y	Y	Y	Y	
MEN_AGE7	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #7	Y	Y	Y	Y	Y	
MEN_AGE8	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #8	Y	Y	Y	Y	Y	
MEN_AGE9	AGE IN YEARS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #9	Y	Y	Y	Y	Y	
MEN_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY MENINGITIS SHOTS? (RECALL)	Y	Y	Y	Y	Y	
MEN_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY MENINGITIS SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_DAGE1	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #1				Y	Y	
MEN_DAGE2	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #2				Y	Y	
MEN_DAGE3	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #3				Y	Y	
MEN_DAGE4	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #4				Y	Y	
MEN_DAGE5	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #5				Y	Y	
MEN_DAGE6	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #6				Y	Y	
MEN_DAGE7	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #7				Y	Y	
MEN_DAGE8	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #8				Y	Y	
MEN_DAGE9	AGE IN DAYS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #9				Y	Y	
MEN_MAGE1	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #1				Y	Y	
MEN_MAGE2	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #2				Y	Y	
MEN_MAGE3	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #3				Y	Y	
MEN_MAGE4	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #4				Y	Y	
MEN_MAGE5	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #5				Y	Y	
MEN_MAGE6	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #6				Y	Y	
MEN_MAGE7	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #7				Y	Y	
MEN_MAGE8	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #8				Y	Y	
MEN_MAGE9	AGE IN MONTHS OF PROV-REPORTED MENINGOCOCCAL-CONTAINING SHOT #9				Y	Y	
MEN_NUM_REC	NUMBER OF HH-REPORTED MENINGITIS SHOTS RECEIVED (RECALL)	Y	Y	Y	Y	Y	
MEN_NUM_SC	NUMBER OF HH-REPORTED MENINGITIS SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	
MEN_NUM_TOT	NUMBER OF HH-REPORTED MENINGITIS SHOTS RECEIVED (TOTAL)	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
MEN_REAS_1	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: NOT RECOMMENDED	Y	Y	Y	Y	Y	
MEN_REAS_10	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: COSTS	Y	Y	Y	Y	Y	
MEN_REAS_11	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: SAFETY CONCERN/SIDE EFFECTS	Y	Y	Y	Y	Y	
MEN_REAS_12	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: EFFECTIVENESS CONCERN	Y	Y	Y	Y	Y	
MEN_REAS_13	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: CHILD FEARFUL	Y	Y	Y	Y	Y	
MEN_REAS_14	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: CHILD SHOULD MAKE DECISION	Y	Y	Y	Y	Y	
MEN_REAS_15	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: COLLEGE SHOT	Y	Y	Y	Y	Y	
MEN_REAS_16	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: DON'T BELIEVE IN VACCINATIONS	Y	Y	Y	Y	Y	
MEN_REAS_17	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: FAMILY/PARENTAL DECISION	Y	Y	Y	Y	Y	
MEN_REAS_18	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: HANDICAPPED/SPECIAL NEEDS/ILLNESS	Y	Y	Y	Y	Y	
MEN_REAS_19	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: RELIGION/ORTHODOX	Y	Y	Y	Y	Y	
MEN_REAS_2	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: LACK OF KNOWLEDGE	Y	Y	Y	Y	Y	
MEN_REAS_20	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: TIME	Y	Y	Y	Y	Y	
MEN_REAS_21	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: MORE INFO/NEW VACCINE	Y	Y	Y	Y	Y	
MEN_REAS_22	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: ALREADY UP-TO-DATE	Y	Y	Y	Y	Y	
MEN_REAS_23	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: NO DOCTOR OR DOCTOR'S VISIT NOT SCHEDULED	Y	Y	Y	Y	Y	
MEN_REAS_3	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: NOT NEEDED OR NOT NECESSARY	Y	Y	Y	Y	Y	
MEN_REAS_4	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: NOT SCHOOL REQUIREMENT	Y	Y	Y	Y	Y	
MEN_REAS_5	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: NOT AVAILABLE	Y	Y	Y	Y	Y	
MEN_REAS_6	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: NOT APPROPRIATE AGE	Y	Y	Y	Y	Y	
MEN_REAS_7	MAIN REASON TEEN DID NOT RECEIVE MENINGITIS SHOTS: OTHER REASON	Y	Y	Y	Y	Y	
MEN_RECOM	HAD OR HAS DOCTOR OR OTHER HEALTH CARE PROFESSIONAL EVER RECOMMENDED THAT TEEN RECEIVE MENINGITIS SHOTS?	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
MOBIL_I	GEOGRAPHIC MOBILITY STATUS: STATE OF RESIDENCE AT BIRTH VERSUS CURRENT STATE	Y	Y	Y	Y	Y	
N_PRVR	NUMBER OF IHQS WITH VACCINATION INFORMATION FOR THE TEEN (RECODE)	Y	Y	Y	Y	Y	
NOSCHOOLR	DURING PAST 12 MONTHS, ABOUT HOW MANY DAYS DID TEEN MISS SCHOOL BECAUSE OF ILLNESS OR INJURY? (RECODE)	Y	Y	Y	Y	Y	
NUM_CELLS_HH	NUMBER OF WORKING CELL PHONES HOUSEHOLD MEMBERS HAVE AVAILABLE FOR PERSONAL USE		Y	Y	Y	Y	
NUM_CELLS_PARENTS	NUMBER OF WORKING CELL PHONES USUALLY USED BY PARENTS OR GUARDIANS		Y	Y	Y	Y	
NUM_PHONE	NUMBER OF RESIDENTIAL TELEPHONE NUMBERS IN HOUSEHOLD (EXCLUDING CELL PHONES)		Y	Y	Y	Y	
NUM_PROVR	NUMBER OF VALID, UNIQUE PROVIDERS IDENTIFIED BY RESPONDENT (FOR TEENS WITH CONSENT) (RECODE)	Y	Y	Y	Y	Y	
P_N13FLU	NUMBER OF SEASONAL INFLUENZA VACCINATIONS IN THE PAST THREE YEARS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13FLU_FL	NUMBER OF SEASONAL INFLUENZA VACCINATIONS OF UNKNOWN TYPE IN PAST THREE YEARS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13FLU_FM	NUMBER OF SEASONAL FLUMIST VACCINATIONS IN PAST THREE YEARS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13FLU_FN	NUMBER OF INJECTED SEASONAL INFLUENZA SHOTS OF OTHER/UNKNOWN TYPE IN PAST THREE YEARS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13FLU_FV	NUMBER OF SEASONAL FLUVIRIN SHOTS IN PAST THREE YEARS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13FLU_FZ	NUMBER OF SEASONAL FLUZONE SHOTS IN PAST THREE YEARS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_N13H1N	NUMBER OF MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_N13H1N_1L	NUMBER OF MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_N13H1N_1M	NUMBER OF INHALED NASAL MONOVALENT 2009 H1N1 INFLUENZA SPRAY VACCINATIONS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_N13H1N_1N	NUMBER OF INJECTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_N13HEPA	NUMBER OF HEPATITIS A-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPA_HA	NUMBER OF HEPATITIS A-CONTAINING SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPA_HO	NUMBER OF HEPATITIS A-ONLY SHOTS DETERMINED BY AGE 13 YEARS FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPB	NUMBER OF HEPATITIS B-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPB_43	NUMBER OF HEPB/HIB COMBO SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPB_61	NUMBER OF HEPATITIS B 0.5 ML RECOMBIVAX SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_N13HEPB_62	NUMBER OF HEPATITIS B 1.0 ML RECOMBIVAX SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPB_63	NUMBER OF HEPATITIS B ENGERIX SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPB_64	NUMBER OF HEPATITIS B-ONLY SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HEPB_HB	NUMBER OF HEPATITIS B-CONTAINING SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13HPV	NUMBER OF HUMAN PAPILLOMAVIRUS SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV	NUMBER OF MEASLES-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV_30	NUMBER OF MMR-ONLY SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV_31	NUMBER OF MEASLES-ONLY SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV_32	NUMBER OF MEASLES-MUMPS SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV_33	NUMBER OF MEASLES-RUBELLA SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV_MM	NUMBER OF MEASLES-CONTAINING SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MCV_VM	NUMBER OF MMR/VARICELLA SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MEN	NUMBER OF MENINGOCOCCAL-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_N13MEN_80	NUMBER OF MENINGOCOCCAL MCV4 SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MEN_81	NUMBER OF MENINGOCOCCAL MPSV4 SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MEN_82	NUMBER OF MENINGOCOCCAL-CONTAINING SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13MMR	NUMBER OF MMR-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13PPS	NUMBER OF PNEUMOCOCCAL POLYSACCHARIDE SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13TDAP_POST10	NUMBER OF TDAP SHOTS SINCE AGE 10 YEARS AND BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13TDAP_POST7	NUMBER OF TDAP SHOTS SINCE AGE 7 YEARS AND BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_N13TDP	NUMBER OF TD/TDAP-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13TDP_11	NUMBER OF TD-ONLY SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13TDP_14	NUMBER OF TDAP-ONLY SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13TDP_15	NUMBER OF TD/TDAP-CONTAINING SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13TDP_POST10	NUMBER OF TD/TDAP-CONTAINING SHOTS SINCE AGE 10 YEARS AND BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13VRC	NUMBER OF VARICELLA-CONTAINING SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_N13VRC_POST1	NUMBER OF VARICELLA-CONTAINING SHOTS AT 12+ MONTHS OF AGE AND BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13VRC_VA	NUMBER OF VARICELLA-CONTAINING SHOTS OF UNKNOWN TYPE BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13VRC_VM	NUMBER OF MMR/VARICELLA SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_N13VRC_VO	NUMBER OF VARICELLA-ONLY SHOTS BY AGE 13 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMFLU	NUMBER OF SEASONAL INFLUENZA VACCINATIONS IN THE PAST THREE YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMFLU_FL	NUMBER OF SEASONAL INFLUENZA VACCINATIONS OF UNKNOWN TYPE IN PAST THREE YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMFLU_FM	NUMBER OF SEASONAL FLUMIST VACCINATIONS IN PAST THREE YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMFLU_FN	NUMBER OF INJECTED SEASONAL INFLUENZA SHOTS OF OTHER/UNKNOWN TYPE IN PAST THREE YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMFLU_FV	NUMBER OF SEASONAL FLUVIRIN SHOTS IN PAST THREE YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMFLU_FZ	NUMBER OF SEASONAL FLUZONE SHOTS IN PAST THREE YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMH1N	NUMBER OF MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_NUMH1N_1L	NUMBER OF MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_NUMH1N_1M	NUMBER OF INHALED NASAL MONOVALENT 2009 H1N1 INFLUENZA SPRAY VACCINATIONS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_NUMH1N_1N	NUMBER OF INJECTED MONOVALENT 2009 H1N1 INFLUENZA VACCINATIONS DETERMINED FROM PROVIDER INFO, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_NUMHEPA	NUMBER OF HEPATITIS A-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPA_HA	NUMBER OF HEPATITIS A-CONTAINING SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPA_HO	NUMBER OF HEPATITIS A-ONLY SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPB	NUMBER OF HEPATITIS B-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPB_43	NUMBER OF HEPB/HIB COMBO SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPB_61	NUMBER OF HEPATITIS B 0.5 ML RECOMBIVAX SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPB_62	NUMBER OF HEPATITIS B 1.0 ML RECOMBIVAX SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPB_63	NUMBER OF HEPATITIS B ENGERIX SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHEPB_64	NUMBER OF HEPATITIS B-ONLY SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_NUMHEPB_HB	NUMBER OF HEPATITIS B-CONTAINING SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMHPV	NUMBER OF HUMAN PAPILLOMAVIRUS SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV	NUMBER OF MEASLES-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV_30	NUMBER OF MMR-ONLY SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV_31	NUMBER OF MEASLES-ONLY SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV_32	NUMBER OF MEASLES-MUMPS SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV_33	NUMBER OF MEASLES-RUBELLA SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV_MM	NUMBER OF MEASLES-CONTAINING SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMCV_VM	NUMBER OF MMR/VARICELLA SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMEN	NUMBER OF MENINGOCOCCAL-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMEN_80	NUMBER OF MENINGOCOCCAL MCV4 SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMEN_81	NUMBER OF MENINGOCOCCAL MPSV4 SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMEN_82	NUMBER OF MENINGOCOCCAL-CONTAINING SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMMMR	NUMBER OF MMR-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_NUMPPS	NUMBER OF PNEUMOCOCCAL POLYSACCHARIDE SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMTDAP_POST10	NUMBER OF TDAP SHOTS SINCE AGE 10 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMTDAP_POST7	NUMBER OF TDAP SHOTS SINCE AGE 7 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_NUMTDP	NUMBER OF TD/TDAP-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMTDP_11	NUMBER OF TD-ONLY SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMTDP_14	NUMBER OF TDAP-ONLY SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMTDP_15	NUMBER OF TD/TDAP-CONTAINING SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMTDP_POST10	NUMBER OF TD/TDAP-CONTAINING SHOTS SINCE AGE 10 YEARS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMVRC	NUMBER OF VARICELLA-CONTAINING SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMVRC_POST1	NUMBER OF VARICELLA-CONTAINING SHOTS AT 12+ MONTHS OF AGE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMVRC_VA	NUMBER OF VARICELLA-CONTAINING SHOTS OF UNKNOWN TYPE DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMVRC_VM	NUMBER OF MMR/VARICELLA SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_NUMVRC_VO	NUMBER OF VARICELLA-ONLY SHOTS DETERMINED FROM PROVIDER INFO, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U131321	UP-TO-DATE FLAG (PROV INFO): 1:3:2:1 SERIES BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_U1313212	UP-TO-DATE FLAG (PROV INFO): 1:3:2:1:2 SERIES BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13FLU0607	UP-TO-DATE FLAG (PROV INFO): 1+ INFLUENZA VACCINATION BETWEEN SEPT 1, 2006 AND JAN 31, 2007, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y					
