

## OVERVIEW OF THE NATIONAL IMMUNIZATION PROVIDER RECORD CHECK STUDY

Rebecca R. Peak, Centers for Disease Control and Prevention, Diane M. Cadell, Westat, Inc.  
Rebecca R. Peak, CDC, 1600 Clifton Rd. NE, Mailstop E-62, Atlanta, GA 30333

**Key Words:** Provider Record Check, Immunization

### 1. Introduction

This paper presents a comprehensive overview of the National Immunization Provider Record Check Study (NIPRCS), a sub-study of the National Health Interview Survey (NHIS). The NHIS, conducted annually by the National Center for Health Statistics, monitors vaccination coverage at the national level and is a cross-sectional household face-to-face interview survey. A nationally representative sample is taken of the civilian, non-institutionalized population of the United States. Since 1991, the NHIS has produced national vaccination coverage estimates based on data collection during face-to-face interviews by administering an Immunization Supplement to households with a child less than six years of age. To determine the validity of these household responses for preschool children, beginning with the 1994 NHIS, the National Immunization Program (NIP) and the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), and its contractor, Westat, Inc., implemented the NIPRCS. The objective of the on-going provider record check study is to assess the quality of the data collected in the NHIS on vaccinations of children aged 19 to 35 months and to adjust the NHIS estimates to provide the best national estimates of vaccination levels for each of the vaccinations currently recommended.

During the administration of the NHIS Immunization Supplement, household respondents are asked about the sample child's vaccination history. The interview questions concern five vaccines: diphtheria and tetanus toxoids and pertussis vaccine (DTP) or diphtheria and tetanus toxoids vaccine (DT); poliovirus vaccine (polio); measles mumps rubella vaccine (MMR) or measles vaccine; *Haemophilus influenzae* type b vaccine (Hib); and Hepatitis B vaccine (Hep B). Respondents are asked to consult the child's written vaccination record (shot card) to answer the vaccination questions, however, if one is not available or cannot be obtained, the household respondent is asked to provide vaccination information from recall (memory). Even though data collection procedures included multiple requests and return visits to households to obtain shot card information, only about 50% of the respondents

rely on a shot card during the interview. Even when available, the shot card may not contain all of the vaccinations the child has received. Without a shot card, the complexity of the recommended vaccination schedule makes it difficult for a respondent to recall the child's history accurately. Thus the households' reports of vaccination status are subject to a potential response bias.

To assess this bias, the NIPRCS collected vaccination information from providers of children aged 19 to 35 months identified by the respondents who completed the NHIS Immunization Supplement. As part of the NHIS household interview, respondents are asked to give the names and addresses of up to three of their child's vaccination provider(s) and to sign a consent form to allow the provider(s) to release the child's vaccination information. The provider(s) listed were contacted to collect information, which was compared with the information given during the household interview.

This paper discusses procedures and response rates based on data from Quarters 1 and 2 of 1994 which were collected through September 1995.

### 2. Design and Data Collection

The NIPRCS has three data collection components (Figure 1):

- Original Provider Study
- Nonresponse Follow-up Study
- Follow-up Provider Study

#### 2a. Original Provider Study

The first phase of data collection was the Original Provider Study, which included the initial mailing to all of the locatable providers listed by the NHIS respondent. Each provider was sent a package containing a letter explaining the study, an Immunization History Questionnaire, a copy of the signed consent form, and a business-reply envelope. Also enclosed was a Mortality and Morbidity Weekly Report (MMWR) article containing the most recent vaccination coverage level data. The Immunization History Questionnaire contained a table where providers

could provide the requested child's vaccination history, or they could attach a copy of the child's vaccination record. Providers responded by either mailing the questionnaire in the business-reply envelope or sending the questionnaire by facsimile to CDC. Providers also had the option of reporting the information to a CDC representative over the telephone or by an in-person visit.

To help with the follow-up to providers who did not respond to the initial mailing, CDC provided grant funds to each state to hire a State Assessment Person. The state person contacted each provider in his/her state that had not responded after three or four weeks. He/She also recontacted providers when there was a question about a child's record received in the mail.

