National Immunization Survey

A User's Guide for the 2004 Public-Use Data File

Centers for Disease Control and Prevention

National Immunization Program
and
National Center for Health Statistics

Prepared by Abt Associates Inc.

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Acknowledgments

The development and production of the NIS public-use files is a team effort that has included contributions from many individuals (listed in alphabetical order) in the three organizations:

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1. Introduction

In 1992 the Childhood Immunization Initiative (CII) (CDC 1994) was established to 1) improve the delivery of vaccines to children; 2) reduce the cost of vaccines for parents; 3) enhance awareness, partnerships, and community participation; 4) improve vaccinations and their use; and 5) monitor vaccination coverage and occurrences of disease. Subsequently the Healthy People 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 of the Centers for Disease Control and Prevention (CDC).

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 all vaccinations universally recommended for children by the Advisory Committee on Immunization Practice (ACIP) (CDC 2003). These vaccines and their recommended numbers of doses include: 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. Additionally, the NIS collects data on Hepatitis A vaccination and influenza vaccination. Hepatitis A vaccination is recommended for all children in selected states (states having high incidence of this disease). Beginning in 2002-03, influenza vaccination of all children aged 6-23 months during the influenza season was encouraged when feasible by ACIP; this encouragement was changed to a recommendation beginning with the 2004-05 influenza season. In addition to the above vaccines, coverage rates are reported 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). All of these vaccines except varicella, pneumococcal, hepatitis A, and influenza 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; influenza and hepatitis A vaccines were added in the first quarter of 2003. Shortages of several routinely recommended vaccines began in early 2001 (CDC 2002a). DTaP shortages began in March 2001 and were resolved by July 2002. The PCV shortage continued until May 2003, recurred again in early 2004, and was resolved in September 2004. The MMR and varicella shortages were of shorter duration. These shortages may have affected vaccination coverage as estimated by the 2004 NIS (CDC 2004).

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 approximately 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 2004 NIS the Household interviews of households began on January 6, 2004 and ended on March 10, 2005, and provider data collection extended from February 20, 2004 to April 22, 2005. A total sample of approximately 3.6 million telephone numbers yielded household interviews for 30,987

children, and 21,998 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 2004 NIS public-use file (PUF) contains data for the 30,987 children with completed household interviews (and more extensive data for the 21,998 children with adequate provider data).

Major changes to the NIS in 2004 included the introduction of a revised Immunization History Questionnaire (see Section 3), and the testing of a shortened version of the household questionnaire for a subsample of households in Q1/2004 (see Section 3).

Published tables of estimates of vaccination coverage for 2004 are available on the National Immunization Program (NIP) website, http://www.cdc.gov/nip/coverage, and are discussed in an *MMWR* report (CDC 2005).

The accompanying code book (*National Immunization Survey 2004 Public-Use Data File: Documentation, Code Book and Frequencies*) documents the contents of the 2004 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

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

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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), Smith et al. (2001a, 2005), and Abt Associates (2005a, 2005b).

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 2004.

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 with children 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 2004.

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 vaccination histories. Approximately71% 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. 2005) 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 Household interview.

During 2004 a dual-frame sample design was implemented in selected quarters for some IAP areas (Abt Associates 2005b). In the simplest application of dual-frame sampling, one has a complete frame of households, but the eligible households are not identified in the frame. The complete frame is the RDD frame. The second frame includes only households that belong to the target population, but that frame does not cover the entire target population. The partial frame is a list frame of households thought to contain age-eligible children. Dual-frame sampling draws a sample from each of the two frames, conducts the survey, and develops weights for each sample. Information related to the overlap of the complete frame with the partial frame is then used to develop composite weights that allow the two samples to be used together in an unbiased manner. These weights are an important aspect of dual-frame sampling, because some eligible households are present only in the complete frame, whereas others are present in both the complete frame and the partial frame and therefore have more than one chance of selection. In the NIS the basic idea was to maintain the RDD sample and add a list sample to the design. The RDD frame covered all of the target population except nontelephone households and households in the zero banks. The list frame (with telephone numbers) offered partial coverage of eligible telephone households.

The NIS Provider Record Check Study

At the end of the Household 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 2004 for the entire sample. Children who were 19 to 35 months of age during 2004 data collection were born between January 2001 and July 2003. The original sample (in replicates that were released for use) consisted of 3,607,627 telephone numbers. Of those, 1,545,789 numbers were eliminated by the automated procedure as nonworking or nonresidential numbers (Battaglia et al. 2005). The remaining 2,061,838 telephone numbers were called to identify 959,422 households, as shown in Rows 3 and 6. Among the identified households, 909,866 (94.8%) were successfully screened for age-eligible children. Of these, 877,228 did not contain an age-eligible child, and 32,638 (3.59%) contained one or more age-eligible children. Among these households 30,019 (92.0%) completed the household interview.

Table 1: Selected Operational Results of NIS Data Collection for 2004

ROW	KEY INDICATOR	NUMBER	PERCENT
	RDD Phase		
1	Total Selected Telephone Numbers in Released Replicates	3,607,627	--
2	Phone Numbers Resolved before Computer-Assisted Telephone Interviewing	1,545,789	42.8% (Row 2/Row 1)
3	Total Phone Numbers Called	2,061,838	--
4	Advance Letters Mailed	1,332,878	64.6% (Row 4/Row 3)
5	Resolved Phone Numbers* – *Resolution Rate*	3,023,174	83.8% (Row 5/Row 1)
6	Households Identified	959,422	31.7% (Row 6/Row 5)
7	Households Successfully Screened for Presence of Age-Eligible Children – *Screening Completion Rate*	909,866	94.8% (Row 7/Row 6)
8	Households with no Age-Eligible Children	877,228	96.4 (Row 8/Row 7)
9	Households with Age-Eligible Children – *Eligibility Rate*	32,638	3.59% (Row 9/Row 7)
10	Households with Age-Eligible Children with Completed Household Interviews– *Interview Completion Rate*	30,019	92.0% (Row 10/Row 9)
11	CASRO Response Rate**	NA	73.1% (Row 5 x Row 7 x Row 10)
12	Age-Eligible Children with Completed Household interviews	30,987	--
	PRC Phase		
13	Children with Consent to Contact Vaccination Providers	26,590	85.8% (Row 13/Row 12)
14	Immunization History Questionnaires Mailed to Providers	34,529	--
15	Immunization History Questionnaires Returned from Providers	30,155	87.3% (Row 15/Row14)
16	Children with Adequate Provider Data	21,998 (includes 108 unvaccinated children)	71.0% (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 telephone surveys, known as the CASRO household response rate, has been defined by the Council of American Survey Research Organizations (Frankel 1983). In 2004 the CASRO household response rate (Row 11) was 73.1%. The CASRO response rate equals the product of the resolution rate (83.8%, Row 5), the screening completion rate (94.8%, Row 7), and the interview completion rate among eligible households (92.0%, 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 household interview.

The presence of ring-no-answer numbers in a telephone 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 2004 was 75.5%, a 2.4 percentage point increase over the standard formula.

Row 12 of Table 1 shows that 30,930 age-eligible children had completed household 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 -- 87.1%

in 2004. 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 2004 the mean number of vaccination providers identified for a child was 1.34.

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 interviews 21,998 (71.0%) had adequate vaccination histories based on provider reporting (21,890) or had no vaccinations based on household reporting (108). The other 29.0% 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 2004 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 2004 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 2004 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

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

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). No changes were made to the NIS questionnaire during 2004. However, in Q1/2004 a shortened version of the NIS questionnaire was tested among a subsample of households. The shortened questionnaire did not ask the respondent to try and locate the child's shot card (Appendix B).

Content of the Immunization History Questionnaire

The revised IHQ used in 2004 added a question on whether the provider would be interested in completing future NIS IHQs on a secure Internet site (Appendix C). The question on the types of care provided was removed from the revised IHQ. 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 2004 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 2004 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 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 Q1/2004-Q4/2004 a total of 275 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 75 children. For the remaining 200 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 Q1/2004-Q4/2004 with a provider-reported birth dose. A similar table is included in the 2000, 2001, 2002,

and 2003 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, 2004

Age in Days at Birth Dose	Unweighted Percentage of Birth Doses
0	48.1
1	29.9
2	12.9
3	3.8
4	2.2
5	1.5
6	1.5

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, 2003 and 2004 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, 2003 and 2004 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 2004 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 2004 by the new race/ethnicity classification can be found at http://www.cdc.gov/nip/coverage/NIS/04/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 2004 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 2004 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 -3.46 percentage points to 4.32 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), participation in the Vaccines for Children program (VFC_PRO), whether the vaccination provider would be interested in completing future NIS IHQs on a secure Internet site (Q5WEB1 to Q5WEB5), 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, 2004

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	26.70 (81.22)	Hispanic	26.70 (81.22)
Non-Hispanic White	51.54 (84.83)	Non-Hispanic White Alone	50.15 (85.08)
Non-Hispanic Black	13.62 (76.47)	Non-Hispanic Black Alone	12.71 (76.04)
Non-Hispanic Asian	4.07 (83.28)	Non-Hispanic Asian Alone	3.34 (83.95)
Non-Hispanic American Indian	0.98 (73.26)	Non-Hispanic American Indian or Alaska Native (AIAN) Alone	0.84 (74.45)
		Non-Hispanic Native Hawaiian or Pacific Islander (NHOPI) Alone	0.42 (75.64)
Non-Hispanic Other Race	0.09 (96.15)	Non-Hispanic Other Race Alone	0.25 (79.43)
		Non-Hispanic Multiple Races	4.10 (82.04) 1. Black/White – 1.78 2. AIAN/White – 0.61 3. Asian and/or NHOPI/White – 0.83 4. Other Combination – 0.88

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, 2004

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)
Unknown	3.00 (84.33)	Unknown	1.51 (70.96)

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 2004. The RDD sampling weights (WGT_RDD in 2003 and 2004) 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 and 2004, 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 Household 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).

As noted earlier a dual-frame design was implemented in selected quarters in 2004 from some IAP areas (Abt Associates 2005b). For those IAP areas a quarterly RDD sample was drawn in the usual fashion. A simple random sample was also drawn from the list frame. A combined sample weight was calculated to allow for the use of the two samples in the estimation of vaccination coverage rates. Let Frame A be the current RDD frame in the NIS. It consists of all the telephone numbers available for selection in an IAP area. Let Frame B consist of telephone numbers of households on the list. Let M_a telephone numbers belong to Frame A only. Let M_b telephone numbers belong to Frame B. Let M_{ab} telephone numbers belong to both Frame A and Frame B. Frame B is a subset of Frame A, so $M_{ab} = M_b$.

The first step in the development of the combined sample weight was the calculation of the base sampling weight. The usual RDD sample for an IAP area has base sampling weight M / m, where M is the total number of telephone numbers in the working banks in the IAP area and m is the total sample size of telephone numbers in the RDD replicates released for that IAP area. If only the households in the RDD sample are matched with the list frame, then the usual base sampling weight must be used for the n_{ab} matched and n_a unmatched households. As part of the dual-frame design, however, the entire RDD sample of telephone numbers in the released replicates in each IAP area was matched with the list frame for that IAP area. Let m_a and m_{ab} denote the resulting numbers of unmatched and matched telephone numbers, respectively. These again represent sample sizes of telephone numbers in the released RDD replicates in the IAP area. Therefore, in addition to calculating a base sampling weight for the list sample in the released list sample replicates (m_b),

separate base sampling weights were calculated for the two parts of the RDD sample, in order to get conditionally unbiased estimates (Srinath et al. 2004):

RDD Sample: M_a / m_a and M_b / m_{ab}.

Experian Sample: M_b / m_b

Here the actual value of M_a was obtained from $M_a = M - M_b$.

With these base sampling weights, the RDD sample from Frame B and the simple random sample from Frame B can each be used to obtain an estimate for the population in Frame B. If the two samples were combined, the base sampling weights calculated above would overestimate M_b. As discussed by Srinath et al. (2004), to form unbiased weights for the combined sample, the base sampling weights for the RDD sample from Frame B were multiplied by p, and the base sampling weights for the simple random sample from Frame B were multiplied by $(1 - p)$. In the NIS the base sampling weights for a quarter undergo further adjustments for factors such as multiple voice-use telephone lines in the household and unit nonresponse. Those adjustments were applied to the composite base sampling weights for the combined RDD and list samples.

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 household 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 household interview. As a result, the adjusted base sampling weights must be further adjusted so that

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

Some sampled households with age-eligible children fail to complete the household 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 Household interview. To compensate for these three types of unit nonresponse, the sampling weights of children with a completed Household 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 Household 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 and 2004 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—three approximately equal-sized cells within each of the two levels of residential directory-listed status in each IAP area, 2) screener

nonresponse—two 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 approximately 93%, telephone coverage is known to be as low as about 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 2003 and 2004 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 2003 and 2004, 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 and 2004 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. Abt Associates Inc. (2005a, 2005b), Frankel et al. (2003b), and Smith et al. (2005) 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 and 2004, 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 30,987 children with a completed Household interview, 21,998 (71.0%) 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 estimates of vaccine coverage. Failure to obtain adequate provider data for the remaining 29.0% was attributable to:

- the parent or guardian not giving consent to contact the child's vaccination providers (14.0%);
- 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 (14.0%); 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 (0.99%).