P_U13FLU0708	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2007 AND JAN 31, 2008, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y				
P_U13FLU0809	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2008 AND JAN 31, 2009, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y			
P_U13FLU0910	**UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2009 AND JAN 31, 2010, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.**		**Y**	**Y**	**Y**		
P_U13FLU1011	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2010 AND JAN 31, 2011, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_U13FLU1112	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2011 AND JAN 31, 2012, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.				Y	Y	
P_U13FLU1213	**UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2012 AND JAN 31, 2013, BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.**					**Y**	
P_U13H1N_1	UP-TO-DATE FLAG (PROV INFO): 1+ MONOVALENT 2009 H1N1 FLU VACCINATION BEFORE AGE 13 YEARS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_U13H1N_2	UP-TO-DATE FLAG (PROV INFO): 2+ MONOVALENT 2009 H1N1 FLU VACCINATIONS BEFORE AGE 13 YEARS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_U13HEPA	UP-TO-DATE FLAG (PROV INFO): 2+ HEPATITIS A-CONTAINING SHOTS BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_U13HEPB	UP-TO-DATE FLAG (PROV INFO): 2+ HEPB 1.0 ML RECOMBIVAX SHOTS BEFORE AGE 13 YEARS, OR 3+ ANY COMBINATION OF HEPATITIS B-CONTAINING SHOTS BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13HPV	UP-TO-DATE FLAG (PROV INFO): 1+ HUMAN PAPILLOMAVIRUS SHOT BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13HPV3	UP-TO-DATE FLAG (PROV INFO): 3+ HUMAN PAPILLOMAVIRUS SHOTS BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_U13MCV	UP-TO-DATE FLAG (PROV INFO): 2+ MEASLES-CONTAINING SHOTS BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13MEN	UP-TO-DATE FLAG (PROV INFO): 1+ MENINGOCOCCAL-CONTAINING SHOT BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13MMR	UP-TO-DATE FLAG (PROV INFO): 2+ MMR-CONTAINING SHOTS BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13PPS	UP-TO-DATE FLAG (PROV INFO): 1+ PNEUMOCOCCAL POLYSACCHARIDE SHOT BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13TD	UP-TO-DATE FLAG (PROV INFO) FOR TD/TDAP BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13TDAP	UP-TO-DATE FLAG (PROV INFO): 1+ TDAP-ONLY SHOT SINCE AGE 10 YEARS AND BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13TDAP7	UP-TO-DATE FLAG (PROV INFO): 1+ TDAP-ONLY SHOT SINCE AGE 7 YEARS AND BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_U13VRC	UP-TO-DATE FLAG (PROV INFO): 1+ VARICELLA-CONTAINING SHOT AT 12+ MONTHS OF AGE AND BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_U13VRC2	UP-TO-DATE FLAG (PROV INFO): 2+ VARICELLA-CONTAINING SHOTS AT 12+ MONTHS OF AGE AND BEFORE AGE 13 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTD1321	UP-TO-DATE FLAG (PROV INFO): 1:3:2:1 SERIES, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTD13212	UP-TO-DATE FLAG (PROV INFO): 1:3:2:1:2 SERIES, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_UTDFLU0607	UP-TO-DATE FLAG (PROV INFO): 1+ INFLUENZA VACCINATION BETWEEN SEPT 1, 2006 AND JAN 31, 2007, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y					
P_UTDFLU0708	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2007 AND JAN 31, 2008, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y				
P_UTDFLU0809	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2008 AND JAN 31, 2009, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y			
P_UTDFLU0910	**UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2009 AND JAN 31, 2010, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.**		**Y**	**Y**	**Y**		
P_UTDFLU1011	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2010 AND JAN 31, 2011, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_UTDFLU1112	UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2011 AND JAN 31, 2012, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.				Y	Y	
P_UTDFLU1213	**UP-TO-DATE FLAG (PROV INFO): 1+ SEASONAL INFLUENZA VACCINATION BETWEEN SEPT 1, 2012 AND JAN 31, 2013, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.**					**Y**	
P_UTDH1N_1	UP-TO-DATE FLAG (PROV INFO): 1+ MONOVALENT 2009 H1N1 FLU VACCINATION, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_UTDH1N_2	UP-TO-DATE FLAG (PROV INFO): 2+ MONOVALENT 2009 H1N1 FLU VACCINATIONS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE AND EXCLUDING VACCINATIONS GIVEN PRIOR TO 10/5/2009.			Y	Y	Y	
P_UTDHEPA	UP-TO-DATE FLAG (PROV INFO): 2+ HEPATITIS A-CONTAINING SHOTS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDHEPA1	UP-TO-DATE FLAG (PROV INFO): 1+ HEPATITIS A-CONTAINING SHOTS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_UTDHEPB	UP-TO-DATE FLAG (PROV INFO): 2+ HEPB 1.0 ML RECOMBIVAX SHOTS, OR 3+ ANY COMBINATION OF HEPATITIS B-CONTAINING SHOTS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDHPV	UP-TO-DATE FLAG (PROV INFO): 1+ HUMAN PAPILLOMAVIRUS SHOT, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDHPV11	UP-TO-DATE FLAG (PROV INFO): 1 HUMAN PAPILLOMAVIRUS SHOT GIVEN 1+ SHOT, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDHPV12	UP-TO-DATE FLAG (PROV INFO): 2 HUMAN PAPILLOMAVIRUS SHOTS GIVEN 1+ SHOT, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDHPV13	UP-TO-DATE FLAG (PROV INFO): 3+ HUMAN PAPILLOMAVIRUS SHOTS GIVEN 1+ SHOT, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDHPV2	UP-TO-DATE FLAG (PROV INFO): 2+ HUMAN PAPILLOMAVIRUS SHOTS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDHPV3	UP-TO-DATE FLAG (PROV INFO): 3+ HUMAN PAPILLOMAVIRUS SHOTS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_UTDHPV3C	UP-TO-DATE FLAG (PROV INFO): HPV CONDITIONAL COMPLETION RATE, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDMCV	UP-TO-DATE FLAG (PROV INFO): 2+ MEASLES-CONTAINING SHOTS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDMEN	UP-TO-DATE FLAG (PROV INFO): 1+ MENINGOCOCCAL-CONTAINING SHOT, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDMENACWY	UP-TO-DATE FLAG (PROV INFO): 1+ MENINGOCOCCAL-CONJUGATE SHOT OR MENINGOCOCCAL-UNKNOWN TYPE SHOT, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDMMR	UP-TO-DATE FLAG (PROV INFO): 2+ MMR-CONTAINING SHOTS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDPPS	UP-TO-DATE FLAG (PROV INFO): 1+ PNEUMOCOCCAL POLYSACCHARIDE SHOT, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDTD	UP-TO-DATE FLAG (PROV INFO) FOR TD/TDAP, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
P_UTDTD_POST10	UP-TO-DATE FLAG (PROV INFO): 1+ TD-ONLY SINCE AGE 10 YEARS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDTDAP	UP-TO-DATE FLAG (PROV INFO): 1+ TDAP-ONLY SHOT SINCE AGE 10 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDTDAP7	UP-TO-DATE FLAG (PROV INFO): 1+ TDAP-ONLY SHOT SINCE AGE 7 YEARS, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.			Y	Y	Y	
P_UTDTDP_POST10	UP-TO-DATE FLAG (PROV INFO): 1+ TD/TDAP-CONTAINING SINCE AGE 10 YEARS, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDVRC	UP-TO-DATE FLAG (PROV INFO): 1+ VARICELLA-CONTAINING SHOT AT 12+ MONTHS OF AGE, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDVRC_NOHIST4	UP-TO-DATE FLAG (PROV INFO): 1+ VARICELLA-CONTAINING SHOT AT 4+ YEARS OF AGE, NO HISTORY OF CHICKEN POX DISEASE, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
P_UTDVRC2	UP-TO-DATE FLAG (PROV INFO): 2+ VARICELLA-CONTAINING SHOTS AT 12+ MONTHS OF AGE, EXCLUDING ANY VACCINATIONS AFTER THE RDD INTERVIEW DATE.	Y	Y	Y	Y	Y	
P_UTDVRC2_NOHIST4	UP-TO-DATE FLAG (PROV INFO): 2+ VARICELLA-CONTAINING SHOT AT 4+ YEARS OF AGE, NO HISTORY OF CHICKEN POX DISEASE, EXCLUDING VACCINATIONS AFTER THE HOUSEHOLD INTERVIEW DATE.				Y	Y	
PDAT	ADEQUATE PROVIDER DATA FLAG	Y	Y	Y	Y	Y	
PPS_AGE1	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #1	Y	Y	Y	Y	Y	
PPS_AGE2	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #2	Y	Y	Y	Y	Y	
PPS_AGE3	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #3	Y	Y	Y	Y	Y	
PPS_AGE4	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #4	Y	Y	Y	Y	Y	
PPS_AGE5	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #5	Y	Y	Y	Y	Y	
PPS_AGE6	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #6	Y	Y	Y	Y	Y	
PPS_AGE7	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #7	Y	Y	Y	Y	Y	
PPS_AGE8	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #8	Y	Y	Y	Y	Y	
PPS_AGE9	AGE IN YEARS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #9	Y	Y	Y	Y	Y	
PPS_DAGE1	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #1				Y	Y	
PPS_DAGE2	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #2				Y	Y	
PPS_DAGE3	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #3				Y	Y	
PPS_DAGE4	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #4				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
PPS_DAGE5	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #5				Y	Y	
PPS_DAGE6	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #6				Y	Y	
PPS_DAGE7	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #7				Y	Y	
PPS_DAGE8	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #8				Y	Y	
PPS_DAGE9	AGE IN DAYS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #9				Y	Y	
PPS_MAGE1	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #1				Y	Y	
PPS_MAGE2	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #2				Y	Y	
PPS_MAGE3	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #3				Y	Y	
PPS_MAGE4	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #4				Y	Y	
PPS_MAGE5	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #5				Y	Y	
PPS_MAGE6	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #6				Y	Y	
PPS_MAGE7	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #7				Y	Y	
PPS_MAGE8	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #8				Y	Y	
PPS_MAGE9	AGE IN MONTHS OF PROV-REPORTED PNEUMOCOCCAL POLYSACCHARIDE SHOT #9				Y	Y	
PROVWT	FINAL PROVIDER-PHASE WEIGHT (EXCLUDING U.S. VIRGIN ISLANDS)	Y	Y	Y			
PROVWT_D	**FINAL DUAL-FRAME PROVIDER-PHASE WEIGHT**				**Y**	**Y**	
PROVWT_LL	**FINAL LANDLINE PROVIDER-PHASE WEIGHT (EXCLUDING U.S. VIRGIN ISLANDS)**				**Y**		
PROVWTVI	FINAL PROVIDER-PHASE WEIGHT (INCLUDING U.S. VIRGIN ISLANDS)		Y	Y			
PROVWTVI_D	**FINAL PROVIDER-PHASE WEIGHT (INCLUDING U.S. VIRGIN ISLANDS)**					**Y**	
PROVWTVI_LL	**FINAL LANDLINE PROVIDER-PHASE WEIGHT (INCLUDING U.S. VIRGIN ISLANDS)**				**Y**		
RACE_K	RACE OF TEEN WITH MULTIRACE CATEGORY (RECODE)	Y	Y	Y	Y	Y	
RACEETHK	RACE/ETHNICITY OF TEEN WITH MULTIRACE CATEGORY (RECODE)	Y	Y	Y	Y	Y	
RDDWT	FINAL HOUSEHOLD-PHASE WEIGHT (EXCLUDING U.S. VIRGIN ISLANDS)	Y	Y	Y			
RDDWT_D	**FINAL DUAL-FRAME HOUSEHOLD-PHASE WEIGHT**				**Y**	**Y**	
RDDWT_LL	**FINAL LANDLINE HOUSEHOLD-PHASE WEIGHT (EXCLUDING U.S. VIRGIN ISLANDS)**				**Y**		
RDDWTVI	FINAL HOUSEHOLD-PHASE WEIGHT (INCLUDING U.S. VIRGIN ISLANDS)		Y	Y			
RDDWTVI_D	**FINAL HOUSEHOLD-PHASE WEIGHT (INCLUDING U.S. VIRGIN ISLANDS)**					**Y**	
RDDWTVI_LL	**FINAL LANDLINE HOUSEHOLD-PHASE WEIGHT (INCLUDING U.S. VIRGIN ISLANDS)**				**Y**		
REGISTRY	DID TEEN'S PROVIDERS REPORT TEEN'S IMMUNIZATIONS TO IMMUNIZATION REGISTRY?	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
RENT_OWN	IS HOME OWNED/BEING BOUGHT, RENTED, OR OCCUPIED BY SOME OTHER ARRANGEMENT?		Y	Y	Y	Y	
RISK_EVER	HAS DOCTOR, NURSE, OR OTHER HEALTH CARE PROFESSIONAL EVER SAID THAT TEEN HAS HAD ANY OF THE FOLLOWING HEALTH CONDITIONS?	Y	Y	Y	Y	Y	
RISK_HH	DO ANY OTHER MEMBERS OF TEEN'S HOUSEHOLD HAVE ANY OF THE FOLLOWING HEALTH CONDITIONS?	Y	Y	Y	Y	Y	
RISK_NOW	DOES TEEN STILL HAVE ANY OF THESE CONDITIONS?	Y	Y	Y	Y	Y	
SEQNUMT	UNIQUE TEEN IDENTIFIER	Y	Y	Y	Y	Y	
SEX	GENDER OF CHILD	Y	Y	Y	Y	Y	
SHOTCARD	SHOT CARD FLAG	Y	Y	Y	Y	Y	
SHOTCARD_ALL	HH-REPORT: DOES SHOT RECORD INCLUDE ALL VACCINATIONS?	Y	Y	Y	Y	Y	
STATE	TRUE STATE OF RESIDENCE (STATE FIPS CODE)	Y	Y	Y	Y	Y	
STRATUM	**STRATUM VARIABLE FOR ALL VARIANCE ESTIMATION**					**Y**	
STRATUM_D	**STRATUM VARIABLE FOR DUAL-FRAME VARIANCE ESTIMATION**				**Y**		
TDP_AGE1	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #1	Y	Y	Y	Y	Y	
TDP_AGE2	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #2	Y	Y	Y	Y	Y	
TDP_AGE3	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #3	Y	Y	Y	Y	Y	
TDP_AGE4	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #4	Y	Y	Y	Y	Y	
TDP_AGE5	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #5	Y	Y	Y	Y	Y	
TDP_AGE6	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #6	Y	Y	Y	Y	Y	
TDP_AGE7	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #7	Y	Y	Y	Y	Y	
TDP_AGE8	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #8	Y	Y	Y	Y	Y	
TDP_AGE9	AGE IN YEARS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #9	Y	Y	Y	Y	Y	
TDP_DAGE1	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #1				Y	Y	
TDP_DAGE2	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #2				Y	Y	
TDP_DAGE3	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #3				Y	Y	
TDP_DAGE4	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #4				Y	Y	
TDP_DAGE5	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #5				Y	Y	
TDP_DAGE6	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #6				Y	Y	
TDP_DAGE7	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #7				Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
TDP_DAGE8	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #8				Y	Y	
TDP_DAGE9	AGE IN DAYS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #9				Y	Y	
TDP_MAGE1	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #1				Y	Y	
TDP_MAGE2	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #2				Y	Y	
TDP_MAGE3	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #3				Y	Y	
TDP_MAGE4	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #4				Y	Y	
TDP_MAGE5	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #5				Y	Y	
TDP_MAGE6	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #6				Y	Y	
TDP_MAGE7	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #7				Y	Y	
TDP_MAGE8	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #8				Y	Y	
TDP_MAGE9	AGE IN MONTHS OF PROV-REPORTED TD/TDAP-CONTAINING SHOT #9				Y	Y	
TEL_SAMPFRAME	**SAMPLE FRAME INDICATOR (LANDLINE OR CELL-PHONE)**				**Y**		
TET_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED TETANUS BOOSTER SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
TET_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY TETANUS BOOSTER SHOTS? (RECALL)	Y	Y	Y	Y	Y	
TET_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY TETANUS BOOSTER SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	
