National Household Education Surveys Program of 2007

Methodology Report

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ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

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NHES
National Household
Education Surveys Program

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CONTENTS

CONTENTS (continued)

CONTENTS (continued)

CONTENTS (continued)

CONTENTS (continued)

CONTENTS (continued)

CONTENTS (continued)

List of Tables

CONTENTS (continued)

List of Tables (continued)

CONTENTS (continued)

List of Tables (continued)

CONTENTS (continued)

List of Tables (continued)

CONTENTS (continued)

List of Tables (continued)

CONTENTS (continued)

List of Tables (continued)

CONTENTS (continued)

List of Tables (continued)

CONTENTS (continued)

List of Exhibits

CONTENTS (continued)

List of Appendixes

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1. INTRODUCTION

1.1 Overview

The National Household Education Surveys Program (NHES) was developed by the National Center for Education Statistics (NCES) to study educational issues that cannot be addressed in institutional surveys. Studies of the educational experiences of young children cannot be conducted solely through institutional surveys because children may be educated or cared for in a variety of formal and informal settings and may be cared for or educated only in their own homes. Similarly, adults may participate in educational activities in a variety of settings, including traditional schools or colleges, community organizations, businesses, and so on; therefore, institutional surveys are not suitable to address the broad range of adult education activities. NHES collects timely information on specific education topics from a relatively large, targeted sample of households and has been conducted approximately every other year since 1991. NHES gathers data on several important topics on a rotating basis. For instance, adult education and early childhood program participation have been the focus of several NHES surveys. One-time surveys on current issues, such as school safety and discipline and civic involvement, have been conducted as well.

The NHES surveys are random digit dialing (RDD) telephone surveys of households in the United States. Interviews are administered using computer-assisted telephone interviewing (CATI) technology, which is a data collection methodology specifically designed so that relatively complex questionnaires can be handled smoothly and efficiently. Previous NHES surveys have been conducted in 1991, 1993, 1995, 1996, 1999, 2001, 2003, and 2005. All surveys were conducted at the same time of the year, winter to early spring. The 2007 administration (NHES:2007) was conducted by Westat, a social science research organization, from January 2 through May 6, 2007.

NHES was intended by NCES to complement its institutional surveys. It also fills a need that existing household surveys, such as the Current Population Survey (CPS) and the Survey of Income and Program Participation (SIPP), cannot satisfy because they are designed to focus primarily on issues other than education. In these other survey systems, data on educational issues are usually collected through supplements to the main household survey, and supplemental surveys have not provided NCES with the level of detail needed for desired analyses.

NHES provides national cross-sectional estimates for the 50 states and the District of Columbia. The NHES design also yields estimates for subgroups of interest for each survey, as defined by age or grade for children, educational participation status for adults, and Black and Hispanic origin for all populations of interest. In addition to providing cross-sectional estimates, NHES is also designed to provide estimates of change over time in key statistics. The survey instruments are designed to address the selected issues in sufficient detail so that analyses can be performed to help explain the phenomena of interest.

The NHES surveys conducted in 2007 (NHES:2007) were the School Readiness Survey (SR-NHES:2007), Parent and Family Involvement in Education Survey (PFI-NHES:2007), and Adult Education for Work-Related Reasons Survey (AEWR-NHES:2007). SR gathered information on the children's readiness for entering school. PFI assessed parent and family involvement in children's education and educational related activities. AEWR addressed participation in formal and informal adult educational activities done for work related reasons.

NHES provides data on the populations of special interest to NCES and education researchers as defined by age and/or grade in school for each survey. It targets these populations using specific screening and sampling procedures. Specific age or grade ranges for a given survey are determined by the survey topic and the research questions formulated for the specific survey administration. Populations of interest in NHES:2007 include children from 3 through age 6 and not yet enrolled in kindergarten (SR), children enrolled in kindergarten through grade 12 (PFI), and civilian, noninstitutionalized adults age 16 and older and not enrolled in grade 12 or below (AEWR).

During NHES:2007 data collection, it became apparent that the final AEWR response rate would be too low for NCES to release the data as a public-use data set (this is described further in chapter 4). Data collection for the AEWR survey was stopped for most cases, with the exception of those for which data were needed for the special study to assess bias in the NHES surveys (the bias study is discussed further in chapter 8). This report discusses the development of and data collection for the AEWR survey in order to fully document the NHES:2007 experience, but the reader should keep in mind that AEWR data were not released.

1.2 NHES Survey Topics

This section presents detailed information on the topical areas addressed in the NHES administrations, including those that have been conducted on a rotating basis and one-time surveys, and the survey populations associated with each topic. Table 1-1 shows each topical area addressed from the 1991 inception of NHES through the 2007 administration.

Table 1-1. Surveys conducted under the National Household Education Surveys Program, by years administered: 1991 through 2007

Survey topics	NHES survey administration								
	1991	1993	1995	1996	1999[1]	2001	2003	2005	2007
Early childhood education/program participation	√		√		√	√		√	
Adult education	√		√		√	√	√	√	
School readiness		√			√				√
School safety and discipline		√							
Parent and family involvement in education				√	√		√		√
Civic involvement				√	√				
After-school programs and activities			√[2]		√	√[3]		√	
Household and library use				√					

[1] NHES:1999 was a special end-of-decade administration that measured key indicators from the surveys fielded during the 1990s.
[2] These items were only asked about children in first through third grades.
[3] The NHES:2001 survey about after-school programs and activities (ASPA) also included before-school programs.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 1991, 1993, 1995, 1996, 1999, 2001, 2003, 2005, and 2007.

- **Early Childhood Education/Program Participation Surveys, ECE/ECPP** (1991, 1995, 2001, and 2005). The ECE/ECPP surveys provide cross-sectional, national estimates of children's participation in care by relatives and non-relatives in private homes and in center-based daycare or preschool programs (including Head Start and Early Head Start). Additional topics addressed in ECE/ECPP interviews have included family learning activities, out-of-pocket expenses for nonparental care, continuity of care, factors related to parental selection of care, parents' perceptions of care quality, delayed kindergarten entry and grade retention, child health and disability, and child, parent, and household characteristics.

  ECE/ECPP collections have included interviews with parents of children from age three through third grade (1991, n = 13,298, 1995, n = 14064) and children from birth through age 6 and not yet in kindergarten (2001, n = 6,749; 2005, n = 7,209). Some ECE/ECPP questions were included in the Parent Survey of NHES:1999 (n = 6,939, parents of infants, toddlers, and preschoolers).

- **Adult Education/Adult Education and Lifelong Learning Surveys, AE/AELL** (1991, 1995, 1999, 2001, and 2005). The Adult Education surveys provide cross-sectional, national estimates of educational participation in basic skills/GED courses, English as a Second Language (ESL) courses, college and university degree and certificate programs, vocational/technical diploma or degree programs, apprenticeships, work-related courses, courses taken for personal development or personal interest, and informal learning. Additional topics covered in the AE surveys include the subject matter of courses or programs, course duration, out-of-pocket expenditures, location and sponsorship, employer support, interest in educational activities, and barriers to participation in educational activities. Information on adult and household characteristics was also collected.

  Sample sizes for the Adult Education surveys have ranged from 6,697 to 19,722 noninstitutionalized adults age 16 and older, not enrolled in 12th grade or below, and not on active duty in the U.S. armed forces.

- **Adult Education for Work-Related Reasons Survey, AEWR** (2003, 2007). The AEWR Survey provides cross-sectional, national estimates of participation in college and university degree or certificate programs taken for work-related reasons, vocational/technical diploma or degree programs taken for work-related reasons, apprenticeships, work-related courses, and informal learning activities related to a job or career. In NHES:2003, interviews were conducted with 12,725 noninstitutionalized adults age 16 and older, not enrolled in 12th grade or below, and not on active duty in the U.S. armed forces .

  The AEWR-NHES:2007 collection, described further in section 1.3, was designed to collect current information on the participation of adults in educational activities related to a job or career. As described in this report, the survey was terminated during data collection due to concerns about low response rates.

- **School Readiness Surveys, SR** (1993, 2007). The SR Survey provides cross-sectional, national estimates of children's developmental accomplishments and difficulties including emerging literacy and numeracy, center-based program participation, educational activities with family members, and health and nutrition. Parents of preschoolers were also asked about their perceptions of skills or knowledge required to start school. In SR-NHES:1993, parents of children in elementary school were also asked about their children's adjustment to school, including feedback from teachers, and early school experiences. Information about family stability and other risk factors was collected along with parent/guardian and household characteristics.

  The SR-NHES:1993 collection included interviews with parents of children ages 3 to 7 in second grade or below and children ages 8 and 9 who were in first or second grade (n = 10,888). Literacy and numeracy items from SR 1993 were asked in Parent-NHES:1999 (n = 3,631 preschoolers), ECPP-NHES:2001 (n = 3,150 preschoolers), and ECPP-NHES:2005 (n = 3,354 preschoolers).

  The SR-NHES:2007 collection, described further in section 1.3, provides current information on the developmental status and school preparedness of preschool children. In addition to providing cross-sectional, national estimates, SR-NHES:2007 provides the ability to measure change in the status of preschoolers over time.

- **School Safety and Discipline Survey, SSD** (1993). The School Safety and Discipline Survey provides national estimates related to the school learning environment, discipline policy, safety at school, victimization, availability and use of alcohol and drugs, and alcohol and drug education, as reported by youth and their parents. Youth were also asked about peer norms for achievement and behavior in school and substance use. Child, parent/guardian and household characteristics were also collected. The SSD collection included interviews conducted with parents of 12,680 students in grades 3 through 12 and with 6,504 youth in grades 6 through 12.

- **Parent and Family Involvement in Education Surveys, PFI/CI (1996) and PFI (2003, 2007).** The PFI surveys addressed specific ways that families are involved in their children's school, or center-based early childhood program (1996 only), school practices to involve and support families, involvement with children's homework, and involvement in educational activities outside of school. Parents of homeschoolers were asked about their reasons for choosing homeschooling and resources they used in homeschooling. The interviews also included questions about child, parent, and household characteristics. PFI collections have included interviews with parents of children from age 3 through grade 12 (1996, n = 20,792) and parents of children in kindergarten through grade 12 (2003, n = 12,426). Some PFI questions were incorporated in the Parent Survey of NHES:1999 (n = 24,600).

  PFI-NHES:2007, described further in section 1.3, provides current information about parent and family involvement in school, involvement in homework, and involvement in educational activities outside of school. In addition to providing cross-sectional, national estimates, PFI-NHES:2007 provides the ability to measure change over time.

- **Civic Involvement: Parent and Family Involvement in Education and Civic Involvement in Education Survey, Youth Civic Involvement Survey, Adult Civic Involvement Survey, PFI/CI, YCI, ACI** (1996). The PFI/CI and YCI surveys focused on the civic involvement of students and their parents. These surveys provide an assessment of the ways that parents and other adults can socialize children for informed civic participation and of opportunities youth have for participation in community service. The Youth Civic Involvement Survey (YCI) collection (n = 8,043) and Youth-NHES:1999 (n = 7,913) provided national estimates for 6th- through 8th-graders and 9th- through 12th-graders. The Adult Civic Involvement Survey (1996, n = 2,250) included interviews that could be used to compare adults in households without children age 3 through grade 12 to adults in households with children in this age/grade range.

- **After-School Programs and Activities Surveys (ASPA)** (2001, 2005). The ASPA surveys provide information about children's participation in care by relatives or nonrelatives in private homes, in school- or center-based programs, and in after-school activities. Parents were also asked about children's self-care. Information about the specific activities in which children were engaged during the after-school hours was collected. In addition, parents were asked about continuity of care arrangements, parental perceptions of care quality, and reasons for choosing parental care. Before- and after-school care items were also asked about kindergartners through third-graders in ECPP-NHES:1995 (n = 6,348). Some questions on before- and after-school care were included in the Parent Survey of NHES:1999 (n = 12,396). ASPA-NHES:2001 included questions

about before-school programs as well as after-school programs. Information on child, parent/guardian, and household characteristics was collected.

ASPA collections have included interviews with parents of children enrolled in kindergarten through eighth grade (2001, n = 9,583; and 2005, n = 11,684).

- **Household and Library Use Survey, HHL** (1996). The HHL survey examined public library use by household members, including the ways that they used public libraries (e.g., borrowing books, attending lectures, attending story hours) and the purposes for using public libraries (e.g., for school assignments, enjoyment, work-related projects). Demographic and educational information also was collected about each household member. HHL-NHES:1996 provided cross-sectional, national estimates of household characteristics and library use for all households in the United States, as well as estimates by state. This survey was administered to the 55,708 households that completed screeners in 1996.

1.3 NHES:2007 Surveys

The three surveys that compose NHES:2007 focus on topics that have been addressed in previous NHES administrations. SR-NHES:2007 includes topics addressed in the SR survey of NHES:1993. In addition some items in the SR survey, including emerging literacy and numeracy, have been included in Parent-NHES:1999, ECPP-NHES:2001 and ECPP-NHES:2005. PFI-NHES:2007 includes topics addressed in PFI/CI-NHES:1996, Parent-NHES:1999, and PFI-NHES:2003. AEWR-NHES:2007 includes topics addressed in AEWR-NHES:2003; in addition, many items in the AEWR survey have been included in more general NHES adult education collections (i.e., those not limited to work-related educational activities) in 1995, 1999, 2001, and 2005.

School Readiness Survey

SR-NHES:2007 collected information on early learning and readiness for entering school, specifically, participation in preschool or other types of center-based care and education, including Head Start, children's developmental accomplishments including literacy and numeracy skills, educational activities with family members, plans for kindergarten enrollment, and the role of the parent in preparing their child for kindergarten. The survey also addressed the amount and type of television viewing by preschoolers. In SR-NHES:2007, parents of 2,633 children who were ages 3 to 6 years old as of December 31, 2006, responded to the SR survey. In addition, some School Readiness questions were

asked of parents of children in kindergarten through second grade, for example, early school experiences and family reading.

Parent and Family Involvement in Education Survey

PFI-NHES 2007 collected information on school choice, homeschooling, school characteristics (including school type, lowest and highest grades at the school, school religious affiliation, and whether the school was a magnet or charter school), student experiences in school, teacher feedback on the child's school performance and behavior, family involvement in school, family help with homework, family involvement in activities outside of school, factors affecting family involvement, and community support. The PFI-NHES:2007 file contains data from interviews completed with parents of 10,681 children in kindergarten through 12th grade, including 10,370 students enrolled in public or private schools and 311 homeschooled children.

Adult Education for Work-Related Reasons

AEWR-NHES 2007 was developed to collect information on the participation in educational activities related to a job or career among adults age 16 and older, not enrolled in 12th grade or below, and not on active duty in the U.S. armed forces. The interview contained questions about participation in college or university degree or certificate programs taken for work-related reasons, vocational or technical degree or diploma programs taken for work-related reasons, apprenticeships, work-related courses or training, and informal learning activities related to a job or career. Employer support of education activities and factors associated with participation or nonparticipation were also addressed. AEWR interviews were completed with 7,710 adults. However, due to concerns about low response rates, the AEWR survey was terminated during data collection. This is described further in later sections of this report.

1.4 NHES:2007 Special Studies

NHES:2007 included two special studies in addition to the main RDD data collection. One of these special studies included a sample of households believed to be homeschooling their children. The purpose of this special study was to ascertain whether unit response rates at the household screening

stage were similar for the general population and for homeschooling families. The approach and outcomes are described in chapter 3. The second special study was a multi-mode study designed to investigate nonresponse bias in the NHES:2007 collection. The bias study involved conducting both telephone and in-person data collection with a sample of households in 30 areas around the country. A detailed description is provided in chapter 8 and a forthcoming technical report (Van de Kerckhove et al. forthcoming). NHES:2007 also included a reinterview study, as does each NHES administration. The reinterview is discussed in chapter 10.

1.5 Contents of the Report

The chapters that follow provide detailed information on the NHES:2007 methodology and procedures. Chapter 2 details the activities undertaken in the design of the NHES:2007 questionnaires. Chapter 3 presents the sample design. Chapter 4 provides information on the data collection procedures. Chapter 5 discusses unit response rates, and chapter 6 discusses item response rates and imputation. Chapter 7 discusses variance estimation and the postcollection statistical procedures (i.e., weighting). In chapter 8, the sample design, data collection procedures, and results of the nonresponse bias study are presented. In chapter 9, NHES:2007 estimates for selected items are compared to estimates from the CPS and previous NHES administrations. Chapter 10 presents the results of the NHES:2007 PFI reinterview.

Appended to this report are supporting materials that give additional information about the surveys and procedures. These include the survey questionnaires (appendix A), a report on extant surveys addressing the same or similar topics that were examined in the design stage (appendix B), the cognitive research report prepared in the design stage of the study (appendix C), detailed information on the sample design (appendix D), the interviewer training agenda (appendix E), survey administration materials (appendixes F, G, and H), range and logic checks used in editing the survey data (appendix I), a comparison of NHES survey estimates using unadjusted base weights with CPS estimates (appendix J), and the PFI reinterview questionnaire (appendix K).

2. QUESTIONNAIRE DESIGN

This section of the report describes the activities conducted in the design of the NHES:2007 surveys. The goal of these activities was to identify major research issues and data needs, to assess the availability of data and measures in extant research, and to refine the instruments. This process involved consultation with many researchers in government, academe, and private sector settings, as well as extensive reviews of available materials. In addition, cognitive research and a two-stage field test were used to test and refine the instruments. The final instruments do not include all topics discussed by the experts (section 2.1), explored in the cognitive research (section 2.5), or discussed by the Technical Review Panels (section 2.6). The instruments were revised based on testing and were reduced in length due to survey administration time constraints.

2.1 Telephone Conferences with Researchers

Telephone conferences were conducted with researchers and NHES data users in academic and private sector institutions across the nation and in government. An effort was made to select individuals representing a variety of institutions and specific areas of research interest. Many of the experts chosen to comment on the surveys have provided feedback on the same survey or similar surveys for prior rounds of NHES, while others are new to NHES. Some of the experts were consulted in person at various occasions, while most were contacted by telephone, based on their availability. Before the calls were conducted, each of the conferees was sent a description of NHES and copies of a previous questionnaire related to the specific topical survey under discussion. The conferences focused on potential enhancements to past items and an exploration of new items that would be appropriate and useful for NHES:2007 to measure. All conferences were conducted by Westat's NHES survey managers. A representative of NCES or the Education Statistics Services Institute (ESSI), which provides support to NCES for the NHES program, listened to most of the telephone conferences.

2.1.1 School Readiness

Telephone conferences were held with nine researchers and professors who have expertise in child development and early childhood education. The group of experts included two government researchers and seven persons affiliated with universities or associations. The experts were provided with

a copy of the questionnaire from the SR-NHES:2003[1] and were asked to 1) identify important research issues to address, 2) offer their thoughts on the appropriate population for the School Readiness Survey, 3) comment on scales used in the SR-NHES:2003, and 4) comment on any additional measurement issues they identified.

In general, the experts who were consulted for the School Readiness Survey felt that the research questions that were addressed in the SR-NHES:2003 were still relevant. To some extent, new subquestions or items were considered necessary to understand emerging issues of interest in the area of school readiness, but the overall issues remain much the same.

Overall, the majority of experts indicated their satisfaction with the research areas addressed in the School Readiness Survey. One expert suggested the possibility of combining the SR and PFI surveys, with questions targeted to specific populations.

Three research areas received particular attention from the experts: developmental characteristics, parental beliefs about school readiness, and home activities. The primary feedback in the area of developmental characteristics was related to questions pertaining to the child's behavior. Experts believed that there should be more questions regarding the child's behavior and that questions in this regards should not be answered in a yes/no format, because this format does not reflect behavior which is in its nature more variable. Moreover, one expert suggested that asking the questions in a yes/no format potentially would put a too large an emphasis on pathology.

With respect to the area of parental beliefs about school readiness, there were mixed responses from experts. Whereas some experts suggested bolstering this section by adding more questions about the parents' beliefs and perceptions (e.g., ask about the importance of the caregiver for school readiness), others questioned the validity of this section in terms of the relatively limited knowledge of parents and the potential for parents to give socially desirable answers to the questions.

Many experts thought that the home activities questions were very important and should be strengthened. Experts suggested adding questions about specific parent-child activities such as math-related and science-related activities. Others suggested asking the parents about their own habits in relation to the activities in this section (e.g., asking parents about their own reading habits). A few experts

[1] NHES:2003 was intended to include an SR component that was subsequently dropped due to budgetary reasons. The drafted SR questionnaire used in these conference calls was therefore never fielded.

indicated that the television shows mentioned in this section should be updated. The identification of family members engaging in activities with children was also suggested.

Each of the experts recommended that questions be added or that questions be re-specified; taken together, these comments touched on all of the sections of the survey. A few of the experts recommended dropping certain items from sections in favor of others, claiming that respondents are more likely to be able to answer their suggested alternative, thus increasing the reliability and validity of the data. Comments regarding specific items were addressed in the development of the survey content outline and draft instrument.

Finally, a strong recommendation to retain continuity with previous NHES School Readiness measures was made by one expert, in order for the survey to support the analysis of change over time. Thus, when revising the instruments, an attempt was made to both improve specific measures and retain consistency with previous measures.

2.1.2 Parent and Family Involvement in Education

Telephone conferences were conducted with eleven researchers who have expertise in parent and family involvement in education, one government researcher, and ten persons associated with academic institutions or private research organizations. In addition to gathering comments about issues previously addressed in the PFI-NHES:2003, the experts were asked about 1) ideas for improving the measurement of parent involvement with older children; 2) priorities for items to ask of parents of preschoolers, because the item pool was to be shared with the School Readiness Survey at the preschool level; and 3) ideas about what items or areas should be deleted.