The 8,989 children for whom an Household 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, 2005) describe the development of this approach in more detail.

For 2003 and 2004, 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, NIS data from 1995 to 2003 were examined. Weights were calculated for each year with and without the unvaccinated children included in the calculations. The weight calculations for these 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 and 2004 described previously will also lead to differences in estimates of vaccination coverage when compared with the 2003 and 2004 estimates resulting from the application of the weighting methodology used in 2002. This was examined using data from the 2003 NIS. At the national level the impact on the estimate of 4:3:1:3 vaccination coverage for 2003 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 for 2003 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
Q5WEB1 to Q5WEB5 – interest of provider in completing future NIS IHQs on a secure Internet site (responses from a maximum of 5 providers allowed)	Yes No Not Sure Missing
REGISTRY – provider(s) reported child's vaccination(s) to state or community immunization registry	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 and 2004 two new influenza vaccine up-to-date variables have been created (see the *National Immunization Survey 2004 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, 07, and 08. Polio-containing vaccines have a vaccination type code of 08, and 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 08, 43, and 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
	08	DTaP/IPV/Hep B
POLIO (Polio-containing vaccine): **XPOLTY1 – XPOLTY8**	08	DTaP/IPV/Hep B
	21	IPV
	22	Polio - unknown type
	20	OPV
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**	08	DTaP/IPV/Hep B
	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), participation in the Vaccines for Children (VFC) program (VFC_PRO), provider interest in completing future NIS IHQs on a secure Internet site (Q5WEB1 to Q5WEB5), 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 *j*th child with adequate provider data in the *i*th sampled household in the *h*th 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

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

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 *h*th IAP area, and m_{hi} denotes the number of age-eligible children with adequate provider data in the *i*th household in the *h*th 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 $Z_{hij} = \frac{W_{hij}(Y_{hij} - \hat{\theta})}{\sum_{h=1}^{L} \hat{T}_h}$, $Z_{hi} = \sum_{j=1}^{m_{hi}} Z_{hij}$, and

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

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

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

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 2004 NIS PUF, ten 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 2004; and W0 in 1995-2001, WT in 2002, and WGT in 2003 and 2004) 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 2004 and (from 2004 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 2004 NIS Public-Use File is:

U.S. Department of Health and Human Services (DHHS). National Center for Health Statistics. The 2004 National Immunization Survey, Hyattsville, MD: Centers for Disease Control and Prevention, 2005.

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.

10. References

Abt Associates Inc. (2005a). *The National Immunization Survey (NIS): 2003 Annual Methodology Report*. Cambridge, MA: Abt Associates Inc.

Abt Associates Inc. (2005b). *The National Immunization Survey (NIS): 2004 Annual Methodology Report*. Cambridge, MA: Abt Associates Inc.

American Association for Public Opinion Research (2004). *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 3rd edition*. Lenexa, KS: AAPOR.

Battaglia, M.P., Malec, D.J., Spencer, B.D., Hoaglin, D.C., and Sedransk J. (1995). Adjusting for noncoverage of nontelephone households in the National Immunization Survey. *1995 Proceedings of the Section on Survey Research Methods*, Alexandria: VA: American Statistical Association, pp. 678-683.

Battaglia, M.P., Ryan M., and Cynamon M. (2005). Purging out-of-scope and cellular telephone numbers from RDD samples. http://www.m-s-g.com/Reference_Library/Purging_Out-Of-Scope.htm.

Blumberg, S.J., Luke, J.V., and Cynamon, M.L. (2004). Has cord cutting cut into random-digit dialed surveys? The prevalence and impact of wireless substitution. Paper presented at Eighth Conference on Health Survey Research Methods, Peachtree City, GA, February 11, 2004.

Brick, J.M. and Kalton, G. (1996). Handling missing data in survey research. *Statistical Methods in Medical Research*, 5:215–238.

Buckley, P., Dennis, J.M., Saulsberry, C., Coronado, V.G., Ezzati-Rice, T., Maes, E., Rodén, A.-S., and Wright, R.A. (1998). Managing 78 simultaneous RDD samples. *1998 Proceedings of the Section on Survey Research Methods*, Alexandria, VA: American Statistical Association, pp. 957-961.

Centers for Disease Control and Prevention (1994). Reported vaccine-preventable diseases - United States, 1993, and the Childhood Immunization Initiative. *MMWR,* 43:57-60.

Centers for Disease Control and Prevention (2000). Prevention of pneumococcal disease among infants and young children using a pneumococcal conjugate vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR*, 49(RR-9):1-35.

Centers for Disease Control and Prevention (2002a). Shortage of varicella and measles, mumps and rubella vaccines and interim recommendations from the Advisory Committee on Immunization Practices. *MMWR*, 51(09): 190-197.

Centers for Disease Control and Prevention (2002b). *National Immunization Survey: Guide to Quality Control Procedures.* http://www.cdc.gov/nis/pdfs/qcman.pdf.

Centers for Disease Control and Prevention (2003). Recommended childhood immunization schedule—United States, 2003. *MMWR*, 52(04):Q1-Q4.

Centers for Disease Control and Prevention (2004). National, state, and urban area vaccination levels among children aged 19-35 months—United States, 2003. *MMWR*, 53(29): 658-661.

Centers for Disease Control and Prevention (2005). National, state, and urban area vaccination levels among children aged 19-35 months—United States, 2004. *MMWR*, 54(29): xxx

Coronado, V.G., Maes, E.F., Rodewald, L.E., Chu, S., Battaglia, M.P., Hoaglin, D.C., Merced, N.L., Yusuf, H., Cordero, J.F., and Orenstein, W.A. (2000). Risk factors for underimmunization among 19-35 month-old children in the United States: National Immunization Survey, July 1996-June 1998. Unpublished manuscript, Centers for Disease Control and Prevention, Atlanta.

Cox, B.G. (1980). The weighted sequential hot-deck imputation procedure. *1980 Proceedings of the Section on Survey Research Methods*. Washington, DC: American Statistical Association, pp. 721-726.

Deming, W.E. (1943). *Statistical Adjustment of Data*. New York: Wiley.

Dillman, D. (1978). *Mail and Telephone Surveys: The Total Design Method.* New York: John Wiley & Sons.

Ezzati-Rice, T.M., Zell, E.R., Battaglia, M.P., Ching, P.L.Y.H., and Wright, R.A. (1995). The design of the National Immunization Survey. *1995 Proceedings of the Section on Survey Research Methods,* Alexandria, VA: American Statistical Association, pp. 668-672.

Frankel, L.R. (1983). The report of the CASRO task force on response rates. *Improving Data Quality in Sample Surveys*. Edited by Wiseman, F. Cambridge, MA: Marketing Science Institute, pp. 1-11.

Frankel, M. R., Battaglia, M.P., Kulp, D.W., Khare, M., and Cardoni, J. (2003a). The impact of ring-no-answer telephone numbers on response rates in random-digit-dialling surveys. Paper presented at 2003 Joint Statistical Meetings, San Francisco, CA.

Frankel, M.R., Srinath, K.P., Hoaglin, D.C., Battaglia, M.P., Smith, P.J., Wright, R.A., and Khare, M. (2003b). Adjustments for non-telephone bias in random-digit-dialling surveys. *Statistics in Medicine,* 22:1611-1626.

Khare, M., Battaglia, M.P., Huggins, V.J., Stokley, S., Hoaglin, D.C., Wright, R.A., and Rodén, A.-S. (2000). Accuracy of vaccination dates reported by immunization providers in the National Immunization Survey. *2000 Proceedings of the Section on Survey Research Methods*. Alexandria, VA: American Statistical Association, pp. 665-670.

Khare, M., Battaglia, M.P., Stokley, S., Wright, R.A., and Huggins, V.J. (2001). Quality of immunization histories reported in the National Immunization Survey. *Proceedings of the International Conference on Quality in Official Statistics* (CD-ROM). Stockholm: Statistics Sweden.

Kish, L. (1965). *Survey Sampling*. New York: John Wiley & Sons, Section 12.4.

Lepkowski, J.M. (1988). Telephone sampling methods in the United States. *Telephone Survey Methodology*. Edited by Groves, R.M., Biemer, P.P., Lyberg, L.E., Massey, J.T., Nicholls, W.L., and Waksberg, J. New York: John Wiley & Sons, pp. 73-98.

National Center for Health Statistics. (2004). *Natality Data, Public-Use Data Files*. http://www.cdc.gov/nchs/products/elec_prods/subject/natality.htm.

National Center for Health Statistics (1999). *National Health Interview Survey: Research for the 1995-2004 Redesign*. Vital and Health Statistics, Series 2, No. 126 (DHHS publication no. (PHS) 99-1326). Hyattsville, MD: National Center for Health Statistics.

Research Triangle Institute (2001). *SUDAAN User's Guide Manual, Release 8.0*. Research Triangle Park, NC: Research Triangle Institute.

Rosenbaum, P.R. (1987). Model-based direct adjustment. *Journal of the American Statistical Association*, 82:387-394.

Rosenbaum, P.R. and Rubin, D.B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70:41-55.

Rosenbaum, P.R. and Rubin, D.B. (1984). Reducing bias in observational studies using subclassification on the propensity score. *Journal of the American Statistical Association*, 79:516-534.

Rust, K.F. and Rao, J.N.K. (1996). Variance estimation for complex surveys using replication techniques. *Statistical Methods in Medical Research*, 5:283-310.

SAS Institute Inc. (1999). *SAS/STAT User's Guide, Version 8*. Cary, NC: SAS Institute Inc.

Smith, P.J., Battaglia, M.P., Huggins, V.J., Hoaglin, D.C., Rodén, A.-S., Khare, M., Ezzati-Rice, T.M., and Wright, R.A. (2001a). Overview of the sampling design and statistical methods used in the National Immunization Survey. *American Journal of Preventive Medicine*, 20(4S):17-24.

Smith, P.J., Rao, J.N.K., Battaglia, M.P., Ezzati-Rice, T.M., Daniels, D., and Khare, M. (2001b). *Compensating for Provider Nonresponse Using Response Propensities to Form Adjustment Cells: The National Immunization Survey.* Vital and Health Statistics, Series 2, No. 133 (DHHS publication no. (PHS) 2001-1333). Hyattsville, MD: National Center for Health Statistics.

Smith, P.J., Hoaglin, D.C., Battaglia, M.P., Khare, M., and Barker, L.E. (2005), *Statistical Methodology of the National Immunization Survey: 1994-2002*. National Center for Health Statistics. Vital Health Stat 2(138).

Srinath, K. P., Battaglia, Michael P., and Khare, Meena (2004), "A Dual Frame Sampling Design for an RDD Survey That Screens for a Rare Population." CD-ROM, Annual Meeting of the American Statistical Association, Alexandria,VA, 4424-4429.

Stata Corporation (2001). *Stata Reference Manual*. College Station, TX: Stata Press.

Wall, T.P., Kochanek, K.M., Fitti, J.E., and Zell, E.R. (1995). The use of real time translation services in RDD telephone surveys. Presented at the 1995 Conference of the American Association for Public Opinion Research, Fort Lauderdale, FL.

Zell, E.R., Ezzati-Rice, T.M., Battaglia, M.P., and Wright, R.A. (2000). National Immunization Survey: The methodology of a vaccination surveillance system. *Public Health Reports*, 115(1):65-77.

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 Questionnaires

Appendix B-1

NIS Household Questionnaire

NIS Hard Copy Questionnaire

SCREENER

September 2004

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 stated 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. 242m).