TET_LAST_AGE	AGE IN YEARS AT LAST TETANUS BOOSTER SHOT (RECALL)	Y	Y	Y	Y	Y	
TET_LAST_TYPE	TYPE OF LAST TETANUS BOOSTER SHOT (RECALL)	Y	Y	Y	Y	Y	
TET_NUM_SC	NUMBER OF HH-REPORTED TETANUS BOOSTER SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	
TET_PLACE_1	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: DOCTOR'S OFFICE	Y	Y	Y	Y	Y	
TET_PLACE_10	**KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: HOSPITAL-BASED CLINIC**					**Y**	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
TET_PLACE_11	**KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: WHILE HOSPITALIZED**					**Y**	
TET_PLACE_12	**KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: ELEMENTARY/MIDDLE/HIGH SCHOOL**					**Y**	
TET_PLACE_2	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: EMERGENCY ROOM	Y	Y	Y	Y	Y	
TET_PLACE_3	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: HEALTH DEPARTMENT	Y	Y	Y	Y	Y	
TET_PLACE_4	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: CLINIC OR HEALTH CENTER	Y	Y	Y	Y	Y	
TET_PLACE_5	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: HOSPITAL	Y	Y	Y	Y	Y	
TET_PLACE_6	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: OTHER MEDICALLY-RELATED PLACE	Y	Y	Y	Y	Y	
TET_PLACE_7	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: PHARMACY OR DRUG STORE	Y	Y	Y	Y	Y	
TET_PLACE_8	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: WORKPLACE	Y	Y	Y	Y	Y	
TET_PLACE_9	KIND OF PLACE TEEN RECEIVED TETANUS BOOSTER SHOT AFTER AGE 7 YEARS: OTHER NON-MEDICALLY-RELATED PLACE	Y	Y	Y	Y	Y	
TET_REAS_1	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: NOT RECOMMENDED	Y	Y	Y	Y	Y	
TET_REAS_10	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: COSTS	Y	Y	Y	Y	Y	
TET_REAS_11	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: SAFETY CONCERN/SIDE EFFECTS	Y	Y	Y	Y	Y	
TET_REAS_12	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: EFFECTIVENESS CONCERN	Y	Y	Y	Y	Y	
TET_REAS_13	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: CHILD FEARFUL	Y	Y	Y	Y	Y	
TET_REAS_14	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: CHILD SHOULD MAKE DECISION	Y	Y	Y	Y	Y	
TET_REAS_15	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: COLLEGE SHOT	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
TET_REAS_16	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: DON'T BELIEVE IN VACCINATIONS	Y	Y	Y	Y	Y	
TET_REAS_17	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: FAMILY/PARENTAL DECISION	Y	Y	Y	Y	Y	
TET_REAS_18	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: HANDICAPPED/SPECIAL NEEDS/ILLNESS	Y	Y	Y	Y	Y	
TET_REAS_19	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: RELIGION/ORTHODOX	Y	Y	Y	Y	Y	
TET_REAS_2	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: LACK OF KNOWLEDGE	Y	Y	Y	Y	Y	
TET_REAS_20	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: TIME	Y	Y	Y	Y	Y	
TET_REAS_21	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: MORE INFO/NEW VACCINE	Y	Y	Y	Y	Y	
TET_REAS_22	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: ALREADY UP-TO-DATE	Y	Y	Y	Y	Y	
TET_REAS_23	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: NOT AVAILABLE	Y	Y	Y	Y	Y	
TET_REAS_24	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: NOT A SCHOOL REQUIREMENT	Y	Y	Y	Y	Y	
TET_REAS_3	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: NOT NEEDED OR NOT NECESSARY	Y	Y	Y	Y	Y	
TET_REAS_4	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: NO DOCTOR OR DOCTOR'S VISIT NOT SCHEDULED	Y	Y	Y	Y	Y	
TET_REAS_5	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: NOT APPROPRIATE AGE	Y	Y	Y	Y	Y	
TET_REAS_7	MAIN REASON TEEN DID NOT RECEIVE TETANUS BOOSTER SHOTS: OTHER REASON	Y	Y	Y	Y	Y	
TET_RECOM	HAD OR HAS DOCTOR OR OTHER HEALTH CARE PROFESSIONAL EVER RECOMMENDED THAT TEEN RECEIVE TETANUS BOOSTER SHOTS?	Y	Y	Y	Y	Y	
TET_TYPE1	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #1	Y	Y	Y	Y	Y	
TET_TYPE2	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #2	Y	Y	Y	Y	Y	
TET_TYPE3	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #3	Y	Y	Y	Y	Y	
TET_TYPE4	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #4	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
TET_TYPE5	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #5	Y	Y	Y	Y	Y	
TET_TYPE6	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #6	Y	Y	Y	Y	Y	
TET_TYPE7	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #7	Y	Y	Y	Y	Y	
TET_TYPE8	TYPE OF HH-REPORTED TETANUS BOOSTER SHOT #8	Y	Y	Y	Y	Y	
TIS_INS_1	IS TEEN COVERED BY HEALTH INSURANCE PROVIDED THROUGH EMPLOYER OR UNION?	Y	Y	Y	Y	Y	
TIS_INS_11	SINCE AGE 11, ANY TIME WHEN TEEN WAS NOT COVERED BY ANY HEALTH INSURANCE?	Y	Y	Y	Y	Y	
TIS_INS_2	IS TEEN COVERED BY ANY MEDICAID PLAN?	Y	Y	Y	Y	Y	
TIS_INS_3	IS TEEN COVERED BY S-CHIP?	Y	Y	Y	Y	Y	
TIS_INS_3A	IS TEEN COVERED BY ANY MEDICAID PLAN OR S-CHIP?	Y	Y	Y	Y	Y	
TIS_INS_4	IS TEEN COVERED BY INDIAN HEALTH SERVICE?	Y					Replaced by TIS_INS_4_5 starting 2009.
TIS_INS_4_5	IS TEEN COVERED BY INDIAN HEALTH SERVICE, MILITARY HEALTH CARE, TRICARE, CHAMPUS, OR CHAMP-VA?		Y	Y	Y	Y	Replaces TIS_INS_4 and TIS_INS_5 starting 2009.
TIS_INS_5	IS TEEN COVERED BY MILITARY HEALTH CARE, TRICARE, CHAMPUS, OR CHAMP-VA?	Y					Replaced by TIS_INS_4_5 starting 2009.
TIS_INS_6	IS TEEN COVERED BY ANY OTHER HEALTH INSURANCE OR HEALTH CARE PLAN?	Y	Y	Y	Y	Y	
VFC_I	DERIVED: IS TEEN VFC ELIGIBLE?		Y	Y	Y	Y	
VFC_ORDER	DO TEEN'S PROVIDERS ORDER VACCINES FROM STATE/LOCAL HEALTH DEPT?	Y	Y	Y	Y	Y	
VISITS	IN PAST 12 MONTHS NUMBER OF TIMES TEEN HAS SEEN A DOCTOR OR OTHER HEALTH CARE PROFESSIONAL	Y	Y	Y	Y	Y	
VRC_AGE_SC1	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #1 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC2	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #2 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC3	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #3 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC4	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #4 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC5	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #5 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC6	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #6 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC7	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #7 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE_SC8	AGE OF TEEN IN YEARS AT HH-REPORTED VARICELLA SHOT #8 (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_AGE1	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #1	Y	Y	Y	Y	Y	
VRC_AGE2	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #2	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
VRC_AGE3	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #3	Y	Y	Y	Y	Y	
VRC_AGE4	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #4	Y	Y	Y	Y	Y	
VRC_AGE5	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #5	Y	Y	Y	Y	Y	
VRC_AGE6	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #6	Y	Y	Y	Y	Y	
VRC_AGE7	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #7	Y	Y	Y	Y	Y	
VRC_AGE8	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #8	Y	Y	Y	Y	Y	
VRC_AGE9	AGE IN YEARS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #9	Y	Y	Y	Y	Y	
VRC_ANY_REC	HH-REPORT: HAS TEEN EVER RECEIVED ANY VARICELLA SHOTS? (RECALL)	Y	Y	Y	Y	Y	
VRC_ANY_SC	HH-REPORT: HAS TEEN EVER RECEIVED ANY VARICELLA SHOTS? (SHOTCARD)	Y	Y	Y	Y	Y	
VRC_DAGE1	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #1				Y	Y	
VRC_DAGE2	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #2				Y	Y	
VRC_DAGE3	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #3				Y	Y	
VRC_DAGE4	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #4				Y	Y	
VRC_DAGE5	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #5				Y	Y	
VRC_DAGE6	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #6				Y	Y	
VRC_DAGE7	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #7				Y	Y	
VRC_DAGE8	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #8				Y	Y	
VRC_DAGE9	AGE IN DAYS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #9				Y	Y	
VRC_HIST	HISTORY OF CHICKEN POX REPORTED BY THE HOUSEHOLD OR BY ANY PROVIDER	Y	Y	Y	Y	Y	
VRC_MAGE1	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #1				Y	Y	
VRC_MAGE2	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #2				Y	Y	
VRC_MAGE3	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #3				Y	Y	
VRC_MAGE4	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #4				Y	Y	
VRC_MAGE5	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #5				Y	Y	
VRC_MAGE6	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #6				Y	Y	
VRC_MAGE7	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #7				Y	Y	
VRC_MAGE8	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #8				Y	Y	
VRC_MAGE9	AGE IN MONTHS OF PROV-REPORTED VARICELLA-CONTAINING SHOT #9				Y	Y	
VRC_NUM_REC	NUMBER OF HH-REPORTED VARICELLA SHOTS RECEIVED (RECALL)	Y	Y	Y	Y	Y	
VRC_NUM_SC	NUMBER OF HH-REPORTED VARICELLA SHOTS RECEIVED (SHOTCARD)	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
VRC_NUM_TOT	NUMBER OF HH-REPORTED VARICELLA SHOTS RECEIVED (TOTAL)	Y	Y	Y	Y	Y	
XFLUTY1	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #1 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY2	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #2 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY3	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #3 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY4	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #4 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY5	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #5 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY6	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #6 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY7	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #7 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY8	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #8 TYPE CODE	Y	Y	Y	Y	Y	
XFLUTY9	SEASONAL INFLUENZA VACCINATION IN PAST THREE YEARS #9 TYPE CODE	Y	Y	Y	Y	Y	
XH1NTY1	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #1 TYPE CODE			Y	Y	Y	
XH1NTY2	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #2 TYPE CODE			Y	Y	Y	
XH1NTY3	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #3 TYPE CODE			Y	Y	Y	
XH1NTY4	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #4 TYPE CODE			Y	Y	Y	
XH1NTY5	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #5 TYPE CODE			Y	Y	Y	
XH1NTY6	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #6 TYPE CODE			Y	Y	Y	
XH1NTY7	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #7 TYPE CODE			Y	Y	Y	
XH1NTY8	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #8 TYPE CODE			Y	Y	Y	
XH1NTY9	MONOVALENT 2009 H1N1 INFLUENZA VACCINATION #9 TYPE CODE			Y	Y	Y	
XHEPATY1	HEPATITIS A-CONTAINING VACCINATION #1 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY2	HEPATITIS A-CONTAINING VACCINATION #2 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY3	HEPATITIS A-CONTAINING VACCINATION #3 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY4	HEPATITIS A-CONTAINING VACCINATION #4 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY5	HEPATITIS A-CONTAINING VACCINATION #5 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY6	HEPATITIS A-CONTAINING VACCINATION #6 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY7	HEPATITIS A-CONTAINING VACCINATION #7 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY8	HEPATITIS A-CONTAINING VACCINATION #8 TYPE CODE	Y	Y	Y	Y	Y	
XHEPATY9	HEPATITIS A-CONTAINING VACCINATION #9 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY1	HEPATITIS B-CONTAINING VACCINATION #1 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY2	HEPATITIS B-CONTAINING VACCINATION #2 TYPE CODE	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
XHEPBTY3	HEPATITIS B-CONTAINING VACCINATION #3 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY4	HEPATITIS B-CONTAINING VACCINATION #4 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY5	HEPATITIS B-CONTAINING VACCINATION #5 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY6	HEPATITIS B-CONTAINING VACCINATION #6 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY7	HEPATITIS B-CONTAINING VACCINATION #7 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY8	HEPATITIS B-CONTAINING VACCINATION #8 TYPE CODE	Y	Y	Y	Y	Y	
XHEPBTY9	HEPATITIS B-CONTAINING VACCINATION #9 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY1	MEASLES-CONTAINING VACCINATION #1 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY2	MEASLES-CONTAINING VACCINATION #2 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY3	MEASLES-CONTAINING VACCINATION #3 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY4	MEASLES-CONTAINING VACCINATION #4 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY5	MEASLES-CONTAINING VACCINATION #5 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY6	MEASLES-CONTAINING VACCINATION #6 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY7	MEASLES-CONTAINING VACCINATION #7 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY8	MEASLES-CONTAINING VACCINATION #8 TYPE CODE	Y	Y	Y	Y	Y	
XMCVTY9	MEASLES-CONTAINING VACCINATION #9 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY1	MENINGOCOCCAL-CONTAINING VACCINATION #1 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY2	MENINGOCOCCAL-CONTAINING VACCINATION #2 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY3	MENINGOCOCCAL-CONTAINING VACCINATION #3 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY4	MENINGOCOCCAL-CONTAINING VACCINATION #4 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY5	MENINGOCOCCAL-CONTAINING VACCINATION #5 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY6	MENINGOCOCCAL-CONTAINING VACCINATION #6 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY7	MENINGOCOCCAL-CONTAINING VACCINATION #7 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY8	MENINGOCOCCAL-CONTAINING VACCINATION #8 TYPE CODE	Y	Y	Y	Y	Y	
XMENTY9	MENINGOCOCCAL-CONTAINING VACCINATION #9 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY1	TD/TDAP-CONTAINING VACCINATION #1 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY2	TD/TDAP-CONTAINING VACCINATION #2 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY3	TD/TDAP-CONTAINING VACCINATION #3 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY4	TD/TDAP-CONTAINING VACCINATION #4 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY5	TD/TDAP-CONTAINING VACCINATION #5 TYPE CODE	Y	Y	Y	Y	Y	