Overall, the experts held the view that the PFI-NHES:2003 was a very comprehensive survey that covered a broad range of topics. In terms of substantive issues, the experts raised the following issues.

The experts felt that the PFI-NHES:2007 survey needed to obtain better information on the social networks of parents and how involved parents are with them. Social network ties are a measure of social capital, a term that refers to the collective value of connections with family, friends, and others, and the information, resources, and assistance that derive from these connections. The size of parents' social

networks is one indicator of the amount of social capital parents possess. Information on how much parents discuss various issues with other parents and what they discuss was also cited as useful. Panel members suggested that NHES might ask about networks parents have with the parents of their children's school friends, as well as with friends and neighbors outside of school.

The experts were of the view that the survey needed to collect more information on parenting style (i.e. whether authoritarian, authoritative, or permissive) to understand to what extent and in what ways parents are involved in their children's lives and in their schools. Questions on routines such as bedtimes, curfews and punishment were also recommended as indicators of involvement. One expert recommended collecting information on parents' understanding and expectations of their role in promoting or guiding their children's development and education. Parents' beliefs and perceptions concerning their role may enhance or limit their involvement. Questions about whether parents perceive their role as supportive or proactive were suggested for the survey. Regarding family rules for children, distinguishing between weekday and weekend rules was also reported to be relevant indicator of parenting style and involvement. A general concern was the issue of "social desirability" in survey questions as compared to observational studies. Some experts noted that parents may overestimate the rules they impose on their children or the time spent with their children, since it may be socially desirable to do so. They recommended wording the questions appropriately so that these issues could be addressed.

Other issues recommended included parents' awareness of recent policy and reform efforts in the area of children's education, such as "No Child Left Behind," as it could influence their decision-making process as well as the nature and level of involvement in their children's education. The experts were of the view that it would also help to find out more on whether these policies have a positive or negative impact on parental involvement.

One expert commented that community collaboration was important in parental involvement and recommended capturing the role of the community in bridging the gap between parents and schools. Some examples of community involvement include provision of transportation to attend children's school activities and community organizations coordinating meetings between parents and school staff. The expert also suggested that the definition of community could be extended to businesses which have flexible work schedules for parents so they can be more involved in children's schools.

Several experts commented that specific questions were needed on organized after-school activities. Participation in such activities was cited as a way for parents to get involved in their children's lives. Information on non-organized activities was not considered to be as important.

With easier access to new technology, several experts felt that the role of technology, especially Internet use, needed more emphasis. The Child Development Supplement of the Panel Study of Income Dynamics (PSID) was cited as potentially useful in framing questions. Topics could include the use of such technology to design curriculum (for homeschooling families) and questions on computer use, including whether it is for education purposes (e.g., instruction, homework, or school projects).

Capturing information on the involvement of various family members was also considered to be important. Therefore, the experts felt that some change in the wording of the questions in the section on non-residential parents was required to include a longer list of family members including other relatives.

Some experts suggested that in addition to parents reading to their children, it was also relevant to find out if children read to their parents or if parents listened to their children. This was considered especially relevant for younger children. One expert suggested that a question on "red shirting" be included in the survey, i.e. whether parents delayed the entry of their children into school.

The experts also recommended distinguishing between school- and parent-initiated meetings organized in schools. School-initiated meetings could be regularly scheduled or organized for a specific reason. The experts felt that a question on the reasons for non-attendance of these meetings could be asked. Similarly, information on the role of the school in accommodating parents was also considered useful. It was considered equally important to distinguish whether the school contacted the parent because of behavior or academic problems or whether for positive reasons.

Parents' involvement in schools may also be limited because of various barriers to participation. Identifying language, cultural, and other social barriers that may limit the home-school relationship was considered important, particularly in the case of immigrant parents.

Regarding modifications, the general view was that several questions in the survey needed to be changed to ask for frequency rather than a yes/no or agree/disagree response. Although this approach lengthened the survey, they felt that the information it provided would be more useful. Although most

experts suggested additions or changes to the wording of some questions, some deletions were also recommended.

2.1.3 Adult Education for Work-Related Reasons

Telephone conferences were held with nine researchers and professors with expertise in work-related adult education and labor economics, including five academic researchers, two private sector researchers, and two government researchers. The experts were provided with a copy of the questionnaire from AEWR-NHES:2003 and were asked to: 1) identify measurement and policy topics that should be addressed in the AEWR-NHES:2007; 2) offer their thoughts on the definition of work-related adult education; 3) recommend any other experts in the field; and 4) comment on any measurement issues they identified.

The experts who were consulted for the AEWR-NHES:2007 indicated that the preliminary definition of work-related adult education presented to them was inclusive and covered the important aspects of learning activities for work-related purposes. There was also general agreement that items included in the AEWR-NHES:2003 questionnaire were useful and addressed critical issues of interest to the experts.

Feedback on the proposed content for the AEWR-NHES:2007 survey was positive, with many of the expert consultants having provided feedback during prior rounds of survey content review. Most of the feedback pertained to the recommended additions of questions to the survey instrument or the alteration of questions in the survey instrument, though some did provide recommendations for potential deletions.

A few of the experts focused on the extent to which individuals, primarily those with lower education levels, are engaging in efforts to improve basic skills such as grammar, writing, communications, time-management, team-working, problem-solving, punctuality, etc., required for success in the workplace. These efforts range from self-study, to the obtaining of employability certificates indicating the possession of core competencies in the area of basic skills, to participation in courses, classes, or training offered by employers to improve these skills.

Some of the experts focused on access issues that could potentially prevent adults from participating in various adult educational activities. These pertain to things such as an individual's understanding of what courses, classes, and training are available to them and issues concerning employer support for participation in such adult educational activities through financial reimbursement, allowances for time off from work, etc. One expert discussed the fact that specific workers, namely lower level workers, may not know what courses, classes, or training are available to them as compared to other higher level, professional workers and are, therefore, relatively limited in terms of their access to these adult educational activities. Another expert discussed the fact that certain employees may not know that they are eligible to receive employer reimbursement for coursework, or they may specifically know that they are not eligible for employer reimbursement for coursework, both of which limit their access to adult educational activities.

Two of the experts indicated that the wording in the survey questionnaire pertaining to vocational or technical diplomas should be changed to vocational or technical certificates to more appropriately reflect common usage.

One expert made two recommendations regarding the addition of follow-up questions on educational attainment to provide important information for analyses in the field of adult education. This expert recommended including a question to ascertain the state where adults completed their high school requirement. According to the expert, this information, when coupled with information from other studies, could be used to examine mobility and to gauge the quality of secondary education by looking at college attendance rates, as well as other factors related to quality. This expert also suggested adding a question pertaining to the field of study of the highest degree obtained, e.g. Bachelors of Arts in Economics. According to the expert, this information could be cross-tabulated with other information, such as occupation, to examine differences between the field of study at the highest education level attained, current occupational field (if any), and current field of study (if any). However, such information may not be as useful for older workers who earned their degrees many years prior to the survey.

Other topics discussed included the rewording of certain questions to eliminate ambiguities; the inclusion of additional outcomes tied to participation in adult educational activities; the inclusion of questions or alteration of questions to differentiate individuals pursuing degrees, diplomas, or certificates from individuals participating in adult educational activities to complete requisite courses, classes, or

training; recommendations to split certain questions to differentiate specific components of those questions; and other suggestions pertaining to individual items.

Based on this feedback from experts, minimal changes were made to the AEWR-NHES:2007 survey instrument, balancing the recommendations of experts with the NHES goal of preserving uniformity of instruments over time to enable the measurement of change over time.

2.2 Review of Extant Data

An additional step in the design of the NHES:2007 surveys was the review of extant surveys to ensure that the NHES:2007 surveys did not overlap with comparable existing sources of data and to identify potential questionnaire items for new constructs to be measured in the NHES:2007 surveys. NHES staff members used a variety of methods to identify extant data, including past NHES experience, the consultations with experts described above, government and university information sources, computer searches, and looking for references to data sources in relevant literature. The review included public government data sources as well as those from universities or private organizations.

A report was compiled providing detailed information about each extant survey, its purpose, design, content, periodicity, and limitations.[2] In general, it was found that NHES:2007 provides a unique opportunity to obtain current and time-series information in the topical areas to be addressed that is not found elsewhere. Many of the other surveys reviewed were found to use a limited sample, either in terms of size, populations represented, and/or the degree to which the sample was nationally representative. For example, some studies that focused on parent and family involvement in education were limited to public school students or to a limited age or grade range. Some adult education studies focused specifically on people who were employed. A second limitation of many extant surveys was that they did not address topics central to the NHES surveys in a way that would meet the goals of the surveys. For example, in the field of adult education, some surveys focused only on employer-provided training or on postsecondary education, whereas the AEWR-NHES:2007 captures participation in a wide range of educational activities. No other existing surveys were found to contain the same content as the NHES surveys for the populations of interest. Finally, because a majority of surveys were conducted only once or with a specific cohort of the population, NHES was found to be uniquely suited to providing data on cross-sectional trends in education.

[2] The complete review of extant surveys can be found in appendix B.

Specifically, no available studies met all of the following goals:

School Readiness Survey

- Collect information about preschoolers and children in kindergarten through second grade;
- Define the population of interest as all children in the nation in the age range of interest;
- Select a sample of sufficient size to generalize to the population;
- Select a sample with sufficient representation of racial/ethnic minorities to permit analysts to produce reliable estimates for these groups;
- Provide current, national, cross-sectional estimates; and
- Collect data on the population and measures of interest at different points in time.

Parent and Family Involvement in Education

- Provide data on a nationally representative sample of children;
- Include children from kindergarten through 12th grade;
- Include children in both public and private schools and children who are home-schooled;
- Cover a range of parent and family involvement items both in schools and homes;
- Provide current, national, cross-sectional estimates; and
- Measure parent and family involvement at regular intervals in order to monitor changes.

Adult Education for Work-Related Reasons

- Provide data on a nationally representative sample of adults including both participants and nonparticipants in adult education;
- Collect data about a range of adult education activities taken from a variety of instructional providers;
- Have sufficient numbers of racial/ethnic minorities to produce reliable estimates for those groups; and

- Produce estimates of participation in adult educational activities that can be used to track change over time.

2.3 Review of Literature

In addition to the review of extant data described above, NHES staff conducted reviews of the research literature in the content areas addressed in NHES:2007. In addition to existing staff knowledge of available literature, searches were conducted of databases containing information on government publications and scholarly journal articles. Examples of such sources are the Education Resources Information Center (ERIC), Sociological Abstracts, PsycInfo, and government agency web sites. Moreover, publications that were reviewed occasionally contained references to other relevant publications not previously identified through other sources.

The literature reviews focused on the research issues that had been identified as high priorities for NHES:2007. These issues are presented in the research questions listed in section 2.4. A summary of each report or article was prepared, citing key research issues, methods, and findings. In addition, a synthesis of the research was developed for each of the three NHES:2007 surveys.

2.4 Formulation of Research Questions

Guided by the information gathered during the design procedures described above, research questions deemed most important for inclusion in the PFI, AEWR, and SR surveys of NHES:2007 were formulated. As the design process continued, the research questions were revised to reflect changes to the instruments made as a result of various reviews and testing. The final research questions are presented here.

2.4.1 School Readiness Research Questions

1. What is the home literacy and learning environment of preschoolers and kindergarteners?

    a. What is the home reading environment like for preschoolers and kindergartners, including the presence of books and the reading habits of children and parents/families?

b. What pre-literacy/emerging literacy behaviors do preschoolers and kindergartners exhibit?

c. What television channels and videos do preschoolers and children in grades K-2 watch, and how much time do they spend watching TV or videos in a typical day?

d. To what extent do children engage in mutual parent-child activities that promote language development, motor development, math and science learning, and general learning?

e. To what extent are fathers involved in home learning and literacy activities with preschoolers and kindergartners?

f. How many preschoolers and kindergartners have access to computer and the Internet?

g. Are there any rules at the home for television viewing?

2. What are the developmental characteristics of preschoolers?

a. To what extent do preschoolers exhibit cognitive skills such as counting, letter recognition, color recognition, and phonological awareness?

b. What social skills and problem behaviors do preschoolers and kindergartners exhibit?

c. What are the domains in which children tend to have more accomplishments or more difficulties (cognitive skills, socioemotional development, language development, and motor development)?

d. What are the associations between accomplishments and difficulties and children's ages, preschool experience, and sociodemographic risk factors?

3. To what extent do children remain in preschool for an additional year, enter a developmental or transitional kindergarten program, experience delayed kindergarten entry, or repeat kindergarten?

a. How many children remain in preschool for an additional year or enter a developmental/transitional kindergarten rather than enter kindergarten?

b. How many children repeat kindergarten or spend two years in kindergarten or an associated grade (e.g., transitional kindergarten)?

c. What is the extent of delayed entry into kindergarten?

4. What are the characteristics of children who attend preschool?

a. What are the characteristics of children who attend preschool programs or daycare centers?

b. What is the association between parent involvement in children's daycare center/preschool program and children's developmental characteristics?

c. What are the differences in characteristics of children who participate in center-based programs and those who do not?

5. What is the association between the health and disability status of preschool children and readiness for school?

   a. What is children's health status at birth and currently?

   b. What is the proportion of children that are covered by health insurance?

   c. How many children are not attending preschool or school, or experienced delayed school entry, due to a health or emotional problem?

   d. What is the proportion of children who have disabilities that affect their ability to learn?

6. What kind of beliefs and perceptions do parents have about school readiness?

   a. What do parents see as their roles in preparing children for kindergarten?

NOTE: The research questions above had as a subquestion of interest differences by child, family, and household characteristics.

Child Characteristics: age, sex, whether in preschool, race/ethnicity, country of origin, length of time in United States, language child speaks at home, general health status, and disabilities.

Family and household characteristics: household composition, marital/partner status, language spoken in home, parent country of origin, length of time in the United States, race/ethnicity, parents' educational status, parents' employment status, occupation, current enrollment in school, own/rent home, family mobility, receipt of public assistance, neighborhood characteristics, and household income.

Sociodemographic risk factors: attributes or circumstances identified in the research literature as putting children at risk in terms of development or school success such as child disability, single-parent family status, child or family language minority status, low income, receipt of public assistance, family mobility, and low parent education levels.

2.4.2 Parent and Family Involvement in Education Research Questions

1. In what ways and to what extent are parents and families involved in their children's schooling?

   a. To what extent do parents delay young children's entry into kindergarten or first grade?

   b. To what extent are parents and families involved in choosing their children's schools?

   c. What are the reasons for parents' school choices and what types of information do parents obtain to make these choices?

   d. In what ways are parents and families involved directly with their children's schools (e.g., meetings, volunteering, etc.)?

   e. What is the relationship between parent and family involvement in school and student experiences and performance (e.g., grades, retention)?

   f. For older children, how does parents' willingness to pay for college relate to family involvement and student experiences and performance?

2. What are the roles of social networks and community in parent and family involvement in school?

   a. What is the extent of parents' contact with parents of other children?

3. What are parents' perceptions of communication by teachers or other school personnel with parents or families?

   a. What is the type and purpose of school communication reported by parents including school contact to discuss both problems and how well the child is doing in school?

   b. What frequency and modes of school contact with families do parents report?

   c. How are parent perceptions of school/family communication related to their involvement with the school, in homework, and in learning activities outside of school?

   d. Do parents report receiving information from schools to plan for children's education and work after high school?

4. What types of school practices to involve and support families are reported by parents?

   a. What are the school practices that parents report?

   b. What is the relationship between school practices and different types and levels of involvement with the school, in homework, and in learning activities outside of school?

   c. What are the differences in reports of school practices based on school characteristics?

   d. What is the relationship of parent-reported school practices to levels of involvement by socioeconomic status?

   e. What is the relationship between family involvement with the school and parent assessments of the school environment concerning parent and family involvement?

5. What are the barriers to school involvement by families?

   a. What are the language barriers that language minority families face and how do they relate to the type and extent of their involvement with the school?

   b. Do parent perceptions of the efficacy of their involvement relate to the type and extent of family involvement?

c. What structural or logistical barriers to school involvement (e.g., work schedules, childcare needs) do parents report?

6. In what ways and to what extent are parents and other household members involved in their children's homework?

   a. How does the involvement of household members in homework relate to student experiences and performance?

   b. How often do household members and other adults outside the household (e.g. tutor) help children with homework?

   c. How does the environment that families create for homework completion relate to student experiences and performance?

   d. What practices do parents follow regarding their children's homework?

7. In what ways are parents and family members involved in non-school activities with children at home?

   a. What is the type and extent of family involvement in daily activities and other learning activities of children and how does this relate to student experiences and performance?

   b. How does family involvement in daily activities relate to student experiences and performance?

8. How is children's health/disability status related to family involvement and student behavior, experiences and performance?

   a. How is children's health related to the level of parent and family involvement in their education?

   b. What is the prevalence of disabilities among children, as reported by parents?

   c. How are children's health and disabilities related to the extent of parent and family involvement, school practices, and student experiences and performance?

   d. To what extent do children receive services for disabilities and from what sources?

   e. What is the extent of children's participation in Individualized Educational Programs or Plans (IEPs) or enrollment in special education classes?

   f. What is the extent of parents' and families' involvement with the school to develop their children's IEPs?

   g. Are parents satisfied with their children's IEPs or special education classes or services, including the school's communication with the family, the special needs teacher or therapist, and the school's ability to accommodate the child's special needs?

9. What is the extent of homeschooling of children during their school years?

a. To what extent do homeschooled students also attend schools to receive some of their instruction?

b. To what extent do parents use homeschool communities or resources such as distance learning/internet use to obtain materials or develop curricula?

c. Of the total school-going years, how many years are children homeschooled?

d. What are the reasons for homeschooling by parents?

e. What is the role of the Internet and the use of other technology or media for homeschooling instruction and curriculum development?

f. To what extent do homeschooling parents and homeschooled children communicate with other homeschool families or participate in activities through homeschooling communities or networks?

10. To what extent do parents receive information about tutoring services from schools or school districts and utilize those services or other tutoring services for their children?

11. How satisfied are parents with their children's teachers and schools?

NOTE: All of the research questions had as a subquestion of interest differences by child, family, and household characteristics. Also of interest are differences by family risk factors.

Child characteristics: age, sex, whether homeschooled or enrolled in school, grade level, race/ethnicity, country of origin, length of time in United States, language child speaks at home, participation in ESL at school, whether child has been at the same school since school started in the fall, general health status, and disabilities.

Family and household characteristics: household composition, marital/partner status of child's parents, language spoken in home by parents, parents' country of origin and length of time in the United States, parents' race/ethnicity, parents' educational status, parents' employment status, occupation and current enrollment in school, family own/rent home, family mobility, family receipt of public assistance, and household income.

Socio-demographic risk factors: attributes or circumstances identified in the research literature as putting children at risk in terms of development or school success) such as child disability, single-parent family status, child or family language minority status, low income, receipt of public assistance, family mobility, and low parent education levels.

2.4.3 Adult Education for Work-Related Reasons Research Questions

1. To what extent do adults participate in educational activities related to a job or career?

    a. To what extent do adults participate in college degree programs or post-degree certificate programs for work-related reasons?

    b. To what extent do adults participate in postsecondary vocational or technical diploma or certificate programs for work-related reasons?

    c. To what extent do adults participate in apprenticeships to attain journeyman status in a trade or craft?

    d. To what extent do adults participate in work-related courses that are not part of a degree, diploma, or certificate program?

    e. To what extent do adults participate in informal learning activities related to work (e.g., on-the-job demonstrations, brown-bags, self-study)?

2. What is the employment status of adults during and after participation in adult education for work-related reasons?

    a. Are employed adults more likely to participate in educational activities related to a job or career?

    b. To what extent do adults participate in adult education for work-related reasons in order to change their job or career field?

    c. To what extent does a change in employment status or occupation follow participation in adult education for work-related reasons?

    d. What types of educational activities are associated with changes in employment status or occupation?

3. How is adults' educational attainment related to their occupation and intent to pursue additional educational credentials?

    a. What is the relationship between the field of an adult's postsecondary degree or diploma (if any), his or her occupation, and the field in which he/she participates in educational activities?

    b. To what extent do adults with bachelor's degrees or more education return to school to participate in vocational programs to enter an occupation?

4. For what specific work-related reasons do adults participate in adult education for work-related reasons, and how does this vary by type of activity?

5. What are the specific work-related outcomes of participation in adult education for work-related reasons, by type of activity?

    a. What are the perceived benefits of educational activities taken?

    b. How useful do adults find the courses, classes, or trainings taken for work-related reasons?

6. What is the intensity of participation in adult education for work-related reasons, by type of activity?

    a. In how many credit hours or hours of classroom instruction do adults participate?

    b. How is the intensity of participation associated with employment?

7. To what extent do adults report that they have completed educational activities or that they have stopped attending activities without completing them, by type of activity (particularly for apprenticeships)?

8. What are the costs and financial supports for participation in adult education for work-related reasons, by types of activities?

    a. How much of their own resources do adults spend to participate in adult education for work-related reasons?

    b. What additional sources of financial support are used to pay for participation in adult education for work-related reasons?

9. From what types of schools, organizations, or persons do adults receive instruction and where do they receive this instruction?

10. What types of employer support do adults receive for their participation in educational activities for work-related reasons?

    a. To what extent do adults receive employer support in the form of payment or reimbursement of tuition and fees or books and materials?

    b. To what extent do adults receive employer support in the form of work-site classes or trainings?

    c. To what extent do adults take courses during their regular work hours (with our without pay)?

    d. To what extent are adults paid for time spent taking educational activities?

