National Immunization Survey

A User's Guide for the
2003 Public-Use Data File

Centers for Disease Control and Prevention

National Immunization Program
and
National Center for Health Statistics

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Acknowledgments

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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 partic ipation; 4) improve vaccinations and their use; and 5) monitor vaccination coverage and occurrences of disease. Subsequently the Healthy People 2000 and 2010 objectives established the goal of having at least 90% of 2-year-old children fully vaccinated with each recommended vaccine and 80% of 2-year-old children vaccinated with the basic immunization series. To fulfill the CII mandate of monitoring vaccination coverage and marking progress toward achieving those goals, the National Immunization Survey (NIS) has been implemented by the National Immunization Program and the National Center for Health Statistics, Centers for Disease Control and Prevention (CDC), and its contractor, Abt Associates Inc.

The target population for the NIS is children aged 19 to 35 months living in households in the United States at the time of the interview. The official coverage estimates reported from the NIS are rates of being up-to-date with respect to the recommended numbers of doses of all recommended vaccines (CDC 2003). These vaccines and their recommended numbers of doses are: diphtheria and tetanus toxoids and pertussis vaccine (DTP), 4 doses; poliovirus vaccine (polio), 3 doses; measles/mumps/rubella vaccine (MMR), 1 dose*; Haemophilus influenzae* type b vaccine (Hib), 3 doses; hepatitis B vaccine (Hep B), 3 doses; varicella zoster (chicken pox) vaccine, 1 dose; and pneumococcal vaccine, 4 doses. In addition to these vaccines, interest focuses on coverage rates for 1 dose of measles-containing vaccine (MCV) and for vaccine series, including the 4:3:1:3:3 series (4+ DTP, 3+ polio, 1+ MCV, 3+ Hib, and 3+ Hep B). The NIS collects data on each of these vaccines. All except for varicella and pneumococcal have been included in the NIS from its start in 1994. Varicella vaccine was added in the third quarter of 1996. Pneumococcal vaccine was added in the fourth quarter of 2000. In October 2000 the Advisory Committee on Immunization Practices recommended that all children aged 2-23 months receive 4 doses of pneumococcal vaccine (CDC

2000). The pneumococcal vaccine was relatively new; there was a supply problem, and a catch-up schedule provided for some children to be fully compliant despite having received fewer than 4 doses. Unlike the 2001 NIS, all children in the 2003 NIS were eligible to receive pneumococcal vaccine. Also, shortages of some of the routinely recommended vaccines began in early 2001 (CDC 2002a). Many of the children sampled in 2003 would have received vaccinations during 2001. Those shortages may have affected vaccination coverage in 2003 (CDC 2004). Starting in the first quarter of 2003, influenza vaccine and hepatitis A vaccine were added to the NIS.

The NIS uses a random-digit-dialing (RDD) telephone survey to identify households containing children in the target age range and interview an adult who is most knowledgeable about the child's vaccinations. With the consent of the child's parent or guardian, the NIS also contacts (by mail) the child's health care providers to request information on vaccinations from the child's medical records.

Samples of telephone numbers are drawn independently, for each calendar quarter, within 78 Immunization Action Plan (IAP) areas. Of the 78 IAP areas, 28 (including the District of Columbia) are urban areas. The remaining 50 are either an entire state or a "rest of state" IAP area (where the state contains one or more urban IAP areas). This design makes it possible to produce annualized estimates of vaccination coverage levels within each of the 78 IAP areas with a specified degree of precision (a coefficient of variation of no more than 5%). Further, by using the same data collection methodology and survey instruments in all IAP areas, the NIS produces vaccination coverage levels that are comparable among IAP areas and over time.

For the 2003 NIS the RDD interviews of households began on January 7, 2003 and ended on February 11, 2004, and provider data collection extended from February 27, 2003 to May 14, 2004. A total sample of approximately 3.7 million telephone numbers yielded household interviews for 30,930 children, and 21,310 of those children had provider data that were adequate to determine whether the child was up-to-date with respect to the recommended immunization schedule. The 2003

NIS public-use file (PUF) contains data for the 30,930 children with completed household interviews (and more extensive data for the 21,310 children with adequate provider data).

Major changes to the NIS in 2003 included the introduction of a new revised Immunization History Questionnaire (see Section 3), and a revision to the sampling weights (see Section 6).

Published tables of estimates of vaccination coverage for 2003 are available on the National Immunization Program (NIP) website, http://www.cdc.gov/nip/coverage, and are discussed in an *MMWR* report (CDC 2004).

The accompanying code book (*National Immunization Survey 2003 Public-Use Data File: Documentation, Code Book and Frequencies*) documents the contents of the 2003 NIS public-use data file. For reference Appendix I reproduces the table of contents and the alphabetical index of variables from the code book.

Additional information on the NIS is available at:

> www.cdc.gov/nis/
> www.cdc.gov/nip/coverage
> www.nisabt.org

For additional information on the NIS data file, please contact the NCHS staff:

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Hyattsville, MD 20782
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E-mail: nchsquery@cdc.gov
Internet: http://www.cdc.gov/nchs/

2. Sample Design

The NIS uses two phases of data collection to obtain vaccination information for a large national probability sample of young children: a random-digit-dialing survey designed to identify households with children 19 to 35 months of age, followed by the Provider Record Check Study (PRC), which obtains provider-reported vaccination histories for these children. This section gives a summary of these two phases of data collection. Other descriptions of the sample design are given by Ezzati-Rice et al. (1995), Zell et al. (2000), and Smith et al. (2001a, 2004).

The NIS RDD Sample

The NIS RDD sampling phase uses independent quarterly samples of telephone numbers in the 78 IAP areas. Table J.1 (in Appendix J) lists the 78 IAP areas by state and shows the estimated number of children living in each state and IAP area in 2003.

The NIS uses the list-assisted method of random-digit dialing (Lepkowski 1988). This method selects a random sample of telephone numbers from "banks" of 100 consecutive telephone numbers (e.g., 617-495-0000 to 617-495-0099) that contain one or more directory-listed residential telephone numbers. The sampling frame of telephone numbers is updated each quarter to reflect new telephone exchanges and area codes. Although the number of cellular telephone users in the U.S. has increased rapidly, most households continue to maintain land-line telephone service (Blumberg et al. 2004). Also, most cellular telephone users pay for incoming calls. Therefore, the NIS sampling frame excluded cellular telephone exchanges in 2003.

The target sample size of completed telephone interviews in each IAP area is designed to achieve an approximately equal number of children with adequate provider-reported

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vaccination histories. Approximately 69% of children with completed telephone interviews had adequate provider data. The phrase "adequate provider data" means that sufficient vaccination history information was obtained from the providers to determine whether the child is up-to-date with respect to the recommended vaccination schedule. The percentage of children with adequate provider data varies among the IAP areas. Starting with the 2002 PUF, the definition of children with adequate provider data was expanded to include unvaccinated children. These are children for whom the respondent reported during the household interview that the child had received no vaccinations and has no immunization providers; or the child was reported as having one or more immunization providers, but those providers reported administering no vaccinations. An NCHS Series 2 Report on the statistical methodology of the NIS (Smith et al. 2004) includes details of how unvaccinated children are included in the estimates of vaccine coverage. NCHS Series 2 reports can be viewed at http://www.cdc.gov/nchs/products/pubs/pubd/series/sr02/ser2.htm. This modification to the NIS produces small changes in vaccination coverage for IAP areas and states, because the number of unvaccinated children in the sample is very small.

The design and implementation of the NIS sample involve four procedures. First, statistical models predict the number of sample telephone numbers needed in each IAP area to meet a target number of interviews (Buckley et al. 1998). Second, the sample for an IAP area is divided into random subsamples called replicates. By releasing replicates as needed, it is possible to spread the interviews for each IAP area evenly across the entire calendar quarter. Third, an automated procedure eliminates a portion of the nonworking and nonresidential telephone numbers from the sample before the interviewers dial them. Fourth, the sample telephone numbers are matched against a national database of residential telephone numbers in order to obtain usable mailing addresses for as many sample households as possible. To promote participation in the NIS, an advance letter is sent to these addresses approximately two weeks prior to the RDD interview.

The NIS Provider Record Check Study

At the end of the RDD interview, consent to contact the child's vaccination providers is requested from the parent/guardian. When verbal consent is obtained, those providers are mailed an immunization history questionnaire (IHQ). This mail survey portion of the NIS is the Provider Record Check (PRC) Study.

The instructions ask vaccination providers to mail or fax the IHQ back upon completion. Two weeks after the initial mailing, a thank you/reminder postcard is sent to each provider. If no response has been received, another questionnaire packet is mailed five weeks after the initial mailing. Finally, seven 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 accepted over the phone. The data from the IHQs are entered, cleaned, edited, and merged with the household information from the RDD survey to produce a child-level record.

Summary of Data Collection

Table 1 presents selected operational results of NIS data collection for calendar year 2003. Children who were 19 to 35 months of age during 2003 data collection were born between January 2000 and July 2002. The original sample (in replicates that were released for use) consisted of 3,744,489 telephone numbers. Of those, 1,534,473 numbers were eliminated by the automated procedure as nonworking or nonresidential numbers. The remaining 2,210,016 telephone numbers were called to identify 1,070,351 households, as shown in Rows 3 and 6. Among the identified households, 1,006,499 (94.0%) were successfully screened for age-eligible children. Of these, 972,532 did not contain an age-eligible child, and 33,967 (3.37%) contained one or more age-eligible children. Among these households 30,134 (88.7%) completed the household RDD interview.

Table 1: Selected Operational Results of NIS Data Collection for 2003

ROW	KEY INDICATOR	NUMBER	PERCENT
	RDD Phase		
1	Total Selected Telephone Numbers in Released Replicates	3,744,489	--
2	Phone Numbers Resolved before Computer-Assisted Telephone Interviewing	1,534,473	41.0% (Row 2/Row 1)
3	Total Phone Numbers Called	2,210,016	--
4	Advance Letters Mailed	1,420,131	64.3% (Row 4/Row 3)
5	Resolved Phone Numbers* – *Resolution Rate*	3,131,078	83.6% (Row 5/Row 1)
6	Households Identified	1,070,351	34.2% (Row 6/Row 5)
7	Households Successfully Screened for Presence of Age-Eligible Children – *Screening Completion Rate*	1,006,499	94.0% (Row 7/Row 6)
8	Households with no Age-Eligible Children	972,532	96.6% (Row 8/Row 7)
9	Households with Age-Eligible Children – *Eligibility Rate*	33,967	3.37% (Row 9/Row 7)
10	Households with Age-Eligible Children with Completed RDD Interviews– *Interview Completion Rate*	30,134	88.7% (Row 10/Row 9)
11	CASRO Response Rate**	NA	69.8% (Row 5 x Row 7 x Row 10)
12	Age-Eligible Children with Completed RDD Interviews	30,930	--
	PRC Phase		
13	Children with Consent to Contact Vaccination Providers	26,313	85.1% (Row 13/Row 12)
14	Immunization History Questionnaires Mailed to Providers	34,243	--
15	Immunization History Questionnaires Returned from Providers	29,367	85.8% (Row 15/Row14)
16	Children with Adequate Provider Data	21,310 (includes 101 unvaccinated children)	68.9% (Row 16/Row 12)

*Includes phone numbers resolved before CATI (Row 2).
**CASRO, Council of American Survey Research Organizations.

A standard approach for measuring response rates in RDD surveys, known as the CASRO household response rate, has been defined by the Council of American Survey Research Organizations (Frankel 1983). In 2003 the CASRO household response rate (Row 11) was 69.8%. The CASRO response rate equals the product of the resolution rate (83.6%, Row 5), the screening completion rate (94.0%, Row 7), and the interview completion rate among eligible households (88.7%, Row 10). The resolution rate is the percentage of the total phone numbers selected that are classifiable as nonworking, nonresidential, or residential. The screening completion rate is the percentage of known households that are successfully screened for the presence of age-eligible children. The interview completion rate is the percentage of households with one or more age-eligible children that complete the RDD interview.

The presence of ring-no-answer numbers in an RDD sample makes it difficult to calculate an accurate estimate of the response rate, because there is considerable uncertainty regarding the proportion of such numbers that are residential. The CASRO and AAPOR guidelines (AAPOR 2004) indicate that the survey researcher must supply an estimate of the proportion of these numbers that are residential in order to determine the final response rate. In the fourth quarter of 2002 a national random subsample of telephone numbers that had ring-no-answer to all NIS call attempts was drawn (Frankel et al. 2003a). These numbers were called 42 additional times over a roughly 14-day period with three attempts per day – morning, afternoon, and evening. From this subsample it was estimated that 20.4% of ring-no-answer telephone numbers were residential (and 79.6% were nonresidential). By modifying the CASRO response rate formula in an appropriate manner to incorporate these estimates, the alternative CASRO response rate for 2003 was 72.5%, a 2.7 percentage point increase over the standard formula.

Row 12 of Table 1 shows that 30,930 age-eligible children had completed RDD interviews. Rows 13 through 16 give results for the PRC phase. Specifically, Row 13 gives the rate of obtaining verbal consent from household respondents to contact their children's vaccination providers -- 85.1% in

2003. The number of IHQs that were mailed to vaccination providers exceeds the number of completed child interviews, because some children have more than one vaccination provider. In 2003 the mean number of vaccination providers identified for a child was 1.36.

Of the IHQs mailed to providers, 85.8% were returned with information pertaining to the child's vaccination history. Among the children with completed household RDD interviews 21,310 (68.9%) had adequate vaccination histories based on provider reporting (21,209) or had no vaccinations based on household reporting (101). The other 31.1% of children lacked adequate provider data for a variety of reasons, such as that the parent did not give consent to contact providers, or the providers did not have medical records for the child.

For each IAP area and each state Table J.1 shows the number of children with completed household interviews and the number of children with adequate provider data.

Informed Consent, Security, and Confidentiality of Information

The Screener Introduction, the Advance Letter, and the 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 respondent (generally the parent or guardian of the child) to participate in the household interview and also (at the end of the interview) to contact the child's vaccination providers.

Information in the NIS 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 sign the NCHS confidentiality agreement and follow instructions to prevent disclosure.

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

3. Content of NIS Questionnaires

This section describes the questionnaires used in the 2003 NIS telephone interview of households and in the NIS PRC survey.

Content of the Household Questionnaire

The computer-assisted telephone interview (CATI) questionnaire used in the RDD phase of NIS data collection (Appendix B) consists of two parts: a screener to identify households with children aged 19 to 35 months and an interview portion. The questionnaire is modeled on the Immunization Supplement to the National Health Interview Survey (NHIS) (NCHS 1999). The NIS 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 2003 NIS household interview.

In the screener the purpose of the survey is explained to the respondent, and the household is screened to determine whether it contains any children 19 to 35 months of age. If the household has an eligible child, the respondent is asked whether he/she is the most knowledgeable person (MKP) for the child's vaccination history. If the respondent indicates that another person in the household is more knowledgeable, the interviewer asks to speak to him or her at that time. If that person is unavailable

to be interviewed, the interview proceeds to Section MR, the name of the MKP is recorded, and a "callback" is scheduled for a later date.

Table 2: Content of the 2003 NIS Household Interview

Screener	Screening questions to determine eligibility, roster of eligible children, availability of shot records
Section MR	Most-knowledgeable-respondent callback questions
Section A	Vaccination history, asked if shot records are available
Section B	Vaccination history, asked if shot records are not available
Section C	Demographic and socioeconomic questions
Section D	Provider information and request for consent to contact the eligible child's vaccination providers

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Also during the screener the person being interviewed is asked whether he/she has a written record (shot card) of the child's vaccination history, and whether it is easily accessible. If the shot card is available, the respondent is asked to provide information directly from it in Section A. If the child 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 child's vaccinations.

Section C obtains information that includes the relationship of the respondent to the child, the race of the child, household income and educational attainment of the mother, and other information on the socioeconomic characteristics of the household and its eligible children. This section is asked of all respondents upon completion of Section A or Section B.

At the conclusion of the NIS household interview, consent is requested to contact the child's vaccination providers (Section D). If verbal consent is obtained, identifying information (name, address, and telephone number) on the vaccination provider(s) is requested, as well as the full names

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of the child and the respondent, so that NIS personnel can contact the providers and identify the child

whose immunization information the NIS is requesting. When verbal consent and sufficient

identifying information are obtained, the IHQ is mailed to the child's vaccination provider(s).

The Q1/2003 NIS questionnaire included new questions on participation in the Special Supplemental

Nutrition Program for Women, Infants, and Children (WIC) and breastfeeding. No changes were

made to the NIS questionnaire during 2003.

Content of the Immunization History Questionnaire

The revised IHQ used in 2003 includes hepatitis A vaccine and influenza vaccine (Appendix C).

The revised IHQ was designed to be simple and brief, to minimize burden on the providers and to

encourage participation in the survey. The IHQ consists of two double-sided pages. Page 1 includes

space for the label that gives the child'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. The new shot grid is structured to make filling in the shot

dates and shot types easier for most vaccination providers. 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 and the National Immunization Program.

4. Data Preparation and Processing Procedures

The household data collection and provider data collection in the NIS incorporate extensive

data preparation and processing procedures. During the household interview the CATI

system makes many edits as the interviewer enters the data. After the 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 IHQs,

data entry of the IHQs, 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 child are consolidated into a child-level data record, the editing continues. At this point a check ensures that the IHQ was filled out for the correct child and that the child is actually 19 to 35 months of age (from all the date-of-birth information). Then editing of the provider-reported vaccination dates 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.

Data Preparation

The editing and cleaning of NIS data involve several steps. First, the CATI system incorporates an automatic editing process. Further cleaning and editing take place in a post-CATI clean-up stage, involving an extensive review of data values, crosschecks, and the recoding of verbatim responses for race, ethnicity, and vaccinations. The next step involves the creation of numerous composite variables. Finally, provider data are cleaned in a separate step. After these steps have been completed, imputations are performed for item nonresponse on selected variables, and weights are calculated. The procedures and rules of the National Health Interview Survey served as the standard in all stages of data editing and cleaning.

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.

The CATI system makes a number of edits as an interviewer enters data. These edits correct data entry errors that can be reconciled while the respondent is on the telephone; they focus, in particular,

on items critical to the conduct of the study, such as those that determine a child's eligibility (e.g., date of birth). To the extent possible without making the CATI system overly complicated, out-of-range and inconsistent responses produce a warning screen, allowing the interviewer to correct errors as they occur.

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.

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 the 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 File. The Sample File contains one record for each sample telephone number. It contains summary information for telephone numbers and households. The Interview File contains one record for each eligible sample child. It contains all vaccination data that the household reported for the child.

Following the creation of these files, a preliminary analysis of each file identifies out-of-range values and extraneous codes. The first check verifies the eligibility status of children, based on date of birth and date of interview. Once the required corrections are verified, the 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 make sure that cases exist across files in a consistent manner. Specifically, checks ensure that each case in the Interview File is also present in the Sample File and that each case in the Sample File was released to the CATI center. Checks also ensure that no duplicate households exist in the Sample File and no duplicate children exist in the Interview File.

When all of these checks have been performed, the final quarterly Interview File is created. Programmers and statisticians then create composite variables for each child. Sampling weights (described in Section 6) are added to each record.

Editing of Provider Data

Six to eight weeks after the close of household data collection for a quarter, the collection of Immunization History Questionnaires (IHQ) from providers typically ends. The data from the hard-copy questionnaires are entered and independently re-entered to provide 100% verification. The Provider Data File is cleaned, in a similar fashion to the household data, for out-of-range values and consistency. A computer program back-codes all "other shot" verbatim responses into the proper vaccine category (e.g., Engerix B counts as Hep B, and Tetramune counts as DTP and Hib). These translations come from a file that contains all such verbatim responses ever encountered in the NIS. Also, the Provider File is checked for duplicate records, and exact duplicates are removed. If the IHQ

contains a date of birth of the child, gender of the child, or child name that differs from the household interview, the IHQ is examined to see whether it may have been filled out for the wrong child. IHQs that appear to have been filled out for the wrong child are removed from the provider database. When a child has data from more than one IHQ, decision rules are applied to produce the most complete picture of the child's immunization history.

Once these data have been cleaned, they are combined with the household interview data. Information from up to five providers can be added to a child's record.

Many variables in the household data are checked against or verified with the provider data. For example, a child'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 child. Shot dates are also compared, and any discrepancies are examined by hand. In most instances the provider data are used if dates do not agree between the provider(s) and the household.

Limitations of Data Editing Procedures

Although data editing procedures were used for the 2003 NIS, the data user should be aware that some inconsistent data might remain in the public-use file. The variables that indicate whether a child 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 does not recontact households or providers to attempt to reconcile potential discrepancies in provider-reported vaccination dates or to resolve date-of-birth reporting errors. However, beginning with the 1999 NIS, the provider-reported data are manually reviewed and edited to correct specific

reporting errors. The *National Immunization Survey: Guide to Quality Control Procedures* (CDC 2002b) discusses the editing procedures in more detail. Some children with adequate provider data may have incomplete vaccination histories. Incomplete vaccination 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 of the vaccinations in the child's medical record. Overall, even with these limitations, the NIS is a rich source of data for assessment of up-to-date status and age-appropriate immunization.

Variable-Naming Conventions

To facilitate access to the contents of the PUF, the names of variables adhere to the SAS (Version 6.12) convention of having no more than 8 characters, and they follow a systematic pattern as much as possible. The code book for the PUF groups the variables into nine broad categories according to the source of the data (household or providers) and the content of the variable (see Appendix I). The household report of vaccinations received by the child is used to create household up-to-date indicator variables. The names of these variables begin with FULL. For example, FULL_HEP indicates whether the child has received three or more hepatitis B vaccinations. Additional household up-to-date variables combine each vaccine with use of a shot card. The names of these variables begin with C_. For example, C_HEP has five values, corresponding to up-to-date on hepatitis B from a shot card, not up-to-date on hepatitis B from a shot card, up-to-date on hepatitis B not from a shot card, not up-to-date on hepatitis B not from a shot card, and vaccination status on hepatitis B indeterminate.

The provider data from the IHQs are used to create numerous child-level composite variables, as described below. The names of the variables giving the number of doses received for each vaccine begin with P_NUM. For example, P_NUMHEP gives the number of doses of hepatitis B vaccine according to the provider data. An up-to-date indicator variable also exists for each vaccine, and

these variables begin with P_UTD. For example, P_UTDHEP indicates whether the child received 3 or more doses of hepatitis B vaccine.

The provider data are also used to form variables for age in days and age in months at time of vaccination. For age in days and age in months, either 4 or 8 variables are created, depending on the vaccine. The variables for age in months end with n_AGE, where n is the dose number. For example, HEP1_AGE to HEP8_AGE give age in months for 8 possible doses of hepatitis B vaccine. Similarly, for age in days at vaccination, the variables start with D and end with the dose number. For example, DHEPB1 to DHEPB8 give age in days for 8 possible doses of hepatitis B vaccine.

Missing-Value Codes

The missing-value codes for household variables are 6 and 96 for DON'T KNOW and 7 and 97 for REFUSED. Some household variables may also contain blanks, if the question was not asked. The variables developed from the IHQ generally do not have specific missing-value codes. For example, if a provider failed to answer the question on types of care provided, the response-category variables for that question would be blank.

Imputation for Item Nonresponse

The NIS uses imputation primarily to replace missing values on selected socioeconomic and demographic variables collected in the household survey. A sequential hot-deck method is used to assign imputed values (Cox 1980). Each imputation cell has at least four donors. The Notes line for each variable in the code book (*National Immunization Survey 2003 Public-Use Data File: Documentation, Code Book and Frequencies*) identifies variables that contain imputed values. These variables include maternal education, Hispanic origin, race, race/ethnicity, firstborn status of child, maternal marital status, maternal age group, whether the household experienced an interruption in

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telephone service, whether the child ever had chicken pox disease, and age in months when the child had chicken pox.

The count of vaccinations for a specific vaccine is based on the number of unique vaccination *dates* reported by the child's provider(s). In filling out the IHQ a provider may not know the date of the first dose of hepatitis B, which is typically given at birth. The provider does, however, have the option of checking the "Administered at Birth" box on the IHQ for the first dose of hepatitis B. For children with fewer than three provider-reported hepatitis B vaccinations, a program checks to see whether the "Administered at Birth" box was checked. If it was checked and the date of the birth dose of hepatitis B was not reported, the program assigns the date of the birth dose for this vaccine. If the household used a vaccination record to report vaccination dates, those dates are examined to see whether the date of the birth dose can be taken from that record. If it is not reported in the vaccination record, a value is imputed from the distribution of provider-reported dates for the birth dose of hepatitis B in the most recent four quarters. The birth dose is defined as being between the date of birth (i.e., 0 days) and the date of birth plus 6 days (i.e., in the first 7 days of life). This imputation procedure was first implemented for Q1/2000-Q4/2000. For Q1/2003-Q4/2003 a total of 221 children had the date of the birth dose of hepatitis B assigned using the above procedure (see HEP_FLAG). The date of the birth dose was taken from the household's vaccination record for 73 children. For the remaining 148 children the value was imputed from the distribution of provider-reported dates for the birth dose.

Table 3 shows the distribution of age in days at the birth dose of hepatitis B for children in Q1/2003-Q4/2003 with a provider-reported birth dose. A similar table is included in the 2000, 2001, and 2002 Data User's Guides. For 1997, 1998, and 1999, Section 5 of the Data User's Guide provides information on the distribution of age in days for the birth dose of hepatitis B vaccine, and gives guidance on imputing age in days at birth dose for children with a missing date, but for whom the provider checked the box indicating that a dose was administered at birth (see HEP_BRTH).

Table 3: Distribution of Age (in days) at the Birth Dose of Hepatitis B Vaccine, National Immunization Survey, 2003

Age in Days at Birth Dose	Unweighted Percentage of Birth Doses
0	47.8
1	29.4
2	14.3
3	3.5
4	2.2
5	1.5
6	1.4

Vaccine-Specific Recoding of Verbatim Responses

During the household interview, respondents are given the option to report vaccinations in addition to, or instead of, the categories specifically read to them. These verbatim responses are entered into the CATI system by the interviewer and stored in the Interview File. They are reviewed in the post-CATI editing process in order to reclassify them into the listed categories, where possible. NIP personnel manually review the verbatim responses and determine to which category or categories (for combination shots), if any, each should be recoded. Once the recoding has been completed, a quality control review ensures that the responses were correctly recoded and are consistent with one another.

Composite Variables

A number of composite variables (constructed from basic variables) are created and included in the NIS PUF. Composite variables assist users and data analysts by eliminating duplication of effort and making NIS data easier to use.

Since the initial years of NIS data collection, the *household composite variables* have included up-to-date status on individual vaccinations (e.g., FULL_DTP), race of child, household income, and up-to-date status on several vaccination series (e.g., ALL4SHOT). Many of these composite household

variables are included in the NIS PUF. Table 4 lists some of the key demographic variables and their categories.

Table 4: Key Demographic Composite Variables	
AGEGRP – age category of child	19-23 months 24-29 months 30-35 months
RACEETHK – race/ethnicity of child (introduced in 2002; RACEKIDR used in 1995-2001)	Hispanic White Alone, non-Hispanic Black Alone, non-Hispanic All Other Races Alone and Multi-Racial, non-Hispanic
SEX – gender of child	Male Female
EDUC1 – education of the mother	<12 years 12 years >12 years, not a college graduate College graduate
MARITAL – marital status of mother	Widowed, divorced, separated, or deceased Never married Currently married
M_AGEGRP	Under 20 years 20-29 years 30 years or older
FRSTBRN	No Yes
INCPOV1R – poverty status	At or above poverty level Below poverty level Not determined

In Q3/1999 the NIS race questions (see questions C3, C4, C9 and C10 in Appendix B) were expanded to include Alaska Native, Native Hawaiian, and Pacific Islander, implementing the revised Office of Management and Budget (OMB) standards for classification of race and ethnicity (http://www.whitehouse.gov/omb/inforeg/statpol.html). The composite race variables in the 2002 and 2003 PUFs, however, contain only three categories: white alone, black alone, and all other races alone and multi-racial. The "all other races alone" category includes Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, and other races. If more than one race was selected during the administration of the questions on race of child, the child is classified as multi-racial. Because of small sample sizes and risk of disclosure within IAP areas, the 2002 and 2003 PUFs do not contain any variables with separate multiple-race categories. Rather, the multi-racial children are

included in the "all other races alone" category. As a guide to data users, information on the 2003

weighted distribution of children by the old race/ethnicity (single race only) classification versus the

new race/ethnicity (single or multiple race) classification is shown in Table 5. Estimates of

vaccination coverage for 2003 by the new race/ethnicity classification can be found at

http://www.cdc.gov/nip/coverage/NIS/03/toc-03.htm.

The 1995-2001 NIS PUFs used a race/ethnicity variable that placed each non-Hispanic child in a

single-race category (non-Hispanic white, non-Hispanic black, and non-Hispanic all other races).

IAP area comparisons of vaccination coverage by race/ethnicity for 2003 versus a year prior to 2002

could be affected by the change in the race/ethnicity variable. To assess the impact of introducing the

new race/ethnicity variable in 2002, 4:3:1:3 vaccination coverage for non-Hispanic white and non-

Hispanic black children for 2003 was compared for those IAP areas where the sample size in the

race/ethnicity group was 30 or greater (see Appendix D). In assessing statistical significance, the

variance of the difference took into account the correlation arising from the overlap of the samples

(Kish 1965). Although some of the differences in vaccination coverage (ranging from –4.6

percentage points to 3.9 percentage points) are statistically significant, most of the significant

differences are small – under two percentage points.

The *provider data* from the IHQs are used to create numerous child-level composite variables. The

most important variables give the number of doses received for each type of vaccine (e.g.,

P_NUMDTP). Up-to-date indicator variables are created for each individual vaccine (e.g.,

P_UTDHIB) and for several vaccine series (e.g., P_UTD431). Another set of variables gives age in

days at time of vaccination. For each dose of a vaccine, the age in days is constructed from the date

of birth of the child and the date of the shot. Corresponding variables give exact age in months at

time of vaccination.

The IHQs also contain information on provider characteristics. This information is used to create composite variables related to provider facility type (PROV_FAC), types of care offered by the provider (NCARER1 to NCARER5), participation in the Vaccines for Children program (VFC_PRO), and participation in state or community immunization registries (REGISTRY).

Table 5: Weighted Distribution of Race/Ethnicity of Children for the Old versus New Race Categories and Corresponding 4:3:1:3 Vaccination Coverage, National Immunization Survey, 2003

Old (single race only) race/ethnicity classification	Weighted percentage distribution of children aged 19-35 months in U.S. (% 4:3:1:3 UTD)	New (single or multiple) race/ethnicity classification	Weighted percentage distribution of children aged 19-35 months in U.S. (% 4:3:1:3 UTD)
Hispanic	25.96 (78.72)	Hispanic	25.96 (78.72)
Non-Hispanic White	52.51 (84.30)	Non-Hispanic White Alone	51.34 (84.34)
Non-Hispanic Black	13.72 (75.46)	Non-Hispanic Black Alone	12.86 (75.12)
Non-Hispanic Asian	4.11 (78.83)	Non-Hispanic Asian Alone	3.62 (80.91)
Non-Hispanic American Indian	1.12 (75.16)	Non-Hispanic American Indian or Alaska Native (AIAN) Alone	0.88 (77.31)
		Non-Hispanic Native Hawaiian or Pacific Islander (NHOPI) Alone	0.24 (69.55)
Non-Hispanic Other Race	0.04 (92.27)	Non-Hispanic Other Race Alone	0.34 (84.79)
		Non-Hispanic Multiple Races	3.66 (80.23) 1. Black/White – 1.43 2. AIAN/White – 0.69 3. Asian and/or NHOPI/White – 0.78 4. Other Combination – 0.76
Unknown	2.49 (85.07)	Unknown	1.09 (86.02)

Note: The Hispanic origin, race, and race/ethnicity variables in the PUF do not include a separate category for "unknown." Children with an unknown Hispanic origin and/or race are imputed using the mother's Hispanic origin and/or race or by a hot-deck method if the mother's information is not present.