CASE ID_____ DATE_____

INTERVIEWER ID_____

TELEPHONE NUMBER_____

DATA ENTRY: DATE_____ ENTERED BY_____(Interviewer ID)

		ALT KEYS	CHECK	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'd like to continue now unless you have any 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

CHECK BELOW, WHERE APPLICABLE

					COL. 1
	S3.3 Date of Birth	**S3.CONF Age Confirm**	**ASK ONLY IF CHILD IS ELIGIBLE (19-35 MONTHS)** **S3.4 Sex**	**S3.5 First Name/ Initials**	**PRIMARY ELIGIBLE 19-35 months** _____/_____/_____ 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 ELIGIBLE 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 ELIGIBLE 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 ELIGIBLE 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

Q4/2004

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………………....	Î	RECORD DATES BELOW
Î NONE…………..	0	GO TO AN2
Î DON'T KNOW….	6	GO TO AN2
Î 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	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
2nd Shot AD12	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
3rd Shot AD13	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
4th Shot AD14	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
5th Shot AD15	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
6th Shot AD16	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
7th Shot AD17	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î REFUSED	9997	GO TO AN2
8th Shot AD18	_____/_____/_____ MO DAY YEAR	Î DON'T KNOW	9996	GO TO AN2
		Î 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………………....	ĺ	RECORD DATES BELOW
ĺ NONE…………..	0	GO TO AN3
ĺ DON’T KNOW….	6	GO TO AN3
ĺ 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	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
2nd Shot AD22	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
3rd Shot AD23	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
4th Shot AD24	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
5th Shot AD25	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
6th Shot AD26	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
7th Shot AD27	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ REFUSED	9997	GO TO AN2
8th Shot AD28	_____/_____/_____ MO DAY YEAR	ĺ DON’T KNOW	9996	GO TO AN2
		ĺ 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	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
2nd Shot AD42	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
3rd Shot AD43	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
4thShot AD44	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
5thShot AD45	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
6th Shot AD46	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
7th Shot AD47	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	GO TO AN5
8thShot AD48	____/____/_____ MO DAY YEAR	□ DON'T KNOW	9996	GO TO AN5
		□ REFUSED	9997	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 OR NEXT CHILD
DON'T KNOW……	6	
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
REFUSED…….. 7

} GO TO B6.D

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
REFUSED…….. 7

} GO TO B3

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 } GO TO B4

DON'T KNOW……. 6 } GO TO B4

REFUSED…….. 7 } GO TO B4

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 } GO TO B5

DON'T KNOW……. 6 } GO TO B5

REFUSED…….. 7 } GO TO B5

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 } GO TO B6

DON'T KNOW……. 6 } GO TO B6

REFUSED…….. 7 } GO TO B6

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……. أ

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 } GO TO B6.B

DON'T KNOW……. 6 } GO TO B6.B

REFUSED…….. 7 } GO TO B6.B

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

NUMBER OF SHOTS……. أ

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
AT BIRTH	ATB
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/ KINDERGARTEN (41) ELEMENTARY (51) HIGH SCHOOL (61) COLLEGE (71) GRADUATE (81)

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 2003 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 2003 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 2003 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	} GO TO C19
DON'T KNOW…….	6	
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
REFUSED…… 7

} Go to c19

C15A Was it more than $12,500?

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

} Go to C19

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
DON'T KNOW……. 6
REFUSED…… 7

} Go to C19

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	} Go to C19
DON'T KNOW…….	6	
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	} Go to C19
DON'T KNOW…….	6	
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	} Go to C19
DON'T KNOW…….	6	
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

أ	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 NEVER 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]

READ WHEN NEW PERSON COMES TO THE PHONE
OR
FOR Authorized Consent Respondent CALLBACK INTRODUCTION

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 Ethics 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.

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 B-2

Q1/2004 Shortened NIS Household Questionnaire

CASE ID_____

TELEPHONE NUMBER_____

INTERVIEW DATE_____

INTERVIEW ID_____

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

NIS Hard Copy Questionnaire

PART 2

July 2003

Section MR – Most Knowledgeable Respondent Callback

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 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	GO TO B6.D
DON'T KNOW…….	6	
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	GO TO B3
DON'T KNOW…….	6	
REFUSED……..	7	

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	GO TO B4
DON'T KNOW…….	6	
REFUSED……..	7	

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	} GO TO B5
DON'T KNOW…….	6	
REFUSED……..	7	

B4.B Was that shot measles only or M-M-R, that is measles, mumps, and rubella?

MEASLES ONLY…..…….	1
FULL 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), H-I-B vaccine, or H Flu vaccine?

YES……..	1	
NO…….	2	} GO TO B6
DON'T KNOW…….	6	
REFUSED……..	7	

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

YES……..	1	
NO…….	2	} GO TO B6.B
DON'T KNOW…….	6	
REFUSED……..	7	

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

أ 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 breast-feeding

CBF_01 Was {FILL CHILD'S NAME] ever breast-fed or fed breast milk?

YES……..	1	
NO……	2	[GO TO CINTRO]
DON'T KNOW……	6	[GO TO CINTRO]
REFUSED……	7	[GO TO CINTRO]
YES……..	1	

CBF_02 How long was [FILL CHILD'S NAME] breast-fed or fed breast milk?

ENTER NUMBER/SELECT PERIOD _____

DAYS…….	1	
MONTHS……...	2	
YEARS……	3	
DON'T KNOW……..	96	[GO TO CBF_N]
REFUSED……..	97	[GO TO CBF_02R]

CBF_02R Can you remember if you or [FILL CHILD'S NAME]'s mother breast-fed (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 breast milk or water?
[IF NECESSARY: This includes formula, juice, or solid foods.]

NEVER 00

ENTER NUMBER _____

ENTER PERIOD:

DAYS……	1
WEEKS…….	2
MONTHS……..	3
DON'T KNOW……..	96
REFUSED……..	97

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 MAOTHER (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/ KINDERGARTEN (41) ELEMENTARY (51) HIGH SCHOOL (61) COLLEGE (71) GRADUATE (81)

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 2003 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 2003 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 2003 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	} GO TO C19
NO……...	2	
DON'T KNOW…….	6	
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	} Go to C19
REFUSED……	7	

C15A — Was it more than $17,500?

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

C15A Was it more than $12,500?

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

} Go to C19

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
DON'T KNOW……. 6

} Go to C19

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
REFUSED…… 7
} Go to C19

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
REFUSED…… 7
} Go to C19

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
REFUSED…… 7
} Go to C19

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_____

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

أ 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 NEVER 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 name 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 name 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) names 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 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]

READ WHEN NEW PERSON COMES TO THE PHONE
OR
FOR Authorized Consent Respondent CALLBACK INTRODUCTION

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) names 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.

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

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. Would you be interested in completing future NIS Immunization History Questionnaires on a secure Internet site?

- ☐ Yes
- ☐ No
- ☐ Not sure

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 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** Mark one box for each vaccine dose					
	Month	Day	Year							
DTP.....1	11	20	2000	☐ Yes	☐ DTP	☐ DTaP	☐ DTaP-Hib	☐ DTP-Hib	☐ DTaP-HepB-IPV	
2	11	18	2001	☒ Yes	☐ DTP	☐ DTaP	☐ DTaP-Hib	☐ DTP-Hib	☐ DTaP-HepB-IPV	

	Month	Day	Year		Mark one box for each vaccine dose				
Hib ... 1	11	20	2000	☐ Yes	☐ Hib	☐ HepB-Hib	☒ DTaP-Hib	☐ DTaP-Hib	
2	11	18	2001	☒ Yes	☒ Hib	☐ HepB-Hib	☐ DTaP-Hib	☐ DTaP-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).**

				Given at birth?	Mark one box for each vaccine given			
Hepatitis B 1	7	19	2000	☐ Yes	☒ Yes	☐ HepB Only	☐ HepB-Hib	☐ DTap-HepB-IPV
2				☐ Yes	☐ Yes	☐ HepB Only	☐ HepB-Hib	☐ DTap-HepB-IPV

- **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)**

					Please enter a description of each vaccine dose
Other 1	11	20	2001	☐ Yes	BCG
				☐ 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 MONTH	DAY	YEAR	Given by Other practice?	Type of Vaccine — Mark one box for each vaccine dose				
DTP	1				Yes	DTP	DTaP	DTaP-Hib	DTP-Hib	DTaP-HepB-IPV
	2				Yes	DTP	DTaP	DTaP-Hib	DTP-Hib	DTaP-HepB-IPV
	3				Yes	DTP	DTaP	DTaP-Hib	DTP-Hib	DTaP-HepB-IPV
	4				Yes	DTP	DTaP	DTaP-Hib	DTP-Hib	DTaP-HepB-IPV
	5				Yes	DTP	DTaP	DTaP-Hib	DTP-Hib	DTaP-HepB-IPV
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	
Hepatitis B	1				Yes	Given at birth? Yes	HepB Only	HepB-Hib	DTaP-HepB-IPV	
	2				Yes		HepB Only	HepB-Hib	DTaP-HepB-IPV	
	3				Yes		HepB Only	HepB-Hib	DTaP-HepB-IPV	
	4				Yes		HepB Only	HepB-Hib	DTaP-HepB-IPV	
MMR	1				Yes	MMR	Measles only			
	2				Yes	MMR	Measles only			
Polio	1				Yes	OPV	IPV	DTaP-HepB-IPV		
	2				Yes	OPV	IPV	DTaP-HepB-IPV		
	3				Yes	OPV	IPV	DTaP-HepB-IPV		
	4				Yes	OPV	IPV	DTaP-HepB-IPV		
Varicella	1				Yes					
	2				Yes					
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					
Other	1				Yes					
	2				Yes					
	3				Yes					
	4				Yes					

Please remember to answer question 9 on page 1.

Please enter a description of each vaccine dose.

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

Thank you!

Centers for Disease Control and Prevention

U.S. Department of Health and Human Services

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 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, 2004.

IAP Area	Old Category Non-Hispanic white	New Category Non-Hispanic white alone	Difference (new – old estimate)	Statistical significance of difference at individual .05 level
Alabama				
Rest of State	88.03	86.87	-1.16	*
Jefferson County	87.25	86.24	-1.01	*
Alaska	73.68	71.95	-1.74	*
Arizona				
Rest of State	75.08	76.10	1.02	*
Maricopa County	81.09	81.94	0.85	
Arkansas	84.14	84.07	-0.07	n.s.
California				
Rest of State	80.18	79.03	-1.15	*
Los Angeles County	81.58	79.99	-1.59	*
Santa Clara County	75.59	79.20	3.61	*
San Diego County	73.81	75.85	2.04	*
Colorado	75.55	77.15	1.61	*
Connecticut	89.16	90.33	1.17	*
Delaware	86.90	85.89	-1.01	*
Dist. of Columbia	89.62	89.62	0.00	n.s.
Florida				
Rest of State	87.85	87.20	-0.65	*
Duval County	74.10	74.62	0.52	*
Miami-Dade County				
Georgia				
Rest of State	85.22	84.77	-0.45	*
Fulton/DeKalb Counties	93.20	93.80	0.59	*
Hawaii	81.74	78.99	-2.75	n.s.
Idaho	80.08	80.24	0.16	*
Illinois				
Rest of State	89.16	89.17	0.01	n.s.
City of Chicago	88.18	87.73	-0.45	*
Indiana				
Rest of State	80.90	80.77	-0.13	*
Marion County	78.71	80.91	2.20	*
Iowa	84.10	84.03	-0.06	n.s.
Kansas	76.13	78.04	1.92	*
Kentucky	81.78	83.20	1.42	*
Louisiana				
Rest of State	83.15	82.51	-0.64	*
Orleans Parish	75.12	72.10	-3.02	*
Maine	81.99	81.72	-0.27	*
Maryland				
Rest of State	86.09	87.37	1.29	*
Baltimore City	85.76	84.37	-1.39	*

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, 2004.

IAP Area	Old Category Non-Hispanic white	New Category Non-Hispanic white alone	Difference (new – old estimate)	Statistical significance of difference at individual .05 level
Massachusetts				
Rest of State	89.34	89.27	-0.07	-0.48
City of Boston	86.05	84.19	-1.86	-11.07
Michigan				
Rest of State	84.27	83.86	-0.41	-6.07
City of Detroit	75.61	79.93	4.32	3.30
Minnesota	85.65	85.57	-0.08	-1.49
Mississippi	87.96	90.51	2.55	36.72
Missouri	84.95	87.21	2.26	16.83
Montana	79.00	78.98	-0.02	-0.13
Nebraska	83.23	82.46	-0.77	-58.51
Nevada	68.50	67.69	-0.80	-3.69
New Hampshire	85.63	85.76	0.12	3.32
New Jersey				
Rest of State	84.60	86.06	1.46	34.40
City of Newark	NA	NA	NA	NA
New Mexico	81.27	80.29	-0.98	-8.52
New York				
Rest of State	89.46	89.35	-0.11	-1.66
NYC - 5 Counties	84.94	87.05	2.10	11.86
North Carolina	86.18	87.49	1.31	9.81
North Dakota	82.49	82.90	0.41	12.00
Ohio				
Rest of State	76.20	75.30	-0.89	-10.56
Cuyahoga County	83.63	82.65	-0.98	-13.07
Franklin County	87.37	87.71	0.34	2.54
Oklahoma	73.15	71.74	-1.42	-3.16
Oregon	82.92	83.00	0.08	0.70
Pennsylvania				
Rest of State	87.77	87.48	-0.29	-4.52
Philadelphia County	89.36	90.43	1.07	9.33
Rhode Island	85.65	87.29	1.63	10.69
South Carolina	81.97	82.57	0.60	6.04
South Dakota	86.20	86.02	-0.18	-1.81
Tennessee				
Rest of State	82.04	81.65	-0.39	-5.07
Shelby County	79.36	80.21	0.85	6.90
Davidson County	91.32	92.04	0.71	7.43
Texas				
Rest of State	79.74	81.92	2.18	20.40
Dallas County	68.86	67.97	-0.89	-2.80
El Paso County	NA	NA	NA	NA

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, 2004.

IAP Area	Old Category Non-Hispanic white	New Category Non-Hispanic white alone	Difference (new – old estimate)	Statistical significance of difference at individual .05 level
City of Houston	77.78	77.51	-0.27	*
Bexar County	71.56	71.31	-0.25	n.s.
Utah	70.26	70.89	0.64	*
Vermont	85.73	85.86	0.13	*
Virginia	82.52	82.14	-0.38	*
Washington				
Rest of State	78.97	78.45	-0.52	*
King County	81.16	81.24	0.08	n.s.
West Virginia	85.91	86.08	0.17	n.s.
Wisconsin				
Rest of State	85.68	85.05	-0.63	*
Milwaukee County	79.08	78.09	-0.99	*
Wyoming	81.94	81.96	0.02	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, 2004.