11. To what extent are adults required by their employers to participate in educational activities?

    a. To what extent is adults' participation suggested by their employers?

    b. How does the extent of employer requirement/suggestion vary by type of educational activity?

12. To what extent do adults report occupational or legal requirements for continuing education?

13. How many adults report the use of distance education in their adult education activities for work-related reasons?

    a. What types of technologies do adults report using?

    b. How do the use of technology and the type of technology vary by type of adult education activity?

14. What are the factors associated with participation or nonparticipation in adult education?

    a. To what extent are adults interested in taking work-related adult education?

    b. To what extent do adults believe that they need or could benefit from additional training for their jobs or careers?

    c. To what extent do adults report that their employers do or do not provide financial support, time off from work, etc., for educational activities?

15. To what extent do adults engage in work-related reading outside of their jobs?

NOTE: All of the research questions had as a subquestion of interest differences by adult and household characteristics.

Demographic information: age, sex, language background, country of origin, race and ethnicity, educational attainment, mother's and father's educational attainment, employment status, and marital status.

Characteristics of Employment: occupation and industry, employer size, earnings, total work hours per week, continuing education requirement, labor union membership, and certificate or license requirements.

Household characteristics: family income, home ownership, and ZIP Code.

2.5 Cognitive Research Program

The NHES:2007 surveys contain many items that have been fielded in previous NHES administrations. As a result, cognitive research focused on the relatively few new research issues identified by experts and on items about which experts expressed concern regarding respondent knowledge or recall or where more information was required to determine the exact wording that should be used for various questions. There were two stages of cognitive research conducted for NHES:2007: focus groups and individual cognitive interviews. The full reports appear in appendix C.

Participants for the cognitive research were recruited using flyers, personal networks of Westat employees, and the community website www.craigslist.com. Westat employees and their immediate families were not eligible to participate, nor were those who had participated in an activity of the same type in the previous year. Recruiting goals and results are described briefly under each activity below. Participants were each paid an honorarium of $40 to $60 for attending a focus group or completing an individual interview.

2.5.1 Phase 1: Focus Groups

At the first stage of cognitive interviewing, prior to the preparation of the full interviews, focus groups were conducted for the SR and PFI interviews. These surveys were chosen because their development included addressing new issues and measures, whereas few new issues were identified by experts for the AEWR survey. Two focus groups were held for the SR survey: one with parents of preschoolers (those ages 3 to 5 and not yet in kindergarten) and one with parents of children in kindergarten through second grade. Three focus groups were held for the PFI survey: one each with parents of elementary school children (kindergarten through grade 5), parents of secondary school children (grades 6 through 12), and homeschooling parents (with children at levels equivalent to any grade from kindergarten through 12th grade).

Recruitment of Participants

Recruitment of the participants focused on including parents with a variety of characteristics. The first criterion for each group was defined by the population of interest for the particular group (e.g., preschoolers) as described above. Additional goals for each focus group were:

- At least three participants who were nonwhite;
- At least three participants with a high school diploma or less education;
- At least three participants from households in which the highest occupation was nonprofessional;
- No more than two participants from private schools,
- Three immigrant parents for each PFI group;

- Parents from both two-parent and single-parent homes; and
- A parent whose first language was not English.

Occupation was inadvertently omitted from the list of questions used to screen participants. In part because of this, but also because recruitment is dependent upon those who volunteer, some recruiting goals were not met. Specifically, the distribution of participants includes fewer families in which parents did not have any postsecondary education or have nonprofessional jobs, although some such parents were included. In addition, few immigrant parents volunteered.

SR Interview Focus Group Findings

The SR focus groups were helpful in eliciting parent perspectives on school readiness (cognitive and behavioral), family activities that contribute to readiness (e.g., reading, arts and crafts), and the parents' awareness of information of interest (e.g., specific types of child language development). The focus groups were also helpful in addressing some of the issues that experts indicated were of importance, such as parents' practices and experiences related to television viewing and computer/Internet use. Focus group results confirmed that much of the material contained in the draft SR instrument developed for a previous NHES administration, along with items recommended by experts, were meaningful to parents and that parents felt equipped to provide answers about those topics.

Some issues that were not included in the original instrument were added based on focus groups participants' comments. For example, focus groups participants thought that their ability to choose or influence their child's entry into kindergarten was fairly limited and seemed to place most of the responsibility on the state or county. Based on this input, questions inquiring parents about their feelings and thoughts about the amount of influence they have in determining their children's enrollment were added to the questionnaire (e.g., "Do you feel you had a say in the decision to delay (his/her) entry into kindergarten?"). (Questions about parental influence were later dropped as a result of the need to reduce the length of the instrument.)

Another important contribution of the focus group was the recognition that the types of activities that parents do with their children are very different for preschool and first grade children. Based on this input, parents of preschoolers and parents of elementary school children were asked

different sets of activity questions. For example, only parents of preschool children were asked whether they taught their child letters, words, or numbers in the last week, and only parents of children in kindergarten through second grade were asked whether they involved their child in household chores like cooking, cleaning, picking up clothes, setting the table, or caring for pets in the last week.

Because experts emphasized the significance of phonological awareness as an important indicator of school readiness, focus group participants were asked to comment on the amount of confidence they have in responding to questions on this topic. Participants seemed fairly confident in their responses related to more simple levels of phonological awareness (i.e., rhyming and beginning and ending sounds). They were less confident about reporting on higher levels of phonological awareness such as elision. Based on this input, questions about basic skills such as rhyming and beginning and ending sounds of words were added to the instrument (some of these questions were later dropped because of time constraints).

PFI Interview Focus Group Findings

The PFI focus groups confirmed that many of the PFI-NHES:2003 questions were appropriate and relevant, including those about types of involvement at school, school-family communication, school practices to involve parents, involvement in homework, and family activities. Experts had recommended expanding NHES coverage of some topics (barriers to involvement and computer/Internet use) and adding questions about community networks. Parents cited work and family obligations as major barriers to participation, and indicated that language and cultural barriers are experienced by some parents. The majority of parents of elementary school children indicated that they did not know many parents of other children and did not discuss school-related issues with other parents. Some parents of older children reported knowing parents of their children's friends and classmates, whereas others did not. In general, schools were not regarded as fostering inter-parent communication, with the exception of PTA meetings.

Regarding computer/Internet use, most elementary school parents indicated that little computer work is required of their children, but parents and children may use the computer or Internet for help. Both computer-based or CD-based programs and Internet sites were mentioned as sources of help. Some parents of these younger children (kindergarten through fifth grade) reported trying to limit their children's time playing computer games and tried to provide educational programs. In contrast, among

secondary students, everyday use for school work and homework was common, and all parents reported children using the Internet at school. Parents of 6th through 12th graders reported both game-playing and educational use at home, and reported efforts to limit type of use or amount of use.

Parents of children who are homeschooled provided extensive information on their reasons for homeschooling, the structure of their own homeschooling, participation in homeschooling groups, and sources of material for homeschooling. There was a large amount of variability in parents' homeschooling practices, but all participating parents belonged to a homeschool group and reported participating in activities with other members of their homeschooling group. Most reported obtaining curriculum material from multiple sources including websites, and several reported that their children took special classes or lessons outside the home. Sources of instructional materials included homeschooling organizations, publishers, bookstores, libraries, and websites representing schools and universities, National Geographic, and the Public Broadcasting System (PBS).

The information obtained in the focus group, together with previous NHES instruments, feedback from experts, and reviews of the extant research literature contributed to the development of the draft instruments. Those instruments (following Technical Review Panel comment for SR and PFI) were tested in the second phase of cognitive research.

2.5.2 Phase 2: Individual Cognitive Interviews

The sections that follow provide summaries of the phase two cognitive research findings for the PFI, SR, and AEWR surveys.[3] As noted earlier, the full report appears in appendix C.

Following development of the instruments, individual cognitive interviews were conducted, using concurrent probing techniques to explore knowledge, recall, and comprehension for the targeted items. A particular strength of individual interviews is that the interviewer can focus on one respondent at a time and tailor the cognitive approach to each case. Probes were used to assess the participants' understanding of terms used in the questions and to ensure that items were salient and unambiguous. Specific probes were employed to assess respondent comprehension of new items included in the questionnaires or items about which knowledge or recall was of concern. An example of a probe that was

[3] The second phase of cognitive research was conducted after comments were received from experts who were on the Technical Review Panels for PFI and SR. See section 2.6 for information about the Technical Review Panels.

used concerned adults' comprehension of the definition given for distance education. With the concurrent methodology, probes are presented immediately following the response to an item. The advantage to this strategy is immediacy, and the drawback is interruption of the interview flow. In some interviews, additional probing was conducted when the interview was over in order to explore specific issues further. Although specific items had been targeted for examination, respondents were encouraged prior to the start of the interview to call the staff member's attention to any items that they found unclear or difficult to answer. Also, cognitive interviews were used to evaluate the flow and order of the questions.

As in the first phase, the recruiting goals sought participants with a wide variety of characteristics. For SR and PFI interviews, the goals were similar:

- Approximately equal distribution across age/grade subgroups (preschoolers, kindergarteners, and children in the first and second grades for SR; kindergarten through grade 5 and grades 6 through 12 for PFI) ;
- At least three parents of children in private schools and at least three parents of children in public schools for PFI;
- At least one parent of a homeschooler for PFI;
- Parents of at least two children from single parent families for each survey;
- Parents of three children whose level of education was not above high school diploma for each survey;
- Parents of up to four children in a professional/managerial occupation for each survey;
- Four parents who were not White, non-Hispanic for each survey;
- At least one interview with a parent of a child with a disability for each survey; and
- At least one interview with a parent who reported family receipt of public assistance (Food Stamps, WIC, TANF) in the last 12 months for each survey.

Nine interviews were planned and conducted for each survey. All SR goals were met with the exception of one: the number of parents whose education was not above a high school diploma was one fewer than the goal. Most PFI recruiting goals were met, but there were two exceptions. No homeschooling parents volunteered and the private school goal fell short by one.

Specific recruiting goals for the AEWR intensive interview were as follows:

- At least five adults who worked in the past 12 months;
- Four or five adults with education beyond a high school diploma or GED, and at least three adults with no more education than a high school diploma or equivalent;
- At least five adults who reported having participated in formal adult educational activities for work-related reasons in the past 12 months;
- Three adults who were employed and were not participants in any formal work-related educational activities in the past 12 months;
- Three adults who were not of White, non-Hispanic origin; preferably one who was an immigrant and/or non-native English speaker;
- A combination of adults engaged in professional/managerial, sales/service, and trade or labor occupations.

Only one of the six preceding recruiting goals was not met. The recruitment of adults who were employed and were not participants in any formal work-related educational activities for work-related reasons fell short by one. All other recruitment goals were met. Nine AEWR interviews were conducted.

Cognitive Research Participants

In all, 27 interviews were administered: nine SR, nine PFI, and nine AEWR interviews. Sixteen[4] adults were interviewed about their children's school/program experiences, family participation in schools/programs, school/program practices to involve and support families, family involvement in schoolwork and learning, and parent and family involvement with their children in educational activities outside of school, or a combination thereof. Eight of the participants were White, five were Black, two were Asian, and one was Hispanic. Five participants had a high school diploma or less education, two had some college, one had an associate's degree, five had bachelor's degrees, and three had either some graduate experience or graduate degrees. See exhibit 1 of the phase two cognitive report in appendix C for more information on cognitive research participants.

[4] Two parents were interviewed about two of their children

The AEWR questionnaire was administered to participants with a variety of demographic differences. Most notably, highest education levels varied from high school diploma to graduate degree. The respondents had participated in a variety of adult education activities; those with higher education levels tended to participate in more activities. Within the 12 months prior to the research, seven respondents had taken work-related courses, four respondents had participated in a college program, all nine had participated in some form of informal work-related training, and two respondents had participated in a vocational/technical program.

SR/PFI Interview Cognitive Research Findings

The phase two cognitive interviews indicated that nearly all items in the questionnaires were comprehended appropriately by the respondents and they were able to provide responses to the questions. A few respondents to the SR/PFI interviews indicated that they were unsure about the accuracy of their responses concerning school size. Several parents of children in primary grades (kindergarten to grade 3) could not answer questions about their children's school grades, since traditional grades (A, B, C, etc.) are not given in their children's schools until fourth grade. Parents reported that some open-ended items (e.g., number of books their child has) would be easier to answer if ranges were provided. Some parents suggested separating questions about school meetings and PTA meetings because of their different auspices and functions. Some adjustment to wording was suggested because middle school and high school students typically have multiple teachers. Some items were also identified for further monitoring in the field test.

In addition to the issues addressed above, minor wording changes were made to various items to help clarify them. A number of questions were deleted because the instrument administration time was longer than desired.

AEWR Interview Cognitive Research Findings

Many of the items in the AEWR survey have been included in previous Adult Education Surveys conducted in NHES. The cognitive research for the AEWR survey focused on key issues in work-related education and training and the items that had been modified from previous surveys or that were new to AEWR-NHES:2007.

AEWR cognitive interviews indicated little need for instrument changes. The need to allow for the recording of two fields of study at the highest degree level was identified. Difficulty in recalling activities over 12 months was reported by some respondents. Respondent confusion between provider and location of activities (i.e., the organization that provided the instruction versus the place a class or program was taken) was identified and was further monitored in the field test.

In addition to the issues discussed above, other minor changes in wording or response categories were made to the AEWR interview in response to the cognitive findings. These changes were made to clarify questions or to more fully capture the range of responses given.

2.6 Technical Review Panels

Technical review panels (TRPs) were established for the PFI-NHES:2007 and SR-NHES:2007 surveys. Since there were no major issues to be discussed regarding the AEWR-NHES:2007 survey, no TRP meeting was held.

The meetings of the PFI and SR panels were held at the Doubletree Crystal City in Arlington, Virginia on May 5-6, 2005 to review the survey instruments and obtain the recommendations of the panel members. Participants included social science researchers and representatives of federal government agencies. Also in attendance were members of the NHES project staffs at NCES and Westat, and Education Statistics Services Institute (ESSI) staff who provide support to NCES on the NHES surveys. The meetings included separate discussions for the SR and PFI members followed by a common discussion of persons in both groups.

Copies of the research questions and draft instruments were sent to each of the panel members in advance of the meeting. In addition, exhibits summarizing the content and structure of each questionnaire were prepared and distributed to the TRP members, due to the complexity of the instruments. Panelists were asked to respond to the research issues addressed, identify important issues not addressed, and provide feedback on the draft instruments. Because each of the instruments was longer than desired, panelists were also asked to recommend areas to which they would assign a lower priority.

2.6.1 Summary of SR/PFI Recommendations

Below is a summary of recommendations for revisions to the SR/PFI questionnaire that emerged from discussions among TRP members. The summary highlights the significant changes to the questionnaire and is organized according to sections of the questionnaire.

General Issues

The panel members expressed interest in special populations, including low income families, Spanish-speaking families, non-English non-Spanish speaking families, immigrant families, and migrant worker families. The methodological issues associated with targeting these populations in a random-digit-dial survey were also discussed.

PA Age Confirmation, Household Relationships, and Child & Parent Language

- There was interest in being able to "sort out" intra-family relationships, especially biological relationships and identification of the biological father of the focal child. The current items satisfy panel interests in this area.

PB Current School Status

- The panel members suggested that, for preschoolers, enrollment include home-based arrangements because of the widespread use of home-based early childhood arrangements.

- Some panel members were interested in hours of schooling for preschool and kindergarten, and whether kindergarten enrollment was in a full-day or half-day program. In addition, care or programs after part-day kindergarten were of interest to some panel members. Program/school mobility in the current school year was also of interest to panel members.

PC Homeschooling

- Panel members were interested in participation in homeschooling groups, and in the distinction between local and national groups. There was also interest in individual versus collective activities, and in joint parent-child activities. Specific suggestions included obtaining information about downloaded materials used in homeschooling, and the local homeschooling organization as a source of materials or services.

- Some panel members suggested clarifying "negative environment" by separating negative peer pressure from issues such as bullying or drugs. Panel members expressed an interest in determining whether some parents homeschool because they have unorthodox perspectives on education such as "unschooling."

PD Early Childhood Care and Programs

- Some panel members were interested in home-based programs in addition to center-based programs. In particular, a panel member noted a growing trend in home-based preschool. Movement from home-based care to center-based programs as children get older was noted as an area of interest. Some panel members expressed concern regarding the deletion of the items about home-based arrangements, which are typically fielded as part of the related ECPP survey.

- Parent confusion between Head Start and state initiated preschool programs was noted. Hours of participation were also of interest, as was a distinction between hours in preschool and hours in child care.

- Panel members noted that an increasing phenomenon is children being asked to leave ("kicked out of") preschool programs, and panel members had an interest in capturing this.

- Program mobility (changing programs) was of interest to panel members.

- Panel members questioned an item about the parent entering the child's program, noting that it was subject to varying interpretation, and pointing out that informal contact is also important.

PE Developmental Characteristics

- A new item on rhyming was of interest to panel members, as was a new item on starting sounds of words. A new item on ending sounds was recommended for deletion.

- Several other items (e.g., holding a pencil, naming colors, writing or drawing, attention, clarity of speech) were discussed, with some recommendations for changes to wording.

- Another new area of interest was spatial relationships. Panel members recommended adding an item asking about children's ability to name shapes.

PF Kindergarten-Related Items

- Panel members noted that, while grade retention is an "official" procedure, decisions about delayed entry are less formal.

- Persons recommending delayed entry may not be those indicated on the questionnaire. Parents may, for example, receive such recommendations from a pediatrician.

- There was interest in full-day or part-day kindergarten attendance, but a panel member noted that definition of part and full day were relative.

- Regarding summer programs, panel members indicated an interest in gathering information specifically about vacation Bible school or other religion-related programs.

PO Role of Parent in Preparing Child for School

- Some panel members found the items concerning parent beliefs (i.e., what parents believe children should be able to do to be ready for school) and parent roles (i.e., what parents believe they should teach their children to do to prepare them for school) were too repetitive and therefore suggested moving those sections apart .

- Panel members noted that some parents feel if they do not teach the child certain skills before school entry, that the child will learn them in school.

- Panel members made some recommendations about specific items, such as not needing questions about both pencils and paint brushes, as well as distinguishing between reading to a child and teaching a child to read. Suggestions for new items included sharing, playing well with others, being empathetic.

- As noted earlier, some panel members found the items concerning parent beliefs and parent roles too repetitive. One panel member recommended focusing on skill sets. Others noted enjoyment of learning and curiosity. It was noted that discipline did not seem to fit with others.

PG School Characteristics

- Panel members expressed interest in distinguishing charter schools from other schools. There was also interest in magnet schools, although some children's assigned schools may have a magnet program in which the child is not participating. It was noted that some charter schools may actually be their own districts. Some panel members were also interested in the level of effort parents made in choosing a school.

- Panel members favored the linking of NHES data to other data sources, and supported identifying the child's school. They also noted that there may be differences in the level of information that parents had about schools. While some parents may seek out such information, particularly from the school directly, from friends, or elsewhere; others may not. They also suggested collecting the reasons for school choice in addition to expanding the factors for school choice to include the availability of an after school program. However, it was noted that children attend before-school programs for very different reasons, and the addition of before-school programs was not recommended.

- A panel member suggested collecting tuition information for private schools. For private schools, it was recommended that the wording "church-related" be replaced with "affiliated with a religion."

- Panel members suggested expanding the range for school size.

- There was interest in the month the child moved to a current school or moved into the district, for those who had changed schools since the beginning of the school year.

PH Student Experiences, Teacher Feedback, and Adjustment

- Some panel members questioned the meaning of a child being "challenged" at school in the context of school work.

- Regarding parent reports of children's school performance, panel members talked about grades versus evaluative assessments. There was interest is gathering the parents' perspective on their children's performance by asking whether the parent thought the child was meeting performance expectations especially for younger children who did not get grades in school.

- It was noted that the teacher feedback items overlap considerably with the parent beliefs about readiness and parent role questions.

- Frequency of teacher contact was of interest, e.g., how often the teacher contacts the parent.

Grade Repetition

- There was considerable discussion about grade repetition. Problems that may be associated with retention, in addition to those already listed in the questionnaire, could include behavior problems and problems paying attention (which may appear as immaturity), and lack of English skills.

- Regarding school actions such as suspension or expulsion, it was suggested that placement in an alternative school be added.

- It was noted that parents tend to have inflated aspirations about their children's eventual educational attainment. A question about how disappointed the parent would be if the child did not go to college was recommended.

- Parent knowledge of college funding plans was considered problematic and subject to error. Panel members recommended that questions be asked on specific actions, such as opening a college fund or 529 account, grandparents opening an account, purchasing bonds, and investigating scholarships.

PI Family Involvement in School

- An additional form of parent attendance at a meeting was recommended—had the parent met with the student's counselor about his or her school program. Panel members suggested collecting information about various types of meetings in separate items.

- Panel members had varying views of negative school climate, including lack of peer acceptance, bullying, being ostracized, safety concerns, and drug use.

PJ School Practices to Involve and Support Families

- Discussion focused on communication between the school and parent, and specifically, whether the school provides information on the parent's role and expectations for involvement, whether there is a written plan, and whether the parent signed a policy paper.

- Panel members emphasized a need to measure parental efficacy, that is, the parent's perception of the extent to which they are able to assist their children with schoolwork or act as an advocate for the child with the school

- Parent knowledge of No Child Left Behind and Title 1 were questioned, and the items were recommended for deletion.