Subsets of the NIS Data

The NIS PUF contains data for all children aged 19 to 35 months who have a completed household interview. An interview is considered complete if the respondent answered either Section A or Section B of the questionnaire. As explained in Section 6, each child with a completed household interview is assigned a weight (WGT_RDD) for use in estimation.

The NIS uses the provider-reported vaccination histories to form the estimates of vaccination coverage, because the provider data are considered much more accurate. Thus, the most important subset of the data consists of children with adequate provider data. For these children one or more providers returned the IHQ, and the vaccination information reported by those providers is sufficient to determine whether the child is up-to-date on the recommended vaccinations. As discussed in Section 7, the PDAT variable identifies the children with adequate provider data (PDAT=1). These children have a separate weight (WGT), which should be used to form estimates of vaccination coverage (see Section 6).

Confidentiality and Disclosure Avoidance

To prevent identification of participants in the NIS and the resulting disclosure of information, certain items from the questionnaires are not included in the PUF. In addition, some of the released variables are top- or bottom-coded, or their categories are collapsed.

5.   Quality Control and Quality Assurance Procedures

A major contributor to the quality of the NIS data is its sample management system, which manages 312 RDD samples annually (78 IAP areas times 4 quarters) and uses 20 performance measures to track their progress toward completion. Important aspects of the quality assurance program for the

RDD component of the NIS include on-line interviewer monitoring; on-line look-ups in topic-oriented databases 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 contribute to a reduction in the total cost of the data collection, 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 2002b) discuss the procedures in more detail.

The quality assurance procedures of the PRC component follow a proven methodology documented by Dillman (1978). The most critical quality assurance activities occur during post-processing of the returned questionnaires or vaccination records. All returned IHQs are examined to identify and correct any obvious errors prior to data entry and then key-entered with 100% verification. The National Immunization Program additionally has conducted a manual quality assurance review of 10% of forms returned by providers. Resulting error rates for the edit process are estimated to be less than 1%.

6.   Sampling Weights

Each of the two stages of data collection results in a sampling weight for the children who have data at that stage. As discussed below, revisions were made to the weighting methodology in 2003. The RDD sampling weights (WGT_RDD in 2003) permit analyses of data from children with completed household interviews (HY_WGT in 1995-2001, and RDD_WT in 2002). Each child with adequate provider data (the subset on which official estimates of vaccination coverage are based) has a "partial-nonresponse-adjusted sampling weight" (WGT in 2003) (W0 in 1995-2001, and WT in 2002).

A sampling weight may be interpreted as the approximate number of children in the target population that the child in the sample represents. Thus, for example, the sum of the sampling weights of

children who are up-to-date (on a particular vaccine or series of vaccines) yields an estimate of the total number of children in the target population who are up-to-date. Dividing this sum by the total of the sampling weights for all children 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 weights reflect each child's probability of being selected into the sample; and the adjustments take into account the number of telephone lines in the household, nonresponse to the household interview, noncoverage of households that do not have telephones, and nonresponse by providers.

Adjusted Base Sampling Weight

In each quarterly NIS sample, each child with a completed RDD interview receives a base sampling weight. This weight is equal to the total number of telephone numbers in the sampling frame for the IAP area divided by the total number of telephone numbers that were randomly sampled from that sampling frame during that quarter. Because households with multiple telephone lines have a greater chance of being sampled, each child's base sampling weight is adjusted by dividing it by the total number of residential telephone lines reported in the household (up to a maximum of 3).

Adjustment for Interview Nonresponse

Nonresponse occurs in population-based surveys when respondents refuse to participate or are not available at the time of the interview. Thus, the sum of the adjusted base sampling weights of children with completed RDD interviews will underestimate the size of the target population in the IAP area, because some sampled households containing age-eligible children do not complete the RDD interview. As a result, the adjusted base sampling weights must be further adjusted so that they

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more accurately reflect the number of children in the target population that each sampled child with a completed RDD interview represents.

Some sampled households with age-eligible children fail to complete the RDD interview because of unit nonresponse: some telephone numbers are never determined to be residential despite multiple call attempts, some households cannot be determined to have age-eligible children, and some households with age-eligible children do not complete the RDD interview. To compensate for these three types of unit nonresponse, the sampling weights of children with a completed RDD interview are adjusted to account for the estimated number of age-eligible children in households whose telephone numbers are never determined to be residential, the estimated number of age-eligible children in households that fail to complete the screening interview, and the number of identified age-eligible children for whom the RDD interview is not completed. Each of these adjustments is carried out within IAP areas by forming weighting cells based on the residential directory-listed status of the sample telephone number and socioeconomic and demographic characteristics of the IAP area's telephone exchanges (e.g., 4 weighting cells formed from directory-listed versus non-directory-listed telephone number by telephone exchanges with 75% or higher white population versus telephone exchanges with less than 75% white population).

For 2003 the definitions of the nonresponse adjustment cells were updated. For each of the three types of unit nonresponse, a stepwise logistic regression model for the data from each quarter relates response to a variety of telephone exchange-level variables. The logistic regression models were developed using data from the 2001-2002 NIS. For unresolved telephone numbers and for screener nonresponse among known households, each IAP area has its own model; for interview nonresponse among age-eligible households, each of the nine Census Divisions has a separate model (to avoid small sample sizes in some IAP areas). The predicted probabilities from these models are used to form weighting cells as follows: 1) unresolved numbers—five approximately equal-sized cells within each of the two levels of residential directory-listed status in each IAP area, 2) screener

nonresponse—three approximately equal-sized cells within each level of residential directory-listed status in each IAP area, and 3) interview nonresponse—two approximately equal-sized cells within each level of residential directory-listed status in each IAP area.

Because the quarterly interview-nonresponse-adjusted base sampling weights pertain to the entire target population and because annualized vaccination coverage estimates are obtained from data for four consecutive quarters, the adjusted base sampling weights are divided by 4 when the data from the four quarters are combined.

Adjustment for Households That Do Not Have Telephones

The NIS sampling frame includes only households that have telephones. Because the target population consists of all children 19 to 35 months of age living in households regardless of whether they have telephones, the interview-nonresponse-adjusted base sampling weights need to be adjusted to compensate for the noncoverage of children living in households without telephones. Although national telephone coverage for age-eligible children is estimated to be 93%, telephone coverage is known to be as low as 85% in some IAP areas. Further, data from the NHIS, which samples both "telephone" and "nontelephone" households, indicate that children living in households without telephones have significantly lower vaccination coverage. Thus, the adjustment to the sampling weights to compensate for noncoverage of nontelephone households may be particularly important in IAP areas in which the percentage of households that have telephones is relatively low.

To compensate for potential noncoverage bias, the NIS employs strategies based on poststratification. An initial step, simple poststratification, separates the sample of completed interviews into cells defined by characteristics related to noncoverage. The poststratification variables are race/ethnicity of the child's mother, the level of educational attainment of the child's mother, and the age of the child. For each IAP area, each cell (after collapsing small cells) has a population control total derived from

current natality data from the National Center for Health Statistics (NCHS 2004). Because the Vital Statistics data give the counts of all live births in the U.S., regardless of whether the household has telephone service, this adjustment corrects in part for underrepresentation of children who belong to households that are less likely to have telephones (typified by racial/ethnic minorities or mothers with low educational attainment).

Use of the natality data to form the required population control totals for the NIS has three limitations: 1) the natality file provides a universe of live births, and therefore it does not reflect infant mortality; 2) the natality file does not include children born outside the United States who immigrate to this country before reaching the age of 19 to 35 months; and 3) the natality file records residence at time of birth, and some children may move from one IAP area to another by the time they reach 19 to 35 months of age. Adjustments are therefore made to the natality data to account for these three factors. For the 2003 NIS the methodology was updated – it used data primarily in the 5% Public-Use Microdata Sample (PUMS) from the 2000 Census to make the revised adjustments.

The main part of the adjustment builds on findings (from other surveys) that households that have a telephone at the time of the survey but have experienced an interruption (of more than one week) in their telephone service during the previous year are often similar to households that do not have a telephone. In the NIS the resulting adjustment, in essence, projects from the non-interruption part of the sample to the non-interruption part of the population and from the interruption part of the sample to both the interruption and nontelephone parts of the population. The estimated population totals for each IAP area take into account the proportion of children in that IAP area that come from households with interruptions in telephone service. In this way the interruption-based adjustment responds better to variation among IAP areas.

An important part of the above nontelephone adjustment is the percentage of children aged 19-35 months residing in households that do not have telephones. For the 2003 NIS, data in the 5% PUMS

from the 2000 Census were used to develop current estimates of telephone coverage for each of the 78 IAP areas. Also, for 2003 raking was used to make final adjustments to the weights (Deming 1943). The raking procedure used IAP-area-level control totals for maternal education categories, maternal race/ethnicity, age group of the child, gender of the child, and whether the household experienced an interruption in telephone service. Briefly, raking takes each variable in turn and applies a proportional adjustment to the current weights of the children who belong to the same category of the variable. After a number of iterations over all of the variables, the raked weights have totals that match all of the desired control totals. By using raking it was possible to incorporate additional variables into the weighting and to use more-detailed categories for those variables. Frankel et al. (2003b) and Smith et al. (2004) give the details of various aspects of the NIS estimation procedures.

The base sampling weights after adjustment for multiple residential telephones, unit nonresponse, and noncoverage of nontelephone households constitute the "RDD sampling weights" (WGT_RDD). For 2003, RDD sampling weight values exceeding the median weight plus six times the interquartile range of the weights within an IAP area were truncated to that threshold during the raking. The weight trimming prevents children with unusually large weights from causing an undue increase in the sampling variability of the estimates.

Adjustment for Provider Nonresponse

Among the 30,930 children with a completed RDD interview, 21,310 (68.9%) had adequate provider data. Starting with the 2002 PUF, the definition of children with adequate provider data includes unvaccinated children. These are children for whom the respondent reported during the household interview that the child had received no vaccinations, and that the child has no immunization providers; or the child was reported as having one or more immunization providers, but those providers reported administering no vaccinations discuss the role of unvaccinated children in the

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estimates of vaccine coverage. Failure to obtain adequate provider data for the remaining 31.1% was attributable to:

- the parent or guardian not giving consent to contact the child's vaccination providers (14.9%);

- inadequate information to contact the provider, the provider did not respond, or the provider responded but did not report any immunization information for the child (15.0%); and

- children with two or more identified providers but not all of the providers responded and the responding providers did not report sufficient information to determine the child's vaccination status (1.2%).

The 9,620 children for whom an RDD interview was completed but adequate provider data were not obtained are "partial nonresponders" because they have only a partial response to the NIS as a whole.

Empirical results suggest that children with adequate provider data have characteristics that are believed to be associated with a greater likelihood of being up-to-date, compared to partial nonresponders. Specifically, children with adequate provider data are more likely to live in households that have higher total family income, to have a white mother, and to live outside a central city of a Metropolitan Statistical Area. Also, a partial nonresponder is less likely to live in the state where the mother resided when the child was born and less likely to have a parent/guardian who could locate a shot card. Both of these factors indicate a potential lack of continuity of health care, and are associated with lower vaccination rates (Coronado et al. 2000). If no adjustment is made to the RDD sampling weights to account for these differences, estimated vaccination coverage rates may be biased.

To reduce potential bias in estimated vaccination coverage estimates attributable to partial nonresponse, a weighting-class adjustment is used in each IAP area (Brick and Kalton 1996). This adjustment involves three steps. In the first step, sampled children 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). Children who 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, children in each class are comparable. Because of this comparability, any subsample of children in a class may represent all of the children in the class. Therefore, the weighting-class adjustment uses the children with adequate provider data to represent all of the children in the class.

In the second step of the weighting-class adjustment, within each class, an adjustment factor redistributes the RDD sample weights of the partial nonresponders among the children who have adequate provider data. These revised RDD sampling weights of children with adequate provider data (WGT) are "partial-nonresponse-adjusted RDD sampling weights." Because of the comparability of children within each weighting class, any estimate that uses data only from the children with adequate provider data, along with their partial-nonresponse-adjusted RDD sampling weights, will have less bias attributable to differences between children with adequate provider data and partial nonresponders. Within an IAP area the sums of adjusted weights of children 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 weights to match IAP area control totals. Control totals for these variables were estimated using the weighted totals from sample of children with completed household interviews. Smith et al. (2001b, 2004) describe the development of this approach in more detail.

For 2003, partial-nonresponse-adjusted RDD sampling weight values exceeding the median weight plus six times the interquartile range of the weights within an IAP area were truncated to that threshold during the raking. The weight trimming prevents children with unusually large weights from causing an undue increase in the sampling variability of the estimates.

Appendix E summarizes the distribution of the sampling weights (WGT_RDD and WGT) in each IAP area.

NIS PUFs for 1995 to 2001 do not include sampling weights that account for the effect of unvaccinated children. To assess the effect of accounting for unvaccinated children from 1995 to 2003, weights were calculated for each year with and without the unvaccinated children included in the calculations. The weight calculations for all nine years used the 1995-2001 approach to compensating for children residing in nontelephone households (That approach, "modified poststratification," subdivides each poststratification cell according to the vaccination status of the child and uses national data on immunization rates of nontelephone households, from the National Health Interview Survey, to construct corresponding population totals. A further description is given by Battaglia et al. [1995].) For 1995 to 2003, Table 6 lists the national estimates of 4:3:1:3 vaccination coverage. At the national level, accounting for unvaccinated children had very little effect on the estimates of 4:3:1:3 vaccination coverage. Within IAP areas also, the two coverage estimates differed little. The largest difference (in either direction) was most often around 2 percentage points (with the isolated exception of single IAP area in 1995). Differences of that magnitude are small relative to the standard errors of the estimates. Although accounting for unvaccinated children has a small effect on estimates of 4:3:1:3 vaccination coverage, data users who use the PUFs to examine IAP-area-level trends over time are advised to interpret the results with appropriate caution.

The modifications to the weighting methodology for 2003 described previously will also lead to differences in estimates of vaccination coverage when compared with the 2003 estimates resulting from the application of the weighting methodology used in 2002. At the national level the impact on the estimate of 4:3:1:3 vaccination coverage is very small (-0.2 percentage point): 81.3% based on the new methodology versus 81.5% based on the 2002 methodology. Differences for the 78 IAP areas ranged from -3.6 percentage points to +2.1 percentage points, with a median difference of -0.4

percentage point and an interquartile range of 1.3 percentage points. The absolute value of the IAP-
area differences expressed in standard error units are all small, around one percentage point or
smaller.

Table 6: Impact of Including Unvaccinated Children in the Weight Calculations: Comparison of Estimated 4:3:1:3 Vaccination Coverage for National Immunization Survey, 1995 to 2003

| | National Estimate | | | IAP-Area Differences | |
| | Accounting for Unvaccinated Children | Not Accounting for Unvaccinated Children | Difference | Minimum | Maximum |
Year	% (95% CI)	% (95% CI)	Percentage Points	Percentage Points	Percentage Points
1995	74.2 (±1.2)	73.7 (±1.2)	+0.5	-2.0	+7.2
1996	76.2 (±1.0)	76.4 (±1.0)	-0.2	-1.7	+1.6
1997	76.0 (±0.9)	76.2 (±0.9)	-0.2	-0.9	+1.1
1998	79.1 (±0.9)	79.1 (±0.9)	0.0	-1.1	+1.0
1999	78.5 (±0.9)	78.4 (±0.9)	+0.1	-0.6	+1.2
2000	76.0 (±0.9)	76.2 (±0.9)	-0.2	-1.2	+1.0
2001	77.1 (±0.9)	77.2 (±0.9)	-0.1	-1.1	+1.4
2002	77.8 (±0.9)	77.6 (±0.9)	+0.2	-1.4	+3.2
2003	81.9 (±0.8)	81.8 (±0.9)	+0.1	-1.8	+3.0

7.   Analytic and Reporting Guidelines

Data from the NIS PUF can be used to produce national, state, and IAP area estimates of vaccination
coverage rates using the WGT weight. Information in the data file can be used to calculate standard
errors of the vaccination coverage rates, using the WGT weight, that reflect the complex sample
design of the NIS. The file includes IAP area and state identifiers (ITRUEIAP and STATE). The
sample is stratified by the 78 IAP areas, and the IAP area identifier and the coded household identifier

(SEQNUMHH) are key variables for obtaining standard errors for IAP area, state, and national estimates of vaccination coverage rates. Demographic and socioeconomic variables in the file can be used to obtain national vaccination coverage rates for subgroups of the population. Data users should, however, be aware that estimates for such subgroups at the state or IAP area level will generally have large standard errors because of small sample sizes. The NCHS standard for precision of subgroup 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.

Key Variables

The variables in the NIS PUF fall into two major categories: 1) variables that apply to all children with completed household interviews (use WGT_RDD), and 2) variables that apply only to children with adequate provider data (use PDAT=1 and the WGT weight). Variables in the first group include the household report of vaccinations received by the child, and various demographic and socioeconomic characteristics of the child, the mother, and the household. Because of reporting and recall errors, the household report of vaccinations is not used to produce vaccination coverage rates. As discussed below, the provider report of vaccinations received by the child is used to produce vaccination coverage rates.

Table 7 lists variables that are commonly used in analyses or for published estimates of vaccination coverage.

The SEQNUMC variable is the unique child identifier. SEQNUMHH is the unique household identifier. Key geographic variables include IAP area (ITRUEIAP), state (STATE), and Census Region (REGION). Key demographic variables include race/ethnicity category of the child (RACEETHK), age category of the child (AGEGRP), age category of the mother (M_AGEGRP), marital status category of the mother (MARITAL), and firstborn status of the child (FRSTBRN). Key

socioeconomic variables include education category of mother (EDUC1), poverty status (INCPOV1R), and the income-to-poverty ratio (INCPORAT). The WIC variables include whether the child ever participated in the WIC program (CWIC_01) and whether the child is currently participating in the WIC program (CWIC_02).

Table 7: NIS Variables That Are Commonly Used in Analyses or for Published Estimates	
ID variables	
SEQNUMC – unique child ID variable	
SEQNUMHH – unique household ID variable	
Geographic variables	
ITRUEIAP – IAP area	
STATE – state FIPS code	
REGION – Census Region	Northeast Midwest South West
Child demographic variables	
AGEGRP – age category of child	19-23 months 24-29 months 30-35 months
RACEETHK – race/ethnicity of child (introduced in 2002; RACEKIDR used in 1995-2001)	Hispanic White Alone, non-Hispanic Black Alone, non-Hispanic All Other Races Alone and Multi-Racial, non-Hispanic
SEX – gender of child	Male Female
FRSTBRN – firstborn status of the child	No Yes
Mother demographic variables	
EDUC1 – education of the mother	<12 years 12 years >12 years, not a college graduate College graduate
MARITAL – marital status of mother	Widowed, divorced, separated, or deceased Never married Currently married
M_AGEGRP – age group of mother	Under 20 years 20-29 years 30 years or older
Poverty variables	
INCPOV1R – poverty status	At or above poverty level Below poverty level Not determined
INCPORAT – income-to-poverty ratio	

Table7 (continued): NIS Variables That Are Commonly Used in Analyses or for Published Estimates

WIC variables	
CWIC_01 – child ever participated in WIC program	Yes No Never heard of WIC Don't Know Refused Missing
CWIC_02 – child currently participating in WIC program	Yes No Don't Know Refused Missing
Breastfeeding variables	
CBF_01 – child ever fed breast milk	Yes No Don't Know Refused Missing
BF_END – length of time in days child was fed breast milk	
BF_EXCL – length of time in days child was exclusively fed breast milk	
Chicken pox variables	
I_HADCPX – did child ever have chicken pox	Yes No
IAGECPXR – age in months when child had chicken pox	0-6 months 7-12 months 13-18 months 19-24 months 25-30 months 31 months or older
Presence of provider data variables	
PDAT – adequate provider data indicator	Yes No
Number of provider-reported doses of vaccine variables	
P_NUMDTP – total number of DT/DTP/DTaP doses	
P_NUMPOL – total number of polio doses	
P_NUMMMR – total number of MCV doses	
P_NUMHIB – total number of Hib doses	
P_NUMHEP – total number of hepatitis B doses	
P_NUMVRC – total number of varicella doses	
P_NUMPCV – total number of pneumococcal doses	
P_NUMFLU – total number of influenza doses	
P_NUMHEA – total number of hepatitis A doses	

Table7 (continued): NIS Variables That Are Commonly Used in Analyses or for Published Estimates

Provider characteristic variables	
PROV_FAC – provider facility type	All public facilities All hospital facilities All private facilities All military/other facilities All WIC clinic providers Mixed types Unknown
VFC_PRO – participation of child's provider(s) in VFC program	All providers Some but not all providers No providers Unknown
REGISTRY – provider(s) reported child's vaccination(s) to state or community immunization registry	All providers Some but not all providers No providers Unknown
NCARER1 to NCARER6 – types of services offered by child's provider(s): NCARER1: child's providers offer comprehensive child care. NCARER2: child's providers offer acute illness care. NCARER3: child's providers offer follow up visits. NCARER4: child's providers offer after-hours telephone coverage. NCARER5: child's providers offer WIC program/services. NCARER6: child's providers offer other services.	All providers Some but not all providers No providers/unknown

The breastfeeding variables include whether the child was ever fed breast milk (CBF_01), the length of time in days the child was fed breast milk (BF_END), and the length of time the child was exclusively fed breast milk (BF_EXCL). Two types of inconsistencies arise in the breastfeeding data: 1) duration of any breastfeeding can exceed the age of the child, and 2) the age of introducing anything other than breast milk exceeds the duration of any breastfeeding. BFENDFL is set equal to 1 when BF_END exceeds the age of the child. BFEXCLFL is set equal to 1 when the duration of exclusive breastfeeding exceeds the duration of any breastfeeding, with a buffer for respondent use of different units of time in the two questions. Appendix F provides details on how the flags were

created. Data users are cautioned to review this appendix before analyzing any of the breastfeeding variables.

Selecting children with PDAT equal to 1 identifies children with adequate provider data (DISPCODE = 1 to 6 or 8 to 11) or who are unvaccinated (as defined earlier). Children who do not have provider data (DISPCODE = MISSING) or who have provider data that are not adequate to determine the up-to-date vaccination status of the child (DISPCODE = 7) have PDAT equal to 2. (Appendix G gives the definition of the values of DISPCODE.)

The NIS PUF contains many variables constructed from the provider data. One set of variables indicates the number of doses the child received for each of the vaccines. For example, P_NUMDTP indicates the number of doses of DTP. It counts all DTP-containing vaccines, including DTP, DTaP, DT, DTaP-Hib and DTP-Hib. Both the individual vaccines and the vaccine series have up-to-date indicator variables. For example, PUTD4313 is an indicator variable for whether the child has 4+ DTP vaccinations, 3+ polio vaccinations, 1+ measles-containing vaccinations, and 3+ Hib vaccinations. Also, PUT43133 is an indicator variable for 4+ DTP, 3+ polio, 1+ MCV, 3+ Hib, and 3+ Hep B. Section 4 discusses the naming conventions for these variables. For 2003 two new influenza vaccine up-to-date variables have been created (see the *National Immunization Survey 2003 Public-Use Data File: Documentation, Code Book and Frequencies* for more detail).

P_UTDFL1:   Vaccinated -- For interviews conducted during year x (defined using the year variable associated with the quarter), child was of age between 6 and 23 months during the entire span from 9/1 through 12/31 of year x-1, and child received at least one influenza vaccination during this period.

Not Vaccinated -- For interviews conducted during year x (defined using the year variable associated with the quarter), child was of age

between 6 and 23 months during the entire span from 9/1 through

12/31 of year x-1, and child received no influenza vaccine during this

period.

Not eligible -- Child falls into neither of the preceding categories.

P_UTDFL2:   Vaccinated -- For interviews conducted during year x (defined using

the year variable associated with the quarter), child was of age

between 6 and 23 months during the entire span from 9/1 through

12/31 of year x-1, and either a) received no doses of influenza

vaccine prior to 9/1/x-1, but then received two between 9/1/(x-1) and

whichever is earlier, date of interview or 1/31/x or

b) received at least one dose of influenza vaccine prior to

9/1/x-1 and then received one during the period 9/1/x-1 through

12/31/x-1.

Not vaccinated -- For interviews conducted during year x (defined using

the year variable associated with the quarter), child was of age

between 6 and 23 months during the entire span from 9/1 through

12/31 of year x-1, but does not qualify for the above definition.

Not eligible -- For interviews conducted during year x (defined using the

year variable associated with the quarter), child's age fell

outside the span of 6 and 23 months at any point between

9/1/x-1 and 12/31/x-1.

To accommodate the large and continually growing number of types of vaccinations covered by the NIS, vaccination-type indicator variables (see Table 8) are also created from information on the Immunization History Questionnaire. For example, the vaccination-type indicator variable for the first dose of DTP (XDTPTY1) indicates whether that dose was a DT, DTP, DTaP, DTP-Hib, or DTaP-Hib vaccination. Each type of vaccination has a distinct vaccination type code. Additional codes cover the situations where the provider does not specify the type of DTP, polio, or pneumococcal vaccine. Varicella vaccine does not require vaccination-type indicator variables. For each vaccination-type indicator variable, two corresponding variables give the child's age in days and age in months at that vaccination (e.g., XDTPTY1 is associated with DDTP1 and DTP1_AGE). More detail on the age-at-vaccination variables is given below.

DTP-containing vaccines have a vaccination type code of 01, 02, 03, 04, 05, and 07. Polio-containing vaccines have a vaccination type code of 20 to 22. Measles-containing vaccines have a vaccination type code of 30 to 33. Hib-containing vaccines have a vaccination type code of 05, 07, 43, and 44. Hepatitis B-containing vaccines have a vaccination type code of 43 or 60. Finally, pneumococcal-containing vaccines have a vaccination type code of 70 to 72. Vaccine type codes 10 to 19 and 50 to 59 have been reserved for later use.

The vaccination-type indicator variables greatly reduce the number of vaccination date and age-at-vaccination variables that must be carried in the NIS public-use file without any loss of information. They also allow data users more easily to determine the specific type of vaccine given at each dose (e.g., the percentage of children with a DTaP vaccination for their first dose of DTP-containing vaccine). The vaccination-type indicator variables are located in Section 9 (Provider-reported Age-at-Vaccination Variables) of the code book. As an example of their use, a weighted (using the WGT weight for children with PDAT = 1) frequency distribution on XDTPTY1 would give estimates of the proportion of DTP-containing first doses that were DT, DTP, DTaP, DTP-Hib, DTaP-Hib, etc.

The NIS PUF includes a variable for age in days at each vaccination (e.g., DDTP1 for the first dose of DTP-containing vaccine). These variables can be used to examine age at vaccination, vaccination spacing intervals, and age-appropriate immunization. Another set of variables gives age in months at time of vaccination (e.g., DTP1_AGE for the first dose of DTP-containing vaccine). They are located in Section 9 of the code book. These variables can be used to determine, for example, whether a child received at least four DTP vaccinations by the age of 19 months. Section 4 discusses the naming conventions for these variables.

Table 8: Vaccination-type Indicator Variables Used with Vaccination-date Arrays and Age-at-vaccination Arrays		
Vaccination-Type Indicator Variable Description and Variable Names	**Vaccination Type Code**	**Specific Type of Vaccination Recorded on Immunization History Questionnaire**
DTP (DTP/DT-containing vaccine): **XDTPTY1 – XDTPTY8**	01	DT
	02	DTP
	03	DTP - unknown type
	04	DTaP
	05	DTP/Hib
	07	DTaP/Hib
POLIO (Polio-containing vaccine): **XPOLTY1 – XPOLTY8**	20	OPV
	21	IPV
	22	Polio - unknown type
MCV (Measles-containing vaccine): **XMMRTY1 – XMMRTY4**	30	MMR
	31	Measles only
	32	Measles/Mumps
	33	Measles/Rubella
HIB (Hib-containing vaccine): **XHIBTY1 – XHIBTY8**	05	DTP/Hib
	07	DTaP/Hib
	43	Hep B - Hib
	44	Hib only
HEP B (Hep B-containing vaccine): **XHEPTY1 – XHEPTY8**	60	Hep B only
	43	Hep B - Hib

Table 8 (continued): Vaccination-type Indicator Variables Used with Vaccination-date Arrays and Age-at-vaccination Arrays		
Vaccination-Type Indicator Variable Description and Variable Names	**Vaccination Type Code**	**Specific Type of Vaccination Recorded on Immunization History Questionnaire**
PCV (Pneumococcal-containing vaccine): **XPCVTY1 – XPCVTY8**	70	Conjugate
	71	Polysaccharide
	72	Pneumococcal – unknown type

The final key set of provider variables relates to characteristics of the provider: provider facility type (PROV_FAC), type of care offered by the provider (NCARER1 to NCARER6), participation in the Vaccines for Children (VFC) program (VFC_PRO), and an indicator of whether the child's vaccinations are reported to a community or state immunization registry (REGISTRY).

Use of the NIS Sampling Weights

The NIS PUF contains two child-level weights. The WGT_RDD variable gives the household weight for each child. It should be used to form estimates from the children with completed household interviews. This weight reflects the stratified sample design and also adjusts for unit nonresponse, for poststratification to population control totals, and for the exclusion of nontelephone children from the NIS. The weight variable that applies to children with adequate provider data is WGT. This weight should be used to form estimates of vaccination coverage. Each child with adequate provider data (PDAT = 1) has a value of WGT. Starting with the 2002 PUF, the definition of children with adequate provider data was expanded to include unvaccinated children (as discussed in Section 2).

The NIS PUF does not contain any provider-level weights. The NIS does not sample providers directly; rather, they are included in the survey through the children they vaccinate. A user of the NIS

PUF should not attempt provider-level analyses (e.g., estimate the percentage of providers in the U.S. that are private providers), because the NIS sample was not designed for that purpose.

Estimation and Analysis

Estimating Vaccination Coverage Rates

Vaccination coverage rates are ratio estimates, as described in the statistical literature on methods for complex sample surveys. Because of the adjustment to the sampling weights for partial nonresponse, statistical analyses require only data from children with adequate provider data (PDAT = 1), along with their partial-nonresponse-adjusted sampling weights (WGT). To summarize the statistical methodology by which vaccination coverage rates and their standard errors are obtained from these data, let Y_{hij} be an indicator, for the jth child with adequate provider data in the ith sampled household in the hth stratum (IAP area) of the NIS sampling design, equal to 1 if the child is up-to-date according to the provider data and 0 otherwise. Also, let W_{hij} denote the value of WGT for this child. Then, letting $\hat{Y}_h = \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij} Y_{hij}$ and $\hat{T}_h = \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} W_{hij}$,

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

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

where L denotes the number of strata (the 78 IAP areas), n_h denotes the number of sampled households containing children with adequate provider data in the hth IAP area, and m_{hi} denotes the number of age-eligible children with adequate provider data in the ith household in the hth IAP area.