Variable Name	Variable Label	2008	2009	2010	2011	2012	Notes
XTDPTY6	TD/TDAP-CONTAINING VACCINATION #6 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY7	TD/TDAP-CONTAINING VACCINATION #7 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY8	TD/TDAP-CONTAINING VACCINATION #8 TYPE CODE	Y	Y	Y	Y	Y	
XTDPTY9	TD/TDAP-CONTAINING VACCINATION #9 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY1	VARICELLA-CONTAINING VACCINATION #1 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY2	VARICELLA-CONTAINING VACCINATION #2 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY3	VARICELLA-CONTAINING VACCINATION #3 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY4	VARICELLA-CONTAINING VACCINATION #4 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY5	VARICELLA-CONTAINING VACCINATION #5 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY6	VARICELLA-CONTAINING VACCINATION #6 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY7	VARICELLA-CONTAINING VACCINATION #7 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY8	VARICELLA-CONTAINING VACCINATION #8 TYPE CODE	Y	Y	Y	Y	Y	
XVRCTY9	VARICELLA-CONTAINING VACCINATION #9 TYPE CODE	Y	Y	Y	Y	Y	
YEAR	SAMPLING YEAR	Y	Y	Y	Y	Y	

Appendix E: Summary Tables

Table E.1: Estimated Population Totals and Sample Sizes of Teens 13-17 Years of Age by State and Estimation Area, National Immunization Survey - Teen, 2012