PK Satisfaction with School

- Panel members recommended asking how much of a say, or role, or influence parents have, changing response options to a measure of intensity.

PL Factors Affecting Parent and Family Participation in School and Parent Support for the School

- Some panel members suggested restructuring this section. Several possible new items were discussed, including items focusing on barriers to involvement and the supportive nature of the schools, whether schools showed respect toward families, whether the school had the child's best interest in mind, and the availability of a support system/contact person at school.

- Some discussion focused on parent perceptions of efficacy and parents' beliefs about their involvement/role. That is, do parents think they can make a difference through their involvement? Language minority status may be associated with a perceived lack of efficacy.

- Panel members cited other specific factors affecting participation: a contact person for when the child has problems; a school policy of being open to parents; and the school shows respect for the family. In addition, parent actions when they disagree with the school or teacher (e.g., about discipline or homework) were discussed as areas of interest.

PM Family Involvement in Schoolwork

- Panel members were interested in the extent to which families set aside a place for children to do homework although the availability of such a place does not necessarily mean it is used.

- It was recommended that the survey collect information on consulting with experts or paying for a tutor. This was particularly of interest concerning children who had repeated a grade (or whose teacher had recommended repeating a grade) and those having difficulty in school.

PN Home Activities/Family Involvement Outside of School

- The involvement of biological fathers with children was cited as important. The ability to identify specific relationships and involvement was recommended.

Reading

- Panel members were interested in family members reading to the child. Other items of interest were the language in which someone reads to the child (e.g., in Spanish speaking families) and whether the child enjoys being read to. Panel members also suggested asking about the respondent or about the person who reads to the child most. Some members also wondered whether a respondent could accurately report about other family members' reading styles.

- Panel members stated that print awareness was not a predictor of reading and recommending dropping the question about the child knowing which is the first page of a book.

- Information on library use was supported, but it was recommended that bookstores also be included.

Other Activities

- Some panel members favored the inclusion of more questions about family-child activities that are more accessible to low income families such as parades or festivals, block parties, etc.

Television

- There was much discussion about television viewing and television programs. Some panel members were interested in both television and video/DVD viewing. A parent viewing with the child was of interest.

- Some panel members were interested in the programs and networks that children watched, as some are more educational (PBS, Discovery) and others more focused on entertainment (broadcast stations, Nickelodeon). However, the amount of time spent watching was not as much of interest. Panel members were interested in educational programs or programs to help children get ready for school.

- Panel members generally agreed that asking about specific early childhood TV programs by name (with flexibility to add new programs by 2007) would be sufficient to ascertain children's exposure to educational programming. It was noted that there is a Spanish-language version of Sesame Street (Plaza Sesamo).

Computer/Internet Use

- Student use of computers and the internet was of interest to panel members. Specific areas of interest included access (working computer at home, elsewhere, type of internet service), use (educational, school projects), and amount of time spent on the computer, including unsupervised time. Questions on games were not of as much interest. Panel members also suggested not asking parents about computer and internet use outside the home as they may not have accurate information about this.

Out-of School Activities

- There was considerable discussion of linkages between schools and after-school activities. Panel members were interested in participation regardless of whether the activity was school-related or not, and recommended asking whether each activity the child did was offered by the school. Additional activities that were suggested included 4H, choir or choral group, and formal tutoring.

- Whether parents spent time making arrangements for after-school or out-of-school activities and the amount of time they spent to do so were of interest.

Family Rules and Rewards

- Panel members favored the inclusion of an item about corporal punishment, e.g., spanking or slapping.

Parent Activities

- The parent activity item was designed to collect information on parent modeling of literacy behavior. Some panel members suggested expanding the item to include other activities (e.g., art, music, writing, mechanics, gardening).

PP Communication with Other Parents

- Panel members were particularly interested in discussions between parents and community members about school issues noting the topics that parents discuss with one another tend to be associated with socioeconomic status. Examples of specific suggestions for topics to ask about: curriculum, school quality, and relationships with teachers. Changes in the response categories measuring frequency from continuous to ordinal format were also recommended.

- To gauge the social networks of parents, a question about numbers of friends or neighbors with children of the same ages and grades that the parents speak with regularly was recommended.

- In addition to parent-to-parent communication, participation in religious or community groups was cited as being of interest.

PQ Health and Disability

- Panel members supported retaining items on birth circumstances.

- Several panel members were highly interested in child obesity.

- Some panel members recommended asking directly about some specific conditions, such as asthma and allergies.

- Panel members were concerned that parent of children with disabilities would not know what a Section 504 plan was.

- Regarding parent satisfaction, asking separate questions about satisfaction with a special needs teacher and with a therapist was of interest. Also, there was interest in parent satisfaction with child outcomes from special education. Finally, the school's commitment to helping the child learn was recommended as an item.

- Panel members asked that the survey specifically ask about health insurance coverage.

- There was some interest in food sufficiency items, but these are covered on other surveys such as FACES and ECLS-K.

PS Mother/Female Guardian Characteristics
PT Father/Male Guardian Characteristics

- More detailed information on parent education was suggested, specifically the name of college or other institution and year of degree. Another option was to collect information on the type of college or other institution attended.

- Some panel members were interested in collecting information about the parents' occupations and their salaries.

Involvement of the Non-Residential Parent (Dropped from SR/PFI Survey Questionnaire)

- Some panel members were interested in the legal parameters of the relationship, including whether the parents were married or divorced, whether there was a custody decree, or parent visitation agreement.

- It was noted that relatives of the nonresidential parent (e.g., child's paternal grandparents) may have a role in the child's life.

PU Household Characteristics

- Collecting information on the family's wealth was recommended, and suggested items included home market value (if owned), rent payments, and car ownership.

- In addition to the forms of public assistance already asked about, panel members were interested in housing subsidy (e.g., Section 8 housing support), and child care assistance.

- There was some interest in how long the child had lived in the household.

2.7 NHES:2007 Field Tests

NHES:2007 included two field tests. The first field test had three purposes. The first goal was to qualitatively assess the NHES:2007 survey questionnaires by monitoring telephone interviews and debriefing the telephone interviewers to obtain their opinions and observations about the survey. This

assessment of the instrument focused on interview flow, how the interviews sounded in "live" administration with respondents, respondent comprehension, and the operation of the CATI system. A second goal was to obtain interview administration timings from the CATI system for the SR, PFI, and AEWR interviews. The SR and PFI interviews were of particular concern based on preliminary timings conducted by and with in-house Westat staff that showed the instruments took too long to administer. Expected administration times were around 20 minutes. Preliminary SR and PFI interviews, however, took over 30 minutes each. In order to meet these two goals, 50 completed interviews of each type (SR, PFI, and AEWR) were considered sufficient for the first field test.

A third goal of the field test was the implementation and evaluation of the planned field procedures for the NHES:2007 bias study. This portion of the field test was conducted in one county in the mid-Atlantic region, and provided an opportunity to identify areas in which the field procedures should be adjusted prior to the full implementation of the bias study in 2007.

The second field test shared the same two goals as the RDD portion of the first field test: evaluation of the survey instruments and assessment of interview administration times. By administering larger numbers of interviews (200 each for SR, PFI, and AEWR), further qualitative assessment of interview flow, respondent comprehension, and the operation of the CATI system would be possible. Quantitative review of the survey data was an additional goal of the second field test. By examining item distributions and "other, specify" responses, survey managers would be able to identify items lacking in variation, having high item nonresponse rates, or having large numbers of "other" responses that might suggest the need for additional response categories. The data review also served as a CATI system check.

2.7.1 Field Test Samples

Two samples were selected to meet the field test goals. First, a random-digit-dial sample was selected that was sufficient to meet the target number of interviews for SR, PFI, and AEWR. Because the goals of the field test involved assessment of the instruments and survey administration times, and not estimation to the population, some deviations from normal random-digit-dial sample selection were implemented. The telephone numbers were selected in the Eastern and Central time zones, only telephone numbers identified by the vendor as residential numbers were selected, and the sample was selected so that approximately two-thirds of the sampled telephone numbers were those flagged as likely containing at least one household member under the age of 15. These changes were implemented

to improve the operational efficiency of the field test. Households selected in this manner are not likely to be different from the population in ways that would affect the results of the field test in terms of evaluating the working of the instruments or the survey timings. A total of 7,000 telephone numbers was selected, with 2,000 of these being allocated to the first field test; the remaining 5,000 telephone numbers were reserved for the second field test.

The second sample, used in the first field test only, was an address sample in the county selected for the test of bias study procedures. Within the county, 10 local segments were selected to improve the operational efficiency of field efforts; the selection of 10 segments in each PSU was also a feature of the main study. A sample of 400 addresses was selected from residential postal delivery data files; the selected addresses were then matched to telephone numbers using a commercial vendor. In a second phase of sampling, the cases with telephone matches and those without telephone matches were subsampled at differential rates to arrive at a final sample composed 75 percent of matched cases and 25 percent of nonmatched cases. The final field test sample contained 120 addresses with telephone number matches and 30 addresses without telephone matches.

2.7.2. Field Test Data Collection Procedures

Telephone interviewers in a Telephone Research Center (TRC) attempted to contact sampled telephone numbers, secure their cooperation, and administer the NHES:2007 interviews for the RDD samples in the first and second field tests and the bias study address sample in the first field test. However, there were some different data collection procedures used for the three different samples.

For the RDD samples, the goal was to dial the sampled telephone numbers and complete the target numbers of SR, PFI, and AEWR interviews. Callbacks were made to telephone numbers at which no contact was made or the household agreed to an appointment. No advance mailings were sent to these households. No refusal conversion was attempted with the RDD sample in the first field test. In the second field test, because the cooperation rate was low, refusal conversion was attempted with initial screener refusals that were coded as mild.

The bias study portion of the first field test included the procedures developed for the full-scale implementation of the study, which included advance mailings, incentives and refusal conversion. The protocol was based on experience from past NHES collections and other recent survey experience

regarding the efficacy of survey mailings and cash incentives and the benefits of relatively high call limits.

Following the TRC telephone collection period for the address sample, three types of address sample cases were assigned to in-person data collection. These were cases for which a telephone match was not found (30 cases) or the number that was matched to the address was nonworking (20 cases), cases that had received 20 call attempts without completion but had never refused (22 cases, including maximum call, no answer, and answering machine results),[5] and non-hostile refusals that were not converted by telephone interviewers (25 cases). About half of the 25 refusal cases (13) had given three refusals, having received advance mailings, incentives, and refusal conversion (see chapter 4, sections 4.5 and 4.6 for details). However, 12 refusal cases had not given three refusals by the beginning of the field collection period on April 29: 5 cases that had reached the maximum number of calls (20) had one refusal; 5 cases that had reached the maximum call limit had two refusals; and 2 cases with two refusals had not yet reached the maximum call limit of 20.

In addition to the nonmatch and nonresponse cases noted above, an additional eight cases that had been completed in the TRC were assigned to in-person interviewers. These were cases in which the address given by the respondent did not exactly match the sampled address, but it was not clear that they were mismatches. Field interviewers were assigned these cases in order to ascertain whether the interview had been conducted at the sampled address.

Attempts to complete interviews through calls initiated by the TRC ended on April 24, at which time cases were prepared for the April 29 field staff training. In-person field work began on April 30 and continued through June 14. Thus, the in-person field work for the bias study portion of the first field test partially overlapped the telephone interviewing for the second field test, which began on May 26 and continued through July 2.

2.7.3 Completed Field Test Interviews

The target number of completed interviews in the first field test was 50 interviews each for the SR, PFI, and AEWR surveys. During the first field test, 55 SR interviews, 64 PFI interviews, and 74

[5] In a few cases, the maximum call limit was not reached because the household had one or more appoints scheduled during telephone collection, which resulted in the case being "on hold" for the appointment for a period of time.

AEWR interviews were completed. These figures include interviews completed with RDD sample telephone numbers and those completed with address sample cases.

One-hundred and five (105) address cases that were not completed in the TRC were attempted in the field, including 75 cases attempted in the TRC and 30 address cases that were not attempted in the TRC because they were not matched to a telephone number. Fifty four Screeners were completed as a result of in-person efforts. Of those Screeners that were completed, 17 were cases that were not matched to a telephone number; 5 were cases that were identified as address-telephone number mismatches; 4 were cases finalized as maximum call cases in the TRC; 17 were cases that were finalized as no answer, answering machine, not working or nonresidential in the TRC; 4 were cases that refused 3 times in the TRC, 1 was a case that refused twice in the TRC, and 6 were cases that refused up to 2 times but finalized with maximum number of calls in the TRC.

In the second field test, the goal was to complete 200 interviews each for SR, PFI, and AEWR. The Screener initial cooperation rate (complete/complete + refusal) was lower than expected (32 percent). While it is common for field tests to experience lower initial cooperation rates than main studies, this low cooperation rate negatively affected the completion of extended interviews. The final numbers of completed interviews were as follows: SR, 154; PFI, 253; and AEWR, 167.

2.7.4 Field Test Results

Interview Administration Times

Screener Administration Time. The average field test administration time for the RDD Screener was 4.9 minutes. This was longer than experienced in past full-scale data collections. While the full-scale data collections included households in which no person was enumerated, the field test involved enumeration in all households, resulting in the longer length.

SR and PFI Interview Administration Times. Based on a small number of timings conducted prior to the first field test, the length of the SR and PFI surveys was of concern; the first field test bore out that concern. The average administration time for the SR survey was 30 minutes, and the average for the PFI survey was 36 minutes. Following the first field test, substantial reductions in the SR/PFI interview were made in consultation with the Technical Review Panel in order to reduce the

administration time. The changes to the instrument were effective in reducing the administration times. The average time for the SR interviews was reduced to 20 minutes and the average for PFI interview was reduced to 28 minutes. Additional deletions were made to the PFI survey following the second field test to reduce the timing further.

Adult Education for Work-Related Reasons Interview Administration Time. In the first field test, the average administration time for the AEWR interview was 21 minutes. The average administration time was 29 minutes for AE participants and 10 minutes for nonparticipants. In the second field test, the average overall administration time was slightly shorter and, when adjusted based on the number of participants and nonparticipants expected in the NHES:2007 sample design plan, the estimated administration time was 17 minutes.

Field Test Instrument Evaluation Results

The field test indicated that, in general, the items in all interviews were working very well, and only minor changes were required to clarify items or to improve item wording. To a large extent, this result reflects the fact that most of the survey items had been tested and administered in prior NHES collections. In addition, the NHES:2007 questionnaires had undergone expert review and cognitive testing. However, because administration times were of concern, the SR/PFI surveys were reduced in length in consultation with the Technical Review Panel.

Screener. The core of the NHES Screener had been thoroughly tested in prior administrations, but the NHES:2007 Screener includes additional items to be administered only to the bias study sample. The field test evaluation focused particularly on these items, while still evaluating the Screener as a whole. Additional wording was added to explain why the Screener included questions asking about telephone numbers in the household, and the wording of a question about participation in work-related courses (administered to bias study cases assigned to in-person collection) was modified so that a lengthy explanation would not be read repeatedly when there are multiple adults in the household.

AEWR Survey. Very few changes were made to the AEWR survey. The survey items had nearly all been administered previously and had been well tested in prior administrations. However, some adjustments were made based upon interview monitoring, interviewer feedback, and a review of the field test data.

- Minor wording changes were made for consistency, as some interviewers were observed to misread or stumble over wording slightly in a few items.

- An item concerning the first language the adult learned to speak was added for consistency with the parent background section of SR/PFI.

- The definition of distance education was observed to be very long. It was shortened following field test one, and was observed to work well in field test two.

- Following the second field test, the "other, specify" responses to item AIL1120 through AIL1340 concerning the types of skills taught in less formal educational activities, suggested that two additional response options and minor wording changes to two others would be useful in classifying responses.

SR and PFI Surveys. Most items in the SR and PFI surveys had been administered in previous NHES collections, but some important items, such as the school lookup and items on tutoring services, were new and required assessment in the field test. Relatively few changes were needed as a result of respondent confusion or problems with specific questions.

- The question concerning participation in a daycare center or preschool was unclear to some respondents, who included home-based group child care (generally known as family daycare). The introduction to the section was revised to clarify the intent of the questions.

- The survey included questions about parent contact with parents of children in their child's school and with parents in their community. Interviewers noted that often these were the same parents, so the items were combined.

- The "other, specify" responses concerning the main reason for choosing the child's school were reviewed following the field test. Two additional response categories were added to the question as a result of this review: " religious and other spiritual reasons," and "cost and financial reasons." In addition the item concerning school size was expanded to include both school and class size.

As noted earlier, the length of the SR and PFI surveys was of concern and the results of the first field test indicated a need to reduce their lengths. Substantial reductions were made for both SR and PFI to reduce the interview administration times. Members of the Technical Review Panel were asked to review the questionnaire and assign priorities to survey items and content areas, and these were taken into account in revising the instrument.

- Skip patterns were revised so that the SR interviews focus primarily on school readiness issues, and many items about parent involvement were eliminated for the preschool population. This approach substantially reduced the SR survey administration time.

- Developmental items concerning sounding out words, buttoning clothes, writing versus scribbling, paying attention well, and telling a story to an adult were deleted to reduce administration time. Some TRP members recommended their deletion because they felt that parents might not be good sources for this information.

- Followup questions about which household members attended school meetings or functions or helped with homework were eliminated.

- Followup questions about whether specific types of meetings or functions had been held at the child's school were deleted.

- Several items concerning how well the parent believes the school does various things were deleted. Those that were retained focused on the child's current education, and those that were deleted focused on school transitions, community services, and planning for future education.

- The section concerning parent beliefs about school readiness was deleted from the SR survey.

- The nonresidential parent section was deleted from the PFI survey due to time constraints.

- Throughout the instrument, items were combined or shortened to reduce the administration time while still capturing some information on topics of interest.

2.7.5 Bias Study Field Test Findings

There were two main goals of the bias study field test. The first goal was to test the protocol for training interviewers, obtaining cooperation, making contact with the TRC with a willing participant, and assessing the approach used to monitor progress in the field. No problems with the bias study approach were identified (see chapter 8 for a discussion of bias study procedures and materials). One issue that was not resolved during the field test was the use of postcards for households where no contact could be made. The postcards asked for a few pieces of basic information and were accompanied by $5. Households were asked to fill out the cards and mail them to Westat. No households returned the cards during the field test. However, so few cases were in the field test that the postcard strategy could not be properly evaluated. The approach was adopted for the full collection.

The second goal of the bias study field test was to evaluate respondent reaction to the in-person approach. This was in response to concerns that sampled households might perceive in-person efforts as harassment since many had already been contacted by telephone and, in some cases, actively refused to participate. Over the course of the field test of the bias study the negative responses were minimal. While interviewers reported that a small number of final refusals were very strong and one was hostile, the experience was not different from in-person refusal conversion efforts on other studies conducted by Westat.

3. SAMPLE DESIGN

An important purpose of the National Household Education Surveys Program (NHES) is to conduct repeated measurements of the same phenomena at different points in time, and this goal was reflected in the sample design of the 2007 administration (NHES:2007). NHES:2007 is a random digit dialing (RDD) telephone survey covering the 50 states and the District of Columbia. It was conducted from January 2 through May 6, 2007. Households were randomly sampled, and a screening interview was administered to a household respondent age 18 or older.[6] Demographic information about household members was used to determine whether anyone was eligible for the School Readiness (SR), Parent and Family Involvement in Education (PFI), or Adult Education for Work-Related Reasons (AEWR) Surveys.

The SR Survey was administered to the parent or guardian[7] in the household who was most knowledgeable about the care and education of the sampled child age 3 through age 6, as of December 31, 2006, who was not yet in kindergarten. For the PFI Survey, the parent/guardian most knowledgeable about the care and education of the sampled child age 20 or younger who was enrolled in kindergarten through twelfth grade was interviewed.[8] The SR and PFI Surveys were administered in a single instrument; however, the sample design considerations discussed in this report treated them as separate surveys. The AEWR Survey was administered to sampled persons 16 years or older who were not currently enrolled in twelfth grade or below and were not institutionalized or on active duty in the U.S. Armed Forces.

3.1. Sampling Telephone Numbers

The sampling frame for NHES:2007 RDD sample was MSG's Genesys frame of all telephone numbers in 100-banks with one or more telephone numbers listed in the white pages in the third quarter of 2006. MSG is a commercial firm that has produced samples of telephone numbers for previous NHES studies. The sampling frame contains estimates from the 2000 census of the race/ethnicity distributions of persons in the telephone exchange, which are used to identify high minority telephone exchanges.

[6]Any household member age 18 or older was eligible to respond to the screening interview. However, if there are no household members age 18 or older, the male or female head of the household was asked to complete the Screener. Household members were defined as persons who considered that household as their residence, kept their possessions there, and had no other place to live.

[7]The respondent for the SR and PFI Surveys was identified by the Screener respondent as the household member most knowledgeable about the care and education of the sampled child. For ease of discussion, the respondent is referred to as the parent/guardian.

[8]Some SR Survey items were administered about children enrolled in kindergarten through second grade.

The sampling method used for NHES:2007 was a list-assisted method described by Casady and Lepkowski (1993) and by Tucker, Lepkowski, and Piekarski (2002). This method was used previously in NHES:1995, NHES:1996, NHES:1999, NHES:2001, NHES:2003, and NHES:2005.[9] The list-assisted method is a single-stage, unclustered method that produces a self-weighting sample of telephone numbers. In a list-assisted sample, a simple random sample of telephone numbers is selected from all telephone numbers that are in 100-banks (the set of numbers with the same first eight digits) in which there is at least one residential telephone number listed in the white pages directory. This is called the listed stratum.[10] Telephone numbers in 100-banks with no listed residential telephone numbers, the zero-listed stratum, are not sampled. The telephone numbers in the listed stratum include both listed and unlisted numbers and both residential and nonresidential numbers.