Letting L denote the number of IAP areas in a state, the above formula can also be used to calculate vaccination coverage rates for states containing two or more IAP areas and for states containing only one IAP area.

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 IAP areas. Letting $Z_{hij} = \dfrac{W_{hij}(Y_{hij} - \hat{\boldsymbol{q}})}{\sum\limits_{h=1}^{L} \hat{T}_h}$, $Z_{hi} = \sum\limits_{j=1}^{m_{hi}} Z_{hij}$, and

$$\overline{Z}_h = \frac{\sum\limits_{i=1}^{n_h} Z_{hi}}{n_h},$$

an estimator of the variance of the vaccination coverage rate, $\hat{\boldsymbol{q}}$, is

$$\hat{V}(\hat{\boldsymbol{q}}) = \sum_{h=1}^{L} \frac{n_h}{n_h - 1} \sum_{i=1}^{n_h} (Z_{hi} - \overline{Z}_h)^2 .$$

The calculation of standard errors for estimates of vaccination coverage rates in the NIS can be implemented in statistical software such as SUDAAN (Research Triangle Institute 2001), SAS (SAS Institute Inc. 1999) and Stata (Stata Corporation 2001). Appendix H gives examples of the use of SUDAAN to estimate vaccination coverage rates and their standard errors for IAP areas and states. For PROC CROSSTAB, the DESIGN = WR (with-replacement sampling of Primary Sampling Units within stratum) option is used, because the sampling fractions for households within an IAP area are all quite small. In these applications the IAP area (ITRUEIAP) is used as the stratum variable, and the household identifier (SEQNUMHH) is used as the Primary Sampling Unit identifier in the NEST statement. The data file should first be sorted on ITRUEIAP and then sorted on SEQNUMHH within ITRUEIAP before running SUDAAN. As indicated above, WGT is used as the weight variable.

Combining Multiple Years of NIS Data

With the release of the 2003 NIS PUF, nine years of NIS data are now available. The precision of estimates of vaccination coverage for subdomains (e.g., by race/ethnicity of child) within IAP areas or states can be improved by combining two or more years of NIS data. Data users should, however, be aware that estimates from combined years of NIS data represent an average over two or more years. Although combining several years of NIS data will yield a larger sample size for IAP 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 more difficult. Given the use of independent random-digit-dialing samples in the NIS, it is also possible that a child could appear in more than one public-use file.

The weights in each PUF (HY_WGT in 1995-2001, RDD_WT in 2002, and WGT_RDD in 2003; and W0 in 1995-2001, WT in 2002, and WGT in 2003) in each PUF should be divided by the number of years being combined. For example, if data for 2000 and 2001 are combined, the weights in each PUF should be divided by 2 to obtain revised weights. It is necessary to use revised weights in order to obtain correct weighted counts of children aged 19-35 months. The child and household ID numbers (SEQNUMC and SEQNUMHH) in the PUFs are unique only within a year, not across years. It is important a user create revised, unique ID numbers when combining data from multiple years. The following SAS code can be used:

YRSEQC = 1 * (YEAR || SEQNUMC);

YRSEQHH = 1 * (YEAR || SEQNUMHH);

YEAR is the 4-digit year variable for the NIS data year (e.g., 2001).

The data file should first be sorted on YEAR, then sorted on ITRUEIAP within YEAR (the two stratum variables), and finally sorted on YRSEQHH (the PSU variable) within ITRUEIAP before running SUDAAN. The revised weight should be used as the weight variable. The SUDAAN NEST statement should be modified to:

NEST YEAR ITRUEIAP YRSEQHH / PSULEV = 3;

8. Summary Tables

Appendix J contains seven tables. As mentioned in Section 2, Table J.1 lists the 78 IAP areas by state. For the U.S. and for each state and IAP area, it gives the estimated population total of children 19 to 35 months of age in 2003 and (from 2003 NIS data collection) the number of children with completed household interviews and the number of children with adequate provider data.

Tables J.2 through J.5 summarize pairs of variables: age group of child by maternal education (Table J.2), age group by family income (Table J.3), age group by race/ethnicity (Table J.4), and age group by gender (Table J.5). Each of these tables gives the unweighted and weighted counts of children who have completed household interviews and the unweighted and weighted counts of children with adequate provider data.

Table J.6 gives unweighted counts of children for shot card use by the presence of adequate provider data.

Table J.7 presents estimates of vaccination coverage and 95-percent confidence-interval half-widths obtained from SUDAAN. The data user should obtain the same estimates from the public-use file.

9. Citations for NIS Data

In publications please acknowledge CDC (NCHS and NIP) as the original data source. The reference for the 2003 NIS Public-Use File is:

U.S. Department of Health and Human Services (DHHS). National Center for Health Statistics. The 2003 National Immunization Survey, Hyattsville, MD: Centers for Disease Control and Prevention, 2004.

The NIS public-use data files are located at www.cdc.gov/nis/.

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

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Appendix A

Glossary of Abbreviations and Terms

Glossary of Commonly Used Abbreviations and Terms

3:3:1 — The series of 3 or more DTP vaccinations, 3 or more polio immunizations, and 1 or more MCV vaccinations

4:3:1 — The series of 4 or more DTP vaccinations, 3 or more polio immunizations, and 1 or more MCV vaccinations

4:3:1:3 — The series of 4 or more DTP vaccinations, 3 or more polio immunizations, 1 or more MCV vaccinations, and 3 or more Hib vaccinations

4:3:1:3:3 — The series of 4 or more DTP vaccinations, 3 or more polio immunizations, 1 or more MCV vaccinations, 3 or more Hib vaccinations, and 3 or more hepatitis B vaccinations

4:3:1:3:3:1 — The series of 4 or more DTP vaccinations, 3 or more polio immunizations, 1 or more MCV vaccinations, 3 or more Hib vaccinations, 3 or more hepatitis B vaccinations, and 1 or more varicella vaccinations given at age 12 months or older

CATI — Computer-assisted telephone interviewing

CDC — Centers for Disease Control and Prevention

DOB — Date of birth

DTaP — Diphtheria and tetanus toxoids and acellular pertussis vaccine

DTP — Diphtheria and tetanus toxoids and pertussis vaccine

DT — Diphtheria and tetanus toxoids vaccine

FLU — Influenza vaccine

Hep A — Hepatitis A vaccine

Hep B — Hepatitis B vaccine

Hib — *Haemophilus influenzae* type b vaccine

IHQ — Immunization history questionnaire

IPV — Inactivated poliovirus vaccine

MCV — Measles-containing vaccine

MMR — Measles, mumps, and rubella vaccine

NCHS — National Center for Health Statistics

NHIS — National Health Interview Survey

NIP	National Immunization Program
OPV	Oral poliovirus vaccine
PCV	Pneumococcal vaccine
RDD	Random-digit dialing
SC	Shot card
UTD	Up-to-date
VFC	Vaccinations for Children program
VRC	Varicella vaccine

Appendix B

NIS Household Questionnaire

NIS Hard Copy Questionnaire

SCREENER

Confidential Information

CASE ID_____ DATE_____

INTERVIEWER ID_____

TELEPHONE NUMBER_____

DATA ENTRY: DATE_____ ENTERED BY_____(Interviewer ID)

			DISP
#1	SALTZ "Is this telephone number for business use only". IF THE ANSWER IF "YES", GO TO RECORD OF CALLS, AND ENTER COMMENTS DESCRIBING CALL. IF THE ANSWER IS "NO", SELECT RESPONSE AND YOU WILL GO BACK TO THE INTRODUCTION AND COMPLETE INTERVIEW.		409
#2	IF AT ANY POINT DURING THE INTRO OR S1, THE RESPONDENT STATES THAT THERE ARE NO CHILDREN <u>AND HANGS UP</u>, USE F5 KEYS TO CODE AS HAVING NO CHILDREN, GO TO RECORD OF CALLS, AND ENTER COMMENTS DESCRIBING CALL.		429
#3	SF9 "Just to make sure I have this correct, are there any children between the ages of 18 months and 36 months old living or staying in your household?" YES 1 CONTINUE AT BEGINNING OF QUESTION WHERE INTERRUPTION OCCURRED NO 2 GO TO ELIGIBILITY STATUS CHECKPOINT (S1=YES=1, S2=DK=6		429

Intro_1   Hello, my name is _____. I'm calling on behalf of the Centers for Disease Control and Prevention. We're conducting a nationwide immunization study to find out how many children under 4 years of age, are receiving all of the recommended vaccinations for childhood diseases. Your telephone number has been selected at random to be included in the study.

CONTINUE WITH INTERVIEW……………..   1   [GO TO S1]
CONFIRM BUSINESS………………………...   2   [GO TO SALTZ]
EMERGENCY-NO KIDS……………………..   3   [GO TO SF9]
ANSWERING MACHINE…………………….   4
ANSWERING SERVICE……………………   5   [GO TO SASERV]

S1.   Am I speaking to someone who lives in this household who is over 17 years old?

I AM THAT PERSON…………………………   1   GO TO S_NUMB
THIS IS A BUSINESS…………………………   2   We are interviewing only private residences. Thank you very much. **[TERMINATE INTERVIEW**]

	NEW PERSON COMES TO PHONE…………	3	REPEAT INTRO_1 HERE, VERIFY PERSON'S AGE AND GO TO S_NUMB
	REFUSED…………………………………...	7	GO TO REFUSAL CONVERSION
	DOESN'T LIVE IN HOUSEHOLD…………...	8	CALLBACK
	NO PERSON AT HOME WHO IS AT LEAST 17………………………………………….	9	GO TO S2_B

S2_B   Does anyone live in your household who is over 17 years old?

	YES………………………………………….	1	When would be a good time for me to call back and talk to that person? [**SCHEDULE APPOINTMENT**]
	NO…………………………………………	2	GO TO S_NUMB

S_NUMB   How many children between the ages of 12 months and 3 years old are living or staying in your household?

IF ONE OR MORE, ENTER # OF CHILDREN………….. _____		(01 to 09)
NO CHILDREN……………………………. 00		GO TO S3_TERM

S3_LTR   A letter describing this study may have been sent to your home recently. Do you remember seeing the letter?

YES………………………………………….	1
NO…………………………………………..	2
DON'T KNOW……………………………...	6
REFUSED…………………………………...	7

S3_INTRO   This study is voluntary and is authorized by the U.S. Public Health Service Act. By law, the information you give will be kept in strict confidence and will be summarized for research purposes only. You may choose not to answer any question you don't want to answer or stop at any time.

S3_EVAL   In order to evaluate my performance, my supervisor may record and listen
            as I ask the questions. I READ THESE STATEMENTS TO THE
            RESPONDENT.

            YES…………………………………………….   1

S3   So I'll know which vaccination questions to ask, please tell me the month,
            day, and year of birth of the (first) child in your household who is between
            12 months and 3 years old.

**[ASK S3.3, S3_CONF, S3.4, AND S3.5 FOR EACH RESPONSE IN S3.1KID OR
S3.MKIDS; RECORD ON ELIGIBILITY GRID]**

S3.3   ENTER BIRTH DATES (MM/DD/YYYY)
         FROM S3.1KID OR S3.MKIDS IN ELIGIBILITY GRID ON PGAE 7.

         If S3 is REFUSED, read YEARREF1
         I understand you may be uncomfortable, however, all information is
         confidential under Federal Law. The only reason we need your child's
         birthdate is to know which immunization questions to ask (IF
         NECESSARY: If you would feel more comfortable, I can enter only a
         month and year of birth.

                 1………………   R STILL REFUSES [GO TO YEARQUIT]
                 2………………   RETURN TO QUESTIONNAIRE [GO TO S3]

         If S3 is Don't Know, read
         YEARDK_1
              The reason we need your child's birth date is to know which
              immunization questions to ask. Is there anyone available who would
              know the child's month, day, and year of birth?

YEARQUIT   Since we need a birthdate in order to continue, these are all the questions I
            have at this time. I'd like to thank you on behalf of the Centers for
            Disease Control and Prevention for the time you have spent answering
            these questions.

S3_CONF   That would make the [ordinal # of kid derived from S_NUMB] child [age
            of child in months and years] old; is that correct?

            YES……………………………………   1
            NO……………………………………   2

S3.4   Is the child born [insert month and year of birth] male or female?

            MALE……………………………………   1
            FEMALE…………………………………   2
            DON'T KNOW……………………………   6
            REFUSED…………………………………   7

S3.5   So I'll know how to refer to [him/her] during the interview, please tell me [his/her] first name or initials

DON'T KNOW……………………………. 6
REFUSED…………………………………… 7

S3_C   I have listed [NAMES FROM S3.5]. Do you have any other children between 12 months and 3 years old living or staying in this household?

YES…………………………………….	1	CONFIRM # AT S_NUMB, CHANGE AS NECESSARY AND REPEAT S3.3, S3_CONF, S3.4, S3.5 for missed children
NO……………………………………..	2	GO T O ELIG. CHECKPOINT

ELIGIBILITY GRID

LISTING TABLE OF CHILDREN BETWEEN THE AGES OF 19 MONTHS AND 35 MONTHS OLD

<u>CHECK BELOW, WHERE APPLICABLE</u>

COL. 1

	S3.3 **Date of Birth**	**S3.CONF** **Age** **Confirm**	**ASK ONLY IF CHILD IS ELIGIBLE (19-35 MONTHS)**		**PRIMARY** **ELIGIBLE** **19-35 months**
			S3.4 **Sex**	**S3.5** **First** **Name/** **Initials**	_____/_____/_____ to _____/_____/_____
Child 1	_____/_____/_____	Y N	M F		
Child 2	_____/_____/_____	Y N	M F		
Child 3	_____/_____/_____	Y N	M F		
Child 4	_____/_____/_____	Y N	M F		
Child 5	_____/_____/_____	Y N	M F		
Child 6	_____/_____/_____	Y N	M F		
Child 7	_____/_____/_____	Y N	M F		
Child 8	_____/_____/_____	Y N	M F		
Child 9	_____/_____/_____	Y N	M F		

ELIGIBILITY STATUS CHECKPOINT

?	1. Checks in Column 1	?	GO TO S4
?	2. NO Checks in Column 1	?	

?

GO TO S3_TERM

S_NUMB_QT. Those are all the questions I have. This survey is collecting information on the health of children between 19 months and 3 years old only. I'd like to thank you on behalf of the Centers for Disease Control and Prevention for the time you spent answering these questions.

[TERMINATE INTERVIEW]

S3_TERM   Those are all the questions I have. (I'd like to thank you on behalf of the Centers for Disease Control and Prevention for the time and effort you spent answering these questions.)
[TERMINATE INTERVIEW]

S3_D_1+1   Most of the remaining questions will be about [FIRST NAME(S)/INITIALS OF <u>ELIGIBLE</u> CHILD(REN) FROM S3>5].

S4   Since this survey asks about immunizations children may have received, I need to speak to the person living in your household who knows the most about the immunizations or shots that [FIRST NAMES/INITIALS OF <u>ELIGIBLE</u> CHILD(REN) FROM S3.5] (has/have) received. Are you this person?

               YES…………………..   1   GO TO S6_INTRO
               NO……………………   2

S5   May I speak with this person now?

               YES…………………..   1   GO TO S5_BOX
               NO, NOT AT HOME..   2   GO TO MR1

S5_BOX   READ WHEN NEW PERSON COMES TO THE PHONE
                                          OR
               FOR Most Knowledgeable Respondent CALLBACK INTRODUCTION

> Hi. I'm calling for the Centers for Disease Control and Prevention. We're calling about an important national study of immunization. I'd like you to know that this study is voluntary and is authorized by the U.S. Public Health Service Act. The information you give will be kept in strict confidence and will be summarized for research purposes only. You may choose not to answer any question you don't want to answer or stop at any time.

S6_INTRO   The following questions ask about immunizations or shots for [FIRST NAMES OF ALL <u>ELIGIBLE</u> CHILDREN, FROM S3.5]. Because the Centers for Disease Control and Prevention needs accurate information on immunizations children receive, we would like you to refer to shot records.

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[ASK S6_X THROUGH S7.B FOR EACH RESPONSE IN S3.1KID OR S3.MKIDS; RECORD ON GRID BELOW]

	S3.5 First Name	S6_x Do you have any shot records for [NAME OF FIRST CHILD]?	S7_A Some children receive many shots, and the name and dates of those shots can be difficult to remember. It would be helpful if you could bring [NAMES OF ALL CHILDREN WITH SHOT RECORDS]'s shot record(s) to the phone. (IF NECESSARY: I'll be happy to wait while you go get it/them)?		S7.B_X Am I correct that you have the shot records for [NAMES OF ALL CHILDREN WITH SHOT RECORDS]?
CHILD 1		YES NO DK REF ___?____/ Repeat S6_X for next child or Go To S8.	YES ? Go To S7.B	CAN'T/WON'T BRING SR TO PHONE ? Go to S8	YES NO ? ? Go To S8.A ? ? ? Go To S8.B
CHLD 2		YES NO DK REF ___?____/ Repeat S6_X for next child or Go To S8.	YES ? Go To S7.B	CAN'T/WON'T BRING SR TO PHONE ? Go to S8	YES NO ? ? Go To S8.A ? ? ? Go To S8.B
CHLD 3		YES NO DK REF ___?____/ Repeat S6_X for next child or Go To S8.	YES ? Go To S7.B	CAN'T/WON'T BRING SR TO PHONE ? Go to S8	YES NO ? ? Go To S8.A ? ? ? Go To S8.B
CHILD 4		YES NO DK REF ___?____/ Repeat S6_X for next child or Go To S8.	YES ? Go To S7.B	CAN'T/WON'T BRING SR TO PHONE ? Go to S8	YES NO ? ? Go To S8.A ? ? ? Go To S8.B
CHILD 5		YES NO DK REF ___?____/ Repeat S6_X for next child or Go To S8.	YES ? Go To S7.B	CAN'T/WON'T BRING SR TO PHONE ? Go to S8	YES NO ? ? Go To S8.A ? ? ? Go To S8.B

DK=DON'T KNOW   REF=REFUSAL

S8   EXISTENCE OF SHOT RECORDS CHECKPOINT

ALL S6_X ANSWERS ARE "YES"…….	1	GO TO S8.A
ALL S6_X ANSWERS ARE "NO"…….	2	GO TO B_INTRO AND ASK FOR EACH CHILD IN HOUSEHOLD
ALL OTHER………………………….	3	GO TO S8.B.

S8.A   CHECKPOINT FOR HOUSEHOLDS WHERE ALL CHILDREN HAVE SHOT RECORDS

ALL S7.A. AND S7.B_X ANSWERS ARE "YES"…………………………	1	GO TO SECTION A SHOT RECORD (*NO CALLBACK NEEDED*)
ALL OTHERS…………………………..	3	ASK SECTION A FOR CHLDREN WITH SHOT RECORDS AND SECTION B FOR CHILDREN WITH SHOT RECORDS OR WHEN SHOT RECORD IS NOT HANDY (*NO CALLBACK NEEDED*)

S8.B.	CHECKPOINT FOR HOUSEHOLDS WHERE SOME CHILDREN HAVE SHOT RECORDS AND SOME CHILDREN DO NOT HAVE SHOT RECORDS	
	ALL S7.A AND S7.B_X ANSWER "YES"…………………………………… 1	ASK SECTION A FOR CHILDREN WITH SHOT RECORDS AND SECTION B FOR CHILDREN WITHOUT SHOT RECORDS (*NO CALLBACK NEEDED*)
	ALL S7.A AND S7.B ANSWERS ARE "NO"…………………………………. 2	GO TO B_INTRO AND ASK FOR EACH CHILD IN HOUSEHOLD (*NO CALLBACK NEEDED*)
	ALL OTHERS…………………………… 3	ASK SECTION A FOR CHILDREN WITH SHOT RECORDS AND SECTION B FOR CHILDREN WITHOUT SHOT RECORDS (*NO CALLBACK NEEDED*)

CASE ID_____

TELEPHONE NUMBER_____

INTERVIEW DATE_____

INTERVIEW ID_____

DATA ENTRY: DATE_____   **BY**_____(INTERVIEWER ID)

NIS Hard Copy Questionnaire

PART 2

Section MR – Most Knowledgeable Respondent Callback

Section A – Available Shot Records

Section B – NO Shot Records

Section C – Demographics

Section D – Provider

Confidential Information

Information contained on this form which would permit identification of any individual or establishment has been collected with a guarantee that it will be held in strict confidence by Abt Associates and CDC, will be used only for purposes states in this study, and will not be disclosed or released to anyone other than authorized staff of CDC without the consent of the individual or establishment in accordance with Section 308(d) of the Public Health Service Act (42 U.S.C. 242.m)

SECTION MR

Most Knowledgeable Respondent Callback Questions

MR1 Before we hang up, please tell me the first name of the person who knows the most about (this child's/these children's) immunizations.

    First Name:_____

    Refused……………………………………………..   7

MR2 When would be a good time to call back and speak with [FILL VAR: this person/NAME FROM MR1]?

    MR2 DATE_____

    MR2_2 TIME_____

MR3 Would I call the same telephone number where I reached you?

    YES…………………………………………..1 GO TO MR_TERM

    NO……………………………………………2

MR4 What number should I call?

    AREA CODE:_____

    NUMBER:_____

MR_TERM Those are all the questions I have. I'd like to thank you on behalf of the Centers for Disease Control and Prevention for the time and effort you spent answering these questions. **[TERMINATE INTERVIEW]**
        …………………………………………

SECTION A

Available Shot Records

NOTE: SECTION A IS ASKED ONLY FOR CHILDREN WITH SHOT RECORDS AVAILABLE (FROM S6 AND S7)

NOTE: EACH SECTION (A,C AND D) IS ASKED IN ITS ENTIRETY FOR EACH CHILD WITH SHOT RECORDS. EACH SECTION (B,C AND D) IS ASKED IN ITS ENTIRETY FOR EACH CHILD WITHOUT SHOT RECORDS.

		SHOT RECORD FOR DTP/DT SHOT		

	AINTRO	Thank you for getting the shot records. The remainder of the survey will take about 15 minutes.		
	AN1	Looking at the shot record, please tell me how many times **[FILL VAR: NAME OF FIRST/SECOND…/SIXTH CHILD, FROM S3.5]** has received a D-T-P, D-T-A-P, or D-T shot, sometimes called a D-P-T shot, diphtheria-tetanus-pertussis shot, baby shot, or three-in-one shot. IF R MENTIONS A SHOT NOT LISTED ABOVE, RECORD IN "OTHER SHOTS".		

Shots……………....	**?** RECORD DATES BELOW		
?NONE……….....	0	GO TO AN2	
?DON'T KNOW….	6	GO TO AN2	
?REFUSED……….	7	GO TO AN2	

AD1   What is the date (on the record) for the [FILL VAR: (First/Second/…Eight)] D-T-P, D-T-A-P, or D-T shot?

1st Shot AD11	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
2nd Shot AD12	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
3rd Shot AD13	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
4th Shot AD14	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
5th Shot AD15	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
6th Shot AD16	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
7th Shot AD17	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
8th Shot AD18	_____/_____/_____ MO DAY YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
GO TO AN_2				

	SHOT RECORD FOR POLIO (DROPS OR SHOTS)			
	AN2　　Looking at the shot record, please tell me how many times [FILL VAR: NAME OF FIRST, SECOND…/SIXTH CHILD, FROM S3.5] has received a polio vaccine—pink drops, sometimes called O-P-V – or a polio shot, sometimes called I-P-V. IF R MENTIONS A SHOT NOT LISTED ABOVE, RECORD IN "OTHER SHOTS".			
	Shots………….…...　　**?**　RECORD DATES BELOW **?**NONE…….…....　　0　GO TO AN3 **?**DON'T KNOW….　　6　GO TO AN3 **?**REFUSED……….　　7　GO TO AN3			
	AD1　What is the date (on the record) for the [FILL VAR: (First/Second/…Eight)] Polio shot?			
1st Shot AD21	_____/_____/_____ MO　DAY　YEAR	?DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
2nd Shot AD22	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
3rd Shot AD23	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
4th Shot AD24	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
5th Shot AD25	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
6th Shot AD26	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
7th Shot AD27	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
8th Shot AD28	_____/_____/_____ MO　DAY　YEAR	? DON'T KNOW	9996	GO TO AN2
		?REFUSED	9997	GO TO AN2
	GO TO AN_3			

SHOT RECORD FOR MEASLES/MMR (SHOTS)

	AN3	Looking at the second record, please tell me how many times [FILL VAR: NAME OF FIRST/SECOND…/SIXTH CHILD, FROM S3.5] has received a measles shot or an M-M-R shot, that is, a measles, mumps, and rubella shot.
		IF R MENTIONS A SHOT NOT LISTED ABOVE, RECORD IN "OTHER SHOTS"

	Shots……………………. ?	RECORD DATES BELOW
	?NONE……………….. 0	GO TO AN 4
	? DON'T KNOW……… 6	GO TO AN4
	?REFUSED…………… 7	GO TO AN4

	AD3	What is the date (on the record) for the [FILL VAR: (First/Second/…Fourth)] (measles or M-M-R) shot? Was that shot measles only or a full M-M-R only?

1ST SHOT AD31	_____/_____/_____ MO DAY YEAR	DON'T KNOW…………	9996	GO TO AN4
		REFUSED………………	9997	GO TO AN4
	AM31	MEASLES ONLY ……….1		
	AM32	MMR ONLY ……….2		
	AM33	DON'T KNOW ……….6		
	AM34	REFUSED ……….7		
2ND SHOT AD32	_____/_____/_____ MO DAY YEAR	DON'T KNOW…………	9996	GO TO AN4
		REFUSED………………	9997	GO TO AN4
	AM31	MEASLES ONLY ……….1		
	AM32	MMR ONLY ……….2		
	AM33	DON'T KNOW ……….6		
	AM34	REFUSED ……….7		
3RD SHOT AD33	_____/_____/_____ MO DAY YEAR	DON'T KNOW…………	9996	GO TO AN4
		REFUSED………………	9997	GO TO AN4
	AM31	MEASLES ONLY ……….1		
	AM32	MMR ONLY ……….2		
	AM33	DON'T KNOW ……….6		
	AM34	REFUSED ……….7		
4th SHOT AD33	_____/_____/_____ MO DAY YEAR	DON'T KNOW…………	9996	GO TO AN4
		REFUSED………………	9997	GO TO AN4
	AM31	MEASLES ONLY ……….1		
	AM32	MMR ONLY ……….2		
	AM33	DON'T KNOW ……….6		
	AM34	REFUSED ……….7		

GO TO A_4

SHOT RECORD FOR HIB (shot)

AN4   Looking at the shot record please tell me how many times [FILL VAR: NAME OF FIRST/SECOND…/SIXTH CHILD FROM S3.5] has received an H-I-B shot. (This is for meningitis and is called HA-MA-FI-LUS IN-FLU-EN-ZA, H-I-B vaccine, or H flu vaccine.)

IF R MENTIONS A SHOT NOT LISTED ABOVE, RECORD IN "OTHER SHOTS" QUESTION A6.

Shots   RECORD DATES BELOW

NONE…………………..   0   GO TO AN5

DON'T KNOW………...   6   GO TO AN5

REFUSED……………....   7   GO TO AN5

AD4   What is the date (on the record) for the [FILL VAR: (First/Second/…Eighth)] (H-I-B) shot?

1st Shot AD41	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
2nd Shot AD42	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
3rd Shot AD43	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
4thShot AD44	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
5thShot AD45	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
6th Shot AD46	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
7th Shot AD47	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5
8thShot AD48	____/____/_____ MO DAY YEAR	DON'T KNOW REFUSED	9996 9997	GO TO AN5 GO TO AN5

GO TO AN_5

		SHOT RECORD FOR HEPATITIS B				
	AN5	(Looking at the shot record) Please tell me how many times **[FILL VAR: NAME OF FIRST/SECOND…/SIXTH CHILD, FROM S3.5]** has received a hepatitis B shot.				
		Shots		?	RECORD DATES BELOW	
		?NONE…………………………..		0	GO TO AN6	
		? DON'T KNOW…………………		6	GO TO AN6	
		?REFUSED………………………		7	GO TO AN6	
	AD5.	What is the date (on the record) for the [FILL VAR: First/Second/…Eight)] (hepatitis B) shot?				
1st Shot AD51	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
2nd Shot AD52	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
3rd Shot AD53	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
4th Shot AD54	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
5th Shot AD55	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
6th Shot AD56	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
7th Shot AD57	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	
8th Shot AD58	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO AN6	
		?	REFUSED…………………	9997	GO TO AN6	

GO TO AN6

		SHOT RECORD FOR CHICKEN POX			
	AN5	(Looking at the shot record) Please tell me how many times **[FILL VAR: NAME OF FIRST/SECOND…/SIXTH CHILD, FROM S3.5]** has received a chicken pox or varicella shot.			
		Shots	?	RECORD DATES BELOW	
		?NONE……………………………..	0	GO TO A5_C	
		? DON'T KNOW…………………	6	GO TO A5_C	
		?REFUSED………………………..	7	GO TO A5_C	
	AD5	What is the date (on the record) for the [FILL VAR: First/Second/…Eight)] (chicken pox) shot?			
1ST Shot AD61	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO A5_C
		?	REFUSED…………………	9997	GO TO A5_C
2nd Shot AD62	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO A5_C
		?	REFUSED…………………	9997	GO TO A5_C
3rd Shot AD63	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO A5_C
		?	REFUSED…………………	9997	GO TO A5_C
4th Shot AD64	____/____/____ MO DAY YEAR	?	DON'T KNOW……………	9996	GO TO A5_C
		?	REFUSED…………………	9997	GO TO A5_C

A5_C I've been asking about shots received by [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] Now I would like to ask, has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever been ill with chicken pox or varicella?

YES…………….....………………… 1   GO TO A5_E

NO……………………………….… 2   ⎫ GO TO A6

DON'T KNOW……………………… 6   ⎬ OR NEXT CHILD

REFUSED………………………… 7   ⎭

A5_E How old was [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]in months, when he/she had chicken pox?

Age child had chicken pox………….   _____|_____ MONTHS

GO TO C1 OR NEXT CHILD

REFUSED……………………….   97

IF UNABLE TO GIVE EXACT MONTHS:

A5_F Was [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]…

…one to six months old?……………………………   01

…seven to twelve months old?…………………....   02

…13to18 months old?…………………………….   03

…19to24 months old?…………………………….   04

…25to30 months old?…………………………….   05

…31to35months old?……………………………..   06

DON'T KNOW…………………………………..   9

REFUSED………………………………………   97

A17   INTERVIEWER CHECKPOINT.

INITIAL INTERVIEW	
?	IF CHILDREN WITH NO AVAILABLE SHOT RECORDS, GO TO B1
?	ALL OTHERS, GO TO C1

SECTION B

NO shot Records

> NOTE: SEE S6 – S8.B TO
> DETERMINE WHICH CHILDREN
> ARE ASKED SECTION B

BINTRO   The remainder of the survey will take about 10 minutes.

B1   Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever received an immunization, that is a shot or drops?

YES………………………...   1

NO……………………………   2

DON'T KNOW…………….   6   } GO TO B6.D

REFUSED…………………...   7

B2   Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]ever received a D-T-P, D-T-A-P or D-T shot (sometimes called a D-T-P shot, diphtheria-tetanus-pertussis shot, baby shot, or three-in-one shot)?

YES………………………...   1

NO……………………………   2

DON'T KNOW…………….   6   } GO TO B3

REFUSED…………………...   7

B2.A   How many D-T-P, D-T-A-P or D-T shots did [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever receive?