State/Estimation Area	ESTIAPT12	Estimated Population Total of Teens	Number of Teens with Complete Household Interviews	Number of Teens with Adequate Provider Data	Percent of Teens with Adequate Provider Data
Total U.S.[1]		20,787,057	31,792	19,199	60.39
Alabama	20	321,732	504	317	62.90
Alaska	74	50,238	554	340	61.37
Arizona	66	449,634	636	360	56.60
Arkansas	46	197,473	527	322	61.10
California	68	2,630,411	719	430	59.81
Colorado	60	333,386	524	311	59.35
Connecticut	1	242,778	499	323	64.73
Delaware	13	57,081	554	341	61.55
District of Columbia	12	25,692	541	342	63.22
Florida	22	1,160,414	578	325	56.23
Georgia	25	688,649	525	328	62.48
Hawaii	72	82,379	559	342	61.18
Idaho	75	116,332	601	357	59.40
Illinois		872,102	1,125	632	56.18
IL-City of Chicago	35	170,993	516	287	55.62
IL-Rest of State	34	701,109	609	345	56.65
Indiana	36	452,701	528	341	64.58
Iowa	56	202,458	501	325	64.87
Kansas	57	198,735	536	340	63.43
Kentucky	27	284,736	513	333	64.91
Louisiana	47	308,850	615	370	60.16
Maine	4	79,928	475	319	67.16
Maryland	14	385,101	627	325	51.83
Massachusetts	2	414,154	535	347	64.86
Michigan	38	679,895	550	368	66.91
Minnesota	40	357,782	463	322	69.55
Mississippi	28	207,626	567	321	56.61
Missouri	58	399,970	531	292	54.99
Montana	61	62,190	516	325	62.98
Nebraska	59	122,250	505	328	64.95
Nevada	73	183,248	603	329	54.56
New Hampshire	5	86,603	460	278	60.43
New Jersey	8	592,555	574	330	57.49
New Mexico	49	143,106	544	331	60.85
New York		1,216,701	1,096	627	57.21
NY-City of New York	11	468,433	576	312	54.17

Table E.1: Estimated Population Totals and Sample Sizes of Teens 13-17 Years of Age by State and Estimation Area, National Immunization Survey - Teen, 2012

State/Estimation Area	ESTIAPT12	Estimated Population Total of Teens	Number of Teens with Complete Household Interviews	Number of Teens with Adequate Provider Data	Percent of Teens with Adequate Provider Data
NY-Rest of State	10	748,268	520	315	60.58
North Carolina	29	633,720	553	347	62.75
North Dakota	62	40,425	452	324	71.68
Ohio	41	774,236	553	327	59.13
Oklahoma	50	257,165	516	322	62.40
Oregon	76	243,916	558	381	68.28
Pennsylvania		798,314	1,215	741	60.99
PA-Philadelphia County	17	90,416	560	348	62.14
PA-Rest of State	16	707,898	655	393	60.00
Rhode Island	6	65,020	491	327	66.60
South Carolina	30	298,113	564	310	54.96
South Dakota	63	54,368	514	298	57.98
Tennessee	31	420,423	553	331	59.86
Texas		1,845,560	2,927	1,594	54.46
TX-Bexar County	55	126,928	615	346	56.26
TX-City of Houston	54	137,592	723	393	54.36
TX-Rest of State	51	1,581,040	1,589	855	53.81
Utah	64	226,329	574	345	60.10
Vermont	7	38,718	464	322	69.40
Virginia	18	517,148	577	334	57.89
Washington	77	442,300	589	353	59.93
West Virginia	19	110,442	503	282	56.06
Wisconsin	44	377,457	469	307	65.46
Wyoming	65	36,512	535	333	62.24
U.S. Virgin Islands[2]	95	7,499	1,033	547	52.95

[1] Excludes U.S. Virgin Islands

[2] Landline sample only; there was no cell-phone sample fielded in the U.S. Virgin Islands.

Table E.2: Estimated Population Totals and Sample Sizes by Age of Teen by Maternal Education, National Immunization Survey - Teen, 2012

Age of Teen in Years	Maternal Education	Teens with Completed Household Interviews[1]		Teens with Adequate Provider Data[1]	
		Unweighted Completes	Weighted Completes[2]	Unweighted Completes	Weighted Completes[3]
13	<12 Years	605	576,094	404	597,594
13	12 Years	1,161	983,276	731	1,003,773
13	>12, Non College Graduate	1,764	1,137,127	1,086	1,127,005
13	College Grad	2,778	1,480,479	1,716	1,465,816
14	<12 Years	620	634,482	389	645,264
14	12 Years	1,269	1,037,839	748	995,078
14	>12, Non College Graduate	1,812	1,085,881	1,121	1,076,780
14	College Grad	2,741	1,337,249	1,703	1,361,119
15	<12 Years	655	681,121	404	674,080
15	12 Years	1,225	1,064,789	712	1,080,761
15	>12, Non College Graduate	1,785	1,085,797	1,052	1,056,279
15	College Grad	2,799	1,527,531	1,724	1,592,973
16	<12 Years	618	536,173	381	535,779
16	12 Years	1,245	1,007,768	750	1,045,602
16	>12, Non College Graduate	1,810	1,143,454	1,067	1,194,766
16	College Grad	2,719	1,381,972	1,627	1,410,273
17	<12 Years	517	494,425	296	465,617
17	12 Years	1,286	1,068,737	723	1,041,156
17	>12, Non College Graduate	1,768	1,075,847	1,050	1,082,923
17	College Grad	2,615	1,447,016	1,515	1,334,418
Total		31,792	20,787,057	19,199	20,787,057

[1] Excludes U.S. Virgin Islands
[2] Weighted by dual-frame weight RDDWT_D
[3] Weighted by dual-frame weight PROVWT_D

Table E.3: Estimated Population Totals and Sample Sizes by Age of Teen by Poverty Status, National Immunization Survey - Teen, 2012

Age of Teen in Years	Poverty Status	Teens with Completed Household Interviews[1]		Teens with Adequate Provider Data[1]	
		Unweighted Completes	Weighted Completes[2]	Unweighted Completes	Weighted Completes[3]
13	Above poverty, > $75K	2,646	1,336,085	1,684	1,338,808
13	Above poverty, <= $75K	2,276	1,562,053	1,432	1,607,649
13	Below poverty	1,076	1,096,078	700	1,092,744
13	Unknown	310	182,761	121	154,987
14	Above poverty, > $75K	2,680	1,274,349	1,696	1,281,189
14	Above poverty, <= $75K	2,393	1,510,255	1,459	1,483,142
14	Below poverty	1,044	1,087,756	684	1,109,970
14	Unknown	325	223,092	122	203,939
15	Above poverty, > $75K	2,768	1,387,699	1,762	1,463,485
15	Above poverty, <= $75K	2,366	1,628,227	1,383	1,697,541
15	Below poverty	1,008	1,133,699	639	1,081,088
15	Unknown	322	209,612	108	161,980
16	Above poverty, > $75K	2,687	1,297,116	1,681	1,324,327
16	Above poverty, <= $75K	2,415	1,556,422	1,419	1,628,320
16	Below poverty	957	996,644	612	1,057,805
16	Unknown	333	219,183	113	175,969
17	Above poverty, > $75K	2,656	1,339,989	1,594	1,333,179
17	Above poverty, <= $75K	2,333	1,539,003	1,356	1,422,384
17	Below poverty	834	942,429	501	966,319
17	Unknown	363	264,604	133	202,232
Total		31,792	20,787,057	19,199	20,787,057

[1] Excludes U.S. Virgin Islands
[2] Weighted by dual-frame weight RDDWT_D
[3] Weighted by dual-frame weight PROVWT_D

Table E.4: Estimated Population Totals and Sample Sizes by Race/Ethnicity by Poverty Status, National Immunization Survey - Teen, 2012

Race/Ethnicity of Teen[2]	Poverty Status	Teens with Completed Household Interviews[1]		Teens with Adequate Provider Data[1]	
		Unweighted Completes	Weighted Completes[3]	Unweighted Completes	Weighted Completes[4]
Hispanic	Above poverty, > $75K	964	618,214	542	633,235
Hispanic	Above poverty, <= $75K	1,622	1,499,302	905	1,545,167
Hispanic	Below poverty	1,647	2,144,477	1,010	2,137,889
Hispanic	Unknown	241	254,816	95	207,899
Non-Hispanic White Only	Above poverty, > $75K	10,536	4,972,058	6,739	5,014,910
Non-Hispanic White Only	Above poverty, <= $75K	7,631	4,404,399	4,679	4,351,171
Non-Hispanic White Only	Below poverty	1,710	1,494,048	1,136	1,592,753
Non-Hispanic White Only	Unknown	1,071	629,897	376	466,490
Non-Hispanic Black Only	Above poverty, > $75K	770	484,581	415	498,941
Non-Hispanic Black Only	Above poverty, <= $75K	1,415	1,191,690	811	1,206,774
Non-Hispanic Black Only	Below poverty	1,001	1,100,571	628	1,066,433
Non-Hispanic Black Only	Unknown	187	140,473	74	154,346
Non-Hispanic Other & Multiple Race	Above poverty, > $75K	1,167	560,385	721	593,902
Non-Hispanic Other & Multiple Race	Above poverty, <= $75K	1,115	700,568	654	735,924
Non-Hispanic Other & Multiple Race	Below poverty	561	517,511	362	510,851
Non-Hispanic Other & Multiple Race	Unknown	154	74,067	52	70,374
Total		31,792	20,787,057	19,199	20,787,057

[1] Excludes U.S. Virgin Islands
[2] Race/ethnicity is respondent-reported and the categories presented here are mutually-exclusive.
[3] Weighted by dual-frame weight RDDWT_D
[4] Weighted by dual-frame weight PROVWT_D

Table E.5: Estimated Population Totals and Sample Sizes by Age of Teen by Race/Ethnicity, National Immunization Survey - Teen, 2012