Differences in telephone coverage rates, especially differential rates among population subgroups, such as those defined by region, age, race/ethnicity, and household composition, are of concern to telephone survey methodologists because they can introduce bias in the estimates. The largest component of coverage bias in a telephone survey such as the NHES is probably due to the prevalence of nontelephone households[11] and the differences between such households and those with telephones. Based on recent findings (Tucker et al. 2002 and Blumberg et al. 2006), it was expected that by 2007, the percentage of households with no telephone service would be about 2 percent, and the percentage of households with cell phone service alone would be about 5 to 10 percent. Tucker et al. (2002) and Blumberg et al. (2006) examined differences in characteristics among persons and households having no telephone service, cellular service only, and landline service (including both landline only, and landline and cellular). Although there are differences in landline coverage (e.g., young adults, adults in 1-person households, renters, and Hispanics have lower landline coverage rates than other groups), raking to population totals for these subgroups is used in NHES to statistically adjust for and reduce undercoverage bias.[12]

Additionally, coverage bias may arise with this sampling scheme because not all telephone households are included in the listed stratum; households in the zero-listed stratum have no chance of being included in the sample. Empirical findings were presented in Brick, et al. (1995) to address the

[9] For the NHES:1991 and NHES:1993 surveys, a modified Mitofsky-Waksberg method was used to select the sample of telephone numbers. The advantages and disadvantages of this method are discussed in Collins et al. (1997).

[10] Here, the term *listed stratum* is used to refer to the set of telephone numbers in 100-banks having at least one listed residential number; that is, at least one number listed in a white pages directory. Later in this report there is a discussion of differential sampling of telephone numbers based on listed status. Note that, unlike the reference to listed status later in this report, the listed stratum referred to here does not refer to the listed status of the particular telephone number.

[11] Nontelephone households include cellular phone-only households, in addition to households with no telephone service.

[12] See chapter 7 for further details about the raking adjustment that was applied in creating the survey weights.

question of coverage bias associated with excluding the zero-listed stratum. The results show that the percentage of telephone numbers in the zero-listed stratum that are residential was small (about 1.4 percent) and that about 3 to 4 percent of telephone households were in the zero-listed stratum. The results also indicate that households in the zero-listed stratum were not very different from households in the listed stratum. Because the proportion of telephone households that were in the zero-listed stratum was small and the persons living in these households were not very different from those living in households in the listed stratum, the bias resulting from excluding the zero-listed stratum is generally very small. Giesbrecht, Kulp, and Starer (1996) examined coverage bias due to exclusion of the zero-listed stratum using data from the Current Population Survey (CPS) and also found the bias to be small.

Before sampling, telephone exchanges were classified by NXXType,[13] a code that indicates the types of telephone numbers assigned within the exchange (e.g., mobile only, cellular only, etc.). A complete list of NXXType codes is given in exhibit 3-1. As a result of legislation that was part of the Telecommunications Act of 1996, by the time NHES:2007 was fielded, exchanges previously limited to land lines may have included cellular numbers because the law allows people to retain their telephone numbers when changing service from landline phones to cellular phones and vice versa. For NHES:2007, as in previous NHES studies, telephone numbers were sampled from exchanges having NXXTypes 00 or 52 only, which cover about 99 percent of listed households.[14] However, for future NHES studies, this restriction should be re-examined; in particular, NXXTypes 50, 51, and 54 should be considered.[15] Telephone numbers assigned for Voice Over Internet Protocol (VOIP) are classified as "plain old telephone service" and were thus in the NXXTypes included in the frame for NHES.

In NHES:2007, as in previous NHES administrations, procedures were used prior to data collection to reduce the number of unproductive calls.[16] For NHES:2005, a more comprehensive prescreening procedure, the Genesys Comprehensive Sample Screening (Genesys-CSS) procedure, was used. Like the Genesys ID and ID-PLUS utilities, the Genesys-CSS utility also included the white and yellow pages matches. The primary differences between Genesys-CSS and the ID-PLUS procedure were enhanced identification of all types of wireless numbers and the pre-dialing of numbers listed in the white

[13]These were previously referred to as "Bellcore types."
[14]Independent tabulation of the Marketing Systems Group's 1st quarter 2005 Genesys database.
[15]The NXXType restriction was reconsidered for NHES:2007. In the past, NXXTypes 50, 51, and 54 have been excluded from the frame because of ethical concerns about cellular telephone customers having to pay for incoming calls. Although changes in pricing plans have ameliorated those concerns, sampling cell phone numbers is not recommended for NHES due to concerns for a household survey about the definition of the sampling unit and selection probabilities, and because of concerns about low response rates.
[16] In NHES administrations prior to 2005, an older version of the Genesys ID procedure was used. A full description of this methodology can be found in prior NHES methodology reports.

pages.[17] With the Genesys-CSS utility, each telephone number is classified into one of the following categories:

LB (Listed Business)

UR (Unlisted Residence)

UB (Unlisted Business)

FM (Fax/Modem)

LA (Language Barrier)

NR (No Ring Back)

NW (Nonworking)

BX (Blocked Exchanges)

PM (Privacy Manager[18])

WR (Wireless)

CP (Cell Phone)

DK (Undetermined: Residential/No Answer/Busy)

Telephone numbers identified by Genesys-CSS as LB, NW, WR, or CP, as well as UB telephone numbers for which no mailing address could be obtained, were excluded from dialing in NHES:2007. In NHES:2007, these exclusions amounted to 33 percent of the sample of telephone numbers; in NHES:2005, the percent excluded from dialing was 35 percent. All telephone numbers that were not excluded from dialing as a result of the Genesys-CSS results were sent to up to two address vendors to obtain mailing addresses. (The second vendor attempted to obtain mailing addresses for only those telephone numbers for which the first vendor was unable to provide a match.) In NHES:2007, address matches were obtained for 34 percent of the total full phase 1 sample[19] and 64 percent of the phase 1 sample excluding the cases that were not dialed (the NW, LB, and nonmailable UB cases).

[17]With Genesys-CSS, all telephone numbers not identified as business numbers (including listed residential numbers) are dialed and allowed to ring up to two times, in order to identify business, cellular, and nonworking numbers. The dialing is done during the hours of 9 a.m. to 5 p.m. local time by specially trained agents. All calls are done in English.

[18]Privacy Manager is a device that works with caller ID to screen and manage incoming calls.

[19]Results for the phase 1 sample are given here because the subsampling in phase 2 was based on mailable status and thus results from the phase 2 sample would be skewed.

Exhibit 3-1. NXXType codes

Code	Description
00	Regular
01	Mobile radio
02	Paging
03	Packet switching
04	Cellular
05	Test code
06	Maritime
07	Air to ground
09	900 service
10	Called party pays
11	Information provider
13	Directory assistant
14	Special calling cards
15	Official exchange carrier service
16	Originating only
17	Billing only
30	Broadband
50	Shared among three or more services
51	Shared between plain old telephone service (POTS) and mobile
52	Shared between POTS & paging
54	Shared between POTS & cellular
55	Special billing options – Cellular
56	Special billing options – Paging
57	Special billing options – Mobile
58	Shared among two or more
60	Intra-Local Access and Transport Area (IntraLATA) billing option – Cellular
61	IntraLATA billing option – Paging
62	IntraLATA billing option - Mobile
63	Combination of 60, 61, and 62
64	Personal communication service (PCS)
65	Miscellaneous
66	Shared between POTS and miscellaneous
67	PCS/Miscellaneous service
68	Selective local exchange, IntraLATA special billing option - PCS/Misc.

SOURCE: TPM™ Data Source (Telcordia™ TPM™ Data Source), Data for the telecommunications industry that describes and supports the local network environment. CD produced by Telcordia ™ Routing Administration(TRA), Telcordia ™ Technologies, Inc. , October 15, 2003.

3.1.1 Oversampling Blacks and Hispanics

The general precision requirement for each survey in NHES:2007 was the ability to detect a 10 to 15 percent relative change for an estimate between 30 and 60 percent (see appendix D for details). As in previous NHES administrations, one goal of NHES:2007 was to produce reliable estimates for race/ethnicity subdomains (in particular, Blacks, Hispanics, and Asians). The method used in NHES surveys to date has been to stratify telephone exchanges by the concentration of Blacks or Hispanics (considered jointly) in the exchange and oversample telephone numbers in the *high minority* stratum. To avoid the possible introduction of biases as a result of this oversampling, the weights used for analysis account for selection probabilities at all stages of selection. The sample design for NHES:2007 was based on the approach used in NHES:2003 and NHES:2005, which was a slight modification of the NHES:2001 approach.[20]

In light of the findings of the 2003 study of mailable and listed status as potential stratification characteristics of telephone numbers, differential sampling of mailable and nonmailable telephone numbers was used in conjunction with minority stratification for NHES:2003 and NHES:2005. Table 3-1 gives the actual race/ethnicity distribution of completed interviews in NHES:2003, compared to the expected distribution if oversampling of telephone numbers in the high minority stratum had not been used.

Because the minority stratification has been effective in improving the sample yield for Blacks, Hispanics, and Asians and stratification on mailable status was effective in improving the operational efficiency of the sample, these characteristics were used to stratify the NHES:2007 sample of telephone numbers. Race/ethnicity distributions were available on the sampling frame. However, the mailable status of telephone numbers was not available on the frame. The standard procedure is to match the sample of telephone numbers to address listings to obtain the mailable status of each sampled telephone number. Therefore, in order to stratify on both minority concentration and mailable status, it was necessary to select the sample of telephone numbers in two phases. The first phase involved sampling by minority stratification only. The mailable status was then obtained for each first-phase telephone number, and the second phase involved subsampling from the first-phase sample using strata defined by the combination of minority stratum and mailable status.

[20]A full description of the approach used in 2001 and then modified in 2003 is available in the 2005 methodology report.

Table 3-1. Race/ethnicity distribution of completed interviews in NHES:2003: Actual counts and percentages compared to counts and percentages expected without oversampling in the high minority stratum: 2003

Race/ethnicity	NHES:2003 actual		NHES:2003 expected without oversampling of telephone numbers in high minority stratum	
	Number of completed interviews	Percent of completed interviews	Number of completed interviews	Percent of completed interviews
PFI				
Total	12,426	100.0	12,426	100.0
Black, non-Hispanic	1,628	13.1	1,230	9.9
Hispanic	2,576	20.7	2,087	16.8
Asian/Pacific Islander	363	2.9	345	2.8
Other	7,859	63.3	8,763	70.5
AEWR				
Total	12,725	100.0	12,725	100.0
Black, non-Hispanic	1,343	10.6	1,018	8.0
Hispanic	1,318	10.4	1,062	8.3
Asian/Pacific Islander	371	2.9	344	2.7
Other	9,693	76.2	10,301	81.0

NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program, 2003; and Adult Education for Work-Related Reasons Survey of NHES, 2003.

3.1.2 Subsampling Cases for Followup

In NHES, substantial effort has been made to make contact with households and secure their cooperation in the interviews. In previous NHES administrations, for each case in which a potential respondent refused to respond to the interview, with the exception of hostile (i.e., profane or abusive) refusals, a refusal conversion was attempted by specially trained interviewers. In recent NHES studies, Screener cases that finalized as *no answer* or *no answer, answering machine* due to failure to make contact were refielded for additional call attempts. Cases that finalized as *maximum call* due to failure to complete an interview after making contact with a person in the household were re-released for additional call attempts.[21]

[21]Please see Chapter 4 for full descriptions of final telephone disposition codes and data collection procedures.

Although these followup methods have proven to be effective in previous NHES studies, NHES:2007 examined whether they would be more effective if they were concentrated on a portion of the sample that is *front-loaded* (i.e., this portion of the sample was designated to be worked at the beginning of the study). The portion of the sample not designated for these followup efforts was released a few weeks into the study, to allow sufficient resources for working the cases that would receive the followup efforts. Since all cases designated for followup efforts were released at the beginning of the study and all efforts initially focused on these cases, this approach was expected to allow for more efficient and effective use of followup procedures in a study with a short data collection period such as NHES.

This *followup subsampling* approach has been used in other surveys conducted by Westat[22] including NHES:2005, and is a cost-effective procedure that may have benefits for improving response rates because it enables resources to be concentrated early on the cases receiving followup and, by holding other cases until a later release date, reduces the amount of unproductive work at the end of the field period. The subsampling procedure is especially effective with an incentive scheme such as that used for NHES:2005, in which a refusal conversion incentive was mailed to the subsample of cases designated for refusal conversion (provided an address was available), but no advance incentive was mailed. In NHES:2007, as discussed in the next section, all cases for which a mailable address was obtained were sent a small precontact incentive in an advance letter introducing the study. Although refusal conversion incentives alone were not proposed for NHES:2007, the front-loading approach was still worthwhile from an operational standpoint due to the enhanced ability to manage cases and ensure that particular types of cases (e.g., noncontact and refusal cases) have sufficient time for followup.

For NHES:2007, as in NHES:2005, 60 percent of the basic sample of telephone numbers was randomly designated to receive followup efforts if attempts to complete the Screener resulted in a refusal, finalization of the case with *no answer* or *no answer, answering machine* status, or finalization of the case as a *maximum call* case with at least 14 call attempts. For the remaining 40 percent of the sample, no followup efforts were attempted for the Screener if any of these conditions occurred. The cases receiving followup attempts were appropriately weighted to account for the cases that are subsampled out.[23] These procedures applied only to Screener cases; all extended interview cases were fielded using

[22]Westat used this subsampling in the 2002 National Survey of America's Families (NSAF) and in the 2003 California Health Interview Survey (CHIS). For details on the 2002 NSAF methodology, refer to Report 2 on the website http://www.urban.org/content/Research/NewFederalism/NSAF/Methodology/2002MethodologySeries/2002.htm. For details on the 2003 CHIS, refer to a forthcoming report to be published on the website http://www.chis.ucla.edu/methods.html. Subsampling for nonresponse followup has also been used in non-RDD surveys such as the American Community Survey (ACS). (See Tersine and Starsinic 2003 for details.)

[23]The expected design effect due to the unequal weighting to account for the proposed subsampling of cases for followup is 1.06. The expected increase in variance was accounted for in the determination of the sample size requirements.

procedures similar to those used in the past including refusal conversion and refielding of maximum call cases. (See chapter 4 for more details on these procedures.)

3.1.3 Methods for Improving Response Rates

Declining Screener unit response rates in NHES over the years led to the design and execution of an experiment in NHES:2003 to examine the effects of respondent incentives as a means to improve response (see Brick et al., 2006). The results of this experiment indicated that small cash incentives are effective in improving NHES Screener unit response, as well as in obtaining cooperation at the refusal conversion stage. Given the positive effects of incentives on Screener unit response, the costs of effective strategies were examined during the design of NHES:2005. Treatments that resulted in low response rates and more costly treatments that yielded results similar to less costly treatments were eliminated from future consideration. Further information concerning the study of the use of incentives in prior NHES administrations can be found in the technical report on the NHES:2003 incentive experiment (Brick et al. 2006).

Due to OMB concerns about sending incentives to refusal cases only, the incentive treatment proposed and implemented for NHES:2007 was an advance letter with a $2 incentive, mailed first class, and a refusal conversion letter with a $2 incentive, also mailed first class. Second refusal letters were sent via either FedEx or Priority Mail.[24] Increased advance incentives of $5 and $10 were sent to random subsamples of the reserve sample in order to examine the effectiveness of those amounts in improving survey response. As discussed in section 3.1.2, the subsampling scheme used for NHES:2005, in which 60 percent of cases are subsampled for nonresponse followup efforts, was proposed and implemented.

3.1.4 Number of Sampled Telephone Numbers

The primary function of the screening interview in NHES:2007 was to assess the eligibility of members of the household for the extended interviews. As a result, the number of households that must be sampled for each type of extended interview was largely a function of the precision requirements for the extended interviews, which are discussed in the next section. The total number of completed Screeners needed in NHES:2007 was driven by the sample size requirement to produce reliable estimates

[24]FedEx was used for all eligible addresses. Priority Mail was used for Post Office boxes and rural route addresses, because they cannot be sent by FedEx.

for preschoolers. A target of 62,000 completed Screeners was set for NHES:2007. This number of screeners was expected to be sufficient to meet the precision requirements of the NHES:2007 surveys and accounted for expected design effects incurred as a result of differential sampling of telephone numbers, subsampling Screener cases for nonresponse followup, unequal within household selection probabilities, and the effects of weighting adjustments. Further details on the precision requirements for NHES and the sample size implications of those requirements are given here and in appendix D. The number of telephone numbers to be sampled was determined by inflating the target of 62,000 completed Screeners to account for the expected residency rates and unit response rates; in doing so, the expected effects of the incentive treatment and the subsampling of cases for followup were also taken into account.

In the first phase of sampling, a sample of 476,167 telephone numbers was drawn, with telephone numbers in areas with high percentages of Black or Hispanic residents sampled at higher rates than those in areas with low percentages of Black or Hispanic residents. The sampling rate in the high minority concentration stratum was nearly twice that of the low minority stratum. In the second phase, within each minority stratum, the sampled telephone numbers were stratified as mailable or nonmailable according to whether a mailing address was able to be matched to the telephone number. Within each of the four strata defined by the combinations of minority concentration and mailable status, telephone numbers were subsampled at different rates in order to attain the final phase 2 allocation shown in table 3-3. The phase 1 sample sizes were determined by calculating the minimum number of telephone numbers expected to be needed from each minority stratum in order to attain the desired phase 2 sample sizes in the minority-by-mailable strata, based on mailable distributions within each minority stratum computed from NHES:2005.

Table 3-2 shows the final phase 2 allocation of telephone numbers and the expected numbers of completed screeners by stratum. In the manner described above, a phase 2 sample of 278,490 was selected for NHES:2007.[25] A total of 251,826 telephone numbers from the second phase sample of 278,490 were initially released, and the remaining 26,664 telephone numbers from the second phase sample were initially held in reserve. Assuming that 45 percent of the sampled telephone numbers would belong to households and assuming a Screener unit response rate of 64 percent, it was expected that about 62,000 screening interviews would be completed. For example, in table 3-2, 29,192 Screeners were

[25]The sample of 278,490 was selected using different rates for four strata. These strata were defined using exchange level classification of minority status and the telephone number level of mailable status, as follows: mailable high minority, mailable low minority, non-mailable high minority, and non-mailable low minority. Subsampling rates for each stratum were determined by the target sample sizes. All mailable telephone numbers were retained in the subsample. Non-mailable telephone numbers were subsampled at rates of approximately 45 percent for high minority and 51 percent for low minority.

expected to be completed in stratum 1 (mailable, high minority). The expected number of completed Screeners for stratum 1 was calculated in the following manner: First, the final NHES:2007 phase 2 allocation to stratum 1 (74,480 telephone numbers) was multiplied by the expected residency rate for cases in this stratum (73 percent) to get the expected number of residential telephone numbers in stratum 1 (54,370). Next, for the 60 percent of those residential numbers that were randomly designated to receive the standard protocol, a 63 percent expected response rate was applied to the expected number of residential telephone numbers; for the remaining 40 percent, a 39 percent initial cooperation rate was applied. These calculations result in a total of 29,192 expected completed Screeners[26] for stratum 1.

After the release of the initial sample of 251,826 telephone numbers, it was determined that the residency and response rates were lower than expected. Thus, the entire reserve sample of 26,664 telephone numbers was released. The total number of telephone numbers released for the study was 278,490, including the 26,664 reserve telephone numbers.

Table 3-2. Expected number of completed screeners, by sampling stratum: 2007

Stratum	Final NHES:2007 phase 2 allocation	Expected residency rate (percent)	Expected Screener response rate (percent)	Expected initial cooperation rate (percent)	Expected number of completed Screeners
Total	251,826	†	†	†	62,000
1 (Mailable, High minority)	74,480	73	63	39	29,192
2 (Mailable, Low minority)	63,203	76	69	42	28,078
3 (Not mailable, High minority)	60,309	11	44	36	2,703
4 (Not mailable, Low minority)	53,834	9	46	36	2,026

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

3.2 Within-Household Sampling

Persons within households that had a completed Screener were sampled for the SR, PFI, and AEWR surveys. One key criterion in the development of the sampling scheme for NHES:2007 was

[26]The rates given in table 3-3 and the associated text have been rounded to whole numbers for presentation purposes. However, more significant digits were used in the actual calculations. Therefore, calculations of the expected number of completed Screeners based on the rounded rates do not match the values given in the table.

minimizing respondent burden. Considerations of the numbers of persons within a household sampled for extended interviews and the combinations of extended interviews also weighed heavily in the development of the sampling scheme.

3.2.1 Precision Requirements

The general precision requirement for all three surveys was the ability to detect a 10 to 15 percent relative change for an estimate between 30 and 60 percent. The following paragraphs provide further detail on more specific requirements for each survey. In NHES:2007, the size of the overall screening sample was largely determined by the need to produce precise estimates of indicators for the populations covered by the SR and PFI surveys, particularly preschoolers (ages 3 to 6 and not yet in kindergarten).[27] The focus on preschoolers stems from the fact that they have the lowest prevalence in households among the subdomains of children (as discussed in section 3.3.1). It is useful to assess how the NHES:2007 sample can be combined with estimates from earlier NHES surveys to examine change over time. In a simple comparison, a t-test statistic is

$$t = \frac{p_1 - p_2}{\sqrt{d_1 p_1 (100 - p_1) / n_1 + d_2 p_2 (100 - p_2) / n_2}},$$

where p is the estimated percentage, d is the design effect, n is the sample size, and the subscripts 1 and 2 denote the two time periods. The current survey's sample size requirements for detecting change are highly dependent on the sample sizes and precision achieved in previous surveys. Thus, increasing the sample size in NHES:2007 drastically above the levels of previous surveys would not substantially improve the precision of estimates of change over time. However, one important consideration was that if larger sample sizes were anticipated for future surveys, then having larger sample sizes in NHES:2007 would facilitate the detection of change over time in the future.