NUMBER OF SHOTS……………….   **?**

ALL SHOTS………………………….   50

DON'T KNOW………………………   96

REFUSED…………………………….   97

B3 Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]ever received a polio vaccination by mouth, pink drops, sometimes called O-P-V, or by polio shot, sometimes called I-P-V?

YES…………………….....   1

NO………………………….   2

DON'T KNOW……………. 6 } GO TO B4

REFUSED…………………... 7

B3.A How many polio vaccinations did [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever receive?

NUMBER OF SHOTS………………. ?

ALL SHOTS………………………… 50

DON'T KNOW……………………… 96

REFUSED…………………………… 97

B4 Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever received a measles or M-M-R (Measles-Mumps-Rubella) shot?

YES…………………….....   1

NO……………………………. 2

DON'T KNOW……………. 6 } GO TO B5

REFUSED…………………... 7

B4.A How many measles or M-M-R shots did [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever receive?

NUMBER OF SHOTS………………. ? IF 1, GO TO B4.B
                  IF 2 OR MORE, GO TO B5

ALL SHOTS………………………… 50

DON'T KNOW……………………… 96

REFUSED…………………………… 97

B4.B Was that shot measles only or M-M-R only?

MEASLES ONLY…...……………… 1

M-M-R ONLY………………………. 2

DON'T KNOW……………………… 96

REFUSED…………………………… 97

B5 Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]ever received an H-I-B shot? This shot is for meningitis and is called Haemophilus Influenzae (HA-MA-FI-LUS IN-FLU-EN-ZI)?

YES……………………..... 1

NO………………………. 2

DON'T KNOW……………. 6 } GO TO B6

REFUSED…………….…... 7

B5.A How many H-I-B shots did [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever receive?

NUMBER OF SHOTS………………. ?

ALL SHOTS…………………………. 50

DON'T KNOW……………………… 96

REFUSED……………………………. 97

B6 Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]ever received a hepatitis B shot? This shot is for meningitis and is often called HepB.

YES……………………..... 1

NO………………………. 2

DON'T KNOW……………. 6 } GO TO B6.B

REFUSED…………….…... 7

B6.A How many hepatitis B shots did [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever receive?

NUMBER OF SHOTS………………. ?

ALL SHOTS…………………………. 50

DON'T KNOW……………………… 96

REFUSED……………………………. 97

B6.B   Has [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]
         ever received a chicken pox or varicella shot?

YES…………………………….   1

NO…….………………………….   2 GO TO B6D

DON'T KNOW………………………   6 GO TO B6D

REFUSED…………………………….   7 GO TO B6D

B6C   How many chicken pox shots did [FILL VAR: NAME OF
        FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever receive?

NUMBER OF SHOTS……………….   **?**

ALL SHOTS………………………….   50

DON'T KNOW………………………   96

REFUSED…………………………….   97

B6D   I've been asking about shots received by [FILL VAR: NAME OF
        FIRST/SECOND…NINTH CHILD, FROM S3.5.] Now I would like to ask, has
        [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] ever
        been ill with chicken pox or varicella?

YES………………………………….   1 GO TO B6.E

NO…….………………………….   2

DON'T KNOW………………………   6

REFUSED…………………………….   7

IF B1=2 OR 6 OR 7, GO TO B10, OTHERWISE CONTINUE

B6E   How old was [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.] in months, when (he/she) had chicken pox?

AGE CHLD HAD CHICKEN POX….   _____|_____ MONTHS

REFUSED…………………………. 97

IF UNABLE TO GIVE EXACT MONTHS

B6F Was [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]………

….one to six months old?	01
….seven to twelve months old?	02
…..13 to 18 months old?	03
…..19 to 24 months old?	04
…..25 to 30 months old?	05
…..31 to 35 months old?	06
DON'T KNOW	9
REFUSAL	97

IF B1=2 OR 6 OR 7, GO TO B10, OTHERWISE CONTINUE

B10. REPEAT B1-B9 FOR EACH CHILD WITH NO AVAILABLE SHOT RECORDS.

B11. INTERVIEWER CHECKPOINT.

> INITIAL INTERVIEW
> ? GO TO C1

SECTION C

Demographics

CWIC_INTRO The following questions are about the WIC program. WIC is a nutrition and health program for Women, Infants, and Children. WIC benefits include food, checks or vouchers for food, health care referrals, and nutrition education.

CWIC_01 Has [FILL CHILD'S NAME] ever received WIC benefits?

YES……………………………… 1

NO………………………………. 2 [GO TO CBF_INBTRO]

NEVER HEARD OF WIC………… 3 [GO TO CBF_INBTRO]

DON'T KNOW…………………… 6 [GO TO CBF_INBTRO]

REFUSED………………………… 7 [GO TO CBF_INBTRO]

CWIC_02 Is [FILL CHILD'S NAME] currently receiving WIC benefits?

YES……………………………….. 1

NO………………………………. 2

DON'T KNOW…………………… 6

REFUSED………………………… 7

CBF_INTRO Now I have a couple of questions on breastfeeding.

CBF_01 Was [FILL CHILD'S NAME] ever breastfed or fed breastmilk?

YES……………………………….. 1

NO……………………………… 2 [GO TO CINTRO]

DON'T KNOW…………………… 6 [GO TO CINTRO]

REFUSED………………………… 7 [GO TO CINTRO]

CBF_02L How long was [FILL CHILD'S NAME] breastfed or fed breastmilk?

	STILL BREASTFEEDING	00	
	ENTER NUMBER/SELECT PERIOD	_____ENTER VALUE OR 996,997	
		996(SKIP TO CBF_N)	
		997 (SKIP TO CBF_02R)	

CBF_02RU   DAYS……………………………….   1

WEEKS…………………………….   2

MONTHS…………………………...   3

YEARS………………………………   4

CBF_02R   Can you remember if you or [FILL CHILD'S NAME]'s mother breastfed (him/her) for:

[READ CHOICES 1 TO 4 AND CIRCLE MOST APPLICABLE]

Under 1 month	1	[GO TO CINTRO]
Between one month and six months	2	[GO TO CINTRO]
Between six months and one year	3	[GO TO CINTRO]
Over 1 year	4	[GO TO CINTRO]
DON'T KNOW	6	[GO TO CINTRO]
REFUSED	7	[GO TO CINTRO]

CBF_N   How old was [FILL CHILD'S NAME] when (he/she) was first fed something other than breastmilk? This includes formula, juice, solid foods, cow's milk, water, sugar water, or anything else.

NEVER   00

ENTER NUMBER   _____

CBF_U   ENTER PERIOD:

DAYS………………………   1

WEEKS……………………..   2

MONTHS…………………...   3

YEARS…………………..   4

CINTRO   Now I have some questions about your entire household.

C1   Including the adults and all the children, how many people live in this household?

                NUMBER OF PEOPLE……

    C1.A   How many of these are adults 18 years of age or older?

                  NUMBER OF PEOPLE…….

    C1.B   And that means that [FILL VAR: ANSWER TO C1-ANSWER TO C1A] of these people are under 18 years of age?

YES………………………………..	1	
NO……………………………………	2	
REFUSED……………………………	7	SKIP TO C1.C

[IF ANSWER TO C1.B IS GREATER THAN OR EQUAL TO S_NUMB +1, THEN ASK C1.C, OTHERWISE, SKIP TO C2]

    C1.C   How many children less than 12 months old live in this household?

                  NUMBER OF CHILDREN < 12 MONTHS   _____

DON'T KNOW	96
REFUSED	97

C2.   Is [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5]. of Spanish, Hispanic, or Latino origin, that is Mexican, Mexican-American, Central American, South American, Puerto Rican, Cuban, or other Spanish-Caribbean? [CIRCLE ALL THAT APPLY]

C2_X01	NO,	NOT SPANISH/HISPANIC………………………..	YES
C2_X02	YES,	MEXICAN'MEXICANO…………………………	YES
C2_X03	YES,	MEXICAN-AMERICAN……………………………	YES
C2_X04	YES,	CENTRAL AMERICAN…………………………	YES
C2_X05	YES,	SOUTH AMERICAN………………………………..	YES
C2_X07	YES,	PUERTO RICAN……………………………………	YES
C2_X08	YES,	CUBAN/CUBAN AMERICAN……………………..	YES
C2_X09	YES,	SPANISH-CARIBBEAN…………………………..	YES
C2_X10	YES,	OTHER SPANISH/HISPANIC (SPECIFY)…………	YES
		DON'T KNOW………………………………………………	96
		REFUSED……………………………………………………	97

C3	Now, I am going to read a list of categories. Please choose one or more of the following categories to describe [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5.]'s race. Is [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5. White, Black or African American, American Indian, Alaska Native, Asian, Native Hawaiian or other Pacific Islander? [CIRCLE ALL THAT APPLY]	
C3_X01	WHITE…………………………………………………	YES
C3_X02	BLACK/AFRICAN AMERICAN………………………….	YES
C3_X03	AMERICAN INDIAN…………………………………….	YES
C3_X04	ALASKA NATIVE……………………………………….	YES
C3_X05	ASIAN………………………………………………….	YES
C3_X06	NATIVE HAWAIIAN…………………………………….	YES
C3_X07	PACIFIC ISLANDER…………………………………….	YES
C3_X08	OTHER………………………………………………….	YES
C3_OTHR1	_____	
	DON'T KNOW…………………………………………	96
	REFUSED………………………………………………..	97
	[IF MORE THAN ONE ANSWER AT C3, ASK C4]	

C4	Which do you feel best describes [FILL VAR: NAME OF FIRST/SECOND…NINTH CHILD, FROM S3.5]'s race?	
	WHITE…………………………………………………	1
	BLACK/AFRICAN AMERICAN………………………….	2
	AMERICAN INDIAN…………………………………….	3
	ALASKA NATIVE……………………………………….	4
	ASIAN………………………………………………….	5
	NATIVE HAWAIIAN…………………………………….	6
	PACIFIC ISLANDER…………………………………….	7
	OTHER………………………………………………….	8
	_____	
	DON'T KNOW…………………………………………	96
	REFUSED………………………………………………..	97

C5	What is your relationship to [FILL VAR: NAME OF FIRST/SECOND…/NITH CHILD, FROM S3.5]?	
	MOTHER (STEP, FOSTER, ADOPTIVE) OR FEMALE GUARDIAN)………………………………………………	01
	FATHER (STEP, FOSTER, ADOPTIVE) OR MALE GUARDIAN)………………………………………………	02
	SISTER OR BROTHER (STEP/FOSTER/HALF/ADOPTIVE)	03
	IN-LAW OF ANY TYPE………………………………….	04
	AUNT/UNCLE……………………………………………	05
	GRANDPARENT………………………………………..	06
	OTHER FAMILY MEMBER…………………………….	07
	FRIEND………………………………………………….	08
	DON'T KNOW………………………………………...	96
	REFUSED………………………………………………..	97

RULES FOR ASKING C6 (EDUCATION), C7 (MARITAL STATUS), C8-C10 (RACE-ETHNICITY) AND C11 (RESIDENCE AT CHILD'S BIRTH):
I.   ONLY ONE CHILD IN HOUSEHOLD: ASL EACH QUESTION ONCE
II.   TWO OR MORE CHILDREN IN HOUSEHOLD:
A.   ASK FOR A CHILD ONLY IF THIS IS THE FIRST CHILD WHERE RESPONDENT IS MOTHER (C5=01)
B.   ALWAYS ASK WHEN RESPONDENT IS NOT MOTHER (C5?01)

C6   What is the highest grade or year of regular school (you have /[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother has) ever completed?

0		1	2	3	4	5	6	7	8		9	10	11	12		13	14	15	16	17+

NEVER ATTENDED/   ELEMENTARY   HIGH SCHOOL   COLLEGE GRADUATE
KINDERGARTEN   (51)   (61)   (71)   (81)
   (41)

DON'T KNOW………………………………………………………… 96
REFUSED……………………………………………………………. 97

C7   (Are you/is [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'S mother) now married, widowed, divorced, separated, or (have you/has she) never been married?

MARRIED…………………………………………………….. 01
WIDOWED…………………………………………………… 02
DIVORCED…………………………………………………… 03
SEPARATED…………………………………………………. 04
NEVER MARRIED…………………………………………… 05
DECEASED…………………………………………………… 06
DON'T KNOW……………………………………………..… 96
REFUSED……………………………………………………… 97

C8   (Are you/is [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother) of Spanish, Hispanic, or Latino origin, that is, Mexican, Mexican-American, Central American, South American, Puerto Rican, Cuban, or other Spanish-Carribean? [CIRCLE ALL THAT APPLY]

C8_X01   NO, NOT SPANISH/HISPANIC…………………………………….. YES
C8_X02   YES, MEXICAN/MEXICNO…………………………………………… YES
C8_X03   YES, MEXICAN-AMERICAN………………………………………… YES
C8_X04   YES, CENTRAL AMERICAN……………………………………….. YES
C8_X05   YES, SOUTH AMERICAN…………………………………………….. YES

C8_X07   YES, PEURTO RICAN……………………………………………….. YES
C8_X08   YES, CUBAN/CUBAN-AMERICAN……………………………… YES
C8_X09   YES, SPANISH-CARIBBEAN……………………………………….. YES
C8_X10   YES, OTHER SPANISH/HISPANIC (SPECIFY)…………………….. YES
C8_OTHR1   _____

DON'T KNOW…………………………………………………….. 96
REFUSED………………………………………………………….. 97

C9   Now I'm going to read a list of categories. Please choose one or more of the following categories to describe (your/[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother's) race. (Are you/is [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother) White, Black or African American, American Indian, Alaska Native, Asian, Native Hawaiian or other Pacific Islander? [CIRCLE ALL THAT APPLY]

C9_X01	WHITE…………………………………………………………	YES
C9_X02	BLACK/AFRICAN AMERICAN……………………………………..	YES
C9_X03	AMERICAN INDIAN…………………………………………	YES
C9_X04	ALASKA NATIVE……………………………………………	YES
C9_X05	ASIAN………………………………………………………	YES
C9_X06	NATIVE HAWAIIAN…………………………………………	YES
C9_X07	PACIFIC ISLANDER…………………………………………	YES
C9_X08	OTHER (SPECIFY)…………………………………………	YES
C9_OTHR1	_____	
	DON'T KNOW………………………………………………..	96
	REFUSED……………………………………………………	97

[IF MORE THAN ONE ANSWER AT C9, ASK C10; OTHERWISE SKIP TO C10A.}

C10   Which do you feel best describes (your/[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother's) race?

WHITE…………………………………………………………	1
BLACK/AFRICAN AMERICAN……………………………………..	2
AMERICAN INDIAN…………………………………………	3
ALASKA NATIVE……………………………………………	4
ASIAN………………………………………………………	5
NATIVE HAWAIIAN…………………………………………	6
PACIFIC ISLANDER…………………………………………	7
OTHER (SPECIFY)…………………………………………	8
_____	
DON'T KNOW………………………………………………..	96
REFUSED……………………………………………………	97

C10A   What is (your/[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother's) month, day, and year of birth?
_____/_____/_____ (mm/dd/yyyy)

[IF MONTH=DK/REF OR YEAR=DK/REF, THEN SKIP TO C10B. OTHERWISE, SKIP TO C11.]

C10B   What is (your/[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother's) current age?

AGE…………………………………………………………	_____
DON'T KNOW…………………………………………………	96
REFUSED……………………………………………………	97

C11   (Do you/Does [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother live at the same address as (you/she) did when [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5] was born?

YES…………………………….. 1   GO TO CFAMINC

NO………………………………… 2

DON'T KNOW……………………. 6   GO TO CFAMINC

REFUSED………………………… 7   GO TO CFAMINC

C11A   In what city, county, and state did (you//[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother) live when /[FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5] was born?

CITY _____

COUNTY _____

STATE _____

OR

COUNTRY _____   GO TO CFAMINC

REFUSED…………………………………………………… 7

C11B   What was (your/ [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHILD, FROM S3.5]'s mother's) zip code at that time?

_____ _____ _____ _____ _____

DON'T KNOW……………………………………………….. 6

REFUSED……………………………………………………. 7

CFAMINC   Please think about your total combined family income during 2002 for all members of the family. Include money for jobs, social security, retirement income, unemployment payments, public assistance, and so forth. Also include income from interest, dividends, net income from business, farm, rent, or any other money income received. Can you tell me that amount before taxes?

$ _____ _____ _____, _____ _____ _____, _____ _____ _____   [GO TO C-19]

DON'T KNOW…………………………………………   GO TO C12 DON'T KNOW

REFUSED……………………………………………..   GO TO C12 REFUSED

C12
DON'T
KNOW
You may not be able to give us an exact figure for your total combined family income, but was your total family income during 2002 more or less that $20,000?

MORE THAN $20,000……..	1	GO TO C16
$20,000…………………….	2	GO TO C19
LESS THAN $20,000………	3	GO TO C13
DON'T KNOW…………….	6	GO TO C19
REFUSED………………….	7	GO TO C19

C12
REFUSED
Income is important in analyzing the immunization information we collect. For example, this information helps us to learn whether persons in one group use these medical services more or less than those in another group. Now you may not be able to give us an exact figure for your total combined family income, but was your total family income during 2002 more or less than $20,000?

MORE THAN $20,000……..	1	GO TO C16
$20,000…………………….	2	GO TO C19
LESS THAN $20,000………	3	GO TO C13
DON'T KNOW…………….	6	GO TO C19
REFUSED………………….	7	GO TO C19

C13
Was the total combined FAMILY income more or less than $10,000?

MORE THAN $10,000……..	1	GO TO C15
$10,000…………………….	2	GO TO C19
LESS THAN $10,000………	3	GO TO C14.A
DON'T KNOW…………….	6	GO TO C19
REFUSED………………….	7	GO TO C19

C14a
Was it more than $7,500?

YES…………………………	1	
NO…………………………..	2	
DON'T KNOW…………….	6	} GO TO C19
REFUSED…………………	7	

C15
Was it more than $15,000?

YES…………………………	1	Go to c15.a
NO…………………………..	2	Go to c15.b
DON'T KNOW…………….	6	
REFUSED…………………	7	} Go to C19

C15A   Was it more than $17,500?

YES……………………….   1
NO…………………………...   2
DON'T KNOW……………   6   } Go to c19
REFUSED…………………   7

C15A   Was it more than $12,500?

YES……………………….   1
NO…………………………...   2
DON'T KNOW……………   6   } Go to C19
REFUSED…………………   7

C16   Was the total combined FAMILY income more or less than $40,000?

MORE THAN $40,000……………..	1	GO TO C16.A
$40,000…………………………	2	GO TO C19
LESS THAN $40,000………………	3	GO TO C17
DON'T KNOW………………………	6	GO TO C19
REFUSED……………………………	7	GO TO C19

C16.A   Was the total combined FAMILY income more or less than $60,000?

MORE THAN $60,000……………..	1	GO TO C18
$60,000…………………………	2	GO TO C19
LESS THAN $60,000………………	3	GO TO C16.B
DON'T KNOW………………………	6	GO TO C19
REFUSED……………………………	7	GO TO C19

C16.B   Was the total combined FAMILY income more or less than $50,000?

MORE THAN $50,000……………..	1	GO TO C19
$50,000…………………………	2	GO TO C19
LESS THAN $50,000………………	3	GO TO C16.C
DON'T KNOW………………………	6	GO TO C19
REFUSED……………………………	7	GO TO C19

C16C   Was the total combined FAMILY income more or less than $45,000?

MORE THAN $45,000……...   1
LESS THAN $45,000……….   2   } Go to C19
DON'T KNOW……………   6
REFUSED…………………   7

C17   Was the total combined FAMILY income more or less than $30,000?

      MORE THAN $30,000……... 1 GO TO C17.A

      $30,000…………………….. 2 GO TO C19
      LESS THAN $30,000………. 3 GO TO C17.B
      DON'T KNOW……………. 6 GO TO C19
      REFUSED………………… 7 GO TO C19

C17.A   Was the total combined FAMILY income more or less than $35,000?
      MORE THAN $35,000……... 1
      LESS THAN $35,000………. 2
      DON'T KNOW……………. 6 } Go to C19
      REFUSED………………… 7

C17.B   Was the total combined FAMILY income more or less than $25,000?
      MORE THAN $25,000……... 1
      LESS THAN $25,000………. 2
      DON'T KNOW……………. 6 } Go to C19
      REFUSED………………… 7

C18   Was the total combined FAMILY income more or less than $75,000?
      MORE THAN $75,000……... 1
      LESS THAN $75,000………. 2
      DON'T KNOW……………. 6 } Go to C19
      REFUSED………………… 7

CINC   Just to confirm that I entered the number correctly, the total combined family income was [FILL RESPONSE, CFAMINC]?
      YES………………………………… 1 [GO TO C19]
      NO………………………………… 2 [GO TO C12]
      DON'T KNOW…………………….. 6 [GO TO C12DONTKNOW]
      REFUSED………………………….. 7 [GO TO C12REFUSED]

C19   In what city, county and state do you live?

      CITY _____

      COUNTY_____

      STATE_____

      DON'T KNOW…………………. 6

      REFUSED………………………. 7

C19A   What is your zip code?

____ ____ ____ ____ ____

DON'T KNOW…………………   6

REFUSED……………………   7

C19B   Do you live within the city limits?

YES………………………………   1

NO………………………………   2

REFUSED……………………   7

C20   The next few questions are about the telephone numbers in your household. Do you have any other home phone numbers in addition to [FILL VAR: AREA CODE/TELEPHONE NUMBER FROM SAMPLE TELEPHONE NUMBER]. Please do not include cellular phones in your answer.

YES………………………………   1

NO………………………………   2   GO TO CNOSERV

REFUSED……………………   7   GO TO CNOSERV

C21.A   Is this second number used only for computer or fax communication?

YES………………………………   1

NO………………………………   2

DON'T KNOW…………………..   6

REFUSED……………………   7   GO TO CNOSERV

C22   Do you have a third home phone number in addition to the two you have already told me about? Please do not include cellular phones in your answer.

YES………………………………   1

NO………………………………   2   GO TO CNOSERV

REFUSED……………………   7   GO TO CNOSERV

C23   Is this third number for home use only, for business use only, or for both home and business use?

HOME ONLY………………….   1

BUSINESS ONLY……………...   2   GO TO CNOSERV

BOTH HOME AND BUSINESS   3

REFUSED……………………   7   GO TO CNOSERV

C23A   Is this third number used only for computer or fax communication?

        YES……………………………   1

        NO………………………….…   2

        DON'T KNOW…………………..   6

        REFUSED………………………   7

CNOSERV   During the past 12 months, has your household been without telephone service for 1 week or more? Please do not include cellular phones in your answer.

        YES……………………………   1

        NO…………………………….…   2   GO TO D5

        DON'T KNOW………………….. 6   GO TO D5

        REFUSED……………………… 7   GO TO D5

CHOWLONG1   For how long was your household without telephone service in the past 12 months?

        IF ONE WEEK OR LESS, ENTER 0 FOR THE NUMBER.
        ENTER NUMBER, PRESS RETURN.
                         NUMBER _____

CHOWLONG2

                      ENTER PERIOD _____

        DAY(S)…………..   1

        WEEK(S)…………. 2

        MONTH(S)……….   3

        DON'T KNOW…..   6

        REFUSED………..   7

   ?   ALL ……………………………………..   GO TO D5

SECTION D

Provider Questions

D5   To get a complete picture of the vaccinations received by your (children/child), we would like to contact doctors or health clinics to obtain a copy of the vaccination records for your (children/child).

D6   How many locations have provided vaccinations for your child named [NAME OF (FIRST) ELIGIBLE CHILD] whose birth date is [DATE OF BIRTH OF (FIRST) ELIGIBLE CHILD]?

NUMBER: _____|_____   IF "00" GO TO D6AA
                                        IF R REFUSES GO TO D6_R

D6AA   How many locations have provided health care for your child? Please include the hospital or birthing center where [HE/SHE] was born, and any other clinics or doctor's offices that have seen [HIM/HER].

NUMBER: |_____| ENTER "0" IF CHILD HAS <u>NEVER</u> SEEN A DOCTOR OR OTHER HEALTH CARE PROVIDER.

IF D6AA=0 GO TO TOPICAL MODULES

IF D611>0 GO TO D6A.1

IF R REFUSES, GO TO D16

D6A.1   Starting with the most recent, please tell me the name, address and telephone number for each location. (Would you take a moment to find shot-cards, appointment cards, or other records you may have?)

YES, CONTINUE ON…………...   1   GO TO D6B.1.1.1

NO, CAN'T FIND, CONTINUE...   2   GO TO D6B.1.1.1

REFUSED……………………….   7   GO TO D6_R

IF REFUSED

D6_R (SUGGESTED COPY) Vaccination information from doctors and clinics is often the most up-to-date and comprehensive. So, in order to obtain the most complete information possible about children's vaccinations, we need to collect the vaccination histories from both the parents or guardians of the children and the doctors and clinics that provide the immunizations. All information about your child and your child's health care provider is held in strict confidence and used for study purposes only. Any names of children, as well as any names of doctors or clinics, will not be used in reporting the study results. We will never release any information that may identify you or your child.
RETURN TO QUESTION
IF R STILL REFUSES ?   GO TO D16

D6B.1.1.1   What is the last name of the doctor?

LAST_____

D6B.2.1.1   Do you know the doctor's first name?

FIRST_____

D6B.3.1.1   Please tell me the name of the office or the clinic.

OFFICE_____

D6B.4.1.1   What is the street address of the office or the clinic?

STREET_____

D6B.5.1.1   Is there a suite, floor or room number?

SUITE#_____

D6B.6.1.1   What city is that in?

CITY_____

D6B.7.1.1   What state is that in?

STATE_____

D6B.8.1.1   What is the zip code?

ZP CODE_____

D6B.9.1.1   What is their telephone number?

TELEPHONE_____

INTERVIEWER NOTE: IF MORE THAN ONE PROVIDER GO TO THE SUPPLEMENTAL PROVIDER SHEET – D6B.1.2.1

IF D6>1	————————————————►	D8
IF D6=0	(NO VACCINATION PROVIDERS), D611>1	D8M

D8   In order to help the doctor or clinic locate your child's vaccination records,

D8M   Sometimes babies are given an immunization soon after birth or a young child may receive an immunization at a well-child visit. We would like to contact the places that have provided care for [CHILD] and request any vaccination information they may have. In order to help the doctor or clinic locate your child's vaccination records,

D8A.1   What is [NAME OF (FIRST) ELIEGIBLE CHILD]'s full name – first, middle and last name?
FIRST _____

IF REFUSED

D15B.   (SUGGESTED SCRIPT) The only reason we need your child's full name is so that the doctor or clinic can locate the correct vaccination records for your child. Once vaccination data have been collected, all names are completely separated from the data, and we will not use your child's name again.
All information is held in strict confidence and is used for study purposes only. I assure you that any names of children, as well as any names of doctors or clinics, will not be used in any study results. We will not release any information that may identify you or your child.

RETURN TO QUESTION, IF R STILL REFUSES, GO TO D16

D8B.1   (What is the [NAME OF (FIRST) ELIGIBLE CHILD]'s full name – first, middle, and last name?)
MIDDLE_____

D8C.1   (What is the [NAME OF (FIRST) ELIGIBLE CHILD]'s full name – first, middle, and last name?)
LAST_____

IF REFUSED

D15B.   (SUGGESTED SCRIPT) The only reason we need your child's full name is so that the doctor or clinic can locate the correct vaccination records for your child. Once vaccination data have been collected, all names are completely separated from the data, and we will not use your child's name again.
All information is held in strict confidence and is used for study purposes only. I assure you that any names of children, as well as any names of doctors or clinics, will not be used in any study results. We will not release any information that may identify you or your child.

RETURN TO QUESTION, IF R STILL REFUSES, GO TO D16

D9A   What is your full name – first, middle, and last?

FIRST_____

IF REFUSED

D15C   (SUGGESTED SCRIPT) The only reason we need your full name is so that the doctor or clinic can locate the correct vaccination records for your child. Once vaccination data have been collected, all names are completely separated from the data, and we will not use your child's name again.

All information is held in strict confidence and is used for study purposes only. I assure you that any names of children, as well as any names of doctors or clinics, will not be used in any study results. We will not release any information that may identify you or your child.
RETURN TO QUESTIONS, IF R STILL REFUSES, FO TO D16

D9B   (What is your full name – first, middle , and last?)

MIDDLE_____

D9C.   (What is your full name – first, middle , and last?)

LAST_____

IF REFUSED

D15C   (SUGGESTED SCRIPT) The only reason we need your full name is so that the doctor or clinic can locate the correct vaccination records for your child. Once vaccination data have been collected, all names are completely separated from the data, and we will not use your child's name again.
RETURN TO QUESTION, IF R STILL REFUSES, GO TO D16

INTERVIEWER NOTE: IF THERE ARE ANY ADDITIONAL ELIGIBLE CHILDREN, GO TO THE SUPPLEMENTAL CHILD SHEET, D6.2.

D9D.   I need to verify that I am speaking with someone who can authorize the release of immunization records for [NAME OF ELIGIBLE CHILD(REN)]. Are you that person?

YES………   1

NO……….   2   GO TO D9D1

REFUSED… 3   GO TO D9D_R

IF REFUSED

> D9D_R (SUGGESTED SCRIPT) Vaccination information from doctors and clinics is often the most up-to-date and comprehensive. So, in order to obtain the most complete information possible about children's vaccinations, we need to collect the vaccination histories from both the parents and guardians of the children and the doctors and clinics that provide the immunizations.
>
> All information about your child and your child's health care provider is held in strict confidence and used for study purposes only. Any names of children, as well as any names of doctors or clinics, will not be used in reporting the study results. We will never release any information that may identify you or your child RETURN TO QUESTION, IF STILL REFUSES ?   GO TO TOP MODS.

D6C   The vaccination records collected from the provider(s) will be kept in strict confidence.

D7   Do we have your permission to contact the provider(s) named in this interview, give the provider(s) basic information that identifies your child(ren), and request that information relevant to your child(ren)'s immunization history be sent to the Centers for Disease Control and Prevention or its contractors for study purposes only?
           YES……..   1

           NO………..   2   [GO TO D7_R]

D7_R   We appreciate the information you have already provided, but without your consent, we cannot contact your health care provider. We are only requesting the dates and types of vaccinations your child(ren) has received and I can assure you that no further information will be provided to us. All information collected is kept confidential under federal law and the names of you and your child(ren) will be completely separated from the data released in study results. The doctor or health clinic will receive 2 forms, one that I have signed indicating your consent to collect immunization information, and one that looks similar to a shot record with only the names of the vaccines listed and blank spaces for the dates to be filled in.

           RETURN TO QUESTION, OR SKIP TO TOP MODS.