IAP Area	Old Category Non-Hispanic black	New Category Non-Hispanic black alone	Difference (new – old estimate)	Statistical significance of difference at individual .05 level
Alabama				
Rest of State	68.76	68.23	-0.52	n.s.
Jefferson County	79.68	79.14	-0.54	*
Alaska	NA	NA	NA	NA
Arizona				
Rest of State	NA	NA	NA	NA
Maricopa County	NA	NA	NA	NA
Arkansas	69.30	69.13	-0.17	n.s.
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	80.42	80.36	-0.07	n.s.
Dist. of Columbia	82.91	83.10	0.20	*
Florida				
Rest of State	93.55	92.36	-1.19	n.s.
Duval County	69.63	70.83	1.20	*
Miami-Dade County	84.82	84.30	-0.52	*
Georgia				
Rest of State	85.81	85.44	-0.37	*
Fulton/DeKalb Counties	79.85	82.98	3.13	*
Hawaii	NA	NA	NA	NA
Idaho	NA	NA	NA	NA
Illinois				
Rest of State	NA	NA	NA	NA
City of Chicago	66.23	65.58	-0.64	*
Indiana				
Rest of State	NA	NA	NA	NA
Marion County	76.79	80.20	3.41	*
Iowa	NA	NA	NA	NA
Kansas	NA	NA	NA	NA
Kentucky	NA	NA	NA	NA
Louisiana				
Rest of State	65.05	62.81	-2.24	*
Orleans Parish	67.76	67.70	-0.07	n.s.
Maine	NA	NA	NA	NA
Maryland				
Rest of State	70.34	70.31	-0.03	n.s.

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, 2004.

IAP Area	Old Category Non-Hispanic black	New Category Non-Hispanic black alone	Difference (new – old estimate)	Statistical significance of difference at individual .05 level
Baltimore City	82.22	81.61	-0.60	*
Massachusetts				
Rest of State	NA	NA	NA	NA
City of Boston	77.81	78.27	0.46	n.s.
Michigan				
Rest of State	NA	NA	NA	NA
City of Detroit	63.88	63.42	-0.46	*
Minnesota	NA	NA	NA	NA
Mississippi	80.19	80.19	0.00	n.s.
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	64.28	64.67	0.39	*
New Mexico	NA	NA	NA	NA
New York				
Rest of State	NA	NA	NA	NA
NYC - 5 Counties	78.62	79.32	0.70	*
North Carolina	78.71	77.72	-0.99	*
North Dakota	NA	NA	NA	NA
Ohio				
Rest of State	NA	NA	NA	NA
Cuyahoga County	86.35	86.02	-0.33	*
Franklin County	84.27	83.68	-0.59	n.s.
Oklahoma	NA	NA	NA	NA
Oregon	NA	NA	NA	NA
Pennsylvania				
Rest of State	NA	NA	NA	NA
Philadelphia County	74.59	74.93	0.35	n.s.
Rhode Island	NA	NA	NA	NA
South Carolina	71.09	70.32	-0.77	*
South Dakota	NA	NA	NA	NA
Tennessee				
Rest of State	NA	NA	NA	NA
Shelby County	70.69	71.15	0.47	*
Davidson County	89.96	89.27	-0.69	*
Texas				
Rest of State	NA	NA	NA	NA
Dallas County	56.38	57.57	1.19	*

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, 2004.

IAP Area	Old Category Non-Hispanic black	New Category Non-Hispanic black alone	Difference (new – old estimate)	Statistical significance of difference at individual .05 level
El Paso County	NA	NA	NA	NA
City of Houston	60.19	56.73	-3.46	*
Bexar County	NA	NA	NA	NA
Utah	NA	NA	NA	NA
Vermont	NA	NA	NA	NA
Virginia	NA	NA	NA	NA
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	75.33	76.13	0.79	*
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 E1: Distribution of Sampling Weights for Children with Completed Household Interviews, National Immunization Survey, 2004, (WGT_RDD)

IAP	Area	N	SUM	MIN	MAX	MEAN	CV
	TOTAL U.S.	30987	5874423.79	0.6115	4453.84	189.577	138.260
1	CT	326	62768.39	2.7378	953.48	192.541	67.233
2	MA-REST OF STATE	380	106155.27	0.8368	1104.25	279.356	65.402
3	MA-CITY OF BOSTON	404	12114.63	0.7833	121.75	29.987	64.386
4	ME	333	20259.10	8.1104	199.30	60.838	50.341
5	NH	344	21567.94	6.9676	304.09	62.697	59.418
6	RI	377	18779.15	4.6765	127.64	49.812	50.002
7	VT	357	9747.71	1.0639	90.52	27.304	61.376
8	NJ-REST OF STATE	460	162968.39	2.3855	1990.37	354.279	80.826
9	NJ-CITY OF NEWARK	432	6957.35	3.6168	72.11	16.105	57.801
10	NY-REST OF STATE	407	188967.48	12.4654	2126.42	464.294	76.364
11	NY-NYC 5 COUNTIES	443	170191.48	14.0196	1597.74	384.179	59.716
12	DISTRICT OF COLUMBIA	477	11041.15	1.8576	145.19	23.147	76.907
13	DE	437	15673.54	2.4807	148.85	35.866	70.145
14	MD-REST OF STATE	390	92584.72	7.2449	1071.95	237.397	62.183
15	MD-CITY OF BALTIMORE	414	13779.09	0.6115	156.89	33.283	83.947
16	PA-REST OF STATE	386	175763.67	9.5866	1683.34	455.346	57.534
17	PA-PHILADELPHIA COUNTY	451	31057.93	1.3729	285.35	68.865	58.340
18	VA	421	146855.61	14.8505	1857.61	348.826	68.297
19	WV	422	27862.63	1.4105	353.69	66.025	83.016
20	AL-REST OF STATE	363	71470.73	2.0787	896.63	196.889	66.952
21	AL-JEFFERSON COUNTY	347	12550.99	2.0751	161.73	36.170	80.167
22	FL-REST OF STATE	434	240777.52	18.1151	3080.75	554.787	68.155
23	FL-DUVAL COUNTY	403	17802.05	1.6712	211.56	44.174	80.613
24	FL-MIAMI-DADE COUNTY	446	50486.40	2.4179	557.00	113.198	65.925
25	GA-REST OF STATE	386	160597.81	18.6918	2611.50	416.057	89.759
26	GA-FULTON/DEKALB COUNTIES	415	35943.71	3.3305	527.58	86.611	83.189
27	KY	338	78464.78	15.8369	1337.47	232.144	81.097
28	MS	394	57815.25	6.4214	552.83	146.739	71.046
29	NC	408	177041.33	16.8857	1740.45	433.925	76.127
30	SC	354	80135.33	14.2320	797.58	226.371	76.004
31	TN-REST OF STATE	352	80930.85	5.6452	1092.39	229.917	66.352
32	TN-SHELBY COUNTY	401	20848.86	2.0640	182.50	51.992	66.930
33	TN-DAVIDSON COUNTY	340	12951.66	1.0313	160.45	38.093	65.271
34	IL-REST OF STATE	417	190000.76	14.3413	1862.31	455.637	65.155
35	IL-CITY OF CHICAGO	461	69232.75	3.3717	844.10	150.179	80.008
36	IN-REST OF STATE	365	102638.17	5.0779	1999.56	281.200	88.657
37	IN-MARION COUNTY	362	21420.16	2.8788	306.56	59.172	68.689
38	MI-REST OF STATE	459	167953.88	1.8941	2064.36	365.913	77.935
39	MI-CITY OF DETROIT	433	20725.12	1.0641	223.56	47.864	71.530
40	MN	340	98870.88	25.9859	1099.62	290.797	61.935
41	OH-REST OF STATE	378	163109.71	5.0212	2351.26	431.507	77.348
42	OH-CUYAHOGA COUNTY	411	25050.81	2.3878	255.44	60.951	75.023
43	OH-FRANKLIN COUNTY	376	24457.87	2.9461	351.53	65.048	74.229
44	WI-REST OF STATE	353	79438.28	23.0064	1272.77	225.038	70.347
45	WI-MILWAUKEE COUNTY	408	21462.40	4.0847	222.83	52.604	65.294
46	AR	347	55276.70	6.8164	726.37	159.299	79.485
47	LA-REST OF STATE	445	82828.56	5.1770	883.64	186.132	78.212
48	LA-ORLEANS PARISH	431	9990.11	3.2905	111.59	23.179	73.573
49	NM	435	38644.87	2.6509	373.36	88.839	67.584

Table E1: Distribution of Sampling Weights for Children with Completed Household Interviews, National Immunization Survey, 2004, (WGT_RDD)

IAP	Area	N	SUM	MIN	MAX	MEAN	CV
50	OK	426	72684.39	9.3829	869.24	170.62	75.5397
51	TX-REST OF STATE	466	362230.60	3.4233	4119.66	777.32	81.6921
52	TX-DALLAS COUNTY	400	63590.60	5.4609	560.02	158.98	54.9301
53	TX-EL PASO COUNTY	331	21224.19	1.4818	199.44	64.12	45.6374
54	TX-CITY OF HOUSTON	435	66657.53	2.9315	730.64	153.24	66.9563
55	TX-BEXAR COUNTY	399	36569.99	3.9906	387.24	91.65	63.1270
56	IA	350	54206.27	16.0674	888.81	154.88	77.8183
57	KS	344	58358.87	15.2427	682.11	169.65	75.4017
58	MO	359	108635.82	26.3923	1061.71	302.61	75.2417
59	NE	383	36530.92	9.5750	417.41	95.38	61.5252
60	CO	395	100327.07	12.0553	1165.48	253.99	62.8219
61	MT	351	15997.09	5.2989	174.53	45.58	59.3953
62	ND	376	11344.16	3.9538	108.46	30.17	56.4421
63	SD	354	14981.53	4.9290	214.96	42.32	75.3023
64	UT	381	67774.92	20.4817	554.94	177.89	50.7935
65	WY	350	9095.26	1.8000	118.44	25.99	59.9494
66	AZ-REST OF STATE	382	46399.06	4.4546	652.68	121.46	78.6377
67	AZ-MARICOPA COUNTY	457	84947.35	8.4185	693.96	185.88	58.0210
68	CA-REST OF STATE	444	448263.83	26.1422	4453.84	1009.60	62.8776
69	CA-LOS ANGELES COUNTY	473	224864.81	14.9007	2308.94	475.40	58.3291
70	CA-SANTA CLARA COUNTY	366	39402.65	7.1451	355.29	107.66	53.4051
71	CA-SAN DIEGO COUNTY	462	64279.18	2.0657	515.24	139.13	58.8552
72	HI	452	25013.18	0.7826	316.64	55.34	64.5454
73	NV	454	49649.35	5.0872	301.54	109.36	53.0908
74	AK	424	14218.44	0.6428	167.65	33.53	67.2310
75	ID	356	30957.34	3.6036	256.03	86.96	57.3027
76	OR	393	67189.34	17.7566	547.40	170.97	52.0441
77	WA-REST OF STATE	384	83297.82	16.4473	744.33	216.92	47.9610
78	WA-KING COUNTY	377	31718.71	6.6284	375.58	84.13	58.4182

Table E2: Distribution of Sampling Weights for Children with Adequate Provider Data, National Immunization Survey, 2004, (WGT)