Of course, the t-statistic is only one of the many methods that can be used to detect and characterize change over time with data from NHES. Regression analysis or simple trend analyses of the various surveys over time are other ways of analyzing these data. For nearly all the methods, increasing sample sizes drastically over those in previous survey administrations does not result in large increases in the power or the precision of the estimates.

[27]Throughout this report, the subgroup of children age 3 through 6 not yet enrolled in kindergarten is referred to simply as "preschoolers."

The sample requirements for estimates of change are more stringent than those for cross-sectional estimates. Bearing in mind the effects of sample sizes from previous administrations on the capacity to detect change over time, the sample size requirements for key estimates were derived. For the SR survey, key sample size determinants were the requirements to detect changes in estimates of participation in center-based care and education arrangements, literacy skills, and numeracy skills,[28] by single year of age and by race/ethnicity (White, non-Hispanic; Black, non-Hispanic; and Hispanic). The key estimates were selected to represent statistics that have been published from the SR-NHES:1993, Parent-NHES:1999, and ECPP-NHES:2001 surveys, and to reflect topics of interest to experts in the field. The subgroups were chosen because they are key subgroups used in analyses of NHES data for preschoolers.

For the PFI survey, the key estimates considered in designing the sample were the percentage of children whose parents participate in three or more activities in the child's school, the percentage of children whose parents report that school practices[29] are done very well, and the percentage of children whose parents participated in six or more home learning activities;[30] the key analytic subgroups were race/ethnicity (White, non-Hispanic; Black, non-Hispanic; and Hispanic), 2-year grade groups with kindergarten as a separate group, parents' educational attainment (high school diploma or below, beyond high school diploma), school type (public, private), and school size (under 300; 300-599; 600-999; 1,000 or more). The key estimates were selected to represent statistics that have been published from the PFI/CI-NHES:1996 and PFI-NHES:2003 surveys, to reflect topics of interest to experts in the field, and to include measures of both in-school and out-of-school involvement. The subgroups were chosen because they are key subgroups used in analyses of NHES data for school-age children.

As a result of the analysis of the precision requirements, target sample sizes (in terms of numbers of completed interviews) of about 3,790 for the SR Survey and 14,150 for the PFI Survey were established. Details of the derivation of these sample sizes are provided in appendix D.

[28]Literacy and numeracy skills included whether the child recognizes all colors, can count higher than ten, and knows all letters of the alphabet.
[29]The school practices considered were the following: School tells family how child is doing in school; school helps family understand child's development; school tells about chances to volunteer; school advises about home learning; and school gives information about community services. These items were considered separately.
[30]The home learning activities considered were the following: Telling the child a story; working on arts or crafts with the child; involving the child in household chores; taking the child to the library; taking the child to a play, concert, or other live show; taking the child to an art gallery, museum, or historical site; taking the child to a zoo or aquarium; working on a project with the child such as building, making, or fixing something; talking with the child about the family history or ethnic heritage; playing board games or working puzzles with the child; and discussing with the child how to manage time.

For the AEWR survey, the key sample size determinants were the requirements to detect changes in estimates of the percentage of adults who participate in work-related adult education activities and the percentage of adults who participate in employer-supported AEWR. The key analytic subgroups were race/ethnicity (White, non-Hispanic; Black, non-Hispanic; and Hispanic), employment status (employed, unemployed but looking for work), and educational attainment (less than high school; high school and higher). A sample size of about 32,700 completed AEWR interviews was required to meet the precision requirement for all of these characteristics. The estimates with the most stringent sample size requirements were AEWR participation estimates for Hispanics and for adults who are unemployed but looking for work. The latter subgroup required a relatively high overall number of completed interviews because adults who are unemployed but looking for work comprised such a small proportion of the adult population (about 6 percent). With a sample size of 15,000 completed AEWR interviews, the precision requirement could be met for all estimates considered with the exception of these two.

It should be noted that many of the key characteristics from the AEWR and PFI Surveys fell outside the 30 to 60 percent range specified in the precision requirement. Larger sample sizes than those required to meet the minimum precision requirement were needed in order to measure change in many key statistics that fall outside the 30 to 60 percent range. As noted above for unemployed adults who are looking for work, extraordinarily large sample sizes would be needed in order to measure these key statistics for some groups, and for some small groups (e.g., those defined by race and ethnicity) no sample size would be adequate to assess the relative change specified in the precision requirement. Response burden considerations and cost considerations were also considered in establishing the final sample size targets.

For the estimate of overall participation in adult education for work-related reasons, only 542 completed interviews were needed to satisfy the precision requirement. However, in order to improve the precision of estimates of characteristics of participants and of estimates outside the 30 to 60 percent range, the target sample size for the AEWR Survey was set at 15,000 completed surveys. Adult education participants were sampled at a higher rate than nonparticipants. Details of the derivation of sample sizes for adults are given in appendix D.

The sample requirements for the extended interviews were determined based on a set of assumptions about extended interview unit response rates.[31] Specifically, the assumed unit response rates were 86 percent for the SR survey and 83 percent for the PFI survey, and the actual unit response rates

[31]The unit response rate expectations were derived from the unit response rates from NHES:2005.

were 77 percent for the SR survey and 74 percent for the PFI survey. For the AEWR survey, the assumed unit response rate was 80 percent for adults sampled as adult education participants, and 74 percent for adults sampled as nonparticipants. The actual unit response rate for the AEWR survey was 62 percent.

3.2.2 Sampling Scheme for Within-Household Sampling

The sampling scheme for within-household sampling was designed to satisfy the sample requirements discussed earlier while keeping the respondent burden to a minimum. The following were the primary goals and features of the sampling scheme for within-household sampling in NHES:2007:

- No more than three persons were sampled in a given household.
- Exactly one preschooler was sampled in every household that had at least one, and exactly one child enrolled in kindergarten through twelfth grade was sampled in every household that had at least one.
- Because adult education participants were of particular interest, they were sampled at a higher rate than other adults.
- In households with eligible children, adults were sampled at lower rates than in households without eligible children. Additionally, adults in households with children sampled for both SR and PFI interviews were sampled at about half the rates of adults in households with only one child sampled.

To carry out this sampling scheme, several flags and/or random numbers were set prior to screening (i.e., at the time the sample of telephone numbers is drawn). The first specified whether the adult sampling algorithm (to determine whether an adult is selected) was to be run for the particular household. Each telephone number received one of three possible designations:

1) Household was designated for the adult sampling algorithm to run;
2) Household was designated for the adult sampling algorithm to run only if there were no eligible children in the household; or
3) Household was not designated for the adult sampling algorithm to run.

This flag was set such that households with eligible children were designated for adult sampling at one-half the rate of households without eligible children (about 27 percent vs. 55 percent).

In the NHES:2001, NHES:2003, and NHES:2005 survey administrations, the Screener contained a *screen-out* question to determine whether there were any eligible children in the household. The response to that question and the values of the aforementioned sampling flags determined the extent of the household enumeration. Because a child was sampled in every household containing an SR- or PFI-eligible child, NHES:2007 featured full enumeration in all households with children, and in households without children that were designated for the adult sampling algorithm to run. That is, the only households that were screened out in NHES:2007 were households without children that were predesignated for no adult sampling.

Following the enumeration of children, if the household had at least one preschooler, then exactly one was randomly sampled for the SR survey. If the household had at least one child ages 3 through 20 enrolled in kindergarten through twelfth grade, then exactly one was randomly sampled for the PFI survey. For each survey, pre-assigned random numbers were used to sample from amongst all eligible children in the household.

In households in which an adult was sampled, adult education participants had twice the probability of selection of nonparticipants. Exhibit 3-2 shows all possible combinations of household compositions for sampling adults based on the presence of children in the household and adult education participation status, with the respective domain probabilities of selection for adults. The maximum rate at which adults in households without children were sampled was 55 percent. That is, in 45 percent of households without children, no enumeration was required. Further details about the differential sampling of adults are given in section 2 of appendix D.

Exhibit 3-2. Overview of the sampling scheme for selecting adults based on household composition

	Household composition		Domain probability of selection	
Child in household	Adult education participant	Adult education nonparticipant	Adult education participant	Adult education nonparticipant
No		✓	0	0.2728
No	✓		0.5456	0
No	✓	✓	0.3637	0.1819
Yes		✓	0	0.1364
Yes	✓		0.2728	0
Yes	✓	✓	0.1819	0.0909

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

3.3. Expected Yield

This section presents the expected yield for each extended interview survey.

3.3.1 SR and PFI Surveys

The SR and PFI interviews were conducted with the parents of a sample of preschoolers and children ages 3 through 20 enrolled in kindergarten through twelfth grade, respectively. Estimates from the October 2003 CPS were used to determine the sampling rates for sampling children for the SR and PFI surveys and to develop the sampling scheme.

Tabulations of the October 2003 CPS data showed that about 32 percent of households were expected to have at least one eligible child Estimates of the percentage of households with eligible children or youth by age/grade group are given in table 3-3. As noted, to balance screening requirements against household burden and minimize the effect of intra-household clustering, the sampling scheme for NHES:2007 involved sampling one preschooler and one child enrolled in grades kindergarten through 12 in every household in which a child in either domain was present.

Table 3-3. Percentage of telephone households with eligible children, by age/grade group: CPS 2003

Household composition	Percent of households
Households with no eligible children	68.3
Households with eligible children	31.7
Households with at least one child ages 3 through 6 and not yet in kindergarten, and no child enrolled in grades kindergarten through 12	3.2
Households with at least one child enrolled in grades kindergarten through 12, and no child ages 3 through 6 and not yet in kindergarten	24.3
Households with at least one child ages 3 through 6 and not yet in kindergarten, and at least child enrolled in grades kindergarten through 12	4.1

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey (CPS), October 2003 School Enrollment Supplement data file (independent tabulations).

Table 3-4 shows the expected number of screened households based on the distribution of household composition shown in table 3-3. The majority of screened households (about 42,000 households) were expected to have no eligible children. Thus, the sampling scheme for within-household sampling was developed such that the screened households with children (about 20,000 households) provided the sample sizes needed to meet the precision requirements while minimizing respondent burden.

3.3.2 AEWR Survey

Persons 16 years or older who were not enrolled in grade 12 or below, not institutionalized, and not on active duty in the U.S. Armed Forces were eligible for the AEWR-NHES:2007 survey. Because sampling adults for AEWR interviews was required in only about one-third of screened households, a subsample of households without eligible children were designated for adult enumeration.

Table 3-4. Expected number of screened households in NHES:2007, by household composition: CPS 2003

Household composition	Expected number of households
Households with no eligible children	42,398
Households with eligible children	19,602
Households with at least one child ages 3 through 6 and not yet in kindergarten, and no child enrolled in grades kindergarten through 12	1,985
Households with at least one child enrolled in grades kindergarten through 12, and no child ages 3 through 6 and not yet in kindergarten	15,084
Households with at least one child ages 3 through 6 and not yet in kindergarten, and at least child enrolled in grades kindergarten through 12	2,533

NOTE: The distribution in this table assumes 62,000 screened households for NHES:2007.
SOURCE: U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey (CPS), October 2003 School Enrollment Supplement data file (independent tabulations).

Table 3-5 shows the expected number of adults sampled for an AEWR interview, by number of adults in the household and presence of eligible children. Based on the sampling scheme described earlier, it was expected that 10,441 adults would be sampled as adult education participants and 10,543 adults would be sampled as nonparticipants. In NHES:2003, about 18 percent of those sampled as adult education nonparticipants who completed extended interviews were found to be AEWR participants, and about 23 percent of persons sampled as participants who completed extended interviews were identified as AEWR nonparticipants. Taking into account the NHES:2003 "switching" rates and assuming unit response rates (based on the AEWR-NHES:2003 unit response rates and experience from NHES:2005) of 74 percent for adults sampled as participants and 69 percent for adults sampled as nonparticipants, it was expected that about 7,295 AEWR interviews would be completed with AEWR participants and about 7,707 AEWR interviews would be completed with nonparticipants. Unit response rates in recent NHES surveys of adults have remained relatively constant over time, and the NHES:2007 screening approach and AEWR Survey were similar to those in NHES:2003; thus, it was reasonable to assume that the unit response and switching rates for the AEWR Survey would be similar to those in the AEWR-NHES:2003 Survey. In NHES:2007, about 14 percent of those sampled as adult education nonparticipants who completed extended interviews were found to be AEWR participants, and about 26 percent of persons sampled as participants who completed extended interviews were identified as AEWR nonparticipants. Additionally, it was found in NHES:2007 that 61 percent for adults sampled as participants and 61 percent of adults sampled as nonparticipants completed interviews, for totals of 3,359 interviews completed with AEWR participants and 4,351 AEWR interviews completed with nonparticipants.

Table 3-5. Expected number of adults sampled for AEWR interviews, by number of adults and presence of eligible children in household: 2007

Number of adults in household	Children in household?	Expected number of sampled adults		
		Sampled as adult education participants	Sampled as nonparticipants	Total
1	Yes	412	279	691
1	No	2,215	3,339	5,553
2	Yes	1,639	1,156	2,795
2	No	4,115	4,473	8,588
3	Yes	394	248	642
3	No	1,002	723	1,725
4	Yes	120	63	183
4	No	413	198	611
5 or more	Yes	40	20	61
5 or more	No	91	44	135
Overall		10,441	10,543	20,984

NOTE: The distributions in this table assume 62,000 screened households for NHES:2007. Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey (CPS), October 2003 School Enrollment Supplement data file (independent tabulations).

3.4 Summary of the Sample Design

Table 3-6 summarizes the expected numbers of completed interviews for the RDD sample selected for NHES:2007. As shown in table 3-7, the expected numbers of completed interviews were 3,790 for SR, 14,150 for PFI, and 15,000 for AEWR. The actual number of completed interviews was 2,633 for the SR survey, 10,681 for the PFI survey, and 7,710 for the AEWR survey.[32]

To facilitate comparison with previous NHES administrations, expected numbers of persons sampled for extended interviews in NHES:2007 are given in table 3-7, along with numbers of persons sampled for extended interviews in NHES:1991, NHES:1993, NHES:1995, NHES:1996, NHES:1999, NHES:2001, NHES:2003, and NHES:2005. Table 3-8 gives the expected numbers of completed interviews in NHES:2007, along with the actual numbers of completed interviews in NHES:1991, NHES:1993, NHES:1995, NHES:1996, NHES:1999, NHES:2001, NHES:2003, and NHES:2005.

[32]The actual number of completed interviews for each survey are lower than expected due to lower than expected unit response rates, specifically, a 53 percent Screener unit response rate compared to the 64 percent expected, 77 percent SR unit response rate compared to 86 percent expected, 74 percent PFI unit response rate compared to 83 percent expected, and 61 percent AEWR unit response rates for both participants and nonparticipants, compared to the expected 74 percent for participants and 69 percent for nonparticipants.

Appendix D contains details about the expected precision of estimates from the three NHES:2007 surveys.

Table 3-6. Expected numbers sampled and expected numbers of completed interviews in the telephone sample for NHES:2007

Sample population	Expected number sampled	Expected unit response rate	Expected number of completed interviews
Household Screeners	114,121	64	62,000
SR	4,518	86	3,790
PFI	17,617	83	14,150
AEWR			
Total adults	20,984	†	15,000
Total AEWR participants	†	†	7,295
AEWR participants sampled as participants	†	80	5,954
AEWR participants sampled as nonparticipants	†	74	1,341
Total AEWR nonparticipants	†	†	7,707
AEWR nonparticipants sampled as participants	†	80	1,773
AEWR nonparticipants sampled as nonparticipants	†	74	5,934

† Not applicable.
NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey (CPS), October 2003 School Enrollment Supplement data file (independent tabulations).

Table 3-7. Comparison of expected numbers of persons sampled for extended interview in NHES:2007 to the numbers sampled in previous survey administrations

Sample	Survey administration								
	NHES: 1991 (actual)	NHES: 1993 (actual)	NHES: 1995 (actual)	NHES: 1996 (actual)	NHES: 1999 (actual)	NHES: 2001 (actual)	NHES: 2003 (actual)	NHES: 2005 (actual)	NHES: 2007 (expected)
Number of completed Screeners	60,314	63,884	45,465	55,838	55,929	48,385	32,049	58,140	62,000
Number of persons sampled for an extended interview									
Total	34,118	27,437	40,319	26,435	36,125	32,966	30,946	33,901	43,119
Infants (0–2 yrs.)	†	†	4,341	†	3,435	5,750	†	4,253	†
Preschoolers (3–not yet in K)	9,925[1]	5,635	4,372	3,594[4]	4,316	2,223[7]	†	4,228[10]	4,518
Grades K–2	9,967[1]	7,270[2]	5,227	4,460	4,841	2,745[8]	3,470[9]	3,741[11]	3,902
Grades 3–5	†	2,882	1,841[3]	4,847	4,788	2,967	3,395	3,918[12]	4,206
Grades 6–12	†	11,650	†	10,934	10,631[5]	5,423[6]	8,077	5,951[6, 13]	9,509
Adults	14,226	†	24,538	2,600	8,114	13,858	16,004	11,810	20,984
Adult education participants	12,464	†	14,355	--	4,542	6,615	8,264	5,265	10,441
Adult education nonparticipants	1,730	†	10,183	--	3,572	7,243	7,740	6,545	10,543

† Not applicable; persons in this category were not eligible for extended interviews.

--These categories are not applicable because the NHES:1996 survey was not an adult education survey.

[1] The sample size for "preschoolers" is actually strictly 3–5 years old, regardless of enrollment status; this sample size includes 2,959 ineligible children. The sample size for "grades K–2" is actually strictly 6–9 years old, regardless of enrollment status or grade; this sample size includes 1,798 ineligible children and 22 of unknown age.

[2] The sample size for grades K–2 includes 158 children who were enrolled in transitional kindergarten, prefirst, special education, or ungraded.

[3] The sample size for grades 3–5 includes only 3rd grade; this sample size includes 36 children enrolled in special education or ungraded.

[4] The sample size for preschoolers includes children up to age 7 who are not enrolled.

[5] The sample size for grades 6–12 includes 5 children whose grade was unknown and 9 children who were enrolled in special education or ungraded.

[6] This sample size reflects only middle schoolers (grades 6–8).

[7] The sample size for preschoolers includes 3 children with unknown enrollment status.

[8] The sample size for grades K–2 includes 38 children with unknown grade and 5 children who were ungraded or in special education.

[9] The sample size for preschoolers includes 82 children with unknown enrollment status, in special education or ungraded.

[10] The sample size for preschoolers includes 7 children with unknown enrollment status, in special education, or ungraded.

[11] The sample size for grades K-2 includes 8 children with unknown enrollment status.

[12] The sample size for grades 3-5 includes 12 children in unknown enrollment status, in special education, or ungraded.

[13] The sample size for grades 6-8 includes 36 children with unknown enrollment status, in special education, or ungraded.

NOTE: The distributions in this table for NHES:2005 assume 59,380 screened households. The distributions in this table for NHES:2007 assume 62,000 screened households. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 1991-2003.

Table 3-8. Comparison of expected numbers of completed interviews in NHES:2007 to the numbers completed in previous survey administrations

Sample	Survey administration								
	NHES: 1991 (actual)	NHES: 1993 (actual)	NHES: 1995 (actual)	NHES: 1996 (actual)	NHES: 1999 (actual)	NHES: 2001 (actual)	NHES: 2003 (actual)	NHES: 2005 (actual)	NHES: 2007 (expected)
Number of completed Screeners	60,314	63,884	45,465	55,838	55,929	48,385	32,049	58,140	62,000
Number of completed extended interviews									
Total	26,460	23,568[1]	33,786	23,042[1]	31,297[1]	27,205	25,151	27,797	32,940
Infants (0–2 yrs.)	†	†	4,135	†	3,378	3,599	†	3,855	†
Preschoolers (3–not yet in K)	5,085[2]	4,424	3,429	3,012[5]	3,561	3,150	†	3,354[6]	3,790
Grades K–2	7,322[2]	6,447[3]	4,830	4,037	4,330	2,350[6]	2,834[6]	3,212	3,212
Grades 3–5	1,464	2,580	1,666[4]	4,348	4,182	2,559	2,837	3,363[6]	3,354
Grades 6–12	†	10,117	†	9,389[6]	9,140[6]	4,670[7]	6,751	5,109[7]	7,584
Other/unknown	21	0	4	6	9	4	4	0	0
Adults	12,568	†	19,722	2,250	6,697	10,873	12,725	8,904	15,000
Adult education participants	11,149	†	11,890	--	3,953	5,348	6,738	4,732	7,295
Adult education nonparticipants	1,419	†	7,832	--	2,744	5,525	5,987	4,172	7,707

† Not applicable; persons in this category were not eligible for extended interviews.

--These categories are not applicable because the NHES:1996 survey was not an adult education survey.

[1] Excludes extended interviews completed with sampled older children (Youth).

[2] The sample size for "preschoolers" is actually strictly 3–5 years old, regardless of enrollment status. The sample size for "grades K–2" is actually strictly 6–9 years old, regardless of enrollment status or grade.