DCG   I would like to confirm that I have the correct information for you and the children in this household.
[INTERVIEWER: CONFIRM ALL NAMES AND SPELLINGS WITH THE RESPONDENT. IF LAST NAMES ARE THE SAME, MAKE SURE THEY HAVE THE SAME SPELLING]

DCG1   I have your name as [FILL: CONSENT GIVER NAME FROM D9A-C-PAGE 2]. Is this correct?
YES……… 1

NO……….. 2   [CORRECT NAME]

DCG2   The name I have for the first child is [FILL:FIRST CHILD'S NAME FROM D8A-C1-PAGE2]. Is this correct?
YES…….. 1

NO……… 2   [CORRECT NAME]

DCONFDOB_1 The birth date I have for [FILL: FIRST CHILD'S NAME FROM D8A-C1-PAGE 2] is [FILL: FIRST CHILD'S NAME BIRTH DATE FROM S3M.KIDS-SCREENER PAGE 5]. Is this correct?
YES…….. 1   [IF SNUMB=1, GO TO TOOP MOD, IF SNUMB>1, GO TO DCG3]
NO…….. 2   [GO TO DNEWDOB_1]

DNEWDOB_1 What is the correct month, day and year of birth of [FILL: FIRST CHILD'S NAME FROM D8A-C1-PAGE2]?
_____/_____/_____ (mm/dd/yyyy) [IF SNUMB=1, GO TO TOP MOD, IF SNUMB>1, GO TO DCG3]

DCG3   The name I have for the next child is [FILL: SECOND/THIRD/…/SIXTH CHILD'S NAME FROM D8A-C1-PAGE 2]. Is this correct?
YES…….. 1

NO……… 2   [CORRECT NAME]

DCG3   The birth date I have for [FILL: SECOND/THIRD/…/SIXTH CHILD'S NAME FROM D8A-C1-PAGE 2] is [FILL: SECOND/THIRD/…/SIXTH CHILD'S BIRTH DATE FROM S3M.KIDS-SCREENER PAGE 5]. Is this correct?
YES…….. 1

NO……… 2   [CORRECT NAME]

DCG3   The birth date I have for [FILL: SECOND/THIRD/…/SIXTH CHILD'S NAME FROM D8A-C1-PAGE 2] is [FILL: SECOND/THIRD/…/SIXTH CHILDS'S BIRTH DATE FROM S3M.KIDS-SCREENER PAGE 5]. Is this correct?

YES……..   1   [GO TO TOP MOD]

NO…..…..   2   [TO DNEWDOB_2]

DNEWDOB_2   What is the correct month, day and year of birth of [FILL: SECOND CHILD'S NAME FROM D8A-C1-PAGE 2]?

_____/_____/_____ (mm/dd/yyyy)

[GO TO TOPICAL MODULES]

D16   Those are all the questions I have. You may be re-contacted in the future to participate in related studies. If you are contacted to participate in future surveys, you have the right to refuse. I'd like to thank you again on behalf of the Centers for Disease Control and Prevention for the time and effort you've spent answering these questions. If you would like more information about the National Immunization Study, please call Jim Murphy at the study's toll-free number, 1-800-247-1970. If you have questions about your rights as a study participant, you may call 1-800-223-8118, toll-free, and ask to speak to the Institutional Review Board Chairperson.

ASK ONLY IF D9D=2

D9D1	Please give me the full name of someone who can authorize the release of these immunization records.
D9D1F	What is the first name?

FIRST_____

D9D1M	What is the middle name?

MIDDLE_____

D9D1L	What is the last name?

LAST_____

D9DREL	What is this person's relationship to [FILL VAR: NAME OF FIRST/SECOND…/NINTH CHLD, FROM S3.5]?	
	MOTHER (STEP, FOSTER, ADOPTIVE) OR FEMALE GUARDIAN………………………………………………………..	01
	FATHER (STEP, FOSTER, ADOPTIVE) OR MALE GUARDIAN………………………………………………………..	02
	SISTER OR BROTHER (STEP/FOSTER/HALF/ADOPTIVE)…………………………………………	03
	IN-LAW OF ANY TYPE…………………………………………	04
	AUNT/UNCLE………………………………………………….	05
	GRANDPARENT………………………………………………	06
	OTHER FAMILY MEMBER………………………………………	07
	FRIEND……………………………………………………..	08
	DON'T KNOW……………………………………………………...	96
	REFUSED…………………………………………………………..	97

D9D1A	May I speak with that person now?		
	YES……………………………….	1	GO TO D9D1NEW
	NO………………………………..	2	

D9D2	When would be a good time to call this person?	
	D9D2_1	DATE_____
	D9D2_2	TIME_____

[GO TO TOPICAL MODULES]

D9D1NEW   Hello, my name is _____. Am I speaking with [NAME LISTED IN D9D1,
               WHO CAN AUTHORIZE RELEASE OF SHOT RECORDS?

               YES…………………………….   1

               NO…………………………..   2   GO TO D9D2

D9D2ANEW   I'm calling on behalf of the Centers for Disease Control and Prevention. We
               talked with [FILL: NAME FROM D9A] and collected immunization and
               provider information for [NAME OF ELIGIBLE CHILD(REN)]. We
               understand that you could authorize the release of immunization information
               for [NAME OF ELIGIBLE CHILD(REN)]. This study is voluntary and is
               authorized by the U.S. Public Health Service Act. You may choose not to
               answer any question you don't want to answer or stop at any time. The
               information you give will be kept in strict confidence and will be summarized
               for research purposes only.

D9DNEW   I need to verify that I am speaking with someone who can authorize the release
               of immunization records for [NAME OF (FIRST) ELIGIBLE CHILD]. Are
               you that person?

               YES…………………………….   1

               NO…………………………….   2   RETURN TO D9D1

               REFUSED……………………   7   GO TO D9D_R

               IF REFUSED

               D9D_R. (SUGGESTED SCRIPT) Vaccination information from doctors and
               clinics is often the most up-to-date and comprehensive. So, in order to obtain
               the most complete information possible about children's vaccinations, we need
               to collect the vaccination histories from both the parents or guardians of the
               children and the doctors and clinics that provide the immunizations.

               All information about your child and your child's health care provider is held
               in strict confidence and used for study purposes only. Any names of children,
               as well as any names of doctors or clinics, will not be used in reporting the
               study results. We will never release any information that may identify you or
               your child.

               RETURN TO QUESTIONS, IF R STILL REFUSES GO TO TOP MODS

D6C   The vaccination records collected from the provider(s) will be kept in strict confidence.

D7   Do we have your permission to contact the provider(s) named in this interview, give the provider(s) basic information that identifies your child(ren), and request that information relevant to your child(ren)'s immunization history be sent to the Centers for Disease Control and Prevention or its contractors for study purposes only?

YES……………………………   1

NO……………………………   2   GO TO TOP MOD

REFUSED………………………   7   GO TO TOP MOD

DCG   I would like to confirm that I have the correct information for you and the children in this household.
[INTERVIEWER: CONFIRM ALL NAMES AND SPELLINGS WITH THE RESPONDENT. IF LAST NAMES ARE THE SAME, MAKE SURE THEY HAVE THE SAME SPELLING]

DCG1   I have your name as [FILL: CONSENT GIVER NAME FROM D9A-C-PAGE 2]. Is this correct?

YES………………………………   1

NO…………………………………   2   [CORRECT NAME]

DCG2   The name I have for the first child is [FILL: FIRST CHLD'S NAME FROM D8A-C1-PAGE 2]. Is this correct?

YES……………………………..   1

NO……………………………   2   [CORRECT NAME]

DCONFDOB_1   The birth date I have for [FILL: FIRST CHILD'S NAME FRON D8A-C1-PAGE 2] is [FILL: FIRST CHILD'S BIRTH DATE FROM S3M.KIDS-SCREENER PAGE 5]. Is this correct?

YES……………………………..   1   [IF SNUMB=1, GO TO TOP MOD, IF SNUMB>1, GO TO DCG3]

NO………………………………   2   [GO TO DNEWDOB_1]

DNEWDOB_1   What is the correct month, day and year of birth of [FILL: FIRST CHILD'S NAME FROM D8A-C1-PAGE 2]?

_____/_____/_____ (mm/dd/yyyy)   [IF SNUMB=1, GO TO TOP MOD, IF SNUMB>1, GO TO DCG3]

DCG3   The name I have for the next child is [FILL: SECOND/THIRD/…/SIXTH CHILD'S NAME FROM D8A-C1-PAGE 2]. Is this correct?

YES……………………………   1

NO……………………………   2   [CORRECT NAME]

DCONFDOB_2   The birth date I have for [FILL: SECOND/THIRD/…/SIXTH CHILD'S NAME FROM D8A-C1-PAGE 2] is [FILL: SECOND/THIRD/…/SIXTH CHILD'S BIRTH DATE FROM S3M.KIDS—SCREENER PAGE 5]. Is this correct?

YES…………………………   1   [GO TO TOP MOD]

NO………………………….   2   [TO DNEWDOB_2]

DNEWDOB_2   What is the correct month, day and year of birth of [FILL: SECOND CHLD'S NAME FROM D8A-C1-PAGE 2]?

_____/_____/_____   (mm/dd/yyyy)

[GO TO TOPICAL MODULES]

D16   Those are all the questions I have. You may be re-contacted in the future to participate in related studies. If you are contacted to participate in future surveys, you have the right to refuse. I'd like to thank you again on behalf of the Centers for Disease Control and Prevention for the time and effort you've spent answering these questions. If you would like more information about the National Immunization Study, please call Jim Murphy at the study's toll-free number, 1-800-247-1970. If you have questions about your rights as a study participant, you may call 1-800-223-8118, toll-free, and ask to speak with the Institutional Review Board Chairperson.

SUPPLEMENTAL PROVIDER SHEET

CASE # | | | | | | | | |

ELIGIBLE CHILD'S NAME:_____   CHILD#:_____

ELIGIBLE CHLD'S BIRTHDATE:_____/_____/_____   PROVIDER#:_____

D6B.1.2.1   What is the last name of the next doctor?

LAST_____

D6B.2.2.1   Do you know the doctor's first name?

FIRST_____

D6B.3.2.1   Please tell me the name of the office or the clinic.

OFFICE_____

D6B.4.2.1   What is the street address of the office or clinic?

STREET_____

D6B.6.2.1   Is there a suite, floor, or room number?

SUITE#_____

D6B.7.2.1   What state is that in?

STATE_____

D6B.8.2.1   What is the zip code?

ZIP CODE_____

D6B.9.2.1   What is their telephone number?

TELEPHONE_____

INTERVIEWER NOTE: IF THERE ARE ANY ADDITIONAL PROVIDERS, OBTAIN ANOTHER SUPPLEMENTAL PROVIDER SHEET. WHEN YOU ARE FINISHED USING THE SUPPLEMENTAL PROVIDER SHEETS, RETURN TO THE QUESTIONNAIRE AT QUESTION D6C.

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┌─────────────────────────────┐
│   SUPPLEMENTAL CHILD SHEET   │
│          PAGE 1             │
└─────────────────────────────┘
```

CASE # |___|___|___|___|___|___|___|___|

NEXT ELIGIBLE CHILD'S NAME:_____   CHILD#:_____

NEXT ELIGIBLE CHLD'S BIRTHDATE:_____/_____/_____

WHICH SHOT SECTION COMPLETED? (circle one): A / B

D6A.2   How many locations have provided vaccinations for your child named [NAME
               OF NEXT ELIGIBLE CHILD] whose birth date is [DATE OF BIRTH OF
               NEXT ELIGIBLE CHILD]?
               NUMBER: |_____|_____|

D6A.2   Starting with the most recent, please tell me the name, address and telephone
               number for each doctor or clinic. (Would you take a moment to find shot
               cards, appointment cards or other records you may have?)
               YES, CONTINUE ON……………   1

               NO, CAN'T FIND, CONTINUE…   2

               REFUSED………………………...   7   GO TO D14B

D6B.1.1.2   What is the last name of the next doctor?

               LAST_____

D6B.2.1.2   Do you know the doctor's first name?

               FIRST_____

D6B.3.1.2   Please tell me the name of the office of clinic.

               OFFICE_____

D6B.4.1.2   What is the street address of the office or the clinic?

               STREET_____

D6B.5.1.2   Is there a suite, floor, or room number?

SUITE#_____

D6B.6.1.2   What city is that in?

CITY_____

D6B.7.1.2   What state is that in?

STATE_____

D6B.8.1.2   What is the zip code?

ZIP CODE_____

D6B.9.1.2   What is their telephone number?

TELEPHONE_____

INTERVIEWER NOTE: IF MORE THAN ONE PROVIDER GO TO AN ADDITIONAL
SUPPLEMENTAL PROVIDER SHEET – D6B.1.2.1

D8A.2   In order to help the doctor or clinic locate your child's vaccination records,
                what is [NAME OF (NEXT) ELIGIBLE CHILD]'s full name – first, middle,
                and last name?
                FIRST_____

D8B.2   MIDDLE_____

D8B.2   LAST_____

                INTERVIEWER NOTE: IF THERE ARE ANY ADDITIONAL ELIGIBLE
                CHILDREN, OBTAIN ANOTHER SUPPLEMENTAL CHLD FORM.

Appendix C

NIS Provider Questionnaire

National Immunization Survey
Immunization History Questionnaire

CDC

CENTERS FOR DISEASE CONTROL AND PREVENTION
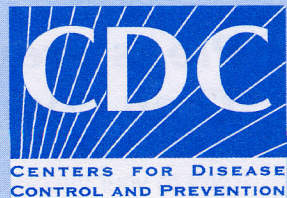
Confidential Information. If received in error, please call 1-800-886-4993.

START HERE ➡ Please review your records and complete this questionnaire for the child identified on the label to the right. Then return the questionnaire in the postage-paid envelope provided or fax toll-free to (888) 529-1772. These medical records are confidential. If faxing, please take extra care to dial the correct number.
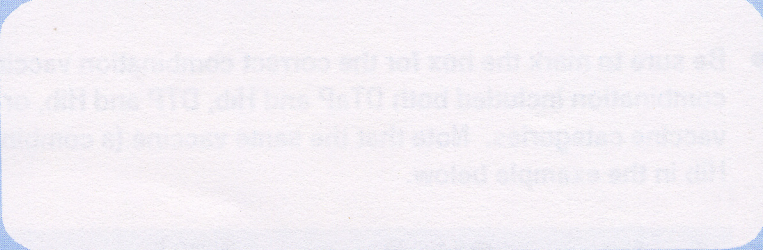
1. **Which of the following best describes your immunization records for this child?**

   - ☐ You have all or partial immunization records for this child. Go to question 2 below.
   - ☐ This facility gives immunizations only at birth (hospital). Go to question 2 below.
   - ☐ Other - Explain

   - ☐ You have provided care to this child, but do not have immunization records.
   - ☐ You have no record of providing care to this child.

   Please complete item 9 and return form as instructed above.

2. **According to your records, what is this child's date of birth?**

Month	Day	Year

   ☐ Don't know

3. **What was the date of this child's _first_ visit, for any reason, to this place of practice?**

Month	Day	Year

   ☐ Don't know

4. **What was the date of this child's _most recent_ visit, for any reason, to this place of practice?**

Month	Day	Year

   ☐ Don't know

5. **Which types of care does this facility routinely provide? Check all that apply.**

   - ☐ Comprehensive well-child care (examination, anticipatory guidance, screening)
   - ☐ Acute illness care
   - ☐ Follow-up visits
   - ☐ After-hours telephone coverage
   - ☐ WIC Program/services
   - ☐ Other - Explain

6. **Which of the following best describes this facility? Check only one box, representing the most specific description.**

   - ☐ Federally-qualified health center, including community/migrant/rural/Indian health center
   - ☐ Hospital-based clinic, including university clinic, or residency teaching practice
   - ☐ Private practice, including solo, group practice, or HMO
   - ☐ Public health department-operated clinic
   - ☐ Military health care facility
   - ☐ WIC clinic
   - ☐ Other - Explain

7. **Is this facility a Vaccines for Children provider?**
   - ☐ Yes
   - ☐ No
   - ☐ Don't know

8. **Did you or your facility report any of this child's immunizations to your community or state immunization registry?**
   - ☐ Yes
   - ☐ No
   - ☐ Not applicable (No registry in my community/state.)
   - ☐ Don't know

9. **Contact information for the person returning this form.**

   Name:

   - ☐ Physician   ☐ Nurse   ☐ Office Manager/Receptionist
   - ☐ Medical Records Administrator/Technician   ☐ Other

   Phone: (   )   X

   FAX: (   )   X

10. **Go to the next page** ➡

Please review the instructions and examples below. Then complete the "Shot Grid" on the next page.

Refer to your vaccination records for the child named on the labels on the front cover and next page of this form.

- Be sure to mark the box for the correct combination vaccine for each dose as shown in the example below. If the combination included both DTaP and Hib, DTP and Hib, or HepB and Hib, be sure to enter the information in both vaccine categories. Note that the same vaccine (a combination DTaP-Hib vaccine) is entered under both DTP and Hib in the example below.

Vaccine		Date Given			Given by other practice?	Type of Vaccine				
		Month	Day	Year		Mark one box for each vaccine dose				
DTP .. 1		11	20	2000	☐ Yes	☐ DTP	☐ DT	☐ DTaP	☒ DTaP-Hib	☐ DTP-Hib
2		1	18	2001	☒ Yes	☐ DTP	☐ DT	☒ DTaP	☐ DTaP-Hib	☐ DTP-Hib

Vaccine		Date Given			Given by other practice?	Type of Vaccine				
						Mark one box for each vaccine dose				
Hib ... 1		11	20	2000	☐ Yes	☐ Hib	☐ HepB-Hib	☒ DTaP-Hib	☐ DTP-Hib	
2		1	18	2001	☒ Yes	☒ Hib	☐ HepB-Hib	☐ DTaP-Hib	☐ DTP-Hib	

- Be sure to mark the "Yes" box under "Given by other practice" for vaccines given by another practice (see example above).

- Be sure to mark the "Yes" box under "Given at birth?" if the first dose of HepB was given at birth. (see example below).

Vaccine		Date Given			Given by other practice?	Given at birth?	Mark one box for each vaccine dose	
Hepatitis B 1		7	19	2000	☐ Yes	☒ Yes	☐ HepB Only	☒ HepB-Hib
2					☐ Yes		☐ HepB Only	☐ HepB-Hib
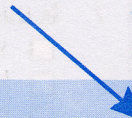
- Use the "Other" space to enter any vaccines not listed on the next page or any additional doses of listed vaccines that were given to this child (see example below).

Vaccine		Date Given				Please enter a description of each vaccine dose
Other 1		11	20	2001	☐ Yes	BCG
2					☐ Yes	

- After completing the "Shot Grid" on the next page, please return this form in the envelope provided.

(Optional) You may also attach a copy of your immunization history records for this child to this form and send it back to the National Immunization Survey, Centers for Disease Control and Prevention, P.O. Box 5517, Chicago, IL 60680-8817.

Or you may fax the confidential information to (888) 529-1772. If faxing this form, cut along fold to separate pages, then fax pages 1 and 3. Do not fax this page.

Vaccine	Date Given			Given by other practice?	Type of Vaccine

| | Month | Day | Year | | Mark one box for each vaccine dose |

DTP . . . . . 1 — ☐Yes ☐DTP ☐DT ☐DTaP ☐DTaP-Hib ☐DTP-Hib
2 — ☐Yes ☐DTP ☐DT ☐DTaP ☐DTaP-Hib ☐DTP-Hib
3 — ☐Yes ☐DTP ☐DT ☐DTaP ☐DTaP-Hib ☐DTP-Hib
4 — ☐Yes ☐DTP ☐DT ☐DTaP ☐DTaP-Hib ☐DTP-Hib
5 — ☐Yes ☐DTP ☐DT ☐DTaP ☐DTaP-Hib ☐DTP-Hib

Mark one box for each vaccine dose

Hib . . . . . . 1 — ☐Yes ☐Hib ☐HepB-Hib ☐DTaP-Hib ☐DTP-Hib
2 — ☐Yes ☐Hib ☐HepB-Hib ☐DTaP-Hib ☐DTP-Hib
3 — ☐Yes ☐Hib ☐HepB-Hib ☐DTaP-Hib ☐DTP-Hib
4 — ☐Yes ☐Hib ☐HepB-Hib ☐DTaP-Hib ☐DTP-Hib
5 — ☐Yes ☐Hib ☐HepB-Hib ☐DTaP-Hib ☐DTP-Hib

Given at birth? Mark one box for each vaccine dose

Hepatitis B 1 — ☐Yes ☐Yes ☐HepB Only ☐HepB-Hib
2 — ☐Yes ☐HepB Only ☐HepB-Hib
3 — ☐Yes ☐HepB Only ☐HepB-Hib
4 — ☐Yes ☐HepB Only ☐HepB-Hib

Mark one box for each vaccine dose

MMR . . . . . 1 — ☐Yes ☐MMR ☐Measles only
2 — ☐Yes ☐MMR ☐Measles only

Mark one box for each vaccine dose

Polio . . . . . 1 — ☐Yes ☐OPV ☐IPV
2 — ☐Yes ☐OPV ☐IPV
3 — ☐Yes ☐OPV ☐IPV
4 — ☐Yes ☐OPV ☐IPV

Varicella 1 — ☐Yes
2 — ☐Yes

Mark one box for each vaccine dose

Pneumo-coccal 1 — ☐Yes ☐Conjugate ☐Polysaccharide
2 — ☐Yes ☐Conjugate ☐Polysaccharide
3 — ☐Yes ☐Conjugate ☐Polysaccharide
4 — ☐Yes ☐Conjugate ☐Polysaccharide

Hepatitis A 1 — ☐Yes
2 — ☐Yes

Influenza 1 — ☐Yes
2 — ☐Yes
3 — ☐Yes

Please enter a description of each vaccine dose.

Other . . . . 1 — ☐Yes
2 — ☐Yes
3 — ☐Yes
4 — ☐Yes

If you need more space to report vaccines, please attach additional sheets.

Please remember to answer question 9 on page 1.

Thank You!

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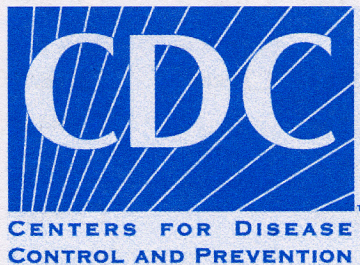
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Thank you for your help with this important study!

If you would like more information about the National Immunization Program, including information about vaccine recommendations, or data and statistics from previous years of the National Immunization Survey, please visit the National Immunization Program website at www.cdc.gov/nip/coverage.

If you would like more information about the National Immunization Survey, please visit the National Immunization Survey website at www.cdc.gov/nis. If you have any questions or comments about this study, please call (800) 886-4993 or email nis@cdc.gov.

Note: Do NOT send any confidential patient information, such as the patient's name or date of birth, in an email message.

Appendix D

IAP Area Estimates of 4:3:1:3 Vaccination Coverage
for Selected Race/ethnicity Groups
for Old versus New Race Classification

Table D.1: Estimates of 4:3:1:3 Vaccination Coverage among Non-Hispanic White Children aged 19-35 months by the Old versus New Race Classification for the 78 IAP Areas, National Immunization Survey, 2003.

IAP Area	Old Category Non-Hispanic white	New Category Non-Hispanic white alone	Difference (new – old estimate)	Statistical significance of difference at .05 level
Alabama				
Rest of State	78.42	79.23	0.82	*
Jefferson County	82.92	82.43	-0.50	*
Alaska	68.40	67.98	-0.41	n.s.
Arizona				
Rest of State	72.11	71.93	-0.18	n.s.
Maricopa County	80.55	80.17	-0.38	*
Arkansas	77.36	77.06	-0.29	*
California				
Rest of State	75.90	76.70	0.80	*
Los Angeles County	74.51	75.69	1.18	n.s.
Santa Clara County	89.33	89.41	0.08	n.s.
San Diego County	77.81	76.96	-0.85	n.s.
Colorado	70.21	71.09	0.88	*
Connecticut	93.30	93.03	-0.26	*
Delaware	83.05	83.97	0.93	*
Dist. of Columbia	90.34	91.32	0.98	*
Florida				
Rest of State	85.61	85.25	-0.36	*
Duval County	79.40	80.04	0.64	*
Miami-Dade County	86.38	83.65	-2.73	*
Georgia				
Rest of State	80.16	80.77	0.60	*
Fulton/DeKalb Counties	88.42	88.03	-0.40	*
Hawaii	70.25	70.74	0.49	n.s.
Idaho	81.93	82.22	0.29	*
Illinois				
Rest of State	86.36	86.08	-0.28	*
City of Chicago	81.89	81.89	0.00	n.s.
Indiana				
Rest of State	80.29	80.59	0.30	*
Marion County	76.03	75.43	-0.60	*
Iowa	82.37	81.66	-0.71	*
Kansas	81.14	81.71	0.57	*
Kentucky	82.78	82.74	-0.04	n.s.
Louisiana				
Rest of State	73.70	73.24	-0.46	*
Orleans Parish	63.77	63.62	-0.15	n.s.
Maine	79.47	79.58	0.11	*
Maryland				
Rest of State	86.28	85.77	-0.51	*
Baltimore City	80.61	79.10	-1.51	*

Table D.1: Estimates of 4:3:1:3 Vaccination Coverage among Non-Hispanic White Children aged 19-35 months by the Old versus New Race Classification for the 78 IAP Areas, National Immunization Survey, 2003.

IAP Area	Old Category Non-Hispanic white	New Category Non-Hispanic white alone	Difference (new – old estimate)	Statistical significance of difference at .05 level
Massachusetts				
Rest of State	92.20	91.96	-0.24	*
City of Boston	85.93	86.89	0.96	*
Michigan				
Rest of State	85.69	85.26	-0.43	*
City of Detroit	NA	NA	NA	NA
Minnesota	84.59	84.48	-0.10	n.s.
Mississippi	83.16	84.19	1.04	*
Missouri	87.48	87.86	0.37	*
Montana	81.93	81.95	0.02	n.s.
Nebraska	81.17	80.80	-0.37	*
Nevada	76.25	75.76	-0.50	*
New Hampshire	86.78	87.32	0.54	*
New Jersey				
Rest of State	84.62	84.27	-0.35	*
City of Newark	NA	NA	NA	NA
New Mexico	71.69	73.02	1.33	*
New York				
Rest of State	88.13	89.32	1.19	*
NYC - 5 Counties	72.95	71.75	-1.21	*
North Carolina	89.93	89.84	-0.08	n.s.
North Dakota	80.28	80.34	0.06	n.s.
Ohio				
Rest of State	85.45	85.22	-0.23	*
Cuyahoga County	85.32	84.68	-0.64	*
Franklin County	84.86	85.29	0.43	*
Oklahoma	65.43	62.79	-2.63	*
Oregon	74.86	74.42	-0.43	*
Pennsylvania				
Rest of State	89.80	89.84	0.03	n.s.
Philadelphia County	83.34	85.66	2.32	*
Rhode Island	87.69	88.40	0.71	*
South Carolina	82.26	82.05	-0.20	*
South Dakota	81.59	81.94	0.35	*
Tennessee				
Rest of State	81.69	82.90	1.21	*
Shelby County	81.88	82.23	0.36	*
Davidson County	86.28	85.79	-0.49	*
Texas				
Rest of State	77.36	77.19	-0.17	*
Dallas County	82.82	82.96	0.14	*

Table D.1: Estimates of 4:3:1:3 Vaccination Coverage among Non-Hispanic White Children aged 19-35 months by the Old versus New Race Classification for the 78 IAP Areas, National Immunization Survey, 2003.

IAP Area	Old Category Non-Hispanic white	New Category Non-Hispanic white alone	Difference (new – old estimate)	Statistical significance of difference at .05 level
El Paso County	NA	NA	NA	NA
City of Houston	81.88	77.25	-4.63	*
Bexar County	88.28	91.52	3.24	*
Utah	78.31	79.33	1.02	*
Vermont	83.82	83.97	0.14	n.s.
Virginia	85.96	85.83	-0.12	n.s.
Washington				
Rest of State	72.08	72.80	0.72	*
King County	76.01	75.57	-0.45	*
West Virginia	75.81	75.70	-0.10	*
Wisconsin				
Rest of State	82.44	82.77	0.33	*
Milwaukee County	84.48	83.64	-0.83	*
Wyoming	77.10	77.22	0.12	n.s.

NA   Sample size is less than 30.
*   Significant at individual .05 level.
n.s. Not significant.

Table D.2: Estimates of 4:3:1:3 Vaccination Coverage among Non-Hispanic Black Children aged 19-35 months by the Old versus New Race Classification for the 78 IAP Areas, National Immunization Survey, 2003.

IAP Area	Old Category Non-Hispanic black	New Category Non-Hispanic black alone	Difference (new – old estimate)	Statistical significance of difference at .05 level
Alabama				
Rest of State	90.29	90.29	0.00	n.s.
Jefferson County	77.89	78.13	0.24	n.s.
Alaska	NA	NA	NA	NA
Arizona				
Rest of State	NA	NA	NA	NA
Maricopa County	NA	NA	NA	NA
Arkansas	82.32	81.30	-1.02	*
California				
Rest of State	NA	NA	NA	NA
Los Angeles County	NA	NA	NA	NA
Santa Clara County	NA	NA	NA	NA
San Diego County	NA	NA	NA	NA
Colorado	NA	NA	NA	NA
Connecticut	NA	NA	NA	NA
Delaware	60.83	59.98	-0.85	*
Dist. of Columbia	71.99	71.26	-0.73	*
Florida				
Rest of State	63.21	63.57	0.36	n.s.
Duval County	81.41	84.40	2.99	*
Miami-Dade County	69.00	69.62	0.62	*
Georgia				
Rest of State	73.59	71.34	-2.25	*
Fulton/DeKalb Counties	70.90	70.17	-0.72	*
Hawaii	NA	NA	NA	NA
Idaho	NA	NA	NA	NA
Illinois				
Rest of State	NA	NA	NA	NA
City of Chicago	60.88	61.90	1.02	*
Indiana				
Rest of State	NA	NA	NA	NA
Marion County	70.03	70.54	0.51	n.s.
Iowa	NA	NA	NA	NA
Kansas	NA	NA	NA	NA
Kentucky	NA	NA	NA	NA
Louisiana				
Rest of State	63.26	63.02	-0.24	n.s.
Orleans Parish	74.06	73.33	-0.73	*
Maine	NA	NA	NA	NA
Maryland				
Rest of State	NA	NA	NA	NA

Table D.2: Estimates of 4:3:1:3 Vaccination Coverage among Non-Hispanic Black Children aged 19-35 months by the Old versus New Race Classification for the 78 IAP Areas, National Immunization Survey, 2003.

IAP Area	Old Category Non-Hispanic black	New Category Non-Hispanic black alone	Difference (new – old estimate)	Statistical significance of difference at .05 level
Baltimore City	76.00	77.11	1.11	*
Massachusetts				
Rest of State	NA	NA	NA	NA
City of Boston	92.37	94.48	2.11	*
Michigan				
Rest of State	NA	NA	NA	NA
City of Detroit	66.94	67.71	0.76	*
Minnesota	NA	NA	NA	NA
Mississippi	88.38	90.55	2.17	*
Missouri	NA	NA	NA	NA
Montana	NA	NA	NA	NA
Nebraska	NA	NA	NA	NA
Nevada	NA	NA	NA	NA
New Hampshire	NA	NA	NA	NA
New Jersey				
Rest of State	NA	NA	NA	NA
City of Newark	71.28	71.32	0.03	n.s.
New Mexico	NA	NA	NA	NA
New York				
Rest of State	NA	NA	NA	NA
NYC - 5 Counties	70.81	70.33	-0.47	*
North Carolina	74.05	70.53	-3.51	*
North Dakota	NA	NA	NA	NA
Ohio				
Rest of State	NA	NA	NA	NA
Cuyahoga County	52.43	50.87	-1.56	*
Franklin County	83.21	79.92	-3.30	*
Oklahoma	NA	NA	NA	NA
Oregon	NA	NA	NA	NA
Pennsylvania				
Rest of State	NA	NA	NA	NA
Philadelphia County	73.50	72.14	-1.36	*
Rhode Island	NA	NA	NA	NA
South Carolina	87.76	89.53	1.76	*
South Dakota	NA	NA	NA	NA
Tennessee				
Rest of State	NA	NA	NA	NA
Shelby County	73.93	74.15	0.22	*
Davidson County	76.97	74.30	-2.67	*
Texas				
Rest of State	NA	NA	NA	NA
Dallas County	51.48	50.18	-1.29	*

Table D.2: Estimates of 4:3:1:3 Vaccination Coverage among Non-Hispanic Black Children aged 19-35 months by the Old versus New Race Classification for the 78 IAP Areas, National Immunization Survey, 2003.

IAP Area	Old Category Non-Hispanic black	New Category Non-Hispanic black alone	Difference (new – old estimate)	Statistical significance of difference at .05 level
El Paso County	NA	NA	NA	NA
City of Houston	60.80	64.67	3.88	*
Bexar County	NA	NA	NA	NA
Utah	NA	NA	NA	NA
Vermont	NA	NA	NA	NA
Virginia	84.57	88.14	3.57	*
Washington				
Rest of State	NA	NA	NA	NA
King County	NA	NA	NA	NA
West Virginia	NA	NA	NA	NA
Wisconsin				
Rest of State	NA	NA	NA	NA
Milwaukee County	70.65	70.08	-0.57	n.s.
Wyoming	NA	NA	NA	NA

NA   Sample size is less than 30.
*   Significant at individual .05 level.
n.s. Not significant.

Appendix E

Summary Statistics for Sampling Weights by IAP Area

Table E.1: Distribution of Sampling Weights for Children with Completed Household Interviews, National Immunization Survey, 2003 (WGT_RDD)

IAP Name	N	SUM	MIN	MAX	MEAN	CV
TOTAL U.S.	30,930	5,899,319.14	0.934	3,164.28	190.731	120.378
AL-Rest of State	392	74,280.11	8.170	902.33	189.490	64.221
AL-Jefferson County	343	13,054.66	8.296	109.93	38.060	48.704
Alaska	378	14,203.76	6.212	158.89	37.576	54.553
AZ-Rest of State	420	45,421.75	19.382	488.67	108.147	62.892
AZ-Maricopa County	467	83,820.58	32.981	404.88	179.487	38.531
Arkansas	352	55,009.74	28.511	728.19	156.278	71.617
CA-Rest of State	469	444,051.61	53.134	3,164.28	946.805	49.261
CA-Los Angeles	449	228,736.31	93.965	1,580.18	509.435	49.221
CA-Santa Clara	372	39,906.94	27.017	445.32	107.277	47.435
CA-San Diego County	380	64,436.09	28.396	484.32	169.569	50.005
Colorado	391	98,638.47	18.560	719.36	252.272	48.802
Connecticut	369	63,430.58	20.539	678.59	171.899	52.532
Delaware	407	15,468.52	5.049	138.81	38.006	55.297
District of Columbia	443	11,126.80	4.157	93.88	25.117	58.804
FL-Rest of State	417	240,385.26	8.566	2,496.27	576.463	57.202
FL-Duval County	431	17,880.08	9.115	198.86	41.485	59.080
FL-Miami-Dade County	431	50,624.78	19.328	469.99	117.459	45.237
GA-Rest of State	378	159,776.35	21.883	1,940.12	422.689	64.865
GA-Fulton/DeKalb Counties	435	36,787.68	15.607	311.81	84.569	61.645
Hawaii	448	24,829.91	7.481	219.86	55.424	51.483
Idaho	340	30,792.48	19.734	308.97	90.566	50.771
IL-Rest of State	401	192,306.47	131.117	1,312.93	479.567	41.704
IL-Chicago	471	71,380.35	16.123	554.98	151.551	54.040
IN-Rest of State	361	104,841.00	15.807	1,284.04	290.418	75.876
IN-Marion County	406	21,351.65	12.412	231.51	52.590	54.615
Iowa	357	54,549.02	36.068	585.51	152.798	44.301
Kansas	346	57,926.74	35.931	464.48	167.418	39.204
Kentucky	341	79,696.42	47.631	942.95	233.714	61.236
LA-Rest of State	455	83,879.65	7.695	766.81	184.351	58.082
LA-Orleans Parish	430	10,384.57	2.694	116.34	24.150	77.335
Maine	370	20,426.28	17.906	142.04	55.206	38.372
MD-Rest of State	406	92,456.25	3.837	1,006.32	227.725	67.061
MD-Baltimore City	392	14,088.42	8.926	119.24	35.940	60.493
MA-Rest of State	386	106,867.39	9.504	995.07	276.859	53.948
MA-City of Boston	417	12,256.81	0.934	131.04	29.393	68.706
MI-Rest of State	452	171,717.25	11.235	1,597.58	379.905	60.491
MI-Detroit	426	21,897.46	1.285	300.05	51.402	81.084
Minnesota	358	98,857.34	65.223	974.37	276.138	54.657
Mississippi	357	59,229.80	30.761	730.05	165.910	65.583
Missouri	418	109,380.84	65.420	848.22	261.677	47.252
Montana	355	15,906.09	6.898	160.97	44.806	46.343
Nebraska	371	36,057.43	26.114	377.04	97.190	45.854

IAP Name	N	SUM	MIN	MAX	MEAN	CV
Nevada	402	48,350.86	38.138	335.21	120.276	40.468
New Hampshire	382	21,622.05	7.801	158.02	56.602	42.604
NJ-Rest of State	414	163,688.11	2.895	1,193.39	395.382	48.595
NJ-Newark	439	7,263.31	2.181	69.93	16.545	54.638
New Mexico	399	38,165.05	27.609	329.48	95.652	54.099
NY-Rest of State	431	191,631.65	17.915	1,229.05	444.621	48.101
NY-5 Counties	446	172,262.46	10.939	1,152.77	386.239	47.836
North Carolina	380	179,181.09	107.877	1,760.91	471.529	47.369
North Dakota	346	11,288.12	10.215	146.38	32.625	49.776
OH-Rest of State	365	166,723.50	13.644	1,523.81	456.777	57.956
OH-Cuyahoga County	397	26,029.92	15.621	268.03	65.567	51.979
OH-Franklin County	362	24,785.02	19.183	239.12	68.467	41.640
Oklahoma	402	71,922.58	35.648	854.32	178.912	68.815
Oregon	376	67,548.55	46.866	488.25	179.650	43.839
PA-Rest of State	413	178,450.82	4.845	1,861.50	432.084	52.193
PA-Philadelphia	453	31,212.98	3.252	226.11	68.903	52.184
Rhode Island	349	18,570.07	17.878	177.53	53.209	42.565
South Carolina	358	81,432.75	40.680	724.82	227.466	61.829
South Dakota	339	14,744.67	13.024	169.41	43.495	53.462
TN-Rest of State	387	82,052.04	11.607	951.61	212.021	66.977
TN-Shelby County	460	21,060.16	7.648	199.73	45.783	66.863
TN-Davidson County	361	13,118.69	7.361	178.13	36.340	65.206
TX-Rest of State	507	355,107.95	25.831	2,524.60	700.410	58.921
TX-Dallas County	423	63,758.29	41.369	587.96	150.729	44.954
TX-El Paso County	339	21,273.77	10.941	175.75	62.754	55.947
TX-City Houston	430	66,404.16	21.848	531.10	154.428	52.876
TX-Bexar County	412	35,412.46	20.735	304.77	85.953	49.754
Utah	365	66,448.20	48.427	558.36	182.050	50.357
Vermont	361	9,919.19	5.961	110.53	27.477	54.504
Virginia	457	146,517.81	16.107	1,445.93	320.608	59.156
WA-Rest of State	382	84,605.08	23.799	689.70	221.479	46.969
WA-King County	414	31,903.34	21.618	332.37	77.061	60.179
West Virginia	350	28,124.93	13.738	428.50	80.357	68.807
WI-Rest of State	345	79,818.46	30.344	850.38	231.358	50.123
WI-Milwaukee County	345	21,908.98	9.674	271.56	63.504	63.686
Wyoming	351	8,892.41	5.808	92.47	25.334	48.283

Table E.2: Distribution of Sampling Weights for Children with Adequate Provider Data, National Immunization Survey, 2003 (WGT)

IAP Name	N	SUM	MIN	MAX	MEAN	CV
TOTAL U.S.	21,310	5,899,319.14	0.803	5,013.68	276.833	128.746
AL-Rest of State	280	74,280.11	10.428	1,040.14	265.286	69.953
AL-Jefferson County	252	13,054.66	10.710	170.63	51.804	54.445
Alaska	278	14,203.76	8.953	189.27	51.093	60.596
AZ-Rest of State	294	45,421.75	27.660	698.31	154.496	69.244
AZ-Maricopa County	318	83,820.58	40.143	971.85	263.587	52.112
Arkansas	253	55,009.74	36.606	985.74	217.430	75.499
CA-Rest of State	302	444,051.61	80.809	5,013.68	1,470.370	53.552
CA-Los Angeles	256	228,736.31	141.054	2,714.25	893.501	50.338
CA-Santa Clara	266	39,906.94	31.705	662.71	150.026	54.482
CA-San Diego County	250	64,436.09	44.642	810.36	257.744	57.530
Colorado	281	98,638.47	83.987	1,155.97	351.027	52.726
Connecticut	279	63,430.58	54.642	1,116.83	227.350	61.804
Delaware	291	15,468.52	10.363	228.08	53.156	64.182
District of Columbia	266	11,126.80	6.131	166.15	41.830	64.326
FL-Rest of State	275	240,385.26	14.094	3,474.01	874.128	56.906
FL-Duval County	278	17,880.08	13.187	330.32	64.317	69.551
FL-Miami-Dade County	276	50,624.78	26.917	440.04	183.423	43.509
GA-Rest of State	254	159,776.35	29.220	3,042.51	629.041	68.775
GA-Fulton/DeKalb Counties	311	36,787.68	19.841	531.59	118.288	67.785
Hawaii	293	24,829.91	12.603	294.70	84.744	53.185
Idaho	253	30,792.48	30.413	410.90	121.709	52.983
IL-Rest of State	261	192,306.47	184.584	3,010.84	736.806	48.821
IL-Chicago	277	71,380.35	55.949	1,085.91	257.691	62.839
IN-Rest of State	245	104,841.00	17.209	1,980.86	427.922	81.350
IN-Marion County	289	21,351.65	19.975	282.22	73.881	50.822
Iowa	264	54,549.02	47.929	795.95	206.625	47.650
Kansas	248	57,926.74	38.211	711.04	233.576	40.615
Kentucky	265	79,696.42	64.254	1,391.80	300.741	63.639
LA-Rest of State	302	83,879.65	11.007	1,163.17	277.747	61.760
LA-Orleans Parish	255	10,384.57	3.852	222.74	40.724	87.664
Maine	277	20,426.28	21.940	182.83	73.741	41.286
MD-Rest of State	288	92,456.25	13.167	1,282.18	321.029	85.626
MD-Baltimore City	262	14,088.42	12.729	207.45	53.773	60.797
MA-Rest of State	273	106,867.39	14.705	1,310.88	391.456	58.781
MA-City of Boston	294	12,256.81	0.803	210.90	41.690	77.643
MI-Rest of State	313	171,717.25	19.984	1,898.77	548.617	59.339
MI-Detroit	252	21,897.46	2.418	517.90	86.895	91.133
Minnesota	268	98,857.34	84.514	1,743.28	368.871	62.713
Mississippi	250	59,229.80	63.135	1,186.33	236.919	66.436
Missouri	290	109,380.84	83.368	1,242.17	377.175	47.945
Montana	282	15,906.09	10.183	209.40	56.405	51.095
Nebraska	276	36,057.43	34.924	548.58	130.643	49.059

IAP Name	N	SUM	MIN	MAX	MEAN	CV
Nevada	282	48,350.86	52.673	448.24	171.457	45.394
New Hampshire	280	21,622.05	12.272	221.33	77.222	43.640
NJ-Rest of State	272	163,688.11	4.751	2,012.88	601.795	56.263
NJ-Newark	260	7,263.31	3.752	94.77	27.936	58.701
New Mexico	253	38,165.05	37.430	726.60	150.850	69.554
NY-Rest of State	277	191,631.65	21.900	2,419.00	691.811	54.030
NY-5 Counties	244	172,262.46	23.419	2,696.66	705.994	53.306
North Carolina	276	179,181.09	145.844	2,335.52	649.207	50.789
North Dakota	273	11,288.12	11.124	190.93	41.348	58.906
OH-Rest of State	255	166,723.50	15.790	2,275.51	653.818	63.151
OH-Cuyahoga County	260	26,029.92	25.840	484.89	100.115	69.950
OH-Franklin County	241	24,785.02	24.481	346.86	102.842	49.673
Oklahoma	268	71,922.58	50.322	1,167.90	268.368	72.125
Oregon	262	67,548.55	72.787	685.22	257.819	47.837
PA-Rest of State	291	178,450.82	28.421	2,678.62	613.233	54.572
PA-Philadelphia	295	31,212.98	4.120	350.91	105.807	61.196
Rhode Island	232	18,570.07	26.513	263.54	80.043	44.656
South Carolina	256	81,432.75	60.623	1,097.30	318.097	60.450
South Dakota	256	14,744.67	17.729	219.43	57.596	57.850
TN-Rest of State	286	82,052.04	15.466	1,306.70	286.895	66.937
TN-Shelby County	330	21,060.16	9.647	267.77	63.819	71.259
TN-Davidson County	276	13,118.69	9.479	206.81	47.531	69.510
TX-Rest of State	327	355,107.95	36.852	4,144.13	1,085.957	65.883
TX-Dallas County	311	63,758.29	72.801	749.80	205.011	47.504
TX-El Paso County	241	21,273.77	14.315	226.89	88.273	52.341
TX-City Houston	281	66,404.16	31.208	950.37	236.314	59.331
TX-Bexar County	257	35,412.46	44.745	484.64	137.792	56.055
Utah	269	66,448.20	57.378	925.77	247.019	61.445
Vermont	288	9,919.19	7.307	149.61	34.442	56.912
Virginia	280	146,517.81	80.077	2,014.42	523.278	66.013
WA-Rest of State	287	84,605.08	40.302	850.10	294.791	51.631
WA-King County	293	31,903.34	27.495	499.61	108.885	67.868
West Virginia	228	28,124.93	17.842	447.39	123.355	68.382
WI-Rest of State	254	79,818.46	45.527	1,139.07	314.246	50.805
WI-Milwaukee County	262	21,908.98	9.991	379.09	83.622	66.438
Wyoming	270	8,892.41	7.096	105.68	32.935	50.175

Appendix F

Flags for Inconsistent Values in the Breastfeeding Data in the 2003 NIS PUF

Flags for Inconsistent Values in the Breastfeeding Data in the 2003 NIS PUF

Two different types of inconsistency arise in breastfeeding data. The first one is that the duration of any breastfeeding exceeds the age of the child, and the second one is that the age of introducing anything other than breast milk exceeds the duration of any breastfeeding. BF_END is used for flagging the former inconsistency, and BF_EXCL is used to flag the latter inconsistency.

1. **Both BF_END and BF_EXCL should be formulated using the following conversion factors:**

   ```
   if unit=1(days)    then BF_END = number x 1
   if unit=2(weeks)   then BF_END = number x 7
   if unit=3(months)  then BF_END = number x 30.4375
   if unit=4(years)   then BF_END = number x 365.25