IAP	Area	N	SUM	MIN	MAX	MEAN	CV
	TOTAL U.S.	21998	5874423.79	0.7671	6623.68	267.044	144.689
1	CT	237	62768.39	3.6774	1430.29	264.846	74.493
2	MA-REST OF STATE	274	106155.27	1.4025	1395.49	387.428	63.383
3	MA-CITY OF BOSTON	277	12114.63	1.0243	190.41	43.735	68.109
4	ME	255	20259.10	9.5776	252.25	79.447	50.812
5	NH	261	21567.94	8.6983	304.09	82.636	59.799
6	RI	284	18779.15	5.5430	197.26	66.124	50.535
7	VT	290	9747.71	1.1494	99.95	33.613	61.345
8	NJ-REST OF STATE	295	162968.39	3.0874	3316.38	552.435	84.909
9	NJ-CITY OF NEWARK	271	6957.35	5.2471	102.21	25.673	64.819
10	NY-REST OF STATE	272	188967.48	16.2637	3153.25	694.733	87.218
11	NY-NYC 5 COUNTIES	250	170191.49	20.7823	3595.35	680.766	72.584
12	DISTRICT OF COLUMBIA	326	11041.15	2.7300	209.36	33.869	85.474
13	DE	317	15673.54	3.0925	245.36	49.443	82.059
14	MD-REST OF STATE	263	92584.72	10.4657	1705.10	352.033	67.287
15	MD-CITY OF BALTIMORE	283	13779.09	0.9071	213.32	48.689	84.439
16	PA-REST OF STATE	274	175763.67	17.9504	2028.76	641.473	57.674
17	PA-PHILADELPHIA COUNTY	298	31057.93	2.1506	460.55	104.221	64.122
18	VA	273	146855.61	19.1938	3052.15	537.933	79.112
19	WV	308	27862.63	1.8462	467.42	90.463	81.879
20	AL-REST OF STATE	242	71470.73	4.5286	1455.60	295.334	76.723
21	AL-JEFFERSON COUNTY	273	12550.99	2.4059	206.20	45.974	85.515
22	FL-REST OF STATE	299	240777.52	20.7215	4453.23	805.276	69.315
23	FL-DUVAL COUNTY	256	17802.05	1.5415	320.10	69.539	88.525
24	FL-MIAMI-DADE COUNTY	268	50486.40	3.0772	747.74	188.382	70.632
25	GA-REST OF STATE	259	160597.81	29.6471	3381.26	620.069	87.140
26	GA-FULTON/DEKALB COUNTIES	290	35943.71	5.4853	786.50	123.944	87.614
27	KY	243	78464.78	34.7472	1666.73	322.900	80.548
28	MS	285	57815.25	7.1497	769.63	202.861	76.421
29	NC	311	177041.33	19.9782	2493.56	569.265	75.472
30	SC	251	80135.33	16.6745	1267.25	319.264	83.774
31	TN-REST OF STATE	273	80930.85	7.1754	1302.92	296.450	63.956
32	TN-SHELBY COUNTY	286	20848.86	2.8281	268.90	72.898	70.920
33	TN-DAVIDSON COUNTY	259	12951.66	2.1869	164.78	50.006	67.266
34	IL-REST OF STATE	299	190000.76	26.0621	2682.84	635.454	70.168
35	IL-CITY OF CHICAGO	275	69232.75	5.8578	1598.37	251.755	82.687
36	IN-REST OF STATE	269	102638.17	5.6115	2195.48	381.555	87.756
37	IN-MARION COUNTY	245	21420.16	3.8239	405.29	87.429	73.103
38	MI-REST OF STATE	333	167953.88	3.9003	2402.16	504.366	76.889
39	MI-CITY OF DETROIT	293	20725.12	2.7497	304.62	70.734	69.909
40	MN	250	98870.88	30.5587	1952.73	395.484	71.422
41	OH-REST OF STATE	282	163109.71	19.7290	3132.72	578.403	84.014
42	OH-CUYAHOGA COUNTY	291	25050.81	2.7770	494.28	86.085	88.893
43	OH-FRANKLIN COUNTY	273	24457.87	6.9478	423.80	89.589	72.813
44	WI-REST OF STATE	266	79438.28	27.6401	1512.35	298.640	65.677
45	WI-MILWAUKEE COUNTY	283	21462.40	4.9781	263.29	75.839	66.532
46	AR	270	55276.70	7.9877	1082.07	204.729	82.903
47	LA-REST OF STATE	299	82828.56	13.4368	1320.55	277.019	77.370
48	LA-ORLEANS PARISH	269	9990.11	4.6352	195.15	37.138	90.338
49	NM	325	38644.87	3.3808	620.29	118.907	75.898

Table E2: Distribution of Sampling Weights for Children with Adequate Provider Data, National Immunization Survey, 2004, (WGT)

IAP	Area	N	SUM	MIN	MAX	MEAN	CV
50	OK	314	72684.39	11.3100	971.39	231.48	75.5002
51	TX-REST OF STATE	341	362230.60	7.6810	5073.18	1062.26	79.4988
52	TX-DALLAS COUNTY	283	63590.60	11.1524	1035.13	224.70	57.6319
53	TX-EL PASO COUNTY	261	21224.19	2.7940	243.07	81.32	44.3750
54	TX-CITY OF HOUSTON	303	66657.53	4.2805	1091.30	219.99	67.2652
55	TX-BEXAR COUNTY	266	36569.99	5.0915	518.35	137.48	62.6233
56	IA	263	54206.27	16.5125	1289.08	206.11	81.8103
57	KS	260	58358.87	18.7004	1032.79	224.46	76.8796
58	MO	261	108635.82	31.0028	1610.72	416.23	77.9149
59	NE	302	36530.92	11.7484	432.44	120.96	63.6134
60	CO	298	100327.07	13.7996	1667.35	336.67	73.1123
61	MT	280	15997.09	6.2732	222.51	57.13	62.3963
62	ND	294	11344.16	4.6527	147.53	38.59	55.2669
63	SD	266	14981.53	6.2912	243.21	56.32	74.6732
64	UT	297	67774.92	29.9491	661.50	228.20	52.9574
65	WY	279	9095.26	2.1170	139.18	32.60	59.2119
66	AZ-REST OF STATE	278	46399.06	5.7263	905.39	166.90	84.3378
67	AZ-MARICOPA COUNTY	325	84947.35	9.0008	834.71	261.38	64.8910
68	CA-REST OF STATE	265	448263.83	38.8561	6623.68	1691.56	59.0688
69	CA-LOS ANGELES COUNTY	299	224864.81	18.8532	3067.92	752.06	61.9039
70	CA-SANTA CLARA COUNTY	257	39402.65	9.5187	489.42	153.32	55.1411
71	CA-SAN DIEGO COUNTY	323	64279.18	3.4953	745.89	199.01	66.1684
72	HI	322	25013.18	1.1810	359.62	77.68	64.7061
73	NV	317	49649.35	7.8082	506.57	156.62	52.4519
74	AK	299	14218.44	0.7671	275.01	47.55	79.2544
75	ID	293	30957.34	4.0931	312.96	105.66	58.3153
76	OR	279	67189.34	27.2052	830.30	240.82	56.9634
77	WA-REST OF STATE	285	83297.82	21.6899	853.53	292.27	50.0772
78	WA-KING COUNTY	263	31718.71	7.3209	434.78	120.60	61.2085

Appendix F

Flags for Inconsistent Values in the Breastfeeding Data in the 2004 NIS PUF

Flags for Inconsistent Values in the Breastfeeding Data in the 2004 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, 2004

DISPCODE: Disposition of Children with Respect to Provider Record Check, National Immunization Survey, 2004

Number of Children	*Disposition Code Number and Definition*
7,607	1 = All identified providers responded, no problems indicated in cross-check between household and provider shot dates.
12,077	2 = All identified providers responded, no NIS shot card to cross check.
508	3 = All identified providers responded, poor immunization history matching results.
32	4 = All identified providers responded, poor immunization history matching results, additional mismatch indicators present.
1,260	5 = Some but not all identified providers responded, but provider information indicates 4:3:1:3:3 up-to-date.
38	6 = Some but not all identified providers responded, but provider information matches NIS shot card immunization history.
305	7 = Some but not all identified providers responded, completeness of provider immunization history is unknown.
34	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.
37	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).
192	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).
105	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).
22,195	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:\nispuf04'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nispuf04'; *--- IF DATASET WAS CREATED WITH FORMATS STORED ---*;
                               *--- PERMANENTLY SPECIFY PATH TO LIBRARY       ---*;
                               *--- OTHERWISE COMMENT THIS STATEMENT OUT      ---*;

%let in_file=dd.nispuf04; *--- 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:\nispuf04'; *--- SPECIFY PATH TO SAS DATASET ---*;
libname library 'c:\nispuf04'; *--- IF DATASET WAS CREATED WITH FORMATS STORED ---*;
                *--- PERMANENTLY SPECIFY PATH TO LIBRARY        ---*;
                *--- OTHERWISE COMMENT THIS STATEMENT OUT       ---*;

%let in_file=dd.nispuf04; *--- 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

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
AGEGRP	0058	0058	3	AGE CATEGORY OF CHILD (RECODE)
ALL4SHOT	0038	0038	2	4:3:1:3 UP-TO-DATE (HH REPORT)
BF_ENDR	0060	0067	3	DURATION OF BREAST FEEDING IN DAYS (RECODE)
BF_EXCLR	0069	0076	3	DURATION OF EXCLUSIVE BREAST FEEDING IN DAYS (RECODE)
BFENDFL	0068	0068	3	FLAG: DURATION OF BREAST FEEDING EXCEEDS CHILD AGE IN DAYS
BFEXCLFL	0077	0077	3	FLAG: DURATION OF BREAST FEEDING EXCEEDS TOTAL
C_431	0039	0039	2	HOUSEHOLD REPORT OF 4:3:1 UP-TO-DATE BY SHOT CARD USE
C_4313	0040	0040	2	HOUSEHOLD REPORT OF 4:3:1:3 UP-TO-DATE BY SHOT CARD USE
C_DTP	0041	0041	2	HOUSEHOLD REPORT OF 4+ DTP UP-TO-DATE BY SHOT CARD USE
C_HEP	0042	0042	2	HOUSEHOLD REPORT OF 3+ HEPATITIS B UP-TO-DATE BY SHOT CARD USE
C_HIB	0043	0043	2	HOUSEHOLD REPORT OF 3+ HIB UP-TO-DATE BY SHOT CARD USE
C_MMR	0044	0044	2	HOUSEHOLD REPORT OF 1+ MEASLES-CONTAINING VACCINE UP-TO-DATE BY SHOT CARD USE
C_POL	0045	0045	2	HOUSEHOLD REPORT OF 3+ POLIO UP-TO-DATE BY SHOT CARD USE
C_VRC	0046	0046	2	HOUSEHOLD REPORT OF 1+ VARICELLA UP-TO-DATE BY SHOT CARD USE
C1R	0080	0081	3	NUMBER OF PEOPLE LIVING IN THE HOUSEHOLD (RECODE)
C5R	0082	0083	3	RELATIONSHIP OF RESPONDENT TO CHILD (RECODE)
CBF_01	0059	0059	3	WAS CHILD EVER BREAST FED OR FED BREAST MILK?
CEN_REG	0084	0084	3	CENSUS REGION BASED ON STATE
CHILDNM	0085	0085	3	NUMBER OF CHILDREN LESS THAN 18 YEARS IN HH (RECODE)
CWIC_01	0078	0078	3	CHILD EVER RECEIVED WIC BENEFITS
CWIC_02	0079	0079	3	CHILD CURRENTLY RECEIVING WIC BENEFITS
D6R	0110	0110	5	NUMBER OF VACCINATION PROVIDERS IDENTIFIED BY RESPONDENT (RECODE)
D7	0111	0111	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

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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

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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	0112	0113	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

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
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
DROT8	0586	0589	9	AGE IN DAYS OF PROVIDER-REPORTED ROTAVIRUS SHOT #8
DTP_SOUR	0047	0047	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	0086	0086	3	EDUCATION OF MOTHER CATEGORIES
ENTRY2	0087	0087	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	0088	0088	3	FIRST BORN STATUS OF CHILD

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
FUL2_MMR	0048	0048	2	HOUSEHOLD REPORT OF 1+ MMR AT ANY AGE
FULL_CPO	0049	0049	2	HOUSEHOLD REPORT OF 1+ VARICELLA AT ANY AGE
FULL_DTP	0050	0050	2	HOUSEHOLD REPORT OF 4+ DTP
FULL_HEP	0051	0051	2	HOUSEHOLD REPORT OF 3+ HEPATITIS B
FULL_HIB	0052	0052	2	HOUSEHOLD REPORT OF 3+ HIB
FULL_POL	0053	0053	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

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
				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
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	0054	0054	2	HOUSEHOLD REPORT OF 4:3:1:3 UTD (UP-TO-DATE)
I_HADCPX	0055	0055	2	DID CHILD EVER HAVE CHICKEN POX?
I_HISP_K	0096	0096	3	HISPANIC ORIGIN OF CHILD
IAGECPXR	0056	0056	2	AGE IN MONTHS WHEN CHILD HAD CHICKEN POX (RECODE)
INCPORAT	0089	0092	3	INCOME TO POVERTY RATIO
INCPOV1R	0093	0093	3	POVERTY STATUS(RECODE)
INCQ298R	0094	0095	3	FAMILY INCOME CATEGORIES (RECODE)
INOPHONR	0105	0105	3	LENGTH OF INTERRUPTION IN TELEPHONE SERVICE IN DAYS(RECODE)
INTRP	0104	0104	3	INTERRUPTION IN PHONE SERVICE OF 7 DAYS OR MORE
ITRUEIAP	0106	0107	4	IAP AREA OF CURRENT RESIDENCE
LANGUAGE	0097	0097	3	LANGUAGE THE INTERVIEW WAS CONDUCTED IN
M_AGEGRP	0100	0100	3	AGE OF MOTHER CATEGORIES
MARITAL	0098	0098	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	0099	0099	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

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
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	0114	0114	6	NUMBER OF PROVIDERS RESPONDING WITH VACCINATION DATA FOR CHILD (RECODE)
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.