[3] The sample size for grades K–2 includes children who were enrolled in transitional kindergarten, prefirst, special education, or ungraded.

[4] The sample size for grades 3–5 includes only 3rd grade; this sample size includes children enrolled in special education or ungraded.

[5] The sample size for preschoolers includes children up to age 7 who are not enrolled.

[6] The sample size includes children who were enrolled in special education or ungraded, distributed to the modal grade for their age.

[7] This sample size reflects only middle schoolers (grades 6–8).

NOTE: The distributions in this table for NHES:2005 assume 59,380 screened households. The distributions in this table for NHES:2007 assume 62,000 screened households. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 1991-2003.

3.5 Supplemental Homeschooler Sample

NHES is the only source of data on homeschooling collected from a nationally representative sample of households. A question has been raised as to whether homeschooling families are less likely to respond to telephone surveys about education, since they have chosen to educate their children outside of the formal public and private school system. The NHES design permits the examination of differences in response rates to the PFI extended interview once a child has been sampled. However, it is not possible, from the RDD sample alone, to ascertain whether homeschooling families are less likely to complete the NHES Screener stage.

In order to determine whether Screener unit response rates differ between homeschooling families and the population as a whole, a seeded sample (selected independent of the NHES:2007 RDD sample) was included in the NHES:2007 data collection. The homeschool seeded sample was a methodological supplement and those cases are not a part of the public-use data analysis file. Under a separate contract, NCES worked with a contractor to identify available lists of homeschooling families. These include extensive lists of those who belong to homeschooling organizations, have attended homeschooling conferences, and have purchased homeschooling materials. The selected lists are from Response Unlimited and include Home Schooling Families as the primary list and Christian Home School Connection Buyers and Home Schooling Today Magazine as supplementary lists. A sample was selected from the lists, matched to telephone numbers, and included in the NHES:2007 data collection.

The goal of this investigation was to detect a difference of 3 percentage points in the Screener unit response rate between the homeschooling population and the overall population. In order to arrive at the total seeded sample size, some assumptions were required. It was assumed that about 70 percent of the selected sample had correct telephone matches ("true matches"), that about 75 percent of households in that "true match" group contained current homeschoolers at the time of the NHES survey, and that the overall RDD Screener response rate would be about 60 percent. The total sample size required to detect a 3 percent difference was 2,420 cases, yielding 1,694 "true matches," and resulting in about 762 completed screeners. One child was sampled in each household; assuming a PFI unit response rate of 83 percent, 633 completed PFI interviews were expected from the supplemental homeschooler sample.

The actual number of completed Screeners from the homeschool sample was 884; 40.12 percent of these households included one or more children enrolled in kindergarten through grade 12, and

12.44 percent of them included one or more homeschoolers. The observed number of homeschooling families from these lists was far lower than anticipated. As a result, it is difficult to use these data to study differences between response rates for the population of homeschooling households and the general population of households since so much of the seeded sample itself lacked homeschooling households. As in the main RDD sample, up to one child was selected for the SR survey if any were eligible and up to one child was selected for the PFI survey if any were eligible. The number of completed SR and PFI interviews was 318.

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4. DATA COLLECTION

This chapter provides an overview of the telephone data collection procedures for the 2007 National Household Education Surveys Program (NHES:2007). It describes the recruitment and training of interviewers, interviewing times and case priorities, procedures designed to increase respondent cooperation, special procedures for language problem and refusal cases, and refielding of nonresponse cases. Bias study data collection is addressed in chapter 8.

As noted in chapter 1, the NHES telephone interviews were administered using computer-assisted telephone interviewing (CATI) technology. The CATI system was programmed to automatically guide the interviewers through the complex skip patterns contained in the NHES surveys. This reduces the potential for interviewer error and helps to minimize the time for administering the interviews. CATI also includes an online help feature so interviewers can access more detailed explanations and/or definitions for selected items in the surveys. The CATI system incorporates online sampling to select appropriate persons for extended interviews during the screening interview, thus reducing additional calls into households. Its scheduling feature allows cases to be automatically fielded for appointments and callback attempts to complete interviews not completed on the first call, and CATI can be programmed to permit adjustments in case management as data collection progresses. Data were entered directly into the CATI database, which also contained the call history of each case, allowing for the assessment of various case management strategies following the close of data collection.

During the data collection phase, NHES experienced lower-than-expected response rates. Among the three topical surveys, response rates for the AEWR survey were lowest, as in past administrations. Due to concerns about the potential for nonresponse bias resulting from the low AEWR response rate, NCES decided that data collection for that survey would be stopped and no public data would be released. AEWR interviews with wave 1 of the RDD sample and with the bias study sample were continued so that nonresponse bias could be evaluated.

4.1 Interviewer Recruitment and Training

Recruitment of interviewers to conduct NHES:2007 began in November 2006. Westat interviewers with prior NHES experience or with experience on other telephone interview studies were

identified and as many as feasible were assigned to NHES:2007. To augment this group, new interviewers were recruited through the personal networks of Westat employees and by means of advertisements placed in local newspapers. Westat also employed interviewers from a subcontractor that is classified by the U.S. Small Business Administration as being in an Historically Underutilized Business Zone (HUBZone). In addition, the NHES:2007 data collection was the first in which Westat had the capability to allow telephone interviewers to conduct secure interviews from their homes. At-home interviewers were recruited using internet advertisements.

Telephone interviewer training for NHES:2007 was conducted in three phases. In the first phase, new interviewing staff completed training in general interviewing techniques and the use of the CATI system. Those who successfully completed this training and those who were experienced and who had already conducted CATI surveys at Westat were then assigned to NHES project training.

NHES:2007 training began with a self-administered online training program that used text and prepared scripts to introduce the study and the survey instruments. Trainees studied information about NHES, including an introduction, Screener scripts, extended interview scripts, gaining cooperation and contact procedures (see the agenda in appendix E). Trainees also completed required exercises and tests. A learning management system was used to guide trainees through the self-administered modules and monitor their progress.

Following completion of the self-administered sessions, trainees were assigned to trainer-led sessions. Interviewing staff who worked at one of the Telephone Research Centers (TRC) attended trainer-led sessions at a TRC. Home-based interviewing staff participated in trainer-led group sessions using voice and computer linkages. The content of the training sessions was the same in the two formats. Upon completion of the trainer-led sessions, all trainees conducted role play interview scripts that were monitored by training staff prior to being scheduled for live data collection.

Groups were scheduled for telephone interviewer training beginning in mid-December 2006 and continuing into April 2007.[33] Of 402 interviewers trained to work on NHES:2007, 195 worked from home and 207 worked at a Westat TRC. The majority of at-home interviewers, 170, were new interviewers for Westat and 25 at-home interviewers were experienced. About 50 percent of the

[33]Unlike previous NHES administrations in which training ended two to three weeks after data collection began, NHES:2007 training took place through April 2007. This approach reflects the implementation of home-based training, which takes place in smaller groups, and the need to keep up with attrition and meet the interviewing demands of a large national RDD study, new TRC interviewers for NHES were trained through April 2007.

interviewers who worked at a Westat TRC were experienced (105) and about 50 percent were new interviewers for Westat (102).

The survey staff included 30 interviewers bilingual in English and Spanish. These interviewers received the same training in English as did all other interviewers. They were then trained to conduct the interviews in Spanish. All of the CATI screens were translated into Spanish, and these screens were available to bilingual interviewers at a keystroke, so they could interview in either English or Spanish when placing a call into a household.

4.2 Special Precollection Procedures

Before the beginning of data collection, special procedures were implemented to remove business and nonworking telephone numbers from the sample, and specific subsampling was done that reduced the number of telephone numbers from the full sample of 476,167 telephone numbers originally drawn to the final sample of 278,490 telephone numbers that was fielded. In addition, an advance mailing was conducted. NHES:2007 also included an investigation into the use of an interactive voice recognition (IVR) pre-notification to introduce a subsample of respondents to the survey.

Identification of business and nonworking numbers. As described in section 3.1, procedures were used prior to data collection to reduce the number of unproductive calls. Specifically, the Genesys Comprehensive Sample Screening (Genesys-CSS) procedure was used. Telephone numbers identified by Genesys-CSS as LB, NW, WR, or CP, as well as UB telephone numbers for which no mailing address could be obtained were excluded from dialing. All telephone numbers that were not excluded from dialing as a result of the Genesys-CSS results were sent to up to two address vendors to obtain mailing addresses. A total of 15,812 telephone numbers in the final sample of 278,490 were assigned a status of nonresidential as a result of either the Genesys-CSS process or matches to yellow pages listings combined with nonmatches to white pages listings.

Subsampling of telephone numbers. As described in chapter 3, two-phase stratification using a measure of Black or Hispanic residents in the ZIP Code and ability to match the telephone number to an address was used to select telephone numbers for the final NHES:2007 sample. In addition, further subsampling was conducted for nonresponse followup. Prior to data collection, 60 percent of the sample of 278,490 was designated for nonresponse followup, including refusal conversion, a higher number of

calls for noncontact cases, and a higher maximum call limit for telephone numbers at which contact with a household member had been made (this first 60 percent is called "wave 1"). The remaining 40 percent ("wave 2") of the original sample and the entire reserve sample were not subject to refusal conversion efforts and had a call limit of 14.

Advance Mailing and Use of Incentives. The NHES:1996 field test showed that households receiving an advance letter were more likely to respond to the survey (Brick, Collins, and Chandler 1997). In an effort to increase Screener-level response, a mailing was planned for the households for which an address was obtained from either of two commercial firms. The advance letters explained the purpose of NHES:2007 and encouraged participation in the study. The letters were printed on National Center for Education Statistics (NCES) letterhead and were sent in U.S. Department of Education envelopes (see appendix F). Based on the findings of an experiment investigating the effectiveness of modest cash incentives (Brick et al. 2006), an incentive of $2 was included in each advance letter. In all, 152,261 telephone numbers were matched with addresses; and all 152,261 telephone numbers with matched addresses were included in the final NHES:2007 sample and sent an advance letter. To coordinate the arrival of the letter with the initial call into the household, the mailing was conducted in waves, one in late December 2006 and one in mid-January 2007 to correspond to the release of the two waves of the original sample, and a third advance mailing in mid-March prior to the release of the reserve sample.

Interactive Voice Response (IVR) Pre-Notification. It was not possible to send an advance letter to all cases in the RDD sample, because not all telephone numbers could be matched to addresses. In NHES:2007, an experiment was conducted to evaluate an Interactive Voice Response (IVR) system to deliver an advance announcement to a sample of telephone numbers. The experiment allowed for an assessment of how useful IVR pre-notification is in notifying potential respondents of the survey and its effect on initial cooperation rates. This brief advance message introduced the study and its sponsorship, and informed respondents that they would be receiving a call from an interviewer. Those receiving the message had the option to press zero to speak with a staff member if they wished.

A total of 14,152 cases in wave 1 were designated to receive IVR call attempts; for comparison purposes 5,000 cases with address matches were included among these cases and were also mailed an advance information letter. The Screener initial cooperation and refusal conversion rates for the cases in the IVR experiment were monitored on a weekly basis. With the experimental results indicating that IVR was having no effect on cooperation or refusal conversion, the decision was made to

not use IVR pre-notification for the wave 2 sample. At that time of this decision (i.e., as of February 18, 2007), the initial cooperation rates for mailables and nonmailables in the wave 1 IVR treatment group were 39.3 percent and 26.8 percent, respectively, and these rates were 38.0 percent and 26.8 percent for mailables and nonmailables in the non-IVR treatment group. The refusal conversion rates at that time were 31.6 percent and 20.5 percent for mailables and nonmailables in the wave 1 IVR treatment group, and 32.0 percent and 23.9 percent for mailables and nonmailables in the wave 1 non-IVR treatment group.

4.3 Scheduling Calls

Data collection for NHES:2007 took place at Westat's TRCs in Rockville and Frederick, Maryland; Sarasota, Florida; and Merced and Sacramento, California. As noted above, Westat also employed interviewers from a subcontractor that is classified by the U.S. Small Business Administration as a Historically Underutilized Business Zone (HUBZone) company. In addition, home-based interviewing staff conducted interviews from their homes throughout much of the United States. All of Westat's interviewing centers and the at-home interviewers used a common CATI system and shared the same scheduler, database, and computing facilities. Interviewers were assigned to the study to provide coverage at all hours the TRCs were open, 9:00 a.m. to midnight on weekdays, 10:00 a.m. to 9:00 p.m. on Saturdays, and 2:00 p.m. to 10:00 p.m. on Sundays. Unless they specifically requested an appointment at another time, respondents were called only between 9:00 a.m. and 9:00 p.m. in their own time zones, except for Saturdays and Sundays, when calls were made from 10:00 a.m. to 6:00 p.m. and 2:00 p.m. to 9:00 p.m., respectively. While time zones of the continental U.S. and time zones in Alaska and Hawaii overlap, permitting interviewers to call those time zones during regular continental U.S. TRC hours, one after-midnight working session was held to ensure complete coverage of cases located in Alaska and Hawaii.

Because NHES is a household survey, the greatest opportunity for respondent contact tends to be during weekday evenings and on weekends, and assignment of interviewer hours took this into consideration. Approximately 30 percent of interviewing labor hours were scheduled on weekdays (Monday through Friday from 9:00 a.m. to 6:00 p.m.), 40 percent on weekday evenings, and 30 percent on weekends.

4.3.1 Assigning Cases to Interviewers

To make initial contact with all cases more quickly and to concentrate subsequent efforts on those cases most likely to be productive, cases were prioritized as follows:

- Cases that had specific appointments;
- Cases that had resulted in busy signals 15 minutes earlier;
- Cases that had resulted in noncontact at a scheduled appointment time;
- Cases that had unspecified appointment/general callback times for the time period;
- Cases that had not been contacted on previous attempts and had not been attempted during the time period;
- Refielded refusal and maximum call cases; and
- Cases that had not yet been called (initial cases).

Initial attempts to contact households and determine the presence of household members eligible for extended interviews were conducted in two groups of calls separated by a one-week hold period: a group of four calls consisting of two evening calls, one daytime call, and one weekend call; and a group of three calls, consisting of two evening calls and a weekend call on a different day than the previous weekend call. Exhibit 4-1 gives the specific parameters for these time periods. If contact had not been made with either a household member or an answering machine after these two sets of calls, the case was sent to a vendor for 14 additional calls to be made by predictive dialing.[34] If contact had not been made with a household member but an answering machine had been reached, the cycles of four calls and three calls were repeated. After this, wave 1 no answer-answering machine cases were randomly subsampled to receive a total of 21, or 28 call attempts; wave 2 and reserve sample no answer-answering machine cases received a total of 14 calls. The subsampling of answering machine cases was done to improve operational efficiency, since these cases tend to have low residency rates and low yield of completed interviews. See appendix G for the result codes used to classify the outcome of each call attempt.

[34]Predictive dialing is a process in which telephone numbers are automatically dialed and are routed to an attendant or operator when a telephone number is answered. The attendant identifies him or herself as an interviewer for the subcontractor and asks if the telephone number is for residential or business use. Calls resulting in no contact are not routed to an attendant or operator; they are automatically handled and classified as noncontact by a computer system. Each attempt made by the predictive dialer was counted as a call attempt.

Exhibit 4-1. Time periods used for call scheduling: 2007

Time slice description	Day(s) of week	Hours (respondent time)
Weekday, first half of the day	Monday through Friday	9:00 a.m. – 2:00 p.m.
Weekday, second half of the day	Monday through Friday	2:00 p.m. – 6:00 p.m.
Weekday, first half of evening	Monday through Friday	6:00 p.m. – 7:30 p.m.
Weekday, second half of evening	Monday through Friday	7:30 p.m. – 9:00 p.m.
Weekday, unrestricted evening	Monday through Friday	6:00 p.m. – 9:00 p.m.
Saturday, unrestricted	Saturday	10:00 a.m. – 6:00 p.m.
Sunday, unrestricted	Sunday	2:00 p.m. – 9:00 p.m.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

Once a household member was contacted, up to 20 calls attempts were made to complete the screener with a household member in wave 1 of the sample, and up to 14 call attempts were made for wave 2 cases, except in the case of language problem or refusal cases, described below. Once a household member was sampled as the subject of an extended interview, up to 24 call attempts were made to complete the interview with the identified respondent.

When a Screener was completed and household members were selected for extended interviews, the interviewer would first attempt to complete any interviews for which the Screener respondent was selected, because he or she was already on the telephone. If other household members were selected, the interviewer asked to speak with them after completing any applicable interviews (or making a callback appointment) with the Screener respondent. Callback attempts were made as necessary to make contact with respondents to extended interviews. For the AEWR survey, the unit response rate was 78 percent among cases in which the sampled adult was the Screener respondent, compared to 46 percent among cases in which the sampled adult was not the Screener respondent.[35]

Language problems and refusal cases were handled according to the procedures described below. When these cases were released to interviewers, their priority was set by the TRC operations manager and the project director according to the nature of the work remaining and the availability of specially trained interviewers. Appendix G shows a listing of status classifications (result codes) for both Screener and extended interview cases.

[35]These rates are given for the AEWR survey because consideration could be given to altering the selection of adults for extended interviews. In contrast, for interviews about children, altering the determination of respondents could introduce an unknown amount of measurement error.

In NHES:2007, contact via the telephone was often made within a few telephone call attempts. More than half of all completed Screeners (33,739 out of 54,034) were completed in one to three calls. Similarly, only a few calls were required to identify the majority of nonworking and nonresidential numbers. Approximately 76 percent of the Screener numbers identified as nonworking when they were dialed (29,450 out of 38,921) and approximately 70 percent of the numbers identified as nonresidential only when they were dialed (7,775 out of 11,086) were finalized within four calls.

4.4 Procedures for Special Circumstances

As in previous years, NHES:2007 followed specific procedures when special circumstances were encountered during data collection.

4.4.1 Answering Machine Messages

Leaving a message when an answering machine was encountered let potential respondents know why they were being called and told them efforts to contact them would continue. The CATI system displayed a message that was read by the interviewer the first time an answering machine was reached at the Screener and extended interview levels and also if the case changed to language problem or refusal status. Four messages were created, one for Screener cases in initial or language problem strategy, one for extended interview cases in initial or language problem strategy, one for Screener cases in refusal strategy, and one for extended cases in refusal strategy. Each was worded somewhat differently, but all briefly explained the purpose and sponsorship of the study and also gave the toll-free number for respondents to call for more information or to make an appointment. Of the 73,664 telephone numbers with at least one answering machine result, 22,282 (30 percent) completed a Screener. Among all completed screeners (54,034), there were 31,752 numbers (59 percent) that never had an answering machine result. The text of the answering machine messages is shown in appendix H.

4.4.2 Non-English Language/Language Problem Cases

When English-only interviewers encountered a case in which the respondent indicated that he or she did not speak English or had a hearing or speech impairment, they attempted to ascertain

whether any adult household member spoke English or could communicate sufficiently clearly to respond to the interview. If they were not successful, the case was coded one of three interim language problem statuses: hearing/speech problem, probable Spanish language, or another language. Specially trained interviewers recontacted the hearing/speech problem cases and attempted to complete an interview. Bilingual interviewers recontacted the Spanish language cases. Cases coded as non-English and non-Spanish were available to all interviewers, who recontacted the household in an effort to identify an English- or Spanish-speaking household member. If a Spanish-speaking household member was identified, the case was recoded as a Spanish language case and made available to bilingual interviewers. Based on reports from survey managers and interviewer monitors, this was a relatively rare occurrence. Interviewers were not trained to correctly identify specific languages, and they were more likely to identify another language as Spanish than misidentify Spanish as another language. Non-English/non-Spanish households in which interviews were not completed were coded as nonresponse.

Table 4-1 shows the outcomes for the three types of language problem Screener cases. A total of 5,771 Screeners were classified as Spanish-speaking by the first interviewer who made contact. About 47 percent of these cases were finalized as completes (n = 2,701), and about 30 percent were finalized as refusals (n = 1,751). A total of 1,237 Screeners had respondents identified by the initial interviewer as speaking some language other than English or Spanish. Of these, about 7 percent (n = 92) were completed. About 65 percent of the households identified as non-English/non-Spanish were finalized as language problems (n = 800) and 25 percent were finalized as refusals (n=307). There were 1,109 Screeners that were classified by at least one interviewer as a hearing or speech problem; 289 of these cases (26 percent) were completed and 461 (42 percent) were refusals.

Occasionally, a trained Spanish-speaking interviewer encountered a household that had never been coded as a language problem but in which Spanish was spoken and English was not. In these cases, the interviewer switched to the Spanish CATI and conducted the interview in Spanish. Those cases were never coded as language problems and do not appear in table 4-1; however, like all completed interviews, they carry a designation as to whether the interview was conducted in English or Spanish. A total of 2,598 Screeners were completed in Spanish.

The NHES:2007 interviews were conducted only in English and Spanish. Therefore, if a household was composed solely of members who spoke a language other than English or Spanish, no interview was conducted. At the extended interview level, only the sampled respondent himself or herself could respond to the AEWR interview; translations by other household members were not permitted. For

the PFI and SR interviews, the parent or guardian who was most knowledgeable about the child was asked to respond. If this parent could not be interviewed in either English or Spanish, interviewers tried to identify another parent or guardian or other household member who could speak English and was sufficiently knowledgeable to respond to the interview. If such a household member was found, the interview was conducted with him or her. There were 273 SR interviews, 776 PFI interviews, and 11 AEWR interviews completed in Spanish.