   if unit=1(days)    then BF_EXCL = number x 1
   if unit=2(weeks)   then BF_EXCL = number x 7
   if unit=3(months)  then BF_EXCL = number x 30.4375
   ```

2. **Flagging BF_END when the duration of any breastfeeding exceeds the age in days with a buffer for different units:**

   ```
   if unit=1(days)    flag when BF_END > age + 1
   if unit=2(weeks)   flag when BF_END > age + 3
   if unit=3(months)  flag when BF_END > age + 15
   if unit=4(years)   flag when BF_END > age + 182
   ```

The different buffers allow for the impact of rounding durations upward in the specified units (for example, 50 days might be reported as 2 months).

3. **Flagging BF_EXCL whenever the duration of exclusive breastfeeding (BF_EXCL) exceeds the duration of any breastfeeding (BF_END) with a buffer for different units. Because respondents may answer the two questions using different units of time, the buffers allow for rounding in either variable. There are a total of 12 combinations and the basis for flagging the inconsistent data is listed in the following table:**

BF_END is converted by different units (X1)	BF_EXCL is converted by different units (X2)	The basis for flagging BF_EXCL
In days	In days	X2>X1+1
	In weeks	X2>X1+3
	In months	X2>X1+15
In weeks	In days	X2>X1+3
	In weeks	X2-3>X1+3
	In months	X2-15>X1+3
In months	In days	X2>X1+15
	In weeks	X2-3>X1+15
	In months	X2-15>X1+15
In years	In days	X2>X1+182
	In weeks	X2-3>X1+182
	In months	X2-15>X1+182

Appendix G

**Disposition of Children with Respect to Provider Record Check,
National Immunization Survey, 2003**

DISPCODE: Disposition of Children with Respect to Provider Record Check, National Immunization Survey, 2003

Number of Children	*Disposition Code Number and Definition*
8,453	1 = All identified providers responded, no problems indicated in cross-check between household and provider shot dates.
10,382	2 = All identified providers responded, no NIS shot card to cross check.
554	3 = All identified providers responded, poor immunization history matching results.
39	4 = All identified providers responded, poor immunization history matching results, additional mismatch indicators present.
1,344	5 = Some but not all identified providers responded, but provider information indicates 4:3:1:3:3 up-to-date.
70	6 = Some but not all identified providers responded, but provider information matches NIS shot card immunization history.
376	7 = Some but not all identified providers responded, completeness of provider immunization history is unknown.
27	8 = Some but not all identified providers responded, but provider information indicates 4:3:1:3:3 up-to-date when post-RDD-interview immunizations are included.
82	9 = Some but not all identified providers responded, but provider information indicates at least as many doses for each vaccine as the RDD respondent (or at least 1 dose for MCV).
158	10 = Some but not all identified providers responded, but the household reported an inexact number of vaccinations ("All,""Don't Know," "Refused," or missing) for one or more vaccines and any exact responses meet previous criteria (for DISPCODE 9).
100	11 = Some but not all identified providers responded, but a definite number of shots was reported by household not from a shot card for one or more vaccines and any other vaccines meet previous criteria (for DISPCODE 9 or 10).
21,585	TOTAL

Notes: The criteria for all dispositions (except 7) are applied in order. A case where some but not all providers responded is assigned disposition 7 if it does not qualify for dispositions 5, 6, 8, 9, 10 or 11.

When checking the criteria for dispositions 10 and 11, the provider history must contain at least three distinct vaccination dates (visits) for the provider immunization count to be accepted for vaccines for which an inexact response was reported, from recall, in the household survey.

Appendix H

**Examples of the Use of SUDAAN To Estimate Vaccination
Coverage Rates and Their Standard Errors**

```
*********************;
title1 'SUD_IAP.SAS';
*********************************************************************
THIS PROGRAM WILL PRODUCE IAP AREA  ESTIMATES AND STANDARD ERRORS
FOR PUTD4313 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:\nispuf03'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nispuf03'; *--- IF DATASET WAS CREATED WITH FORMATS STORED ---*;
                  *--- PERMANENTLY SPECIFY PATH TO LIBRARY       ---*;
                  *--- OTHERWISE COMMENT THIS STATEMENT OUT      ---*;

%let in_file=dd.nispuf03; *--- NAME OF SAS DATASET ---*;
%let wt=wgt;              *--- WEIGHT TO USE ---*;

Proc format;
      /*
         THE FOLLOWING FORMAT WILL BE USED FOR PUTD4313.
         ORIGINAL VALUES OF PUTD4313 ARE 1,0.
         MUST BE CONVERTED TO 1,2 IN SUDAAN.
      */
 value put4313f
   1='4:3:1:3 Up-to-date'
   2='Not 4:3:1:3 Up-to-date';

 value itrueiaf
  0 ='U.S Total'
  01='Connecticut'
  02='MA-Rest of State'
  03='MA-City of Boston'
  04='Maine'
  05='New Hampshire'
  06='Rhode Island'
  07='Vermont'
  08='NJ-Rest of State'
  09='NJ-City of Newark'
  10='NY-Rest of State '
  11='NY-5 Counties    '
  12='District of Columbia '
  13='Delaware        '
  14='MD-Rest of State '
  15='MD-Baltimore City'
  16='PA-Rest of State '
  17='PA-Philadelphia  '
  18='Virginia        '
  19='West Virginia   '
  20='AL-Rest of State '
```

```
21='AL-Jefferson County'
22='FL-Rest of State '
23='FL-Duval County  '
24='FL-Miami-Dade County   '
25='GA-Rest of State'
26='GA-Fulton/Dekalb '
27='Kentucky        '
28='Mississippi     '
29='North Carolina  '
30='South Carolina  '
31='TN-Rest of State '
32='TN-Shelby County '
33='TN-Davidson County '
34='IL-Rest of State '
35='IL-City Chicago  '
36='IN-Rest of State '
37='IN-Marion County '
38='MI-Rest of State '
39='MI-Detroit       '
40='Minnesota        '
41='OH-Rest of State '
42='OH-Cuyahoga County '
43='OH-Franklin County '
44='WI-Rest of State '
45='WI-Milwaukee County'
46='Arkansas         '
47='LA-Rest of State '
48='LA-Orleans Parish'
49='New Mexico       '
50='Oklahoma         '
51='TX-Rest of State '
52='TX-Dallas County '
53='TX-El Paso County  '
54='TX-City Houston  '
55='TX-Bexar County  '
56='Iowa             '
57='Kansas           '
58='Missouri         '
59='Nebraska         '
60='Colorado         '
61='Montana          '
62='North Dakota     '
63='South Dakota     '
64='Utah             '
65='Wyoming          '
66='AZ-Rest of State '
67='AZ-Maricopa County '
68='CA-Rest of State '
69='CA-Los Angeles   '
70='CA-Santa Clara   '
71='CA-San Diego County'
72='Hawaii           '
73='Nevada           '
74='Alaska           '
75='Idaho            '
76='Oregon           '
```

```
  77='WA-Rest of State '
  78='WA-King County   ';

data sud_file;
 set &in_file(keep= seqnumhh seqnumc putd4313 itrueiap  &wt);

 if putd4313=0 then putd4313=2; *--- CONVERT PUTD4313=0 TO PUTD4313=2 ---*;

 nseqnumh=1*seqnumhh; *--- CONVERT HOUSEHOLD ID SEQNUMHH FROM CHARACTER TO NUMERIC ---*;

*=== SORT BY NEST VARIABLES: ITRUEIAP (STRATUM) NSEQNUMH (PRIMARY SAMPLING UNIT) ===*;
proc sort;
 by itrueiap nseqnumh;

proc crosstab data=sud_file filetype=sas design=wr;
weight &wt;
nest itrueiap nseqnumh;
subgroup  itrueiap putd4313 ;
levels     78    2    ;
tables    itrueiap * putd4313 ;
print nsum wsum  rowper serow/style=nchs ;
rtitle "4:3:1:3  ESTIMATES BY IAP";
rformat itrueiap itrueiaf.;
rformat putd4313 put4313f.;
output rowper serow/filename=sud_est filetype=sas;

proc print data=sud_est(where=(putd4313=1)) noobs label;
format itrueiap itrueiaf.;
var itrueiap rowper serow ;
label
    rowper='Percent 4:3:1:3 Up -to-date'
    serow='Standard Error'
 ;
title "4:3:1:3  ESTIMATES BY IAP";
```

```
*********************;
title1 'SUDSTATE.SAS';
*************************************************************************
THIS PROGRAM WILL PRODUCE STATE  ESTIMATES AND STANDARD ERRORS
FOR PUTD4313 USING SAS CALLABLE SUDAAN.

NOTE : THE STATE VARIABLE IS BASED ON FIPSTATE CODES ,THERE ARE
       NO STATES WITH FIPS CODES 3,7,14,43,52.

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:\nispuf03'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nispuf03'; *--- IF DATASET WAS CREATED WITH FORMATS STORED ---*;
            *--- PERMANENTLY SPECIFY PATH TO LIBRARY        ---*;
            *--- OTHERWISE COMMENT THIS STATEMENT OUT      ---*;

%let in_file=dd.nispuf03; *--- NAME OF SAS DATASET ---*;
%let wt=wgt;          *--- WEIGHT TO USE ---*;

PROC FORMAT;
/*
  THE FOLLOWING FORMAT WILL BE USED FOR PUTD4313.
  ORIGINAL VALUES OF PUTD4313 ARE 1,0.
  MUST BE CONVERTED TO 1,2 IN SUDAAN.
*/
 value put4313f
   1='4:3:1:3 Up-to-date'
   2='Not 4:3:1:3 Up-to-date'
 ;
 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         '
;

data sud_file;
 set &in_file(keep= seqnumhh seqnumc putd4313  itrueiap state &wt);

 if putd4313=0 then putd4313=2; *** CONVERT PUTD4313=0 TO PUTD4313=2 ***;

 nseqnumh=1*seqnumhh;   *** CONVERT HOUSEHOLD ID SEQNUMH FROM CHARACTER TO NUMERIC ***;

*=== SORT BY NEST VARIABLES: ITRUEIAP (STRATUM) NSEQNUMH (PRIMARY SAMPLING UNIT) ===*;
proc sort;
 by itrueiap nseqnumh;

proc crosstab data=sud_file filetype=sas design=wr;
weight &wt;
nest itrueiap nseqnumh;
subgroup  state putd4313 ;
levels     56   2    ;
tables state * putd4313 ;
print nsum wsum  rowper serow/style=nchs ;
rtitle "4:3:1:3  ESTIMATES BY STATE";
rformat state statef.;
```

```
rformat putd4313 put4313f.;
output rowper serow  / filename=sud_est filetype=sas;