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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
P_UTDHEP	0133	0133	8	UTD (UP-TO-DATE) FLAG FOR PROVIDER 3+ HEPATITIS

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
				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	0037	0037	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	0115	0115	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
Q5WEB1	0116	0116	7	INTEREST IN IHQ ON WEBSITE PROVIDER #1
Q5WEB2	0117	0117	7	INTEREST IN IHQ ON WEBSITE PROVIDER #2
Q5WEB3	0118	0118	7	INTEREST IN IHQ ON WEBSITE PROVIDER #3
Q5WEB4	0119	0119	7	INTEREST IN IHQ ON WEBSITE PROVIDER #4
Q5WEB5	0120	0120	7	INTEREST IN IHQ ON WEBSITE PROVIDER #5
RACE_K	0101	0101	3	NEW RACE OF CHILD (RECODE)
RACEETHK	0102	0102	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

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
SEQNUMHH	0007	0011	1	UNIQUE HOUSEHOLD IDENTIFIER
SEX	0103	0103	3	GENDER OF CHILD
SHORT	0032	0032	1	Q1/2004 SHORT QUESTIONNAIRE EXPERIMENT FLAG
SHOTCARD	0057	0057	2	SHOT CARD USE FLAG
STATE	0108	0109	4	STATE OF RESIDENCE (STATE FIPS CODE)
VFC_PRO	0122	0122	7	PARTICIPATION OF CHILD'S PROVIDERS IN VACCINES FOR CHILDREN PROGRAM
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

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VARIABLE NAME	BEGIN POSITION	END POSITION	SECTION NUMBER	VARIABLE LABEL
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
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	0033	0036	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, 2004

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	5,874,424	30,987	21,998
Alabama	84,022	710	515
Rest of State	71,471	363	242
Jefferson County	12,551	347	273
Alaska	14,218	424	299
Arizona	131,346	839	603
Rest of State	46,399	382	278
Maricopa County	84,947	457	325
Arkansas	55,277	347	270
California	776,810	1,745	1,144
Rest of State	448,264	444	265
Los Angeles County	224,865	473	299
Santa Clara County	39,403	366	257
San Diego County	64,279	462	323
Colorado	100,327	395	298
Connecticut	62,768	326	237
Delaware	15,674	437	317
District of Columbia	11,041	477	326
Florida	309,066	1,283	823
Rest of State	240,778	434	299
Duval County	17,802	403	256
Miami-Dade County	50,486	446	268
Georgia	196,542	801	549
Rest of State	160,598	386	259
Fulton/DeKalb Cos.	35,944	415	290
Hawaii	25,013	452	322
Idaho	30,957	356	293
Illinois	259,234	878	574
Rest of State	190,001	417	299
City of Chicago	69,233	461	275
Indiana	124,058	727	514
Rest of State	102,638	365	269
Marion County	21,420	362	245
Iowa	54,206	350	263
Kansas	58,359	344	260
Kentucky	78,465	338	243

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, 2004

State/IAP Area	Estimated Population Total of Children	Number of Children with Completed HH Interviews	Number of Children with Adequate Provider Data
Louisiana	92,819	876	568
Rest of State	82,829	445	299
Orleans Parish	9,990	431	269
Maine	20,259	333	255
Maryland	106,364	804	546
Rest of State	92,585	390	263
Baltimore City	13,779	414	283
Massachusetts	118,270	784	551
Rest of State	106,155	380	274
City of Boston	12,115	404	277
Michigan	188,679	892	626
Rest of State	167,954	459	333
City of Detroit	20,725	433	293
Minnesota	98,871	340	250
Mississippi	57,815	394	285
Missouri	108,636	359	261
Montana	15,997	351	280
Nebraska	36,531	383	302
Nevada	49,649	454	317
New Hampshire	21,568	344	261
New Jersey	169,926	892	566
Rest of State	162,968	460	295
City of Newark	6,957	432	271
New Mexico	38,645	435	325
New York	359,159	850	522
Rest of State	188,967	407	272
NYC - 5 Counties	170,191	443	250
North Carolina	177,041	408	311
North Dakota	11,344	376	294
Ohio	212,618	1,165	846
Rest of State	163,110	378	282
Cuyahoga County	25,051	411	291
Franklin County	24,458	376	273
Oklahoma	72,684	426	314
Oregon	67,189	393	279

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, 2004

State/IAP Area	Estimated Population Total of Children	Number of Children with Completed HH Interviews	Number of Children with Adequate Provider Data
Pennsylvania	206,822	837	572
Rest of State	175,764	386	274
Philadelphia County	31,058	451	298
Rhode Island	18,779	377	284
South Carolina	80,135	354	251
South Dakota	14,982	354	266
Tennessee	114,731	1,093	818
Rest of State	80,931	352	273
Shelby County	20,849	401	286
Davidson County	12,952	340	259
Texas	550,273	2,031	1,454
Rest of State	362,231	466	341
Dallas County	63,591	400	283
El Paso County	21,224	331	261
City of Houston	66,658	435	303
Bexar County	36,570	399	266
Utah	67,775	381	297
Vermont	9,748	357	290
Virginia	146,856	421	273
Washington	115,017	761	548
Rest of State	83,298	384	285
King County	31,719	377	263
West Virginia	27,863	422	308
Wisconsin	100,901	761	549
Rest of State	79,438	353	266
Milwaukee County	21,462	408	283
Wyoming	9,095	350	279

Table J.2: Estimated population totals and sample sizes for age group by maternal education, National Immunization Survey, 2004

		Children with Completed Household Interviews		Children with Adequate Provider Data	
Age Group in Months	**Maternal Education**	**Unweighted Sample Size**	**Weighted Sample Size**	**Unweighted Sample Size**	**Weighted Sample Size**
19 - 23	LESS THAN 12 YEARS	1,162	377,056.4	799	377,259.9
19 - 23	12 YEARS	2,427	565,503.7	1,707	561,022.2
19 - 23	GREATER 12 YEARS, NOT COLLEGE GRADUATE	1,760	384,323.2	1,257	384,362.2
19 - 23	COLLEGE GRADUATE	3,932	446,217.4	2,813	434,312.7
24 - 29	LESS THAN 12 YEARS	1,500	477,875.7	1,051	488,657.3
24 - 29	12 YEARS	2,852	609,347.3	2,015	623,971.1
24 - 29	GREATER 12 YEARS, NOT COLLEGE GRADUATE	2,090	423,843.2	1,493	437,100.2
24 - 29	COLLEGE GRADUATE	4,676	506,415.5	3,376	514,445.7
30 - 35	LESS THAN 12 YEARS	1,331	439,105.3	924	425,940.3
30 - 35	12 YEARS	2,722	664,497.4	1,887	656,562.5
30 - 35	GREATER 12 YEARS, NOT COLLEGE GRADUATE	2,012	446,144.6	1,416	436,831.2
30 - 35	COLLEGE GRADUATE	4,523	534,094.3	3,260	533,958.6

Table J.3: Estimated population totals and sample sizes for age group by family income, National Immunization Survey, 2004

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	142	25,986.1	0	0.0
19 - 23	0 - $ 7,500	449	98,144.1	324	111,512.4
19 - 23	$ 7,501 - $10,000	360	109,421.1	244	111,192.2
19 - 23	$10,001 - $12,500	181	45,727.1	134	49,128.2
19 - 23	$12,501 - $15,000	313	79,533.3	237	80,720.1
19 - 23	$15,001 - $17,500	133	39,235.5	93	37,264.6
19 - 23	$17,501 - $20,000	478	110,086.2	338	106,947.4
19 - 23	$20,001 - $25,000	445	92,795.6	332	91,722.0
19 - 23	$25,001 - $30,000	536	112,489.3	387	108,872.5
19 - 23	$30,001 - $35,000	414	84,175.7	297	88,496.4
19 - 23	$35,001 - $40,000	472	89,744.8	348	85,252.8
19 - 23	$40,001 - $45,000	277	48,958.1	213	53,553.3
19 - 23	$45,001 - $50,000	479	81,566.3	349	78,421.8
19 - 23	$50,001 +	3,602	554,440.6	2,687	549,045.2
19 - 23	DON'T KNOW	684	150,336.7	445	163,456.7
19 - 23	REFUSED	316	50,460.1	148	41,371.4
24 - 29	MISSING	196	37,244.9	1	201.4
24 - 29	0 - $ 7,500	531	119,951.4	364	117,389.9
24 - 29	$ 7,501 - $10,000	443	109,340.5	335	122,112.7
24 - 29	$10,001 - $12,500	232	54,192.7	166	55,769.4
24 - 29	$12,501 - $15,000	350	89,401.8	268	100,226.9
24 - 29	$15,001 - $17,500	164	35,045.2	127	36,370.5
24 - 29	$17,501 - $20,000	498	121,766.1	346	117,501.2
24 - 29	$20,001 - $25,000	543	113,363.2	412	114,771.9
24 - 29	$25,001 - $30,000	617	130,816.9	440	129,524.6
24 - 29	$30,001 - $35,000	452	90,743.1	338	90,225.1
24 - 29	$35,001 - $40,000	625	116,376.5	459	123,223.3
24 - 29	$40,001 - $45,000	358	50,165.3	281	53,328.4
24 - 29	$45,001 - $50,000	568	88,099.7	418	89,518.1
24 - 29	$50,001 +	4,329	593,624.4	3,244	625,481.3
24 - 29	DON'T KNOW	853	204,387.1	572	241,248.2
24 - 29	REFUSED	359	62,962.8	164	47,281.3
30 - 35	MISSING	204	46,466.7	3	1,206.3
30 - 35	0 - $ 7,500	498	117,438.3	351	106,520.8
30 - 35	$ 7,501 - $10,000	406	121,466.4	291	120,466.1
30 - 35	$10,001 - $12,500	186	56,216.3	131	52,265.9
30 - 35	$12,501 - $15,000	336	78,998.4	254	76,125.1
30 - 35	$15,001 - $17,500	171	42,464.1	128	46,743.7
30 - 35	$17,501 - $20,000	507	124,641.3	360	125,206.0
30 - 35	$20,001 - $25,000	547	120,411.8	412	126,682.8
30 - 35	$25,001 - $30,000	621	139,036.0	453	141,697.9
30 - 35	$30,001 - $35,000	455	92,967.1	344	99,750.7
30 - 35	$35,001 - $40,000	553	113,844.4	416	114,874.8
30 - 35	$40,001 - $45,000	375	64,823.7	268	63,833.2
30 - 35	$45,001 - $50,000	573	107,015.5	414	104,695.7

Table J.3 (continued): Estimated population totals and sample sizes for age group by family income, National Immunization Survey, 2004

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 +	4,155	649,009.8	3,103	662,246.0
30 - 35	DON'T KNOW	666	149,674.2	412	167,656.6
30 - 35	REFUSED	335	59,367.5	147	43,320.8

Table J.4: Estimated population totals and sample sizes for age group by race/ethnicity, National Immunization Survey, 2004

		Children with Completed Household Interviews		Children with Adequate Provider Data	
Age Group in Months	**Race/Ethnicity of Child**	**Unweighted Sample Size**	**Weighted Sample Size**	**Unweighted Sample Size**	**Weighted Sample Size**
19 - 23	HISPANIC	1,916	472,412.1	1,358	482,195.7
19 - 23	NON-HISPANIC WHITE ALONE	5,256	902,048.0	3,812	872,745.2
19 - 23	NON-HISPANIC BLACK ALONE	1,250	237,093.6	791	244,135.9
19 - 23	NON-HISPANIC ALL OTHER RACES ALONE AND MULTI-RACIAL	859	161,547.0	615	157,880.1
24 - 29	HISPANIC	2,428	564,595.1	1,721	582,156.6
24 - 29	NON-HISPANIC WHITE ALONE	6,160	1,026,430.1	4,560	1,041,598.3
24 - 29	NON-HISPANIC BLACK ALONE	1,503	242,750.1	937	246,567.4
24 - 29	NON-HISPANIC ALL OTHER RACES ALONE AND MULTI-RACIAL	1,027	183,706.3	717	193,852.1
30 - 35	HISPANIC	2,127	555,163.5	1,487	527,880.2
30 - 35	NON-HISPANIC WHITE ALONE	6,050	1,075,202.8	4,425	1,093,339.3
30 - 35	NON-HISPANIC BLACK ALONE	1,443	280,497.7	899	275,897.2
30 - 35	NON-HISPANIC ALL OTHER RACES ALONE AND MULTI-RACIAL	968	172,977.5	676	156,175.8

Table J.5: Estimated population totals and sample sizes for age group by gender, National Immunization Survey, 2004

		Children with Completed Household Interviews		Children with Adequate Provider Data	
Age Group in Months	**Gender**	**Unweighted Sample Size**	**Weighted Sample Size**	**Unweighted Sample Size**	**Weighted Sample Size**
19 - 23	MALE	4,812	920,520.9	3,392	924,841.3
19 - 23	FEMALE	4,469	852,579.7	3,184	832,115.6
24 - 29	MALE	5,698	1,020,039.1	4,037	1,041,245.1
24 - 29	FEMALE	5,420	997,442.5	3,898	1,022,929.2
30 - 35	MALE	5,421	1,063,866.8	3,820	1,038,424.0
30 - 35	FEMALE	5,167	1,019,974.8	3,667	1,014,868.5

Table J.6: Sample sizes for shot card use by presence of adequate provider data, National Immunization Survey, 2004