At the completion of the Quarters 1 and 2 of 1994 data collection, provider information was matched with the household respondent interview information. When discrepancies existed which could not be resolved without further contact, either the provider or the household respondents were recontacted by telephone to obtain additional information or reconfirm existing information. The majority of provider callbacks were to resolve reports of multiple shots on a given day when the provider reported less than the household respondent. The provider was recontacted to make sure all of the child's records and chart information were checked for additional vaccination dates. The majority of household callback cases occurred when the NHIS respondent overreported the number of vaccinations the child received. Household respondents were telephoned to obtain information on any additional vaccination providers. Also, household respondents were recontacted if their only responding provider indicated no medical record of the child, or had treated the child but had no immunization record. If the household could supply the names of additional providers that the child had seen, then the names and addresses of those providers were recorded.

## **2b. Nonresponse Follow-Up Study**

The second phase of data collection was the Nonresponse Follow-up Study. This study included NHIS respondents in three subgroups. The first group consisted of NHIS respondents who completed the Immunization Supplement, but failed to supply adequate provider information and/or failed to sign the consent form to contact the provider. The second group consisted of NHIS respondents who completed the NHIS Core questionnaire (introductory family information), but for some reason (possibly refusal) did not complete the Immunization Supplement. Finally, the third group consisted of NHIS respondents who reported that the child received no vaccinations.

Household Respondents who were part of the Nonresponse Follow-Up Study were sent a package which contained a request asking them to provide the names and addresses of health care providers, as well as a consent form requesting their permission to contact the named providers. For non-respondents to this mailing, an attempt was made to contact the household respondents by telephone. Directory Assistance was utilized to find the necessary telephone numbers. If a phone number could not be found for a particular household respondent, then that respondent was sent a second package. If a phone number was found, the household respondent was contacted to obtain provider information over the telephone as well as to obtain a verbal consent to contact the provider(s). If the respondent requested another package, then one was sent to their address.

## **2c. Follow-Up Provider Study**

Both the Nonresponse Follow-up Study and the Household Reconciliation Process (telephone calls to household respondents to reconcile data) gave new provider names and addresses to contact for children's vaccination records. Contacting these providers, which was the third component of the data collection, was called the Follow-up Provider Study. A first package was sent to the new providers listed, and, if they did not respond after three or four weeks, a second request was sent. Either a verbal consent form or, preferably, a written consent form was sent to the providers.

## **3. Response Rates**

There were 1,342 children who were 19 through 35 months of age on the NHIS Core Questionnaire, therefore contributing initial family and basic health information. Of these, there were 1,230 children (92%) with completed NHIS Immunization Supplements. There were 849 (69%) household respondents who gave provider information and consent to contact their child's provider(s). Out of the 849 cases, 729 (86%) respondents provided adequate information to be able to send a package to the provider(s). Of these 729 cases, 717 (98%) children that had at least one provider who returned the Immunization History Questionnaire and 673 (92%) children had at least one provider who returned the questionnaire with vaccination information. The high provider response rates were due in part to the extensive follow-up efforts of the State Assessment Persons.

Of the 501 cases included in the Nonresponse Follow-up Study, 285 (57%) household respondents gave adequate information to be able to send a package to their child's provider(s). Out of these 285 children, 172 children (60%) had at least one provider who

returned the questionnaire with vaccination information. Of the 112 children with initial family and basic health information but no Immunization Supplement, 24 (21%) of these children had provider data after the Nonresponse Follow-Up Study.

After the Nonresponse Follow-Up Study and Reconciliation processes were completed and more provider information was obtained, 852 (69%) out of the 1,230 children with complete Immunization Supplements had at least one provider responding with vaccination information.

#### 4. Conclusion

In summary, the National Immunization Provider Record-Check Study is used to increase the accuracy of household-based reports of vaccination coverage in the National Health Interview Survey. In the Original Provider Survey, a high provider response rate of 98% was obtained due to the extensive efforts of the State Assessment Persons. The Nonresponse Follow-Up Study and Reconciliation Processes after the original mailing increased the number of children with provider immunization information by 27%.

**Figure 1**  
**Flow Diagram of Process**  
**National Immunization Provider Record Check Study**