*** EXCLUDE 3,7,14,43,52 THERE ARE NO STATES WITH THESE FIPS CODES *** ;
proc print data=sud_est(where=(putd4313=1
                    & state notin (3,7,14,43,52))) label noobs;
var state rowper serow ;
label
    rowper='Percent 4:3:1:3 Up -to-date'
    serow='Standard Error'
 ;
title "4:3:1:3  ESTIMATES BY STATE";
```

Appendix I

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and

Alphabetical Index of Variables

from

National Immunization Survey
2003 Public-Use Data File
Documentation, Code Book and Frequencies

2003 National Immunization Survey Public-Use Data File

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2003 National Immunization Survey Public-Use Data File

ALPHABETICAL INDEX OF VARIABLES

VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
AGEGRP	0057	0057	3	AGE CATEGORY OF CHILD (RECODE)
ALL4SHOT	0037	0037	2	4:3:1:3 UP-TO-DATE (HH REPORT)
BF_ENDR	0059	0066	3	DURATION OF BREAST FEEDING IN DAYS (RECODE)
BF_EXCLR	0068	0075	3	DURATION OF EXCLUSIVE BREASTFEEDING IN DAYS (RECODE)
BFENDFL	0067	0067	3	FLAG: DURATION OF BREAST FEEDING EXCEEDS CHILD AGE IN DAYS
BFEXCLFL	0076	0076	3	FLAG: DURATION OF EXCLUSIVE BREASTFEEDING EXCEEDS TOTAL BREASTFEEDING
C_431	0038	0038	2	HOUSEHOLD REPORT OF 4:3:1 UP-TO-DATE BY SHOT CARD USE
C_4313	0039	0039	2	HOUSEHOLD REPORT OF 4:3:1:3 UP-TO-DATE BY SHOT CARD USE
C_DTP	0040	0040	2	HOUSEHOLD REPORT OF 4+ DTP UP-TO-DATE BY SHOT CARD USE
C_HEP	0041	0041	2	HOUSEHOLD REPORT OF 3+ HEPATITIS B UP-TO-DATE BY SHOT CARD USE
C_HIB	0042	0042	2	HOUSEHOLD REPORT OF 3+ HIB UP-TO-DATE BY SHOT CARD USE
C_MMR	0043	0043	2	HOUSEHOLD REPORT OF 1+ MEASLES-CONTAINING VACCINE UP-TO-DATE BY SHOT CARD USE
C_POL	0044	0044	2	HOUSEHOLD REPORT OF 3+ POLIO UP-TO-DATE BY SHOT CARD USE
C_VRC	0045	0045	2	HOUSEHOLD REPORT OF 1+ VARICELLA UP-TO-DATE BY SHOT CARD USE
C1R	0079	0080	3	NUMBER OF PEOPLE LIVING IN THE HOUSEHOLD (RECODE)
C5R	0081	0082	3	RELATIONSHIP OF RESPONDENT TO CHILD (RECODE)
CBF_01	0058	0058	3	WAS CHILD EVER BREAST FED OR FED BREAST MILK?
CEN_REG	0083	0083	3	CENSUS REGION BASED ON STATE
CHILDNM	0084	0084	3	NUMBER OF CHILDREN LESS THAN 18 YEARS IN HH (RECODE)
CWIC_01	0077	0077	3	CHILD EVER RECEIVED WIC BENEFITS
CWIC_02	0078	0078	3	CHILD CURRENTLY RECEIVING WIC BENEFITS
D6R	0109	0109	5	NUMBER OF VACCINATION PROVIDERS IDENTIFIED BY RESPONDENT (RECODE)
D7	0110	0110	5	CONSENT TO OBTAIN CHILD'S IMMUNIZATION RECORDS FROM VACCINATION PROVIDERS IDENTIFIED IN QUESTION D6 IN THE INTERVIEW
DDTP1	0174	0177	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #1
DDTP2	0178	0181	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #2
DDTP3	0182	0185	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #3
DDTP4	0186	0189	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #4

2003 National Immunization Survey Public-Use Data File

ALPHABETICAL INDEX OF VARIABLES

VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
DDTP5	0190	0193	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #5
DDTP6	0194	0197	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #6
DDTP7	0198	0201	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #7
DDTP8	0202	0205	9	AGE IN DAYS OF PROVIDER-REPORTED DTP SHOT (ALL TYPES INCLUDING DT) #8
DFLU1	0694	0697	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #1
DFLU2	0698	0701	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #2
DFLU3	0702	0705	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #3
DFLU4	0706	0709	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #4
DFLU5	0710	0713	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #5
DFLU6	0714	0717	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #6
DFLU7	0718	0721	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #7
DFLU8	0722	0725	9	AGE IN DAYS OF PROVIDER-REPORTED FLU SHOT #8
DHEPA1	0742	0745	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #1
DHEPA2	0746	0749	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #2
DHEPA3	0750	0753	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #3
DHEPA4	0754	0757	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #4
DHEPA5	0758	0761	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #5
DHEPA6	0762	0765	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #6
DHEPA7	0766	0769	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #7
DHEPA8	0770	0773	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS A SHOT #8
DHEPB1	0398	0401	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #1
DHEPB2	0402	0405	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #2
DHEPB3	0406	0409	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #3
DHEPB4	0410	0413	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #4
DHEPB5	0414	0417	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #5
DHEPB6	0418	0421	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #6
DHEPB7	0422	0425	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #7

VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
DHEPB8	0426	0429	9	AGE IN DAYS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #8
DHIB1	0334	0337	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #1
DHIB2	0338	0341	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #2
DHIB3	0342	0345	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #3
DHIB4	0346	0349	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #4
DHIB5	0350	0353	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #5
DHIB6	0354	0357	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #6
DHIB7	0358	0361	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #7
DHIB8	0362	0365	9	AGE IN DAYS OF PROVIDER-REPORTED HIB SHOT (ALL TYPES) #8
DISPCODE	0111	0112	6	NIS PROVIDER RECORD-CHECK DISPOSITION CODE
DMMR1	0302	0305	9	AGE IN DAYS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #1
DMMR2	0306	0309	9	AGE IN DAYS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #2
DMMR3	0310	0313	9	AGE IN DAYS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #3
DMMR4	0314	0317	9	AGE IN DAYS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #4
DMP1	0462	0465	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS SHOT #1
DMP2	0466	0469	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS SHOT #2
DMP3	0470	0473	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS SHOT #3
DMP4	0474	0477	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS SHOT #4
DMPRB1	0486	0489	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #1
DMPRB2	0490	0493	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #2
DMPRB3	0494	0497	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #3
DMPRB4	0498	0501	9	AGE IN DAYS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #4
DPCV1	0630	0633	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #1
DPCV2	0634	0637	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #2
DPCV3	0638	0641	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #3
DPCV4	0642	0645	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #4

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
DPCV5	0646	0649	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #5
DPCV6	0650	0653	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #6
DPCV7	0654	0657	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #7
DPCV8	0658	0661	9	AGE IN DAYS OF PROVIDER-REPORTED PNEUMOCOCCAL SHOT #8
DPOLIO1	0238	0241	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #1
DPOLIO2	0242	0245	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #2
DPOLIO3	0246	0249	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #3
DPOLIO4	0250	0253	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #4
DPOLIO5	0254	0257	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #5
DPOLIO6	0258	0261	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #6
DPOLIO7	0262	0265	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #7
DPOLIO8	0266	0269	9	AGE IN DAYS OF PROVIDER-REPORTED POLIO SHOT (ALL TYPES) #8
DRB1	0510	0513	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #1
DRB2	0514	0517	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #2
DRB3	0518	0521	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #3
DRB4	0522	0525	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #4
DRB5	0526	0529	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #5
DRB6	0530	0533	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #6
DRB7	0534	0537	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #7
DRB8	0538	0541	9	AGE IN DAYS OF PROVIDER-REPORTED RUBELLA SHOT #8
DROT1	0558	0561	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #1
DROT2	0562	0565	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #2
DROT3	0566	0569	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #3
DROT4	0570	0573	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #4
DROT5	0574	0577	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #5
DROT6	0578	0581	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #6
DROT7	0582	0585	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #7

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
DROT8	0586	0589	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #8
DTP_SOUR	0046	0046	2	SHOT CARD USED FOR DTP REPORTING
DTP1_AGE	0206	0207	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#1
DTP2_AGE	0208	0209	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#2
DTP3_AGE	0210	0211	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#3
DTP4_AGE	0212	0213	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#4
DTP5_AGE	0214	0215	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#5
DTP6_AGE	0216	0217	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#6
DTP7_AGE	0218	0219	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#7
DTP8_AGE	0220	0221	9	AGE IN MONTHS PROVIDER-REPORTED DTP (ALL TYPES)SHOT#8
DVRC1	0606	0609	9	AGE IN DAYS OF PROVIDER-REPORTED VARICELLA SHOT #1
DVRC2	0610	0613	9	AGE IN DAYS OF PROVIDER-REPORTED VARICELLA SHOT #2
DVRC3	0614	0617	9	AGE IN DAYS OF PROVIDER-REPORTED VARICELLA SHOT #3
DVRC4	0618	0621	9	AGE IN DAYS OF PROVIDER-REPORTED VARICELLA SHOT #4
EDUC1	0085	0085	3	EDUCATION OF MOTHER CATEGORIES
ENTRY2	0086	0086	3	CHILD LIVES IN STATE WITH HEPATITIS B STATE ENTRY LAW FOR DAY CARE/HEAD START (2001-2002 SCHOOL YEAR)
FLU1_AGE	0726	0727	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #1
FLU2_AGE	0728	0729	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #2
FLU3_AGE	0730	0731	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #3
FLU4_AGE	0732	0733	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #4
FLU5_AGE	0734	0735	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #5
FLU6_AGE	0736	0737	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #6
FLU7_AGE	0738	0739	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #7
FLU8_AGE	0740	0741	9	AGE IN MONTHS OF PROVIDER-REPORTED FLU SHOT #8
FRSTBRN	0087	0087	3	FIRST BORN STATUS OF CHILD
FUL2_MMR	0047	0047	2	HOUSEHOLD REPORT OF 1+ MMR AT ANY AGE
FULL_CPO	0048	0048	2	HOUSEHOLD REPORT OF 1+ VARICELLA AT ANY AGE
FULL_DTP	0049	0049	2	HOUSEHOLD REPORT OF 4+ DTP
FULL_HEP	0050	0050	2	HOUSEHOLD REPORT OF 3+ HEPATITIS B
FULL_HIB	0051	0051	2	HOUSEHOLD REPORT OF 3+ HIB

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
FULL_POL	0052	0052	2	HOUSEHOLD REPORT OF 3+ POLIO
HEA1_AGE	0774	0775	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #1
HEA2_AGE	0776	0777	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #2
HEA3_AGE	0778	0779	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #3
HEA4_AGE	0780	0781	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #4
HEA5_AGE	0782	0783	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #5
HEA6_AGE	0784	0785	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #6
HEA7_AGE	0786	0787	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #7
HEA8_AGE	0788	0789	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS A SHOT #8
HEP_BRTH	0123	0123	8	HEPATITIS B GIVEN AT BIRTH FLAG
HEP_FLAG	0124	0124	8	HEPATITIS B BIRTH SHOT DATE IMPUTATION FLAG
HEP1_AGE	0430	0431	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #1
HEP2_AGE	0432	0433	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #2
HEP3_AGE	0434	0435	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #3
HEP4_AGE	0436	0437	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #4
HEP5_AGE	0438	0439	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #5
HEP6_AGE	0440	0441	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #6
HEP7_AGE	0442	0443	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #7
HEP8_AGE	0444	0445	9	AGE IN MONTHS OF PROVIDER-REPORTED HEPATITIS B (ALL TYPES) SHOT #8
HIB1_AGE	0366	0367	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #1
HIB2_AGE	0368	0369	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #2
HIB3_AGE	0370	0371	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #3
HIB4_AGE	0372	0373	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #4
HIB5_AGE	0374	0375	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #5
HIB6_AGE	0376	0377	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #6

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
HIB7_AGE	0378	0379	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #7
HIB8_AGE	0380	0381	9	AGE IN MONTHS OF PROVIDER-REPORTED HIB (ALL TYPES) SHOT #8
HUTD4313	0053	0053	2	HOUSEHOLD REPORT OF 4:3:1:3 UTD (UP-TO-DATE)
I_HADCPX	0054	0054	2	DID CHILD EVER HAVE CHICKEN POX?
I_HISP_K	0095	0095	3	HISPANIC ORIGIN OF CHILD
IAGECPXR	0055	0055	2	AGE IN MONTHS WHEN CHILD HAD CHICKEN POX (RECODE)
INCPORAT	0088	0091	3	INCOME TO POVERTY RATIO
INCPOV1R	0092	0092	3	POVERTY STATUS(RECODE)
INCQ298R	0093	0094	3	FAMILY INCOME CATEGORIES (RECODE)
INOPHONR	0104	0104	3	LENGTH OF INTERRUPTION IN TELEPHONE SERVICE IN DAYS(RECODE)
INTRP	0103	0103	3	INTERRUPTION IN PHONE SERVICE OF 7 DAYS OR MORE
ITRUEIAP	0105	0106	4	IAP AREA OF CURRENT RESIDENCE
LANGUAGE	0096	0096	3	LANGUAGE THE INTERVIEW WAS CONDUCTED IN
M_AGEGRP	0099	0099	3	AGE OF MOTHER CATEGORIES
MARITAL	0097	0097	3	MARITAL STATUS OF MOTHER CATEGORIES
MMR1_AGE	0318	0319	9	AGE IN MONTHS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #1
MMR2_AGE	0320	0321	9	AGE IN MONTHS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #2
MMR3_AGE	0322	0323	9	AGE IN MONTHS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #3
MMR4_AGE	0324	0325	9	AGE IN MONTHS OF PROVIDER-REPORTED MEASLES-CONTAINING VACCINE SHOT #4
MOBIL	0098	0098	3	GEOGRAPHIC MOBILITY STATUS: STATE OF RESIDENCE OF CHILD AT BIRTH VERSUS CURRENT STATE OF RESIDENCE
MP1_AGE	0478	0479	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS SHOT #1
MP2_AGE	0480	0481	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS SHOT #2
MP3_AGE	0482	0483	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS SHOT #3
MP4_AGE	0484	0485	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS SHOT #4
MPR1_AGE	0502	0503	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #1
MPR2_AGE	0504	0505	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #2
MPR3_AGE	0506	0507	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #3
MPR4_AGE	0508	0509	9	AGE IN MONTHS OF PROVIDER-REPORTED MUMPS/RUBELLA SHOT #4
N_PRVR	0113	0113	6	NUMBER OF PROVIDERS RESPONDING WITH VACCINATION DATA FOR CHILD (RECODE)
NCARER1	0114	0114	7	CHILD'S PROVIDERS OFFER COMPREHENSIVE CHILD CARE

VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
NCARER2	0115	0115	7	CHILD'S PROVIDERS OFFER ACUTE ILLNESS CARE
NCARER3	0116	0116	7	CHILD'S PROVIDERS OFFER FOLLOW UP VISITS
NCARER4	0117	0117	7	CHILD'S PROVIDERS OFFER AFTER-HOURS TELEPHONE COVERAGE
NCARER5	0118	0118	7	CHILD'S PROVIDERS OFFER WIC PROGRAM/SERVICES
NCARER6	0119	0119	7	CHILD'S PROVIDERS OFFER OTHER SERVICES
P_NUHEPX	0142	0142	8	NUMBER OF HEPATITIS B-ONLY SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUHPHB	0143	0143	8	NUMBER OF HEPATITIS B/HIB (COMVAX) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMDAH	0144	0144	8	NUMBER OF DTAP/HIB (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMDHB	0145	0145	8	NUMBER OF DTP/HIB COMBINATION SHOTS (ALL TYPES), AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMDHM	0146	0146	8	NUMBER OF DTP/HIB (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMDTA	0147	0147	8	NUMBER OF DTAP (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMDTM	0148	0148	8	NUMBER OF DT (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMDTP	0149	0149	8	NUMBER OF DTP SHOTS (ALL TYPES INCLUDING DT), AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMFLU	0150	0150	8	NUMBER OF FLU SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMHEA	0151	0151	8	NUMBER OF HEPATITIS A SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.

VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
P_NUMHEP	0152	0152	8	NUMBER OF HEPATITIS B (ALL TYPES) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMHIB	0153	0153	8	NUMBER OF HIB (ALL TYPES) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMIPV	0154	0154	8	NUMBER OF IPV (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMMR	0155	0155	8	NUMBER OF MCV (MEASLES-CONTAINING VACCINE) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMMX	0156	0156	8	NUMBER OF TRUE MMR (NOT INCLUDING MEASLES-ONLY SHOTS), AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMP	0160	0160	8	NUMBER OF MUMPS SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMPR	0161	0161	8	NUMBER OF MUMPS/RUBELLA SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMS	0157	0157	8	NUMBER OF MEASLES-ONLY SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMSM	0158	0158	8	NUMBER OF MEASLES/MUMPS SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMMSR	0159	0159	8	NUMBER OF MEASLES/RUBELLA, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMOLN	0162	0162	8	NUMBER OF POLIO (UNMARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMOPV	0163	0163	8	NUMBER OF OPV (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
P_NUMPCC	0164	0164	8	NUMBER OF CONJUGATE (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMPCN	0165	0165	8	NUMBER OF PNEUMOCOCCAL (UNMARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMPCP	0166	0166	8	NUMBER OF POLYSACCHARIDE (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMPCV	0167	0167	8	NUMBER OF PNEUMOCOCCAL(ALL TYPES) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMPOL	0168	0168	8	NUMBER OF POLIO (ALL TYPES) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMRB	0169	0169	8	NUMBER OF RUBELLA SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMROT	0170	0170	8	NUMBER OF ROTAVIRUS SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMTPM	0171	0171	8	NUMBER OF DTP (MARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMTPN	0172	0172	8	NUMBER OF DTP (UNMARKED) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_NUMVRC	0173	0173	8	NUMBER OF VARICELLA (CHICKEN POX) SHOTS, AS DETERMINED FROM PROVIDER INFORMATION. DOES NOT INCLUDE SHOTS REPORTED BY THE PROVIDER(S) AS OCCURRING AFTER THE RDD INTERVIEW DATE.
P_U12VRC	0130	0130	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 1+ VARICELLA AT 12+ MONTHS
P_UTD331	0129	0129	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3:3:1
P_UTD431	0125	0125	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 4:3:1
P_UTDFL1	0131	0131	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER INFLUENZA VARIABLE 1
P_UTDFL2	0132	0132	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER INFLUENZA VARIABLE 2

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
P_UTDHEP	0133	0133	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3+ HEPATITIS B
P_UTDHIB	0134	0134	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3+ HIB
P_UTDMCV	0135	0135	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 1+ MCV
P_UTDMMX	0136	0136	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 1+ MMR (NOT INCLUDING ANY MEASLES-ONLY SHOTS)
P_UTDPC3	0137	0137	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3+ PNEUMOCOCCAL
P_UTDPCV	0138	0138	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 4+ PNEUMOCOCCAL
P_UTDPOL	0139	0139	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3+ POLIO
P_UTDTP3	0140	0140	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3+ DTP
P_UTDTP4	0141	0141	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 4+ DTP
PCV1_AGE	0662	0663	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #1
PCV2_AGE	0664	0665	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #2
PCV3_AGE	0666	0667	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #3
PCV4_AGE	0668	0669	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #4
PCV5_AGE	0670	0671	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #5
PCV6_AGE	0672	0673	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #6
PCV7_AGE	0674	0675	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #7
PCV8_AGE	0676	0677	9	AGE IN MONTHS OF PROVIDER-REPORTED PNEUMOCOCCAL (ALL TYPES) SHOT #8
PDAT	0036	0036	1	CHILD HAS ADEQUATE PROVIDER DATA
POL1_AGE	0270	0271	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #1
POL2_AGE	0272	0273	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #2
POL3_AGE	0274	0275	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #3
POL4_AGE	0276	0277	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #4
POL5_AGE	0278	0279	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #5
POL6_AGE	0280	0281	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #6
POL7_AGE	0282	0283	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #7
POL8_AGE	0284	0285	9	AGE IN MONTHS OF PROVIDER-REPORTED POLIO (ALL TYPES) SHOT #8
PROV_FAC	0120	0120	7	PROVIDER FACILITY TYPE

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
PU431331	0128	0128	8	UTD FLAG FOR PROVIDER 4:3:1:3:3:1 (INCLUDES 1+ VARICELLA AT AGE 12+ MONTHS)
PUT43133	0127	0127	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 4:3:1:3:3
PUTD4313	0126	0126	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 4:3:1:3
RACE_K	0100	0100	3	NEW RACE OF CHILD (RECODE)
RACEETHK	0101	0101	3	NEW RACE/ETHNICITY OF CHILD (RECODE)
RB1_AGE	0542	0543	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #1
RB2_AGE	0544	0545	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #2
RB3_AGE	0546	0547	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #3
RB4_AGE	0548	0549	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #4
RB5_AGE	0550	0551	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #5
RB6_AGE	0552	0553	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #6
RB7_AGE	0554	0555	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #7
RB8_AGE	0556	0557	9	AGE IN MONTHS OF PROVIDER-REPORTED RUBELLA SHOT #8
REGISTRY	0121	0121	7	CHILD'S PROVIDERS REPORTED CHILD'S VACCINATIONS TO IMMUNIZATION REGISTRY
ROT1_AGE	0590	0591	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #1
ROT2_AGE	0592	0593	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #2
ROT3_AGE	0594	0595	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #3
ROT4_AGE	0596	0597	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #4
ROT5_AGE	0598	0599	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #5
ROT6_AGE	0600	0601	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #6
ROT7_AGE	0602	0603	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #7
ROT8_AGE	0604	0605	9	AGE IN MONTHS OF PROVIDER-REPORTED ROTAVIRUS SHOT #8
SEQNUMC	0001	0006	1	UNIQUE CHILD IDENTIFIER
SEQNUMHH	0007	0011	1	UNIQUE HOUSEHOLD IDENTIFIER
SEX	0102	0102	3	GENDER OF CHILD
SHOTCARD	0056	0056	2	SHOT CARD USE FLAG
STATE	0107	0108	4	STATE OF RESIDENCE (STATE FIPS CODE)
VFC_PRO	0122	0122	7	PARTICIPATION OF CHILD'S PROVIDERS IN VACCINES FOR CHILDREN PROGRAM

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
VRC1_AGE	0622	0623	9	AGE IN MONTHS OF PROVIDER-REPORTED VARICELLA SHOT #1
VRC2_AGE	0624	0625	9	AGE IN MONTHS OF PROVIDER-REPORTED VARICELLA SHOT #2
VRC3_AGE	0626	0627	9	AGE IN MONTHS OF PROVIDER-REPORTED VARICELLA SHOT #3
VRC4_AGE	0628	0629	9	AGE IN MONTHS OF PROVIDER-REPORTED VARICELLA SHOT #4
WGT	0022	0031	1	NEW WEIGHT FOR CHILDREN WITH ADEQUATE PROVIDER DATA AND UNVACCINATED CHILDREN
WGT_RDD	0012	0021	1	RDD CHILD INTERVIEW WEIGHT
XDTPTY1	0222	0223	9	DTP-CONTAINING VACCINATION #1 TYPE CODE
XDTPTY2	0224	0225	9	DTP-CONTAINING VACCINATION #2 TYPE CODE
XDTPTY3	0226	0227	9	DTP-CONTAINING VACCINATION #3 TYPE CODE
XDTPTY4	0228	0229	9	DTP-CONTAINING VACCINATION #4 TYPE CODE
XDTPTY5	0230	0231	9	DTP-CONTAINING VACCINATION #5 TYPE CODE
XDTPTY6	0232	0233	9	DTP-CONTAINING VACCINATION #6 TYPE CODE
XDTPTY7	0234	0235	9	DTP-CONTAINING VACCINATION #7 TYPE CODE
XDTPTY8	0236	0237	9	DTP-CONTAINING VACCINATION #8 TYPE CODE
XHEPTY1	0446	0447	9	HEPATITIS B-CONTAINING VACCINATION #1 TYPE CODE
XHEPTY2	0448	0449	9	HEPATITIS B-CONTAINING VACCINATION #2 TYPE CODE
XHEPTY3	0450	0451	9	HEPATITIS B-CONTAINING VACCINATION #3 TYPE CODE
XHEPTY4	0452	0453	9	HEPATITIS B-CONTAINING VACCINATION #4 TYPE CODE
XHEPTY5	0454	0455	9	HEPATITIS B-CONTAINING VACCINATION #5 TYPE CODE
XHEPTY6	0456	0457	9	HEPATITIS B-CONTAINING VACCINATION #6 TYPE CODE
XHEPTY7	0458	0459	9	HEPATITIS B-CONTAINING VACCINATION #7 TYPE CODE
XHEPTY8	0460	0461	9	HEPATITIS B-CONTAINING VACCINATION #8 TYPE CODE
XHIBTY1	0382	0383	9	HIB-CONTAINING VACCINATION #1 TYPE CODE
XHIBTY2	0384	0385	9	HIB-CONTAINING VACCINATION #2 TYPE CODE
XHIBTY3	0386	0387	9	HIB-CONTAINING VACCINATION #3 TYPE CODE
XHIBTY4	0388	0389	9	HIB-CONTAINING VACCINATION #4 TYPE CODE
XHIBTY5	0390	0391	9	HIB-CONTAINING VACCINATION #5 TYPE CODE
XHIBTY6	0392	0393	9	HIB-CONTAINING VACCINATION #6 TYPE CODE
XHIBTY7	0394	0395	9	HIB-CONTAINING VACCINATION #7 TYPE CODE
XHIBTY8	0396	0397	9	HIB-CONTAINING VACCINATION #8 TYPE CODE
XMMRTY1	0326	0327	9	MCV-CONTAINING VACCINATION #1 TYPE CODE
XMMRTY2	0328	0329	9	MCV-CONTAINING VACCINATION #2 TYPE CODE
XMMRTY3	0330	0331	9	MCV-CONTAINING VACCINATION #3 TYPE CODE
XMMRTY4	0332	0333	9	MCV-CONTAINING VACCINATION #4 TYPE CODE