Shot Card Use	Presence of Adequate Provider Data	Unweighted Sample Size	Percent
SHOT CARD	ADEQUATE PROVIDER DATA	8,890	28.7
SHOT CARD	NO ADEQUATE PROVIDER DATA	2,699	8.7
NO SHOT CARD	ADEQUATE PROVIDER DATA	13,108	42.3
NO SHOT CARD	NO ADEQUATE PROVIDER DATA	6,290	20.3
TOTAL		30,987	100.0

Table J.7: Estimates of Vaccination Coverage^ and 95-Percent Confidence-Interval Half-Widths†††, National Immunization Survey, 2004*

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***
US National	95.9±0.5	85.5±0.8	91.6±0.7	93.0±0.6	93.5±0.6	92.4±0.6	87.5±0.7	73.2±1.0	83.5±0.9	82.5±0.9	80.9±0.9	76.0±1.0
Alabama	96.6±2.4	85.8±5.6	92.1±4.0	91.8±4.5	95.1±2.9	93.6±3.8	89.9±4.7	74.0±6.5	84.1±5.7	83.0±6.2	82.3±6.2	80.1±6.3
AL-Jefferson County	93.1±4.6	87.4±6.0	88.5±5.3	89.4±5.4	93.3±4.5	91.0±5.1	90.3±5.0	81.4±6.4	83.9±6.5	83.5±6.6	82.1±6.7	81.1±6.8
AL-Rest of State	97.2±2.7	85.5±6.5	92.8±4.6	92.2±5.2	95.5±3.3	94.0±4.4	89.8±5.5	72.7±7.5	84.1±6.6	82.9±7.2	82.4±7.2	79.9±7.3
Alaska	93.1±3.7	79.9±6.4	88.3±5.1	89.7±4.8	86.6±5.3	90.1±4.7	76.5±6.5	74.6±6.9	78.2±6.4	76.1±6.5	75.3±6.6	66.4±6.9
Arizona	95.0±2.4	83.6±3.8	91.0±3.0	92.9±2.5	92.6±2.8	89.9±3.2	85.8±3.5	71.9±4.5	81.8±4.0	81.0±4.1	78.6±4.2	73.0±4.5
AZ-Maricopa County	95.9±2.5	83.6±4.8	91.6±3.6	91.8±3.5	94.1±3.0	90.1±3.8	85.3±4.6	75.1±5.7	81.5±5.1	80.7±5.2	77.8±5.4	72.3±5.8
AZ-Rest of State	93.4±5.0	83.6±6.3	89.9±5.4	95.0±3.1	89.8±5.6	89.7±5.5	86.7±4.9	66.0±7.5	82.5±6.4	81.7±6.4	80.1±6.5	74.3±6.9
Arkansas	97.6±2.2	85.8±5.8	94.3±4.2	94.6±3.0	97.6±2.2	94.7±3.5	94.0±3.0	63.6±7.5	84.9±5.9	84.9±5.9	82.4±6.3	80.6±6.3
California	94.1±2.3	85.3±3.2	90.6±2.7	93.1±2.1	91.7±2.5	90.4±2.6	90.2±2.4	76.1±3.9	84.1±3.2	83.1±3.3	81.3±3.4	78.6±3.5
CA-Los Angeles Co.	95.6±3.3	85.2±5.0	93.1±3.5	94.1±2.9	90.8±4.1	91.8±3.9	89.7±4.0	72.3±6.4	83.6±5.1	81.7±5.3	80.1±5.5	76.6±5.8
CA-San Diego County	94.5±3.2	83.4±5.2	90.0±3.8	89.5±4.5	92.6±3.8	89.9±4.0	87.3±4.7	70.3±6.3	80.0±5.4	79.9±5.4	77.2±5.6	74.3±5.8
CA-Santa Clara Co.	94.3±3.8	90.0±4.4	91.5±4.3	92.5±4.1	93.8±3.9	91.3±4.1	87.0±5.0	83.7±5.5	88.1±4.7	87.7±4.7	84.6±5.1	79.9±5.6
CA-Rest of State	93.3±3.5	85.2±4.8	89.4±4.2	93.2±3.3	91.8±3.7	89.7±4.1	91.2±3.6	78.1±5.8	84.6±4.8	83.9±4.9	82.1±5.1	80.1±5.3
Colorado	95.0±2.9	82.3±5.7	90.1±4.1	90.8±3.8	92.6±3.7	88.5±4.5	86.1±4.6	62.8±7.0	80.1±5.8	80.1±5.8	77.1±6.2	73.4±6.4
Connecticut	99.7±0.6	92.2±4.9	96.1±4.0	95.0±3.7	99.0±1.1	95.1±3.6	92.7±4.1	90.3±4.9	88.9±5.7	88.7±5.7	87.8±5.8	84.8±6.1
Delaware	98.7±1.2	87.4±5.5	92.4±4.6	94.5±3.9	94.1±4.2	94.7±3.6	87.6±5.6	74.4±6.6	86.4±5.6	86.4±5.6	86.0±5.6	79.9±6.5
Dist. of Columbia	98.0±2.0	89.6±4.7	95.3±3.2	94.6±3.2	97.1±2.5	94.0±3.2	92.3±3.5	72.4±6.6	86.3±5.2	86.0±5.2	82.5±5.7	79.5±5.9
Florida	98.4±1.1	91.4±2.7	94.9±2.0	95.4±2.0	98.0±1.2	96.8±1.7	91.3±2.9	55.0±5.6	90.1±2.8	89.7±2.9	88.5±3.0	84.7±3.7
FL-Miami-Dade Co.	96.8±2.8	88.1±4.7	92.6±3.9	93.9±3.4	98.3±1.6	96.5±2.1	81.3±5.9	48.6±7.2	85.8±5.0	85.3±5.1	84.0±5.2	73.0±6.5
FL-Duval County	94.7±4.0	80.2±7.0	86.9±6.2	87.7±6.2	90.4±5.2	91.7±4.7	81.7±6.9	60.9±8.0	76.4±7.3	74.6±7.3	72.7±7.6	68.6±7.7
FL-Rest of State	99.0±1.3	92.9±3.2	96.0±2.3	96.3±2.4	98.5±1.5	97.2±2.1	94.1±3.5	55.9±7.1	92.0±3.4	91.8±3.4	90.6±3.7	88.3±4.5
Georgia	97.8±2.0	88.2±5.1	95.3±2.8	91.9±4.3	94.1±2.9	94.5±3.1	91.6±4.1	67.9±6.5	86.7±5.2	85.5±5.2	84.7±5.3	82.0±5.5
GA-Fulton/DeKalb	96.8±2.3	89.3±4.3	93.8±3.3	93.7±3.7	93.1±3.5	93.7±3.2	89.4±4.7	68.1±7.4	86.9±4.8	86.0±4.9	85.6±4.9	80.9±5.6
GA-Rest of State	98.0±2.4	88.0±6.1	95.6±3.3	91.5±5.2	94.3±3.5	94.7±3.7	92.1±4.9	67.8±7.8	86.6±6.2	85.4±6.3	84.5±6.4	82.2±6.6
Hawaii	94.9±2.5	85.6±4.5	88.7±4.1	94.7±2.9	92.4±3.2	89.9±3.9	91.7±3.4	86.0±4.1	83.4±4.7	82.6±4.8	81.2±4.9	79.8±5.0
Idaho	95.2±3.0	85.3±5.0	92.3±3.6	91.7±3.9	93.6±3.5	92.3±3.7	77.1±5.7	81.4±5.2	82.8±5.2	82.6±5.2	80.6±5.4	70.4±6.2
Illinois	97.8±1.6	88.5±3.5	93.3±2.7	95.0±2.4	91.8±3.4	94.3±2.4	85.9±3.7	76.4±4.7	86.4±3.8	83.7±4.3	82.7±4.4	73.7±4.9
IL-City of Chicago	95.9±3.8	85.2±6.6	89.7±6.0	93.4±4.2	91.5±4.7	91.4±4.6	86.8±5.3	80.0±6.0	83.4±6.8	80.7±7.1	77.8±7.3	70.7±7.6
IL-Rest of State	98.4±1.7	89.7±4.1	94.6±3.0	95.5±2.9	91.9±4.4	95.3±2.9	85.6±4.7	75.0±6.0	87.5±4.5	84.8±5.3	84.5±5.3	74.7±6.1
Indiana	95.5±2.6	83.0±4.9	93.1±3.0	91.5±3.9	93.9±2.9	93.0±2.9	80.3±5.4	77.7±5.7	81.3±5.1	81.3±5.1	79.0±5.3	68.2±6.4
IN-Marion County	95.6±4.0	83.8±6.3	90.6±5.2	91.3±4.8	93.8±4.5	90.6±4.6	85.1±5.5	81.5±6.3	81.8±6.4	81.8±6.4	78.3±6.7	73.8±6.9
IN-Rest of State	95.5±3.0	82.8±5.8	93.6±3.4	91.6±4.6	93.9±3.3	93.6±3.4	79.3±6.4	76.9±6.8	81.2±6.0	81.2±6.0	79.2±6.2	67.0±7.6
Iowa	96.1±3.1	88.6±5.8	93.7±3.6	92.9±5.4	93.9±3.9	94.9±3.7	85.9±5.4	67.7±7.5	88.0±5.9	86.1±6.2	86.1±6.2	76.1±7.1
Kansas	95.5±4.3	82.6±6.5	90.5±5.3	92.3±4.3	93.0±4.8	92.1±4.9	77.8±6.6	65.4±7.5	80.6±6.7	79.5±6.7	77.5±6.8	65.8±7.6
Kentucky	98.9±1.3	86.4±5.6	93.5±3.6	91.0±5.6	97.5±2.1	95.4±3.1	89.6±5.8	76.1±6.8	80.4±6.9	80.4±6.9	79.1±7.0	77.1±7.1
Louisiana	94.3±2.8	77.9±5.6	89.4±3.6	88.7±3.9	92.8±3.0	89.0±3.7	82.2±5.2	71.9±5.6	76.9±5.6	76.3±5.6	74.9±5.6	70.1±6.2
LA-Orleans Parish	92.1±4.4	79.6±6.2	85.5±5.5	90.2±4.8	88.2±5.1	85.7±5.7	83.7±5.9	75.9±7.5	77.1±6.4	75.9±6.5	71.5±7.0	68.0±7.3
LA-Rest of State	94.6±3.1	77.7±6.2	89.8±4.0	88.6±4.4	93.4±3.3	89.4±4.1	82.0±5.8	71.4±6.2	76.9±6.2	76.4±6.2	75.3±6.3	70.4±6.9

Table J.7 (continued): Estimates of Vaccination Coverage^ and 95-Percent Confidence-Interval Half-Widths†††, National Immunization Survey, 2004*