Age of Teen in Years	Race/Ethnicity of Teen[2]	Teens with Completed Household Interviews[1]		Teens with Adequate Provider Data[1]	
		Unweighted Completes	Weighted Completes[3]	Unweighted Completes	Weighted Completes[4]
13	Hispanic	932	915,964	577	989,224
13	Non-Hispanic White Only	4,101	2,302,824	2,597	2,274,479
13	Non-Hispanic Black Only	680	583,241	400	563,128
13	Non-Hispanic Other & Multi-Racial	595	374,947	363	367,357
14	Hispanic	954	920,187	540	894,463
14	Non-Hispanic White Only	4,106	2,169,501	2,581	2,176,355
14	Non-Hispanic Black Only	723	627,424	428	621,135
14	Non-Hispanic Other & Multi-Racial	659	378,339	412	386,288
15	Hispanic	943	983,084	524	965,974
15	Non-Hispanic White Only	4,238	2,324,513	2,637	2,386,963
15	Non-Hispanic Black Only	680	625,574	382	619,251
15	Non-Hispanic Other & Multi-Racial	603	426,067	349	431,906
16	Hispanic	836	789,405	463	782,553
16	Non-Hispanic White Only	4,303	2,368,338	2,616	2,374,174
16	Non-Hispanic Black Only	661	540,616	376	604,871
16	Non-Hispanic Other & Multi-Racial	592	371,008	370	424,823
17	Hispanic	809	908,168	448	891,976
17	Non-Hispanic White Only	4,200	2,335,226	2,499	2,213,353
17	Non-Hispanic Black Only	629	540,461	342	518,109
17	Non-Hispanic Other & Multi-Racial	548	302,170	295	300,677
Total		31,792	20,787,057	19,199	20,787,057

[1] Excludes U.S. Virgin Islands
[2] Race/ethnicity is respondent-reported and the categories presented here are mutually-exclusive.
[3] Weighted by dual-frame weight RDDWT_D
[4] Weighted by dual-frame weight PROVWT_D

Table E.6: Estimated Population Totals and Sample Sizes by Age and Gender of Teen, National Immunization Survey - Teen, 2012

Age of Teen in Years	Gender	Teens with Completed Household Interviews[1]		Teens with Adequate Provider Data[1]	
		Unweighted Completes	Weighted Completes[2]	Unweighted Completes	Weighted Completes[3]
13	Male	3,274	2,092,732	2,050	2,111,682
13	Female	3,034	2,084,245	1,887	2,082,506
14	Male	3,421	2,109,684	2,135	2,132,278
14	Female	3,021	1,985,768	1,826	1,945,962
15	Male	3,354	2,228,287	2,032	2,277,139
15	Female	3,110	2,130,951	1,860	2,126,955
16	Male	3,264	2,034,808	1,984	2,057,346
16	Female	3,128	2,034,559	1,841	2,129,074
17	Male	3,342	2,176,588	1,940	2,063,653
17	Female	2,844	1,909,437	1,644	1,860,462
Total		31,792	20,787,057	19,199	20,787,057

[1] Excludes U.S. Virgin Islands
[2] Weighted by dual-frame weight RDDWT_D
[3] Weighted by dual-frame weight PROVWT_D

Table E.7: Sample Sizes for Shot Card Use by Presence of Adequate Provider Data, National Immunization Survey - Teen, 2012[1]

Shot Card Use	Presence of Adequate Provider Data	Unweighted RDD Completes	Percent	Weighted RDD Completes[2]	Percent[2]
Shot card	Adequate provider data	4,853	15.3	2,846,789	13.7
Shot card	Non-adequate provider data	2,499	7.9	1,480,047	7.1
Not shot card	Adequate provider data	14,346	45.1	9,558,182	46.0
Not shot card	Non-adequate provider data	10,094	31.8	6,902,039	33.2
Total		31,792	100.0	20,787,057	100.0

[1] Excludes U.S. Virgin Islands
[2] Weighted by dual-frame weight RDDWT_D

Table E.8: Estimated Vaccination Coverage*†, With Selected Vaccines Among Adolescents Aged 13-17 Years§, by State and Selected Area -- National Immunization Survey-Teen, United States, 2012

	Both Sexes			Female		
	≥ 1 Td or Tdap¶	≥ 1 Tdap**	≥ 1 MenACWY††	≥ 1 HPV§§	≥ 3 doses HPV¶¶	HPV 3 dose series completion***
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
US National	**88.5(±0.8)**	**84.6(±0.9)**	**74.0(±1.1)**	**53.8(±1.9)**	**33.4(±1.7)**	**66.7(±2.6)**
Alabama	87.2(±5.3)	81.7(±6.0)	60.5(±7.1)	46.6(±10.4)	31.1(±9.9)	69.1(±14.0)
Alaska	78.5(±4.9)	77.1(±5.0)	52.7(±6.2)	56.1(±9.3)	31.4(±8.8)	60.8(±14.0)
Arizona	91.2(±3.6)	87.5(±4.5)	85.5(±5.0)	54.3(±9.5)	36.9(±9.3)	72.8(±12.2)
Arkansas	69.8(±6.4)	64.4(±6.8)	37.5(±7.0)	41.2(±10.7)	18.3(±7.2)	48.0(±17.8)
California	92.7(±3.4)	89.4(±3.8)	76.0(±5.5)	65.0(±8.3)	35.8(±8.4)	58.0(±11.4)
Colorado	93.3(±3.5)	93.2(±3.5)	73.2(±6.6)	61.4(±10.8)	38.0(±11.2)	66.5(±15.3)
Connecticut	92.5(±3.9)	89.3(±4.8)	88.8(±3.7)	57.6(±10.3)	43.6(±10.5)	78.4(±11.6)
Delaware	85.0(±5.1)	77.8(±5.9)	78.0(±6.2)	67.2(±9.8)	50.4(±10.2)	76.6(±10.8)
Dist. of Columbia	90.4(±4.4)	84.5(±5.2)	92.1(±3.3)	57.8(±10.1)	38.5(±9.7)	69.5(±11.7)
Florida	93.4(±3.8)	86.8(±5.1)	68.6(±6.8)	39.4(±10.1)	25.3(±8.8)	70.4(±13.8)
Georgia	87.9(±4.6)	80.5(±6.0)	73.1(±6.8)	52.3(±10.8)	29.0(±9.0)	59.0(±14.2)
Hawaii	79.8(±5.4)	74.1(±5.9)	70.4(±6.3)	64.6(±9.4)	43.4(±9.7)	74.8(±11.5)
Idaho	70.7(±5.8)	64.5(±6.1)	63.2(±6.3)	51.3(±9.5)	27.8(±8.2)	62.0(±16.6)
Illinois	80.2(±5.3)	77.3(±5.4)	67.7(±6.0)	41.2(±8.5)	21.1(±6.3)	57.7(±14.4)
IL-City of Chicago	83.8(±5.5)	78.5(±6.1)	77.0(±6.2)	61.4(±10.4)	37.8(±10.8)	65.9(±15.9)
IL-Rest of State	79.3(±6.5)	77.0(±6.5)	65.4(±7.2)	36.2(±10.1)	16.9(±7.3)	54.0(±19.4)
Indiana	96.9(±2.3)	94.4(±3.0)	92.0(±3.8)	48.4(±9.9)	35.2(±9.1)	77.9(±11.6)
Iowa	80.2(±5.8)	77.8(±5.9)	64.4(±6.7)	57.5(±9.6)	35.6(±9.3)	66.9(±13.7)
Kansas	93.7(±3.1)	92.2(±3.3)	55.9(±7.3)	42.7(±10.5)	25.1(±9.3)	64.1(±16.8)
Kentucky	86.0(±4.7)	80.0(±5.6)	62.9(±6.8)	51.2(±10.6)	34.9(±9.9)	73.4(±14.4)
Louisiana	93.5(±3.1)	89.8(±3.7)	90.8(±3.6)	62.1(±8.6)	40.5(±9.0)	69.9(±12.3)
Maine	84.7(±5.3)	79.5(±5.9)	73.7(±6.1)	61.7(±9.4)	41.8(±9.6)	74.5(±12.4)
Maryland	82.2(±6.1)	78.1(±6.6)	74.9(±6.9)	42.7(±10.9)	30.9(±9.4)	76.0(±12.4)
Massachusetts	98.5(±1.2)	95.7(±2.4)	89.2(±3.7)	69.3(±7.9)	43.0(±9.1)	68.6(±11.9)
Michigan	87.9(±4.4)	84.2(±4.8)	87.5(±4.2)	48.1(±9.7)	32.2(±9.3)	72.1(±12.2)
Minnesota	90.2(±5.3)	85.6(±6.1)	66.6(±6.8)	59.4(±10.3)	33.1(±9.9)	58.7(±15.1)
Mississippi	56.8(±7.2)	53.5(±7.3)	40.7(±7.1)	39.7(±10.6)	12.1(±5.9)	45.7(±20.5)
Missouri	89.9(±4.4)	88.0(±4.8)	58.3(±7.6)	51.6(±10.5)	34.5(±9.7)	69.2(±15.4)
Montana	92.2(±3.5)	90.2(±3.8)	58.6(±6.6)	55.1(±9.8)	41.6(±10.1)	85.4(±7.9)
Nebraska	85.2(±5.3)	81.4(±5.8)	75.5(±6.1)	67.5(±10)	37.3(±10.0)	61.2(±14.8)
Nevada	88.5(±4.9)	86.3(±5.0)	66.3(±6.3)	62.5(±9.5)	37.2(±10.2)	63.7(±12.6)
New Hampshire	97.0(±2.0)	96.3(±2.2)	83.1(±5.6)	52.2(±10.6)	34.5(±9.7)	69.8(±13.5)
New Jersey	94.3(±3.1)	90.9(±4.0)	91.6(±3.9)	54.6(±9.7)	31.6(±8.5)	65.7(±14.2)
New Mexico	91.4(±4.1)	82.6(±5.6)	54.2(±7.0)	51.1(±10.1)	30.3(±8.7)	59.7(±13.5)
New York	93.3(±2.6)	90.3(±2.9)	78.5(±4.1)	56.0(±7.1)	39.7(±7.2)	76.5(±7.8)
NY-City of New York	91.7(±3.6)	86.4(±4.5)	75.3(±5.8)	53.6(±8.9)	37.3(±8.9)	72.8(±10.8)

Table E.8: Estimated Vaccination Coverage*†, With Selected Vaccines Among Adolescents Aged 13-17 Years§, by State and Selected Area -- National Immunization Survey-Teen, United States, 2012