XPCVTY1	0678	0679	9	PNEUMOCOCCAL-CONTAINING VACCINATION #1 TYPE CODE
XPCVTY2	0680	0681	9	PNEUMOCOCCAL-CONTAINING VACCINATION #2 TYPE CODE

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
XPCVTY3	0682	0683	9	PNEUMOCOCCAL-CONTAINING VACCINATION #3 TYPE CODE
XPCVTY4	0684	0685	9	PNEUMOCOCCAL-CONTAINING VACCINATION #4 TYPE CODE
XPCVTY5	0686	0687	9	PNEUMOCOCCAL-CONTAINING VACCINATION #5 TYPE CODE
XPCVTY6	0688	0689	9	PNEUMOCOCCAL-CONTAINING VACCINATION #6 TYPE CODE
XPCVTY7	0690	0691	9	PNEUMOCOCCAL-CONTAINING VACCINATION #7 TYPE CODE
XPCVTY8	0692	0693	9	PNEUMOCOCCAL-CONTAINING VACCINATION #8 TYPE CODE
XPOLTY1	0286	0287	9	POLIO-CONTAINING VACCINATION #1 TYPE CODE
XPOLTY2	0288	0289	9	POLIO-CONTAINING VACCINATION #2 TYPE CODE
XPOLTY3	0290	0291	9	POLIO-CONTAINING VACCINATION #3 TYPE CODE
XPOLTY4	0292	0293	9	POLIO-CONTAINING VACCINATION #4 TYPE CODE
XPOLTY5	0294	0295	9	POLIO-CONTAINING VACCINATION #5 TYPE CODE
XPOLTY6	0296	0297	9	POLIO-CONTAINING VACCINATION #6 TYPE CODE
XPOLTY7	0298	0299	9	POLIO-CONTAINING VACCINATION #7 TYPE CODE
XPOLTY8	0300	0301	9	POLIO-CONTAINING VACCINATION #8 TYPE CODE
YEAR	0032	0035	1	YEAR OF INTERVIEW

Appendix J

Summary Tables

Table J.1: Estimated population totals and sample sizes of children 19-35 months of age by state and IAP area, National Immunization Survey, 2003

State/IAP Area	Estimated Population Total of Children	Number of Children with Completed Household Interviews	Number of Children with Adequate Provider Data
U.S. National	5,899,319	30,930	21,310
Alabama	87,335	735	532
Rest of State	74,280	392	280
Jefferson County	13,055	343	252
Alaska	14,204	378	278
Arizona	129,242	887	612
Rest of State	45,422	420	294
Maricopa County	83,821	467	318
Arkansas	55,010	352	253
California	777,131	1,670	1,074
Rest of State	444,052	469	302
Los Angeles County	228,736	449	256
Santa Clara County	39,907	372	266
San Diego County	64,436	380	250
Colorado	98,638	391	281
Connecticut	63,431	369	279
Delaware	15,469	407	291
District of Columbia	11,127	443	266
Florida	308,890	1,279	829
Rest of State	240,385	417	275
Duval County	17,880	431	278
Miami-Dade County	50,625	431	276
Georgia	196,564	813	565
Rest of State	159,776	378	254
Fulton/DeKalb Cos.	36,788	435	311
Hawaii	24,830	448	293
Idaho	30,792	340	253
Illinois	263,687	872	538
Rest of State	192,306	401	261
City of Chicago	71,380	471	277
Indiana	126,193	767	534
Rest of State	104,841	361	245
Marion County	21,352	406	289
Iowa	54,549	357	264
Kansas	57,927	346	248
Kentucky	79,696	341	265

Table J.1 (continued): Estimated population totals and sample sizes of children 19-35 months of age by state and IAP area, National Immunization Survey, 2003

State/IAP Area	Estimated Population Total of Children	Number of Children with Completed HH Interviews	Number of Children with Adequate Provider Data
Louisiana	94,264	885	557
Rest of State	83,880	455	302
Orleans Parish	10,385	430	255
Maine	20,426	370	277
Maryland	106,545	798	550
Rest of State	92,456	406	288
Baltimore City	14,088	392	262
Massachusetts	119,124	803	567
Rest of State	106,867	386	273
City of Boston	12,257	417	294
Michigan	193,615	878	565
Rest of State	171,717	452	313
City of Detroit	21,897	426	252
Minnesota	98,857	358	268
Mississippi	59,230	357	250
Missouri	109,381	418	290
Montana	15,906	355	282
Nebraska	36,057	371	276
Nevada	48,351	402	282
New Hampshire	21,622	382	280
New Jersey	170,951	853	532
Rest of State	163,688	414	272
City of Newark	7,263	439	260
New Mexico	38,165	399	253
New York	363,894	877	521
Rest of State	191,632	431	277
NYC - 5 Counties	172,262	446	244
North Carolina	179,181	380	276
North Dakota	11,288	346	273
Ohio	217,538	1,124	756
Rest of State	166,723	365	255
Cuyahoga County	26,030	397	260
Franklin County	24,785	362	241
Oklahoma	71,923	402	268
Oregon	67,549	376	262

Table J.1 (continued): Estimated population total and sample sizes of children 19-35 months of age by state and IAP area, National Immunization Survey, 2003

State/IAP Area	Estimated Population Total of Children	Number of Children with Completed HH Interviews	Number of Children with Adequate Provider Data
Pennsylvania	209,664	866	586
Rest of State	178,451	413	291
Philadelphia County	31,213	453	295
Rhode Island	18,570	349	232
South Carolina	81,433	358	256
South Dakota	14,745	339	256
Tennessee	116,231	1,208	892
Rest of State	82,052	387	286
Shelby County	21,060	460	330
Davidson County	13,119	361	276
Texas	541,957	2,111	1,417
Rest of State	355,108	507	327
Dallas County	63,758	423	311
El Paso County	21,274	339	241
City of Houston	66,404	430	281
Bexar County	35,412	412	257
Utah	66,448	365	269
Vermont	9,919	361	288
Virginia	146,518	457	280
Washington	116,508	796	580
Rest of State	84,605	382	287
King County	31,903	414	293
West Virginia	28,125	350	228
Wisconsin	101,727	690	516
Rest of State	79,818	345	254
Milwaukee County	21,909	345	262
Wyoming	8,892	351	270

Table J.2: Estimated population totals and sample sizes for age group by maternal education, National Immunization Survey, 2003

Age Group in Months	Maternal Education	Children with Completed Household Interviews		Children with Adequate Provider Data	
		Unweighted Sample Size	Weighted Sample Size	Unweighted Sample Size	Weighted Sample Size
19 - 23	LESS THAN 12 YEARS	1,306	404,434.0	891	416,944.4
19 - 23	12 YEARS	2,431	557,045.9	1,630	534,435.8
19 - 23	GREATER 12 YEARS, NOT COLLEGE GRADUATE	1,708	361,078.2	1,212	359,622.5
19 - 23	COLLEGE GRADUATE	3,719	441,852.6	2,588	440,418.8
24 - 29	LESS THAN 12 YEARS	1,506	448,137.6	1,080	470,142.6
24 - 29	12 YEARS	2,957	642,167.6	1,995	639,380.8
24 - 29	GREATER 12 YEARS, NOT COLLEGE GRADUATE	2,004	436,465.4	1,374	422,133.5
24 - 29	COLLEGE GRADUATE	4,371	497,402.5	3,114	503,904.3
30 - 35	LESS THAN 12 YEARS	1,423	454,194.8	933	428,573.1
30 - 35	12 YEARS	2,964	669,462.8	1,992	685,842.9
30 - 35	GREATER 12 YEARS, NOT COLLEGE GRADUATE	2,128	469,894.9	1,442	471,177.5
30 - 35	COLLEGE GRADUATE	4,413	517,182.7	3,059	526,742.8

Table J.3: Estimated population totals and sample sizes for age group by family income, National Immunization Survey, 2003

Age Group in Months	Family Income	Children with Completed Household Interviews		Children with Adequate Provider Data	
		Unweighted Sample Size	Weighted Sample Size	Unweighted Sample Size	Weighted Sample Size
19 - 23	MISSING	127	26,891.5	2	1,614.2
19 - 23	0 - $ 7,500	494	110,544.3	330	110,016.4
19 - 23	$ 7,501 - $10,000	408	98,382.4	295	104,775.4
19 - 23	$10,001 - $12,500	191	58,214.2	130	59,687.0
19 - 23	$12,501 - $15,000	318	70,245.9	216	61,537.7
19 - 23	$15,001 - $17,500	171	41,354.8	119	42,298.5
19 - 23	$17,501 - $20,000	499	106,318.0	353	100,491.3
19 - 23	$20,001 - $25,000	479	110,181.5	349	106,496.7
19 - 23	$25,001 - $30,000	589	124,017.4	411	121,282.1
19 - 23	$30,001 - $35,000	389	77,750.1	283	80,787.4
19 - 23	$35,001 - $40,000	500	95,717.3	353	102,598.7
19 - 23	$40,001 - $45,000	276	51,966.4	210	51,040.0
19 - 23	$45,001 - $50,000	444	75,852.6	329	80,308.0
19 - 23	$50,001 +	3,248	490,185.2	2,365	491,259.9
19 - 23	DON'T KNOW	671	162,046.8	410	175,555.6
19 - 23	REFUSED	360	64,742.2	166	61,672.6
24 - 29	MISSING	175	32,199.3	3	903.4
24 - 29	0 - $ 7,500	528	117,865.9	361	122,598.9
24 - 29	$ 7,501 - $10,000	454	98,521.5	314	99,525.8
24 - 29	$10,001 - $12,500	203	51,041.8	142	47,976.3
24 - 29	$12,501 - $15,000	416	91,879.8	306	94,074.2
24 - 29	$15,001 - $17,500	186	42,025.5	134	42,984.6
24 - 29	$17,501 - $20,000	560	126,606.8	401	125,401.9
24 - 29	$20,001 - $25,000	568	128,803.9	404	136,350.6
24 - 29	$25,001 - $30,000	689	135,769.2	504	145,730.6
24 - 29	$30,001 - $35,000	455	90,564.4	329	86,918.8
24 - 29	$35,001 - $40,000	573	105,852.4	408	110,120.5
24 - 29	$40,001 - $45,000	323	51,796.0	240	52,052.2
24 - 29	$45,001 - $50,000	578	99,726.6	421	101,786.3
24 - 29	$50,001 +	3,922	604,904.8	2,887	599,232.0
24 - 29	DON'T KNOW	757	167,980.6	498	202,410.0
24 - 29	REFUSED	451	78,634.7	211	67,495.2
30 - 35	MISSING	163	39,372.4		
30 - 35	0 - $ 7,500	548	131,572.0	371	130,045.3
30 - 35	$ 7,501 - $10,000	427	100,891.1	301	108,790.4
30 - 35	$10,001 - $12,500	223	52,380.1	138	46,992.2
30 - 35	$12,501 - $15,000	372	91,258.2	267	90,406.7
30 - 35	$15,001 - $17,500	202	51,367.5	138	55,421.3
30 - 35	$17,501 - $20,000	535	126,550.6	373	127,301.5
30 - 35	$20,001 - $25,000	599	129,051.2	437	134,551.0
30 - 35	$25,001 - $30,000	662	138,542.7	460	137,332.2
30 - 35	$30,001 - $35,000	468	92,381.9	337	96,779.1
30 - 35	$35,001 - $40,000	618	119,820.4	445	123,378.3
30 - 35	$40,001 - $45,000	354	68,649.4	243	71,031.6
30 - 35	$45,001 - $50,000	552	94,249.2	403	102,339.3

Table J.3 (continued): Estimated population totals and sample sizes for age group by family income, National Immunization Survey, 2003

Age Group In Months	Family Income	Children with Completed Household Interviews		Children with Adequate Provider Data	
		Unweighted Sample Size	Weighted Sample Size	Unweighted Sample Size	Weighted Sample Size
30 - 35	$50,001 +	4,016	623,919.9	2,862	631,314.8
30 - 35	DON'T KNOW	727	170,764.3	441	190,001.4
30 - 35	REFUSED	462	79,964.5	210	66,651.3

Table J.4: Estimated population totals and sample sizes for age group by race/ethnicity, National Immunization Survey, 2003

Age Group in Months	Race/Ethnicity of Child	Children with Completed Household Interviews		Children with Adequate Provider Data	
		Unweighted Sample Size	Weighted Sample Size	Unweighted Sample Size	Weighted Sample Size
19 - 23	HISPANIC	1,960	473,549.7	1,332	475,317.2
19 - 23	NON-HISPANIC WHITE ALONE	4,989	909,004.7	3,594	901,597.7
19 - 23	NON-HISPANIC BLACK ALONE	1,356	228,939.7	819	227,017.2
19 - 23	NON-HISPANIC ALL OTHER RACES ALONE AND MULTI-RACIAL	859	152,916.6	576	147,489.5
24 - 29	HISPANIC	2,384	539,147.7	1,676	558,160.8
24 - 29	NON-HISPANIC WHITE ALONE	5,890	1,060,296.3	4,286	1,057,665.3
24 - 29	NON-HISPANIC BLACK ALONE	1,629	254,829.8	958	246,738.4
24 - 29	NON-HISPANIC ALL OTHER RACES ALONE AND MULTI-RACIAL	935	169,899.2	643	172,996.8
30 - 35	HISPANIC	2,203	535,681.3	1,473	514,998.7
30 - 35	NON-HISPANIC WHITE ALONE	6,096	1,109,446.1	4,297	1,108,127.4
30 - 35	NON-HISPANIC BLACK ALONE	1,634	286,786.6	990	297,318.7
30 - 35	NON-HISPANIC ALL OTHER RACES ALONE AND MULTI-RACIAL	995	178,821.4	666	191,891.5

Table J.5: Estimated population totals and sample sizes for age group by gender, National Immunization Survey, 2003

Age Group in Months	Gender	Children with Completed Household Interviews		Children with Adequate Provider Data	
		Unweighted Sample Size	Weighted Sample Size	Unweighted Sample Size	Weighted Sample Size
19 - 23	MALE	4,685	902,857.1	3,224	896,647.4
19 - 23	FEMALE	4,479	861,553.6	3,097	854,774.1
24 - 29	MALE	5,553	1,021,158.3	3,898	1,029,220.3
24 - 29	FEMALE	5,285	1,003,014.8	3,665	1,006,340.9
30 - 35	MALE	5,706	1,090,893.9	3,884	1,088,790.6
30 - 35	FEMALE	5,222	1,019,841.5	3,542	1,023,545.8

Table J.6: Sample sizes for shot card use by presence of adequate provider data, National Immunization Survey, 2003.

Shot Card Use	Presence of Adequate Provider Data	Unweighted Sample Size	Percent
SHOT CARD	ADEQUATE PROVIDER DATA	9,943	32.1
SHOT CARD	NO ADEQUATE PROVIDER DATA	3,397	11.0
NO SHOT CARD	ADEQUATE PROVIDER DATA	11,367	36.8
NO SHOT CARD	NO ADEQUATE PROVIDER DATA	6,223	20.1
TOTAL		30,930	100.0

Table J.7: Estimates of Vaccination Coverage^ and 95-Percent Confidence -Interval Half-Widths[†††],
National Immunization Survey, 2003*

State/IAP Area	3+DTP[†]	4+DTP[‡]	3+Polio[§]	1+MMR[ǁ]	3+Hib[¶]	3+HepB**	1+Var[††]	3+PCV[‡‡]	4:3:1[§§]	4:3:1:3[ǁǁ]	4:3:1:3:3[¶¶]	4:3:1:3:3:1***
US National	96.0±0.5	84.8±0.8	91.6±0.7	93.0±0.6	93.9±0.6	92.4±0.6	84.8±0.8	68.1±1.0	82.2±0.9	81.3±0.9	79.4±0.9	72.5±1.0
Alabama	96.8±2.7	85.5±4.7	90.4±4.0	91.2±3.7	94.1±3.5	93.6±3.3	91.3±3.7	69.1±5.8	82.7±4.8	82.2±4.9	80.4±5.0	79.1±5.0
AL-Jefferson County	97.8±2.1	88.1±4.8	91.3±3.9	94.1±3.4	96.5±2.7	95.0±2.8	94.0±3.1	73.8±6.4	83.7±5.3	83.1±5.4	80.6±5.6	78.6±5.7
AL-Rest of State	96.6±3.2	85.0±5.4	90.3±4.7	90.7±4.3	93.6±4.1	93.3±3.8	90.8±4.3	68.3±6.7	82.5±5.6	82.0±5.6	80.4±5.8	79.2±5.8
Alaska	93.0±3.4	83.9±4.8	90.9±3.7	90.7±3.9	90.0±4.0	90.3±3.8	81.1±5.1	76.0±6.0	81.9±5.0	81.4±5.1	79.7±5.2	72.9±5.7
Arizona	96.1±1.6	81.7±3.7	89.4±3.0	91.5±2.7	94.5±1.9	92.1±2.5	81.5±3.7	63.0±4.7	78.9±3.9	78.8±3.9	76.9±4.0	68.4±4.4
AZ-Maricopa County	96.2±2.1	83.1±4.8	89.9±3.9	92.0±3.4	95.5±2.3	92.1±3.4	83.3±4.7	61.7±6.2	79.8±5.2	79.8±5.2	77.4±5.3	69.3±5.8
AZ-Rest of State	96.0±2.5	79.1±5.7	88.5±4.6	90.7±4.2	92.6±3.3	92.2±3.2	78.3±5.9	65.4±6.5	77.2±5.8	77.0±5.9	75.8±5.9	66.7±6.6
Arkansas	96.2±2.3	81.9±5.6	93.8±3.2	90.6±4.7	95.2±2.6	93.5±3.5	88.3±5.0	50.5±7.9	79.7±6.0	79.5±6.0	76.5±6.4	74.5±6.6
California	95.7±2.1	84.0±3.2	91.2±2.7	92.8±2.5	93.0±2.5	90.4±2.8	89.7±2.8	72.7±3.8	81.2±3.4	79.6±3.5	77.4±3.6	75.6±3.7
CA-Los Angeles Co.	94.6±3.2	85.5±4.8	92.5±3.5	95.8±2.5	93.3±3.4	90.2±4.1	95.2±2.5	69.3±6.4	84.8±4.9	83.5±5.0	80.3±5.4	79.1±5.5
CA-San Diego County	94.5±3.8	84.9±5.5	92.6±4.1	93.2±3.7	91.7±4.5	89.7±4.7	86.9±5.1	67.5±6.8	83.1±5.7	81.1±6.1	79.2±6.2	75.2±6.6
CA-Santa Clara Co.	98.0±2.2	89.6±4.4	95.0±3.0	93.2±3.8	96.1±2.7	96.1±2.7	87.3±4.7	82.2±5.3	87.1±4.8	84.8±5.1	83.6±5.3	77.3±5.9
CA-Rest of State	96.3±3.3	82.6±4.9	90.0±4.3	91.2±4.1	92.7±3.9	90.1±4.3	87.4±4.5	74.3±5.7	78.6±5.3	76.9±5.5	75.1±5.6	73.6±5.6
Colorado	94.4±2.7	73.1±6.3	88.9±4.0	85.6±5.1	89.0±4.3	89.4±4.1	78.9±5.6	56.8±6.8	69.6±6.4	68.6±6.4	67.5±6.4	63.0±6.6
Connecticut	99.2±1.0	95.5±2.6	97.1±2.3	98.4±1.4	98.6±1.2	98.2±1.4	93.2±3.2	86.4±4.9	95.0±2.7	94.6±2.8	94.0±2.9	89.1±3.9
Delaware	97.5±2.3	84.0±6.0	86.6±5.3	93.0±4.2	92.7±4.8	90.3±4.9	81.5±6.1	62.1±6.8	80.1±6.3	79.6±6.3	76.3±6.6	66.1±7.0
Dist. of Columbia	96.5±3.3	84.4±5.9	90.3±4.8	92.8±4.1	93.5±3.5	94.7±2.7	88.8±4.9	67.4±6.9	80.5±6.3	77.2±6.5	76.2±6.5	71.9±6.8
Florida	98.5±1.2	87.6±3.5	94.4±2.4	95.2±2.3	96.7±2.0	95.2±2.1	87.6±4.0	57.9±5.7	83.8±4.3	82.7±5.0	81.0±5.1	73.7±5.5
FL-Miami-Dade Co.	97.8±1.9	88.5±4.5	93.3±3.3	94.9±2.7	96.3±2.5	93.9±3.4	86.0±4.4	44.7±6.5	84.7±4.9	83.2±5.1	81.5±5.2	73.1±5.9
FL-Duval County	96.3±2.8	83.4±6.1	89.9±5.3	95.5±3.1	94.5±3.2	94.1±4.3	90.5±4.2	63.2±7.3	81.9±6.2	81.4±6.2	80.2±6.3	75.3±6.6
FL-Rest of State	98.8±1.5	87.7±4.4	94.9±3.1	95.3±3.0	96.9±2.5	95.6±2.6	87.7±5.0	60.2±7.2	83.7±5.4	82.7±6.3	81.0±6.4	73.8±7.0
Georgia	95.8±2.5	79.8±6.4	88.4±4.2	90.7±3.5	92.0±3.3	92.9±3.0	90.5±3.5	62.4±5.7	77.1±6.4	76.6±6.4	76.6±6.4	74.6±6.5
GA-Fulton/DeKalb	95.1±2.8	79.7±5.6	88.1±4.2	95.7±2.3	89.8±4.2	92.1±3.6	90.0±3.6	61.9±6.6	77.9±5.7	75.4±5.9	75.3±5.9	71.2±6.2
GA-Rest of State	96.0±2.9	79.9±7.8	88.5±5.0	89.5±4.2	92.5±3.9	93.1±3.6	90.7±4.2	62.5±6.8	76.9±7.8	76.9±7.8	76.9±7.8	75.4±7.8
Hawaii	95.8±2.7	86.1±4.4	90.6±3.7	93.6±3.2	93.5±3.2	91.9±3.4	89.6±4.2	77.7±6.0	83.3±4.7	82.8±4.8	82.0±4.9	78.7±5.4
Idaho	94.7±2.9	85.8±5.0	90.9±3.9	92.9±3.7	92.3±3.5	89.3±4.3	72.8±6.1	71.0±6.5	82.5±5.4	81.6±5.5	78.1±5.9	61.4±6.8
Illinois	95.6±2.3	87.1±3.6	91.9±3.0	93.6±2.8	94.5±2.5	93.0±2.8	77.8±4.7	67.4±5.2	84.9±3.9	84.6±3.9	82.9±4.1	69.1±5.1
IL-City of Chicago	94.8±3.7	82.6±5.8	90.6±4.6	91.3±6.2	93.6±3.9	93.0±3.3	84.3±6.6	64.9±7.5	77.8±7.2	76.8±7.2	76.0±7.2	71.3±7.3
IL-Rest of State	95.9±2.8	88.7±4.4	92.4±3.7	94.5±3.0	94.9±3.0	93.0±3.7	75.3±6.1	68.3±6.6	87.5±4.5	87.5±4.5	85.5±4.8	68.3±6.5
Indiana	96.6±2.3	83.2±5.6	93.8±3.3	92.5±4.2	95.2±3.1	94.3±2.9	73.1±6.3	72.6±6.2	82.0±5.7	81.7±5.7	79.0±5.9	62.3±6.8
IN-Marion County	94.3±2.8	81.6±5.4	91.0±3.5	93.4±3.1	93.5±3.2	91.0±3.7	79.9±5.2	75.9±5.6	80.2±5.5	79.2±5.6	75.1±6.0	65.9±6.3
IN-Rest of State	97.1±2.7	83.5±6.7	94.3±3.9	92.4±5.1	95.6±3.6	94.9±3.4	71.7±7.5	71.9±7.4	82.3±6.8	82.3±6.8	79.8±7.0	61.6±8.0
Iowa	96.7±2.7	85.4±4.9	93.1±3.6	91.1±3.7	91.8±4.2	92.1±3.9	71.6±6.5	60.5±6.6	84.5±5.0	82.6±5.3	81.1±5.5	63.4±6.7
Kansas	95.6±3.0	81.3±5.7	91.8±3.8	89.4±4.6	93.1±4.0	91.7±3.7	74.7±6.1	66.9±6.6	78.1±6.0	77.7±6.0	75.7±6.1	62.8±6.6
Kentucky	97.6±2.2	85.8±5.5	92.0±4.7	95.5±2.8	94.1±4.0	96.0±2.7	91.6±4.2	74.9±6.7	82.7±6.2	81.2±6.6	81.0±6.6	78.5±6.7
Louisiana	94.8±2.8	76.6±5.2	90.0±3.7	88.4±4.1	93.8±3.2	90.2±3.8	83.3±4.5	57.9±6.0	72.7±5.5	72.4±5.6	69.9±5.7	64.7±5.8
LA-Orleans Parish	89.2±5.8	78.1±7.0	85.7±6.1	86.4±6.0	90.0±5.7	90.1±5.3	82.7±6.6	59.3±8.1	74.8±7.2	74.3±7.2	73.3±7.3	68.4±7.7
LA-Rest of State	95.5±3.1	76.4±5.8	90.5±4.1	88.6±4.5	94.3±3.6	90.2±4.3	83.3±4.9	57.7±6.7	72.5±6.2	72.1±6.2	69.5±6.3	64.3±6.5

Table J.7 (continued): Estimates of Vaccination Coverage^ and 95-Percent Confidence-Interval Half-Widths[†††], National Immunization Survey, 2003*

State/IAP Area	3+DTP[†]	4+DTP[‡]	3+Polio[§]	1+MMR[‖]	3+Hib[¶]	3+HepB**	1+Var[††]	3+PCV[‡‡]	4:3:1[§§]	4:3:1:3[‖‖]	4:3:1:3:3[¶¶]	4:3:1:3:3:1***
Maine	97.7±2.0	88.8±4.4	91.9±3.6	94.1±3.3	94.3±3.0	90.3±3.8	81.0±4.8	75.1±5.6	84.1±5.0	81.8±5.2	78.6±5.4	68.6±6.0
Maryland	97.1±2.2	86.0±5.2	94.1±3.4	93.7±4.0	96.8±2.2	92.3±4.2	90.4±4.3	69.9±6.1	84.6±5.3	84.3±5.3	81.3±5.8	77.4±5.9
MD-Baltimore City	93.6±3.7	82.2±6.1	92.3±4.1	94.9±3.4	93.5±3.7	90.7±4.1	89.1±4.7	61.1±7.2	81.4±6.1	80.9±6.1	77.4±6.4	74.3±6.6
MD-Rest of State	97.7±2.4	86.6±5.9	94.3±3.9	93.5±4.5	97.3±2.5	92.5±4.8	90.6±4.9	71.2±7.0	85.1±6.0	84.8±6.0	81.9±6.6	77.8±6.8
Massachusetts	99.0±1.0	94.6±2.7	95.9±2.4	97.7±1.5	97.9±1.5	97.5±1.5	89.1±4.3	90.9±3.7	92.5±3.1	91.7±3.2	90.7±3.4	82.5±4.8
MA-City of Boston	99.7±0.6	93.7±3.5	96.5±2.5	95.3±3.5	98.4±2.0	95.5±3.3	94.4±3.2	91.5±4.2	90.1±4.5	90.1±4.5	88.8±4.7	85.7±5.2
MA-Rest of State	98.9±1.1	94.8±3.0	95.9±2.6	98.0±1.6	97.8±1.7	97.7±1.6	88.5±4.8	90.8±4.1	92.7±3.4	91.9±3.5	90.9±3.7	82.2±5.4
Michigan	95.1±3.1	84.0±4.7	92.5±3.4	92.5±3.7	93.2±3.6	94.0±2.7	88.8±3.8	53.8±6.0	83.3±4.7	82.9±4.8	81.5±4.9	78.6±5.0
MI-City of Detroit	88.6±5.8	72.0±7.6	84.0±6.3	86.4±6.2	86.4±6.2	89.4±4.6	79.8±7.1	37.3±8.3	70.7±7.7	70.5±7.7	69.6±7.7	64.1±8.1
MI-Rest of State	95.9±3.5	85.5±5.3	93.6±3.8	93.3±4.1	94.1±4.0	94.6±3.0	90.0±4.2	55.9±6.6	84.9±5.3	84.4±5.3	83.0±5.4	80.4±5.6
Minnesota	96.3±2.8	87.9±4.8	92.8±3.6	92.6±3.8	94.7±3.3	94.1±3.3	78.2±6.4	72.9±6.7	85.3±5.2	84.4±5.4	83.9±5.5	70.7±6.9
Mississippi	96.5±3.2	86.5±5.5	93.7±3.9	94.7±3.1	92.8±4.5	94.0±4.0	88.5±4.5	62.9±7.2	84.0±5.9	84.0±5.9	83.6±5.9	78.2±6.3
Missouri	97.5±2.1	87.4±4.5	92.5±3.5	94.5±3.0	95.1±2.8	95.4±2.6	83.9±4.8	69.9±6.0	84.9±4.8	84.2±4.9	83.3±5.0	74.4±5.7
Montana	96.0±2.5	87.6±4.3	89.3±4.1	90.7±3.8	93.1±3.2	89.2±4.1	74.6±5.6	65.6±6.3	84.9±4.6	84.6±4.6	80.0±5.3	64.7±6.2
Nebraska	93.9±3.8	85.0±5.4	91.2±4.2	91.0±4.5	91.8±4.1	90.2±4.4	75.3±6.8	67.8±6.7	82.7±5.6	82.0±5.6	80.4±5.7	67.8±6.9
Nevada	91.5±3.9	81.3±5.3	87.3±4.6	89.2±4.2	90.5±4.1	88.6±4.4	78.1±5.6	39.6±6.3	78.1±5.5	78.1±5.5	75.7±5.7	65.5±6.3
New Hampshire	98.6±1.8	91.4±3.6	94.4±3.0	94.6±3.0	97.9±1.9	96.5±2.4	83.3±4.9	79.4±5.1	88.8±4.1	88.4±4.1	86.5±4.4	76.1±5.5
New Jersey	93.4±3.3	81.5±5.5	87.4±4.5	93.5±3.0	91.6±4.0	91.3±3.8	76.8±6.0	72.1±6.4	77.0±5.9	75.8±6.1	75.0±6.1	63.6±6.8
NJ-City of Newark	91.5±3.9	78.6±5.9	88.2±4.5	92.3±4.1	92.1±3.8	92.5±3.6	80.9±5.5	58.1±7.0	74.4±6.4	74.0±6.4	72.7±6.5	64.4±6.9
NJ-Rest of State	93.5±3.5	81.6±5.7	87.3±4.7	93.5±3.1	91.6±4.2	91.3±3.9	76.7±6.3	72.7±6.7	77.1±6.2	75.9±6.4	75.1±6.4	63.5±7.0
New Mexico	93.8±3.1	81.6±6.0	86.2±5.1	93.9±3.3	92.8±3.6	91.8±3.9	84.7±5.4	63.5±8.2	77.6±6.5	77.0±6.6	75.2±6.8	70.8±7.2
New York	96.1±1.9	87.7±3.2	91.3±2.8	95.1±2.1	92.6±2.9	90.3±3.1	87.3±3.2	76.8±4.1	83.5±3.7	81.9±3.9	78.6±4.2	73.1±4.5
NY-NYC 5 Counties	94.5±3.2	84.2±5.0	88.1±4.7	97.0±2.1	88.5±5.1	87.8±5.2	91.5±3.7	76.3±6.1	80.1±5.7	77.2±6.1	72.7±6.7	69.3±6.8
NY-Rest of State	97.6±2.2	90.8±4.1	94.1±3.2	93.4±3.5	96.4±2.8	92.5±3.6	83.5±5.1	77.3±5.6	86.5±4.8	86.2±4.9	83.9±5.1	76.6±5.8
North Carolina	96.9±2.5	90.0±4.1	94.1±3.3	95.7±2.9	95.9±2.8	92.4±3.7	86.0±4.8	72.1±6.1	89.4±4.3	88.6±4.4	86.7±4.6	77.3±5.7
North Dakota	97.7±2.1	86.2±5.1	88.8±4.9	90.9±4.0	96.9±2.4	95.3±3.1	71.8±6.0	60.5±6.6	82.5±5.7	82.5±5.7	80.4±5.9	63.1±6.7
Ohio	94.9±2.6	85.2±4.1	92.2±3.0	95.6±2.3	94.0±3.1	92.7±3.1	81.5±4.4	65.0±5.5	84.4±4.2	84.2±4.2	82.3±4.3	71.0±5.2
OH-Cuyahoga County	98.4±1.5	80.3±7.3	90.1±5.3	95.5±3.0	95.5±2.9	91.7±4.7	83.6±6.1	67.3±7.4	76.2±7.7	75.1±7.7	73.0±7.7	65.9±7.8
OH-Franklin County	94.7±3.6	84.1±5.5	90.1±4.2	94.4±3.5	94.7±3.4	93.6±3.6	83.0±5.2	61.2±7.2	82.9±5.7	82.9±5.7	81.8±5.7	70.7±6.5
OH-Rest of State	94.4±3.4	86.1±5.2	92.8±3.8	95.7±2.9	93.7±4.0	92.7±3.9	81.0±5.6	65.2±7.1	85.8±5.2	85.8±5.2	83.8±5.5	71.8±6.6
Oklahoma	90.9±5.3	74.2±7.1	86.0±6.1	88.0±6.1	87.5±5.7	87.9±5.7	83.9±6.2	41.8±7.1	73.7±7.0	72.3±7.1	70.5±7.2	67.0±7.3
Oregon	95.7±3.1	83.3±5.4	90.9±4.3	92.4±3.6	92.9±3.7	89.7±4.4	87.0±4.4	70.2±6.5	79.9±5.7	79.3±5.8	76.5±6.1	70.3±6.4
Pennsylvania	98.4±1.4	90.8±3.6	92.9±3.5	94.1±3.4	96.8±1.8	96.7±1.7	85.9±4.5	81.4±4.8	87.7±4.0	86.9±4.1	86.2±4.1	79.1±4.9
PA-Philadelphia	96.3±2.8	83.7±5.3	92.1±3.7	92.5±4.0	93.6±3.3	91.7±4.0	90.0±4.2	80.9±5.5	81.3±5.5	80.0±5.6	77.2±5.9	75.2±6.0
PA-Rest of State	98.7±1.5	92.0±4.2	93.0±4.0	94.4±3.9	97.4±2.0	97.6±1.9	85.1±5.3	81.5±5.5	88.8±4.7	88.1±4.7	87.8±4.7	79.8±5.7
Rhode Island	97.4±2.7	95.4±3.3	94.5±3.6	93.6±3.7	95.4±3.2	93.9±3.5	90.7±4.6	89.7±4.7	88.9±4.7	87.3±4.9	85.2±5.2	79.8±6.0
South Carolina	97.0±2.5	86.3±5.0	92.5±3.9	91.6±3.8	94.7±3.2	94.2±3.2	86.0±5.0	75.7±6.8	85.5±5.1	84.6±5.2	84.3±5.2	80.3±5.7
South Dakota	95.8±2.7	86.4±5.2	90.7±4.7	91.3±4.3	95.2±2.8	91.9±4.1	68.4±6.7	37.3±7.0	83.4±5.6	83.4±5.6	80.9±5.8	60.0±7.1

Table J.7 (continued): Estimates of Vaccination Coverage^ and 95-Percent Confidence-Interval Half-Widths†††, National Immunization Survey, 2003*

State/IAP Area	3+DTP†	4+DTP‡	3+Polio§	1+MMR‖	3+Hib¶	3+HepB**	1+Var††	3+PCV‡‡	4:3:1§§	4:3:1:3‖‖	4:3:1:3:3¶¶	4:3:1:3:3:1***
Tennessee	97.3±1.4	83.5±4.0	92.6±3.1	94.6±2.0	94.8±2.2	93.6±2.5	87.8±3.5	68.3±5.0	81.1±4.4	80.5±4.5	78.8±4.6	73.5±4.8
TN-Davidson County	96.4±2.6	85.2±5.2	91.8±4.0	93.4±3.7	94.2±3.3	91.2±4.0	89.5±4.4	73.8±6.5	83.2±5.4	82.7±5.4	79.6±5.8	76.0±6.0
TN-Shelby County	96.8±2.2	81.8±5.4	91.0±3.6	93.8±3.2	91.2±3.7	92.7±3.2	86.6±4.6	69.7±6.5	78.6±5.6	77.2±5.8	76.9±5.8	68.9±6.2
TN-Rest of State	97.5±1.9	83.7±5.5	93.2±4.2	95.1±2.7	95.8±2.9	94.3±3.3	87.8±4.7	67.0±6.8	81.4±6.1	81.1±6.1	79.1±6.2	74.3±6.5
Texas	94.6±2.1	80.6±3.7	90.1±2.7	91.4±2.5	92.8±2.4	90.4±2.4	87.6±2.8	59.8±4.4	78.1±3.8	77.2±3.8	74.8±3.9	69.8±4.1
TX-Bexar County	94.4±3.5	80.6±6.1	92.2±4.0	91.8±4.0	94.7±3.4	92.0±3.9	88.2±4.6	65.7±6.9	79.1±6.1	78.8±6.2	77.3±6.2	74.9±6.3
TX-City of Houston	92.1±3.6	76.8±5.6	86.7±4.4	89.7±4.0	91.0±3.8	83.7±5.0	83.5±4.7	58.2±6.8	74.8±5.7	74.8±5.7	69.2±6.2	63.3±6.4
TX-Dallas County	93.6±4.2	78.5±5.8	88.8±4.9	90.2±4.5	91.4±4.4	86.6±4.9	85.8±5.0	58.0±6.4	75.9±5.9	74.9±5.9	70.2±6.1	67.0±6.2
TX-El Paso County	96.1±2.8	85.2±5.3	88.9±4.5	91.7±4.0	95.1±2.9	86.6±4.9	86.3±5.0	57.0±7.2	81.6±5.7	80.9±5.7	77.2±6.1	71.6±6.5
TX-Rest of State	95.2±3.0	81.5±5.4	90.8±3.9	91.9±3.5	93.1±3.4	92.5±3.5	88.7±4.0	60.0±6.5	78.8±5.5	77.6±5.6	76.3±5.7	70.9±6.0
Utah	92.3±4.1	82.4±5.6	88.5±4.6	88.6±4.7	90.8±4.5	87.8±4.9	79.0±6.1	65.9±6.9	80.4±5.7	80.2±5.7	78.8±5.9	70.1±6.7
Vermont	98.8±1.2	93.3±2.9	95.9±2.5	96.4±2.4	98.4±1.4	90.2±3.7	71.2±5.9	76.5±5.7	89.7±3.9	89.5±3.9	83.6±4.8	65.3±6.2
Virginia	98.2±2.1	90.1±4.5	92.9±3.6	92.9±4.0	96.5±2.6	96.1±2.7	87.0±5.1	80.9±5.8	85.8±5.2	84.8±5.3	84.0±5.4	79.8±5.7
Washington	97.6±1.7	83.7±4.1	92.6±2.9	93.5±2.8	95.6±2.1	91.2±2.8	66.6±4.9	68.2±4.7	81.0±4.3	79.7±4.3	75.3±4.6	56.2±5.1
WA-King County	97.8±1.9	87.2±4.7	93.1±3.8	95.0±2.8	96.3±2.3	88.0±4.6	71.9±6.6	69.4±6.8	83.8±5.1	83.1±5.2	77.1±6.0	61.2±7.0
WA-Rest of State	97.5±2.3	82.4±5.3	92.4±3.7	92.9±3.7	95.3±2.8	92.4±3.5	64.6±6.3	67.7±5.9	80.0±5.5	78.4±5.6	74.7±5.9	54.4±6.5
West Virginia	94.8±4.1	79.3±7.0	88.4±5.5	88.7±5.8	93.1±4.7	89.2±5.6	76.5±7.0	59.3±7.9	78.9±7.0	77.4±7.2	74.6±7.4	63.2±7.8
Wisconsin	96.2±2.4	86.8±4.0	91.1±3.3	94.2±2.8	93.5±2.9	93.0±2.9	84.4±4.2	74.3±5.1	83.6±4.3	82.7±4.3	81.2±4.5	73.4±5.0
WI-Milwaukee Co.	97.3±2.5	86.2±5.6	90.9±4.3	96.8±2.4	95.2±2.9	93.6±3.5	85.7±5.6	76.0±6.7	82.3±6.0	80.9±6.1	78.9±6.3	71.1±6.9
WI-Rest of State	95.9±3.0	86.9±4.9	91.2±4.1	93.4±3.5	93.0±3.6	92.8±3.6	84.1±5.1	73.9±6.3	83.9±5.2	83.2±5.3	81.8±5.4	74.0±6.1
Wyoming	95.3±2.8	81.0±5.2	90.7±3.7	90.8±3.8	95.8±2.7	92.3±3.3	68.6±6.1	66.2±6.4	77.2±5.5	77.2±5.5	75.8±5.6	56.8±6.6

^ Estimate=NA (Not Available) if the unweighted sample size for the numerator was <30 or (CI half width)/Estimate > 0.5 or (CI half width) >10.

* Children in the Q1/2003-Q4/2003 National Immunization Survey were born between January 2000 and July 2002.

† Three or more doses of any diphtheria and tetanus toxoids and pertussis vaccines including diphtheria and tetanus toxoids, and any acellular pertussis vaccine (DTP/DTaP/DT)

‡ Four or more doses of any diphtheria and tetanus toxoids and pertussis vaccines including diphtheria and tetanus toxoids, and any acellular pertussis vaccine (DTP/DTaP/DT)

§ Three or more doses of any poliovirus vaccine

‖ One or more doses of measles-mumps-rubella vaccine; previous reports of vaccination coverage were for measles-containing vaccine (MCV)

¶ Three or more doses of *Haemophilus influenzae* type b (Hib) vaccine

** Three or more doses of hepatitis B vaccine

†† One or more doses of varicella at or after child's first birthday, unadjusted for history of varicella illness

‡‡ Three or more doses of pneumococcal conjugate vaccine

§§ Four or more doses of DTP, three or more doses of poliovirus vaccine, and one or more doses of any MCV

‖‖ Four or more doses of DTP, three or more doses of poliovirus vaccine, one or more doses of any MCV, and three or more doses of Hib

¶¶ Four or more doses of DTP, three or more doses of poliovirus vaccine, one or more doses of any MCV, three or more doses of Hib, and three or more doses of HepB

***Four or more doses of DTP, three or more doses of poliovirus vaccine, one or more doses of any MCV, three or more doses of Hib, three or more doses of HepB,
   and one or more doses of varicella

††† % ± 95% Confidence Interval