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±1.7	88.8±4.2	93.2±3.3	91.7±3.8	93.9±3.5	91.8±3.6	83.8±5.2	84.6±4.8	86.2±4.7	85.0±4.9	82.1±5.3	73.8±6.1
Maryland	97.3±2.0	86.5±4.8	90.5±4.4	94.8±3.3	95.7±2.5	93.9±3.4	90.2±4.1	76.6±5.7	81.3±5.5	81.3±5.5	80.0±5.5	76.0±5.8
MD-Baltimore City	95.0±3.5	88.2±4.5	92.4±4.6	93.9±3.6	94.8±3.4	94.5±3.1	91.0±6.1	75.1±7.4	85.3±5.4	85.3±5.4	82.8±5.7	80.0±7.2
MD-Rest of State	97.6±2.3	86.3±5.4	90.2±5.0	95.0±3.7	95.8±2.9	93.8±3.8	90.1±4.6	76.9±6.5	80.8±6.2	80.8±6.2	79.6±6.3	75.4±6.6
Massachusetts	97.7±2.0	93.2±3.1	94.5±2.8	96.0±2.4	97.0±2.1	94.8±2.8	90.6±3.8	89.7±3.8	91.5±3.4	90.9±3.4	89.1±3.7	84.0±4.5
MA-City of Boston	96.6±3.0	89.9±4.9	94.8±3.3	92.4±4.2	95.2±3.3	92.7±3.7	91.4±4.2	91.8±4.0	86.9±5.4	85.8±5.5	82.4±5.8	78.8±6.0
MA-Rest of State	97.8±2.2	93.6±3.4	94.4±3.1	96.4±2.7	97.2±2.3	95.0±3.1	90.5±4.2	89.5±4.2	92.1±3.7	91.5±3.8	89.9±4.1	84.6±5.0
Michigan	94.7±3.3	86.1±4.3	89.4±4.5	91.8±3.7	91.3±4.0	93.1±3.6	88.0±4.3	63.4±6.1	83.1±4.9	81.3±5.2	81.2±5.2	79.2±5.3
MI-City of Detroit	90.9±4.2	70.2±6.7	84.9±5.5	90.7±4.2	87.7±4.8	92.6±4.1	86.4±5.1	50.7±7.1	68.6±6.8	68.1±6.8	67.9±6.8	65.6±6.8
MI-Rest of State	95.1±3.7	88.0±4.7	90.0±5.0	91.9±4.1	91.8±4.5	93.2±4.1	88.2±4.8	65.0±6.8	84.9±5.5	83.0±5.8	82.8±5.8	80.8±5.9
Minnesota	97.7±2.7	88.7±5.9	92.6±5.0	91.7±4.7	92.8±5.0	91.7±5.6	83.3±6.3	77.3±6.5	86.5±6.1	85.7±6.1	85.2±6.2	77.7±6.7
Mississippi	96.4±3.4	87.3±5.4	92.8±4.5	94.4±3.8	93.1±4.1	91.2±5.1	90.6±4.4	61.4±7.3	86.4±5.6	85.8±5.6	84.0±6.0	80.4±6.3
Missouri	97.0±2.8	87.1±5.6	92.1±4.3	93.8±3.4	94.6±3.5	90.6±4.1	85.1±5.0	76.2±6.7	86.0±5.7	86.0±5.7	81.6±6.1	75.2±6.6
Montana	96.2±2.6	83.6±5.2	89.2±4.3	91.2±3.9	93.3±3.3	89.3±4.6	74.9±5.8	69.6±6.3	82.6±5.3	81.6±5.4	78.2±6.0	64.5±6.7
Nebraska	97.0±2.3	84.4±5.2	93.4±3.2	92.7±3.5	95.3±2.8	93.7±3.3	82.2±5.0	75.5±5.9	83.0±5.3	83.0±5.3	82.3±5.4	72.6±6.0
Nevada	91.0±3.8	72.8±6.1	88.4±4.1	87.4±4.1	88.7±4.1	86.5±4.4	80.7±4.9	49.6±6.4	71.3±6.1	70.6±6.2	68.4±6.2	65.1±6.3
New Hampshire	96.7±3.3	91.4±4.3	94.3±3.7	93.5±4.1	96.0±3.5	94.1±3.8	85.6±5.3	82.0±5.8	89.5±4.7	89.0±4.8	86.3±5.1	78.4±6.0
New Jersey	97.6±2.2	86.2±5.0	91.3±3.6	94.6±3.1	95.7±2.4	95.0±2.9	86.8±4.8	78.9±6.1	84.1±5.3	83.3±5.3	82.7±5.4	74.4±6.3
NJ-City of Newark	97.2±2.2	77.8±6.0	90.9±4.6	93.5±3.9	93.5±4.0	93.5±4.1	79.8±5.6	70.9±6.7	77.4±6.1	74.5±6.4	72.2±6.6	64.1±7.1
NJ-Rest of State	97.6±2.3	86.6±5.2	91.3±3.7	94.6±3.2	95.8±2.5	95.1±3.0	87.1±5.0	79.3±6.4	84.4±5.5	83.7±5.5	83.2±5.6	74.9±6.5
New Mexico	96.8±2.7	87.2±4.7	92.0±3.9	89.9±4.5	94.2±3.6	95.9±2.5	87.5±4.7	71.6±6.1	84.8±5.2	84.8±5.2	83.5±5.3	79.0±5.8
New York	97.7±1.5	86.5±4.2	92.5±2.9	95.5±2.1	92.7±3.2	95.4±2.2	89.1±3.6	83.4±3.9	84.6±4.3	82.8±4.6	82.2±4.6	78.0±4.9
NY-NYC 5 Counties	96.1±2.9	83.2±5.8	90.4±4.2	93.2±3.9	90.9±4.4	94.1±3.7	90.2±4.5	79.0±5.9	81.2±6.0	79.6±6.1	79.4±6.1	77.2±6.3
NY-Rest of State	99.1±1.3	89.5±6.2	94.4±4.1	97.6±2.0	94.4±4.7	96.6±2.4	88.2±5.6	87.4±5.2	87.7±6.3	85.6±6.9	84.7±6.9	78.7±7.4
North Carolina	97.9±2.4	84.7±5.9	92.5±4.2	95.6±3.5	97.6±2.5	94.3±4.1	89.9±4.6	85.7±4.7	82.5±6.0	82.3±6.0	81.6±6.0	77.8±6.4
North Dakota	96.1±2.3	85.7±4.6	91.5±3.5	92.6±3.3	95.5±2.4	93.8±3.1	79.6±5.2	69.3±6.1	84.7±4.7	84.0±4.7	82.0±5.0	71.0±5.8
Ohio	96.6±2.3	85.8±4.8	90.6±4.1	93.1±3.1	94.7±2.7	91.7±3.9	84.2±4.2	69.2±5.7	83.1±5.1	82.2±5.1	79.5±5.4	70.6±5.7
OH-Cuyahoga County	98.3±1.6	89.1±4.5	90.7±4.3	96.2±2.5	97.6±1.8	94.5±3.4	90.7±4.6	79.7±6.0	86.5±5.0	86.0±5.0	83.2±5.6	78.4±6.3
OH-Franklin County	99.5±0.8	89.2±4.6	94.1±3.7	94.9±3.4	95.7±2.9	95.9±2.7	87.3±4.7	74.3±6.7	87.4±4.8	86.7±4.9	86.4±4.9	79.0±5.8
OH-Rest of State	96.0±2.9	84.8±6.2	90.1±5.2	92.3±4.0	94.1±3.5	90.6±5.1	82.8±5.4	66.8±7.3	81.9±6.5	80.9±6.6	78.0±6.9	68.1±7.3
Oklahoma	90.2±4.7	75.2±6.4	87.6±4.9	90.6±4.4	86.0±5.4	92.1±3.7	89.6±4.6	44.1±6.9	74.8±6.4	72.6±6.6	72.1±6.6	71.4±6.6
Oregon	97.0±2.2	84.8±4.7	91.0±3.8	93.7±3.1	92.6±3.6	91.7±3.6	84.8±5.0	74.6±5.9	81.8±5.1	81.1±5.1	78.9±5.3	73.8±6.0
Pennsylvania	97.7±1.7	89.5±3.5	94.5±2.5	95.0±2.6	97.4±1.7	95.7±2.4	91.9±3.4	83.1±4.6	87.3±3.8	87.1±3.8	85.7±4.0	81.8±4.5
PA-Philadelphia	97.7±1.7	81.7±5.8	91.8±4.0	94.0±3.6	96.4±2.2	94.2±2.9	89.3±4.6	86.2±4.4	80.5±5.8	80.0±5.8	78.0±5.9	75.0±6.1
PA-Rest of State	97.7±2.0	90.9±4.0	95.0±2.8	95.2±3.0	97.6±2.0	96.0±2.8	92.3±4.0	82.5±5.3	88.5±4.3	88.4±4.3	87.1±4.5	83.0±5.2
Rhode Island	97.4±2.1	94.7±2.7	95.4±2.6	95.6±2.8	94.2±3.0	94.9±2.8	91.7±3.6	90.6±3.8	90.9±3.7	88.2±4.2	86.7±4.4	81.5±5.1
South Carolina	97.3±2.6	83.7±6.3	91.7±4.8	92.0±4.5	95.6±3.0	93.9±4.6	90.2±4.7	76.4±7.1	82.8±6.4	82.2±6.4	79.8±7.0	77.2±7.3
South Dakota	96.8±3.0	90.3±4.7	92.5±4.1	93.7±4.1	94.9±3.5	95.2±2.8	79.4±5.9	46.4±7.6	89.2±4.8	88.0±5.0	86.1±5.2	73.3±6.5

Table J.7 (continued): Estimates of Vaccination Coverage^ and 95-Percent Confidence-Interval Half-Widths†††, National Immunization Survey, 2004*

State/IAP Area	3+DTP†	4+DTP‡	3+Polio§	1+MMRll	3+Hib¶	3+HepB**	1+Var††	3+PCV‡‡	4:3:1§§	4:3:1:3lll	4:3:1:3:3¶¶	4:3:1:3:3:1***
Tennessee	96.0±2.4	86.8±3.5	91.7±3.0	91.3±3.1	92.8±2.7	92.9±2.9	89.0±3.5	74.9±4.7	84.3±3.7	83.2±3.7	82.4±3.9	79.1±4.2
TN-Davidson County	98.3±1.4	90.9±4.0	96.2±2.2	95.2±2.9	96.4±2.2	94.9±2.8	94.0±3.2	83.4±5.6	90.4±4.1	90.0±4.1	89.7±4.1	88.3±4.4
TN-Shelby County	94.9±3.2	81.2±6.0	90.5±4.6	89.1±4.6	84.0±5.6	87.0±5.1	88.4±4.8	70.7±6.8	78.8±6.2	73.8±6.7	73.0±6.7	71.4±6.8
TN-Rest of State	95.9±3.4	87.6±4.7	91.3±4.1	91.2±4.1	94.5±3.6	94.1±3.8	88.4±4.8	74.7±6.4	84.7±4.9	84.5±5.0	83.7±5.1	79.6±5.7
Texas	91.6±2.4	78.2±3.8	87.0±2.9	89.2±2.7	89.4±2.6	88.3±2.9	84.8±3.2	62.8±4.4	75.4±4.0	74.4±4.0	72.5±4.2	69.3±4.3
TX-Bexar County	90.3±5.4	77.6±6.6	84.4±6.1	89.9±4.8	89.3±5.5	91.0±4.3	88.7±4.9	71.8±6.7	75.0±6.8	75.0±6.8	74.3±6.8	73.3±6.8
TX-City of Houston	86.5±5.2	69.8±6.6	83.5±5.5	86.0±4.9	86.9±4.5	80.6±5.8	79.4±5.8	55.8±6.8	69.2±6.6	68.4±6.6	65.5±6.7	61.7±6.9
TX-Dallas County	90.6±3.9	74.6±6.2	87.2±4.6	89.5±4.4	88.4±4.2	85.6±4.6	86.4±4.8	55.4±6.8	73.1±6.3	71.9±6.3	68.7±6.5	67.1±6.5
TX-El Paso County	91.9±4.0	74.6±6.1	86.9±4.8	90.1±4.4	89.3±4.4	84.5±5.0	88.8±4.5	68.3±6.3	71.8±6.2	70.6±6.3	64.8±6.5	63.5±6.5
TX-Rest of State	92.8±3.3	80.7±5.5	87.9±4.2	89.6±4.0	90.0±3.8	90.2±4.2	84.9±4.6	64.1±6.5	77.1±5.8	76.0±5.8	74.7±6.0	71.0±6.2
Utah	90.3±4.0	77.6±5.6	87.2±4.4	89.8±3.8	89.9±4.0	83.7±4.8	84.7±4.6	69.6±6.2	75.4±5.7	75.2±5.7	71.3±5.9	67.8±6.1
Vermont	97.0±2.3	91.5±3.8	94.7±2.9	94.4±3.2	94.9±3.1	91.1±3.7	72.8±6.2	81.1±5.4	89.6±4.1	88.8±4.2	85.0±4.7	66.6±6.6
Virginia	98.3±1.5	88.2±4.8	90.1±4.5	96.6±2.4	94.4±3.2	93.2±3.8	88.4±5.0	86.6±4.8	85.6±5.3	83.4±5.6	81.0±5.9	73.9±6.8
Washington	96.4±1.9	85.0±4.1	91.0±3.0	92.3±2.8	94.9±2.2	88.7±3.3	77.6±4.4	81.0±4.2	82.4±4.3	81.2±4.3	77.7±4.6	66.5±5.0
WA-King County	96.3±2.8	89.0±4.7	92.4±3.7	94.8±3.0	95.5±2.9	90.8±3.8	84.5±4.8	87.5±4.9	85.7±5.0	84.5±5.2	81.0±5.5	73.7±6.1
WA-Rest of State	96.4±2.4	83.4±5.3	90.4±3.9	91.4±3.7	94.7±2.9	88.0±4.3	75.0±5.8	78.5±5.4	81.1±5.6	80.0±5.6	76.4±5.9	63.7±6.5
West Virginia	97.3±2.3	88.1±5.4	94.0±3.5	94.6±4.4	97.5±2.2	93.4±4.6	81.7±6.2	71.1±6.7	87.7±5.4	87.7±5.4	86.6±5.5	76.0±6.6
Wisconsin	97.5±1.5	88.2±4.0	95.1±2.1	93.6±2.9	94.7±2.2	91.8±3.3	88.6±3.3	79.5±5.0	86.3±4.2	85.1±4.3	82.9±4.6	78.0±4.9
WI-Milwaukee Co.	97.8±1.9	83.6±5.7	92.1±3.7	94.3±3.2	94.2±3.7	91.5±4.3	86.4±5.2	81.8±5.8	80.4±5.9	80.2±6.0	78.7±6.1	73.1±6.5
WI-Rest of State	97.4±1.9	89.4±4.9	95.9±2.5	93.4±3.6	94.9±2.6	91.8±4.0	89.2±4.0	78.9±6.1	87.9±5.1	86.5±5.2	84.1±5.6	79.4±6.0
Wyoming	94.8±2.8	86.2±4.3	92.8±3.2	92.7±3.3	94.7±2.8	93.8±3.0	70.4±6.4	82.8±5.0	84.9±4.5	84.1±4.6	83.3±4.7	64.1±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 Q1/2004-Q4/2004 National Immunization Survey were born between January 2001 and July 2003.

† 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

ll 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

lll 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