	Both Sexes			Female		
	≥ 1 Td or Tdap¶	≥ 1 Tdap**	≥ 1 MenACWY††	≥ 1 HPV§§	≥ 3 doses HPV¶¶	HPV 3 dose series completion***
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
NY-Rest of State	94.2(±3.6)	92.7(±3.8)	80.5(±5.5)	57.5(±10.2)	41.3(±10.3)	78.8(±10.6)
North Carolina	91.4(±4.0)	87.9(±4.5)	68.2(±6.4)	53.3(±9.7)	35.5(±9.5)	74.8(±12.5)
North Dakota	92.2(±4.5)	89.5(±5.0)	88.1(±4.9)	60.3(±9.8)	40.9(±9.6)	76.6(±11.4)
Ohio	78.9(±6.4)	73.8(±6.7)	66.4(±6.9)	56.4(±10.4)	31.9(±10.5)	67.6(±13.9)
Oklahoma	78.8(±5.5)	77.1(±5.6)	63.8(±6.7)	55.1(±9.5)	38.4(±9.4)	75.3(±10.7)
Oregon	88.8(±3.8)	86.0(±4.5)	58.3(±6.3)	58.5(±9.3)	38.6(±9.3)	69.8(±11.3)
Pennsylvania	91.4(±3.1)	88.4(±3.4)	89.4(±3.6)	57.4(±8.0)	44.6(±8.2)	81.4(±8.3)
PA-Philadelphia	92.0(±3.9)	87.2(±4.7)	92.9(±3.7)	76.2(±8.2)	51.9(±10.3)	69.5(±11.6)
PA-Rest of State	91.4(±3.5)	88.6(±3.8)	88.9(±4.0)	55.0(±9.0)	43.6(±9.2)	83.7(±9.6)
Rhode Island	96.9(±2.1)	94.0(±2.9)	94.3(±2.9)	73.7(±9.4)	57.7(±10.0)	80.6(±9.5)
South Carolina	67.9(±7.1)	64.9(±7.2)	58.5(±7.3)	41.9(±10.6)	26.6(±9.5)	69.0(±16.2)
South Dakota	68.3(±6.3)	65.9(±6.5)	40.0(±6.8)	51.0(±10.1)	31.8(±9.3)	64.2(±14.2)
Tennessee	79.7(±6.0)	77.4(±6.2)	69.4(±6.7)	54.3(±11.0)	28.6(±9.4)	56.1(±15.1)
Texas	88.1(±2.9)	82.5(±3.3)	84.6(±3.3)	51.2(±5.8)	30.3(±5.3)	61.4(±8.3)
TX-Bexar County	87.7(±5.6)	78.6(±7.2)	83.6(±6.0)	43.0(±10.4)	26.3(±9.3)	61.9(±14.3)
TX-City of Houston	89.9(±4.1)	82.5(±5.7)	87.6(±4.5)	55.8(±9.4)	36.8(±9.5)	67.6(±12.2)
TX-Rest of State	88.0(±3.3)	82.9(±3.7)	84.4(±3.8)	51.5(±6.7)	30.1(±6.1)	60.8(±9.5)
Utah	84.9(±5.8)	81.5(±6.3)	56.5(±7.0)	44.3(±10.4)	24.1(±8.4)	54.9(±15.2)
Vermont	94.5(±3.5)	93.1(±3.6)	72.6(±6.1)	66.4(±9.0)	46.2(±9.6)	76.5(±9.7)
Virginia	91.1(±4.1)	88.7(±4.3)	62.1(±7.4)	50.9(±10.9)	27.9(±9.2)	57.9(±16.0)
Washington	89.5(±4.8)	86.0(±5.1)	71.2(±6.6)	64.5(±10.1)	43.5(±9.8)	70.1(±11.3)
West Virginia	73.6(±6.8)	68.2(±7.1)	64.1(±7.4)	45.2(±10.6)	36.1(±10.2)	81.6(±13.0)
Wisconsin	92.6(±3.7)	89.8(±4.4)	74.4(±6.2)	50.5(±10.8)	37.5(±10.5)	78.9(±11.4)
Wyoming	88.4(±4.5)	85.4(±4.8)	59.0(±6.6)	53.9(±10.0)	30.3(±8.7)	59.7(±14.0)
U.S. Virgin Islands* **	78.2(±4.2)	72.0(±4.5)	38.1(±4.8)	28.7(±6.5)	9.1(±4.4)	34.7(±14.0)

* Estimate presented as point estimate (%) ± 95% confidence interval (CI). Estimate=NA (Not Available) if the unweighted sample size for the denominator was <30 or (CI half width)/Estimate > 0.588.

† Estimates with confidence intervals >20 may not be reliable.

§ Adolescents in the 2012 NIS-Teen were born between January 1994 and February 2000. Vaccination coverage estimates include only adolescents who had adequately complete provider-reported immunization records.

¶ ≥1 dose of tetanus toxoid-diphtheria vaccine (Td) or tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of ten years.

** ≥1 dose of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of ten years.

†† ≥1 dose of meningococcal conjugate vaccine or meningococcal-unknown type vaccine.

§§ ≥1 dose of human papillomavirus vaccine, either quadrivalent or bivalent.

¶¶ ≥3 doses of human papillomavirus vaccine, either quadrivalent or bivalent. Some adolescents may have received more than the three recommended HPV doses.

*** Percent who received three doses among those who had at least one HPV dose and at least 24 weeks between the first dose and the interview date.

Appendix F: Vaccine Type Codes

Table F.1: 2012 NIS-Teen Vaccine Type Codes

Vaccine Code	Description
11	Td
14	Tdap
15	Td/Tdap-containing, unknown subtype
30	MMR-only
31	Measles-only
32	Measles-Mumps
33	Measles-Rubella
43	HepB-Hib
61	0.5 ml Recombivax
62	1.0 ml Recombivax
63	Engerix
64	Hepatitis B-only, unknown subtype checked
80	MCV4 (Menactra)
81	MPSV4 (Menomune)
82	Meningococcal-containing, unknown subtype
1L	Monovalent 2009 H1N1 Flu, unknown subtype
1M	Monovalent 2009 H1N1 Flu spray
1M	Injected monovalent 2009 H1N1 Flu
CV	Human Papillomavirus, Cervarix
FL	Seasonal Flu-containing, unknown subtype
FM	Seasonal Flumist
FN	Injected Seasonal Flu, other/unknown subtype
FV	Seasonal Fluvirin
FZ	Seasonal Fluzone
GD	Human Papillomavirus, Gardasil
HA	Hepatitis A-containing, unknown subtype
HB	Hepatitis B-containing, unknown subtype
HO	Hepatitis A-only (Havrix or Vaqta)
HP	Human Papillomavirus, unknown subtype
MM	Measles-containing, unknown subtype
VA	Varicella-containing, unknown subtype
VM	MMR-Varicella
VO	Varicella-only

Appendix G: Trends in the NIS-Teen Response Rates and Vaccination Coverage Rates, 2006-2012

Table G.1: Key Indicators[1] from Landline Sample Household and Provider Data Collection by Survey Year, National Immunization Survey - Teen, 2006-2012[2]

Survey Year	Resolution Rate (%)	Screener Completion Rate (%)	Interview Completion Rate (%)	CASRO Response Rate (%)	Teens with Adequate Provider Data (%)
2006[3]	82.4	81.4	83.7	56.2	52.7
2007[3]	82.2	81.5	83.5	55.9	53.8
2008	82.2	83.8	85.2	58.7	58.1
2009	82.7	85.0	82.5	58.0	57.4
2010	83.1	85.4	81.6	57.9	59.4
2011[4]	82.9	84.7	81.5	57.2	61.5
2012[4]	84.0	84.9	77.2	55.1	62.0

[1] For the definitions of the key indicators see Table 1 of NIS-Teen Data User's Guides for the survey year of interest.
[2] Excludes the U.S. Virgin Islands.
[3] In 2006 and 2007, NIS-Teen was conducted only in Quarter 4.
[4] Landline sample only.

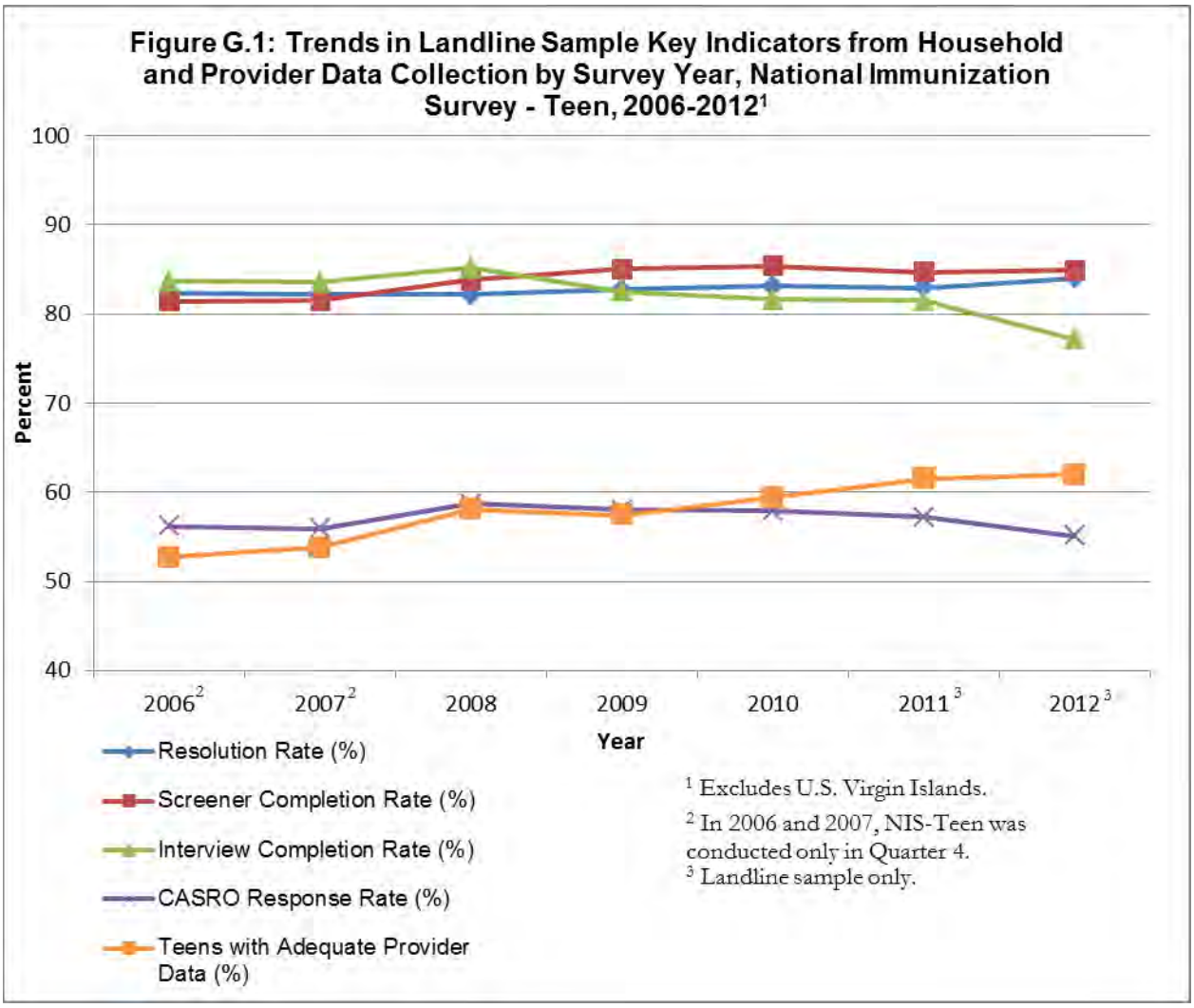


Figure G.1 presents a graphical representation of the data contained in Table G.1. It shows how selected key indicators from landline sample household and provider data collection performed throughout the years, from 2006 to present. Note that these data apply to the landline sample only.

Table G.2: Key Indicators[1] from Cell-Phone Sample Household and Provider Data Collection by Survey Year, National Immunization Survey - Teen, 2011-2012[2]

Survey Year[3]	Resolution Rate (%)	Screener Completion Rate (%)	Interview Completion Rate (%)	CASRO Response Rate (%)	Teens with Adequate Provider Data (%)
2011	46.9	70.2	68.0	22.4	54.6
2012	52.0	70.6	64.0	23.6	56.4

[1] For the definitions of the key indicators see Table 1 of NIS-Teen Data User's Guides for the survey year of interest.
[2] Excludes the U.S. Virgin Islands.
[3] Cell-phone sample was added to the NIS-Teen in 2011.

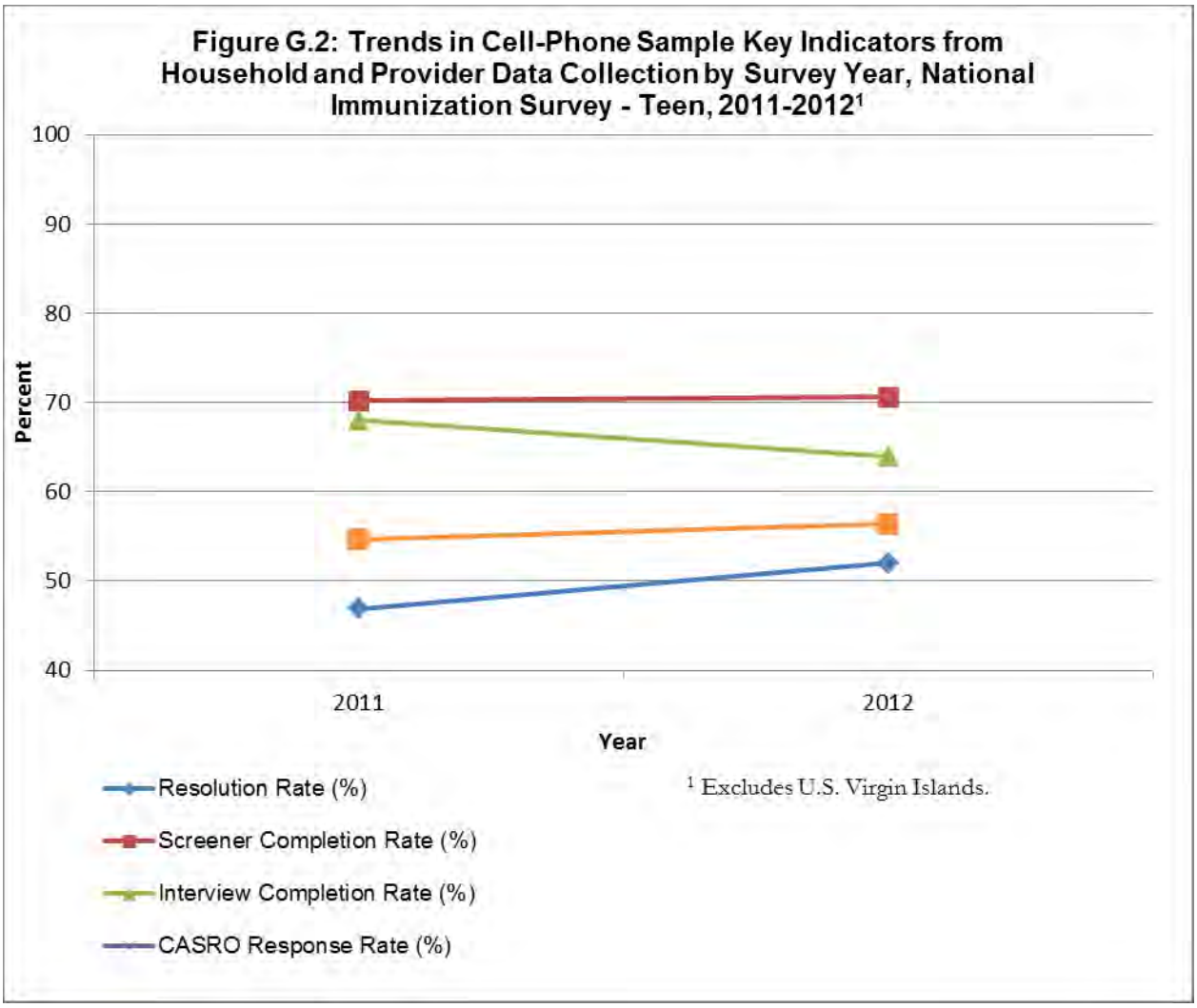


Figure G.2 presents a graphical representation of the data contained in Table G.2. It shows how selected key indicators from cell-phone sample household and provider data collection performed from 2011 to present. Note that these data apply to the cell-phone sample only. Cell-phone sample was added to the NIS in 2011.

Table G.3: Vaccine-Specific Coverage Levels Among Teens Age 13-17 Years in the United States by Survey Year, National Immunization Survey - Teen, 2006-2012[1]

									Varicella			
Survey Year	≥ 1 Td or Tdap[¶]	≥ 1 Tdap Since Age 10**	≥ 1 Tdap Since Age 7[¶¶¶]	≥ 1 MenACWY[††]	≥ 1 HPV[§§]	≥ 3 Doses HPV[†]	≥2 MMR[¶¶]	≥ 3 HepB***	History of Varicella Disease[†††]	≥ 1 doses Varicella Vaccine if Had No History of Varicella Disease	≥ 2 Doses Varicella Vaccine if Had No History of Varicella Disease	History of Varicella Disease or Received ≥ 2 Doses Varicella Vaccine[§§§]
2006[2]	60.1	10.8	N.A.	11.7	N.A.	N.A.	86.9	81.3	69.9	65.5	N.A	N.A.
2007[2]	72.3	30.4	N.A.	32.4	25.1	N.A.	88.9	87.6	65.8	75.7	18.8	N.A.
2008	72.2	40.8	N.A.	41.8	37.2	17.9	89.3	87.9	59.8	81.9	34.1	73.5
2009	76.2	55.6	N.A.	53.6	44.3	26.7	89.1	89.9	52.7	87.0	48.6	75.7
2010	81.2	68.7	68.8	62.6	48.7	31.9	90.4	91.6	44.7	90.5	58.1	76.8
2011[3]	85.3	78.2	78.4	70.5	53.0	34.8	91.1	92.3	36.6	92.3	68.3	79.9
2012	88.5	84.6	85.0	74.0	53.8	33.4	91.4	92.8	30.6	94.7	74.9	82.6

[1] Excludes the U.S. Virgin Islands.
[2] In 2006 and 2007, NIS-Teen was conducted only in Quarter 4.
[3] Prior to 2011, estimates are single-frame, landline-sample estimates. From 2011 onward, estimates are dual-frame (landline plus cell-phone) estimates.
¶ ≥1 dose of tetanus toxoid-diphtheria vaccine (Td) or tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of ten years.
** ≥1 tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of ten years.
†† ≥1 meningococcal conjugate vaccine or meningococcal -unknown type vaccine.
§§ ≥1 human papillomavirus vaccine, either quadrivalent or bivalent. Percentages reported among females only.
† ≥3 human papillomavirus vaccine, either quadrivalent or bivalent. Percentages reported among females only.
¶¶ ≥ 2 doses of measles-mumps-rubella vaccine.
*** ≥3 doses of hepatitis B vaccine.
††† By parent/guardian report or provider records.
§§§ History of disease or received ≥2 doses varicella vaccination.
¶¶¶ ≥1 tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of seven years.
Source: http://www.cdc.gov/vaccines/stats-surv/imz-coverage.htm#nisteen

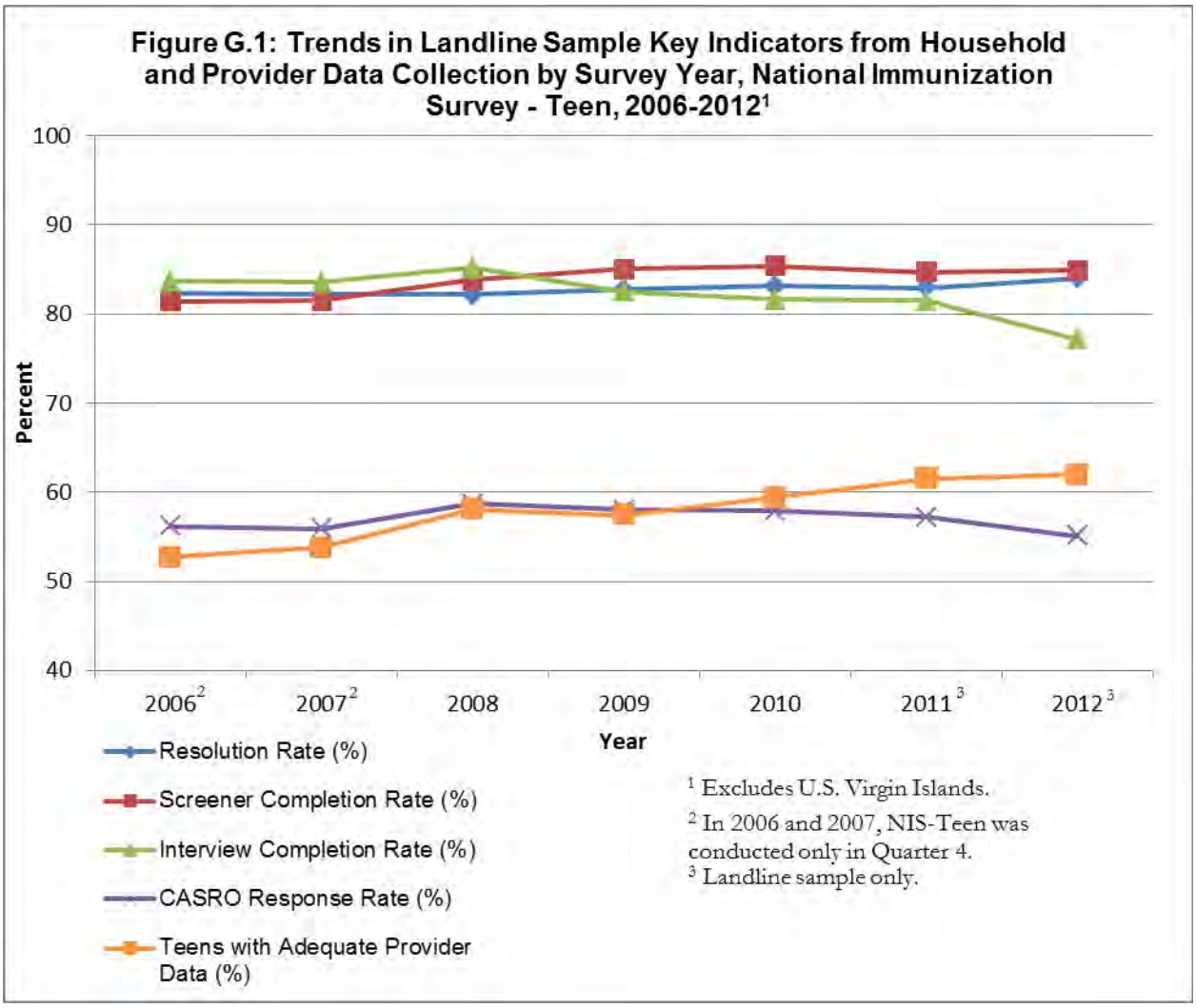


Figure G.3 presents a graphical representation of the data contained in Table G.3. It displays the trend in vaccine-specific coverage levels among teens age 13-17 years from 2006 to 2012. Note that these data apply to the landline sample only from 2006-2010, and to the dual-frame sample from 2011 forward.