Table 4-1. Language problem Screener cases, by response status: 2007

Language problem	Number	Percent
Identified as Spanish language households		
Total	5,771	100
Complete	2,701	47
Refusal	1,751	30
Language problem	896	16
Other	423	7
Identified as non-English/non-Spanish language households		
Total	1,237	100
Complete	92	7
Refusal	307	25
Language problem	800	65
Other	38	3
Hearing/speech problems		
Total	1,109	100
Complete	289	26
Refusal	461	42
Language problem	261	24
Other	98	9

NOTE: Because of rounding, percentages may not add to 100. *Other* includes maximum call and no answer-answering machine cases, as well as cases identified as nonworking or nonresidential on callback.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

4.5 Refusal Conversion

Whenever a refusal occurred, the interviewer used a CATI Non-Interview Report Form (NIRF) module to record general demographic information about the refusing respondent (e.g., sex, approximate age) and the respondent's reasons for refusing to participate if any had been given. Interviewers also rated the strength of the refusal as mild, firm, or hostile. In NHES:2007, any mild or firm refusal case in wave 1 of the sample was released after a 13-day hold for a conversion attempt at the

household level. (The hold period was shortened toward the end of data collection to allow all refusal cases to be processed.) TRC supervisors reviewed all cases coded as hostile to determine whether that designation was merited. Any cases rated as hostile that were judged by the supervisor to be inappropriately coded were recoded to firm refusals and were eligible to be released for a conversion attempt. Truly hostile (profane or abusive) refusal cases were never released for conversion. In addition, households that contacted NCES or Westat's TRC directly and declined to participate were excluded from refusal conversion.

Any household member age 18 or older was eligible to answer the Screener. Therefore, Screener refusal conversion efforts were not targeted to a particular household member. In some cases, another adult household member completed the Screener at the conversion stage, and in some cases, the same adult who previously refused was persuaded to participate.

At the extended interview level, refusal conversion attempts were conducted with the sampled respondent. That is, attempts were made to convert the parent of the sampled child who refused the PFI and SR interviews and the adult who refused the AEWR interview from a refusal case to a completed interview. Refusal conversion at the extended interview level was conducted for all non-hostile refusal cases, regardless of whether the household was in wave 1 or wave 2 of the sample.

4.5.1 Mailings to Screener Refusal Cases and Use of Respondent Incentives

To persuade respondents to change their minds about participating in NHES:2007, letters with a $2 incentive were sent to each wave 1 household that initially refused to participate in the study for which an address had been obtained (excluding hostile refusals). The refusal conversion letter was printed on agency stationery and signed by the NHES Contracting Officer's Representative (COR) (see appendix F). It gave a brief explanation of NHES:2007, emphasized the importance of the household's participation, and provided Westat's toll-free telephone number for respondents to call for information about the study or to schedule appointments. A total of 35,334[36] such letters were mailed; a total of 4,097 refusal cases had no address matched with their telephone number and were not sent a letter.

[36]Eleven cases from the wave 2 sample matched with an address were also sent a letter, for a total of 35,345 initial refusal conversion letters mailed.

Because the refusal conversion letters were sent to households for which an address had been obtained, those households might have also received a letter from NCES by first-class mail prior to the initial contact with the household. However, the decision was made to send a second letter because the initial letters may have been thrown away or one household member may have opened the advance information letter and not conveyed the information to other household members. Refusal cases that had been mailed letters were assigned a high calling priority, just below appointments scheduled for a specific time, to increase the chance of contact shortly after the letter was scheduled to arrive.

Table 4-2 shows the results of refusal conversion efforts in NHES:2007 for Screener cases, including overall refusal conversion results and first and second stage refusal conversion results by the mailable status of the case. In all, 39,431 wave 1 cases had at least one refusal.

After the initial refusal, those for which an address was obtained were mailed a refusal conversion letter with a $2 incentive; 35,334 cases were mailed a letter and 4,097 were not. As shown in table 4-2, Screeners were completed with 9,121 households in the mailable group (27 percent) and 580 households in the nonmailable group (16 percent). In addition 1,563 mailable numbers and 392 nonmailable numbers were identified as nonworking or nonresidential numbers. The majority of first refusal cases refused again (62 percent of mailable cases and 64 percent of nonmailable cases). In addition, some cases were finalized in other nonresponse statuses such as language problems, or were neither completed nor refused again despite several call attempts and became refusal maximum calls.

Table 4-2. Results of refusal conversion efforts at the Screener level: 2007

			All cases that ever refused				Cases refielded after one refusal				Cases refielded after two refusals			
			Refusal conversion letter		No letter		Refusal conversion letter		No letter		Refusal conversion letter		No letter	
Result	Total	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	39,431	100	35,334	100	4,097	100	35,334	100	4,097	100	20,859	100	2,336	100
Complete	13,448	37	12,651	38	797	22	9,121	27	580	16	3,530	18	217	10
Refusal	14,160	39	12,648	38	1,512	20	20,859	62	2,358	64	12,648	63	1,490	67
Other nonresponse or noncontact	9,066	25	7,783	24	1,283	32	3,791	11	767	21	3,992	20	516	23
Ineligible telephone number	2,757	†	2,252	†	505	†	1,563	†	392	†	689	†	113	†

† Not applicable.

NOTE: The calculation of percent excludes ineligible telephone numbers in the denominator. Other nonresponse includes language problems, no answer-answering machine cases, refusal maximum call cases, and problem cases that could not be resolved during data collection (e.g., household members away for an extended period). Ineligible telephone numbers are those found to be nonresidential or nonworking, and those Screener cases are not considered in the calculation of completion rates.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

4.5.2 Refielding Second Screener Refusals

An additional refusal conversion attempt was made for wave 1 cases that had twice refused to participate in the Screener interview. No cases in which respondents had telephoned or written following the receipt of refusal conversion letters to say they did not want to participate were released again, however, in a few such cases, the interview was completed before a refusal letter was received by NCES. Cases were held for a period of 13 days before being released for an additional conversion attempt, with the exception of the last weeks of the data collection period when some cases had a shorter hold period due to lack of time. A second refusal conversion letter printed on ED stationary was sent to these refielded cases via FedEx (or mailed by Priority Mail if the address was a P.O. Box or rural route). In all, 20,859 Screeners cases were sent a letter by FedEx or Priority Mail.

Table 4-2 also shows the numbers and percentages of refielded second refusals that were completed. Among the 20,859 mailable cases, 3,530 (18 percent of eligible cases) completed the Screener; 689 were identified as nonworking or nonresidential telephone numbers and were ineligible. An additional 217 Screeners were completed with nonmailable second refusals (10 percent of eligible cases); and 113 were identified as nonworking or nonresidential and were ineligible. The remaining cases for both the mailable and nonmailable groups either refused again, or resulted in other forms of nonresponse such as language problems or being neither completed nor refused again despite further call attempts.

Taking both first refusal conversion and second refusal conversion efforts into account, 38 percent of the eligible refusal cases that were mailed a letter were eventually completed, as were 22 percent of the cases that were not mailed a letter. In addition, 2,757 cases were identified as nonresidential or nonworking numbers (i.e. ineligible) on subsequent calls.

4.5.3 Extended Interview Refusal Conversion

Both initial and second refusal conversion were also undertaken at the extended interview level for NHES:2007, although no mailings were conducted for these refusals. Ninety-one SR interviews (17 percent of eligible cases) and 471 PFI interviews (19 percent of eligible cases) were completed as a result of initial refusal conversion attempts (that is, conversion following a first refusal). An additional refusal conversion attempt was also made for extended interview cases for which two refusals had been

received. Twenty SR interviews were completed among 234 refielded SR second refusal cases (9 percent of eligible cases); 113 PFI interviews were completed out of 1,106 refielded PFI second refusal cases (10 percent of eligible cases). The total numbers of completed extended interviews resulting from both initial and second refusal conversion efforts were 111 for SR and 584 for PFI. Tables 4-3 and 4-4 present the results of refusal conversion strategies for SR and PFI.

For AEWR, refusal conversion at the extended level was limited to adults sampled for AEWR in the wave 1 sample because a decision was made during data collection to cancel adult sampling for those cases that were not in the wave 1 sample. Five hundred sixty-nine extended AEWR interviews were completed as a result of initial refusal conversion efforts (19 percent of eligible cases) and 128 extended interviews were completed as a result of second refusal conversion efforts (9 percent of eligible cases). A total of 697 extended interviews were completed as a result of all refusal conversion efforts. Table 4-5 present the results of refusal conversion strategies for AEWR.

Table 4-3. Results of refusal conversion efforts at the extended interview level in SR-NHES:2007

	All refusal cases		Cases refielded after one refusal		Cases refielded after two refusals	
Final result	Number	Percent	Number	Percent	Number	Percent
Total	527	100	527	100	234	100
Complete	111	21	91	17	20	9
Ineligible	10	2	8	2	2	1
Refusal	130	25	235	45	129	55
Other nonresponse	272	52	189	36	83	35
Ineligible telephone number	2	#	2	#	†	†
Not a household member	2	†	2	†	†	†

Rounds to zero.

† Not applicable.

NOTE: The final results for the refielded cases are included in the columns giving final results for all refusal cases, of which the refielded cases are a subset. Because of rounding, percentages may not add to 100. Ineligible persons were those whose age, enrollment status, or grade was outside the study range. Ineligible telephone numbers were those found to be nonresidential or nonworking, and at the extended level these cases were treated as nonresponse. Other nonresponse included language problems, maximum call cases, and problem cases that could not be resolved during data collection (e.g., household members away for an extended period). Ineligible telephone numbers were those found to be nonresidential or nonworking, and at the extended level these cases were treated as nonresponse. Those who were not household members were persons enumerated in error in the Screener.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Readiness (SR) of the National Household Education Surveys Program (NHES), 2007.

Table 4-4. Results of refusal conversion efforts at the extended interview level in PFI-NHES:2007

	All refusal cases		Cases refielded after one refusal		Cases refielded after two refusals	
Final result	Number	Percent	Number	Percent	Number	Percent
Total	2,491	100	2,491	100	1,106	100
Complete	584	24	471	19	113	10
Ineligible	3	#	3	#	0	#
Refusal	580	23	1,117	45	569	52
Other nonresponse	1,311	53	889	36	422	38
Ineligible telephone number	4	#	3	#	1	#
Not a household member	9	†	8	†	1	†

† Not applicable.
# Rounds to zero.
NOTE: The final results for the refielded cases are included in the columns giving final results for all refusal cases, of which the refielded cases are a subset. Because of rounding, percentages may not add to 100. Ineligible persons were those whose age, enrollment status, or grade was outside the study range. Other nonresponse included language problems, refusal maximum call cases, and problem cases that could not be resolved during data collection (e.g., household members away for an extended period). Ineligible telephone numbers were those found to be nonresidential or nonworking, and at the extended level these cases were treated as nonresponse. Those who were not household members were persons enumerated in error in the Screener.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in (PFI) of the National Household Education Surveys Program (NHES), 2007.

Table 4-5. Results of refusal conversion efforts at the extended interview level in AEWR-NHES:2007

	All refusal cases		Cases refielded after one refusal		Cases refielded after two refusals	
Final result	Number	Percent	Number	Percent	Number	Percent
Total	2,994	100	2,994	100	1,459	100
Complete	697	23	569	19	128	9
Ineligible	0	#	0	#	0	#
Refusal	815	27	1,467	49	807	55
Other nonresponse	1,464	49	942	32	522	36
Ineligible telephone number	7	#	6	#	1	#
Not a household member	11	†	10	†	1	†

† Not applicable.
# Rounds to zero.
NOTE: The final results for the refielded cases are included in the columns giving final results for all refusal cases, of which the refielded cases are a subset. Because of rounding, percentages may not add to 100. Ineligible persons were those whose age, enrollment status, or grade was outside the study range. Ineligible telephone numbers were those found to be nonresidential or nonworking, and at the extended level these cases were treated as nonresponse. Other nonresponse included language problems, maximum call cases, and problem cases that could not be resolved during data collection (e.g., household members away for an extended period) (AEWR-NHES:2007). . Ineligible telephone numbers were those found to be nonresidential or nonworking, and at the extended level these cases were treated as nonresponse. Those who were not household members were persons enumerated in error in the Screener.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education for Work Related Reasons Survey (AEWR) of the National Household Education Surveys Program (NHES), 2007.

4.6 Procedures for Other Nonresponse Cases

Additional contact attempts were made in an effort to complete nonresponse cases other than refusals, that is, those that were assigned maximum call, no answer-answering machine, and no answer status. The maximum call condition applied to both Screeners and extended interviews, while the no answer conditions applied only to Screeners.

4.6.1 Maximum Call Cases

Telephone numbers at which a person had been contacted and 9 Screener call attempts had been made without completion of the Screener were held for 1 week and were released for additional call attempts. A total of 20 attempts were made to complete the Screener with wave 1 cases before classifying a case as a maximum call case; up to 14 Screener call attempts were made for wave 2 and reserve sample cases. At the extended interview level, up to 24 call attempts were made for each extended interview prior to classifying the case as a maximum call case; the same maximum call rule was used for extended interviews in wave 1 and wave 2. Note that refusals generally received fewer call attempts because they were finalized after the third refusal (refusal procedures were described above in section 4.2).

Table 4-6 shows the results of refielding maximum call cases at the Screener level. Of the 16,501 Screener maximum call cases refielded, 2,207 were completed. This represents 13 percent of refielded maximum call cases and 4 percent of all Screeners completed in NHES:2007. Nearly all wave 1 Screener cases that were finalized in maximum call status received 20 or more call attempts;[37] nearly all wave 2 or reserve cases received 14 call attempts.[38]

[37]Once contact was made with a household member, the calling protocol allowed for 9 more attempts before classifying a case as a maximum call case. For example, an appointment set at a first contact on call attempt 16 could result in 9 or more attempts before closing the case as a maximum call.

[38]An example of a wave 2 maximum call result code with less than 14 attempts is a case with a long term appointment (i.e., an appointment set early in the data collection period for late in the data collection period) in which the appointment was missed. This case would have proceeded through the normal calling protocol after the missed appointment but may not have reached the full 14 calls by the close of data collection.

Table 4-6. Results of refielded maximum call Screener cases: 2007

Final result	Number	Percent of eligible telephone numbers
Total	16,501	100
Complete	2,207	14
Refusal	6,167	40
Maximum call	6,194	40
Other nonresponse or noncontact	851	6
Ineligible telephone number	1,082	†

† Not applicable.
NOTE: Other nonresponse included language problems, no answer cases, and problem cases that could not be resolved during data collection (e.g., household members away for an extended period). Ineligible telephone numbers were those found to be nonresidential or nonworking, and those Screener cases were not considered in the calculation of completion rates.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

4.6.2 No Answer-Answering Machine Cases

No answer-answering machine cases were those at which all of the first seven call attempts resulted in contact with an answering machine, a ring with no answer, or a busy signal; that is, there was no contact with a person and at least one result was an answering machine contact. In wave 1 these cases were designated to receive up to 21 calls or 28 calls;[39] for those in wave 2 these cases were designated to receive up to 14 calls.

4.6.3 No Answer Cases

No answer Screener cases were those at which neither a person nor an answering machine was ever reached (NA cases). Historically, very few completed Screeners have resulted from refielding these cases, but the process of refielding has resulted in the identification of a portion of these numbers as nonworking or nonresidential. Therefore, to ensure that interviewing hours were spent on cases most likely to be productive, after 7 attempts to reach a household member by the Westat TRC, all cases that were classified as NA were sent to a vendor for an additional 14 calls using predictive dialing methods. If a

[39]Approximately half of the wave 1 sample was randomly subsampled to receive 21 calls and approximately half of the sample was randomly subsampled to receive 28 calls. Among wave 1 cases designated to receive up to 28 attempts, 46 percent completed the Screener, compared to 45 percent of the wave 1 cases designated to receive up to 21 attempts.

household member answered as a result of the predictive dialing attempts, the case was sent back to the Westat TRC for additional followup by a NHES-trained telephone interviewer. Westat sent 31,907 noncontact cases to the vendor for predictive dialing follow-up. Of those, 1,896 cases were returned to Westat following contact with a household member and of those, 455 cases, or approximately 1 percent of all cases sent for predictive dialing completed a Screener. This is similar to the 2 percent of no answer cases that completed the Screener in NHES:2005.

4.6.4 Results of Refielding Cases

The intensive working of nonresponse cases in NHES:2007 was beneficial, and the refusal conversion activities for NHES:2007 were productive. Thirty-eight percent of Screener refusal cases mailed an initial refusal letter with $2 were completed whereas 22 percent of Screener refusals cases who were not mailed a letter were completed. Additionally, 21 percent of second refusal cases that were sent a letter by FedEx or Priority Mail were completed; approximately 8 percent of second refusals cases that were not mailed to were completed. For each of the extended interviews, 23 percent of first refusal cases were completed and 9 to 10 percent of second refusal cases were completed. Also, 14 percent of Screener maximum call cases were completed through additional calling efforts.

4.7 Weekly Progress in Completing Cases

Table 4-7 presents the number of Screener and extended interviews completed each week of data collection. By the end of data collection week six (the interviewing week ending February 11), Screeners had been completed with 20,260 households, 37 percent of the number eventually completed. Forty-one percent[40] of the extended interviews (8,524) had also been completed by February 11. By March 11 (the end of week 10), 37,455 Screeners, 69 percent of the total, had been completed. Sixty-nine percent of the extended interviews (14,416 out of the 21,024 that were eventually completed) were completed by this time.

[40]The sum of percentages in table 4-7 do not equal percentages presented in the text because of rounding.

Table 4-7. Weekly progress in completing cases: 2007

Week	Week ending	Screeners completed		Extended interviews completed	
		Number	Percent	Number	Percent
Total		54,034	100	21,024	100
1	January 7, 2007	1,914	4	708	3
2	January 14, 2007	3,107	6	1,258	6
3	January 21, 2007	4,018	7	1,653	8
4	January 28, 2007	3,797	7	1,666	8
5	February 4, 2007	3,422	6	1,532	7
6	February 11, 2007	4,002	7	1,707	8
7	February 18, 2007	3,590	7	1,635	8
8	February 25, 2007	4,514	8	1,542	7
9	March 4, 2007	4,877	9	1,442	7
10	March 11, 2007	4,214	8	1,273	6
11	March 18, 2007	3,799	7	1,141	5
12	March 25, 2007	2,986	6	923	4
13	April 1, 2007	2,095	4	697	3
14	April 8, 2007	2,268	4	675	3
15	April 15, 2007	2,178	4	898	4
16	April 22, 2007	1,789	3	735	3
17	April 29, 2007	1,176	2	574	3
18	May 6, 2007	283	1	768	4
	After close of RDD outbound data collection[1]	5	#	197	1

Rounds to zero.

[1] Extended interviews completed after May 6, 2007 were those not completed at the close of data collection but determined to have sufficient information to be included in the data set following imputation of missing items.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

4.8 Item Clarification Callbacks

There was very little need in NHES:2007 to call back into households to resolve problems, clarify responses, or obtain missing data for completed cases. In NHES collections prior to 2001, households were called back if the respondent indicated that the telephone number automatically dialed by CATI was not his or her telephone number. In the NHES:2007, however, a question and comments screen was included so the interviewer could record the reason why their telephone number did not match the number automatically dialed by CATI and provide more detailed information if available.

4.9 Quality Control Procedures

The initial steps to support quality control of data collection occurred prior to the start of interviewing. These included careful specification and thorough testing of the CATI system by programming, project, data preparation, and TRC staff; cognitive research; two field tests; and a comprehensive interviewer training program for data collection staff, all described earlier. In this section, quality control activities that occurred during data collection are described.

4.9.1 Quality Control throughout the Interviewing Process

During data collection, prompt technical assistance was available for any hardware or software problems that were encountered. Also, specific efforts were focused on promoting excellence in interviewer-respondent interactions, including establishing rapport, securing respondent cooperation, administering interviews clearly, and responding to questions about the study. These efforts included monitoring interviewers as they conducted interviews, providing prompt feedback, individual coaching and group trainings, and holding information meetings to inform interviewers when project staff or TRC supervisors noticed the need for additional prompts or explanations for certain questions.

4.9.2 Triage

During all hours of TRC operation, interviewing was supported by one of 12 specially trained triage supervisors. The triage supervisor was called whenever a problem interfered with the ability to conduct CATI interviewing. At that time, he or she diagnosed the problem and contacted the appropriate support personnel who were contacted via home phones or beeper numbers. Speedy remedy for both hardware and software problems and decisions on project-specific issues were available during all interviewing hours. For example, when interviewers were experiencing slow CATI screen response on the first weekend of data collection for NHES:2007, network engineers and NHES CATI programmers were contacted. They discovered that the combination of the Blaise platform and the method of allocating interviewers to network resources triggered the problem and resolved the problem soon after by adding network resources and refining the assignment algorithm.

4.9.3 Interviewer Monitoring

Westat systematically and rigorously monitored telephone interviewer performance throughout the field period. The purpose of monitoring was to reinforce good interviewing practice and to help build interviewing skills through coaching. Monitors, who included TRC supervisors and project staff, evaluated interviewers on their telephone manner and relationship with respondents, specifically on their level of skill in reading the questions, listening to the comments and questions of respondents and providing accurate probes and replies, correctly recording the information, and gaining respondent cooperation. Monitors entered their observations into an automated system; each monitoring period was about 10 minutes in length. All of the TRCs and the at-home interviewers can be monitored from terminals located at the Rockville TRC through Westat's telephone system, so project staff and supervisors were able to provide feedback to interviewers no matter where they were located. In addition, each TRC has monitoring stations. Monitoring hours were allocated in about the same proportion as interviewer hour allocation; therefore, about 30 percent of the monitoring hours occurred during the daytime, 40 percent during the evenings, and 30 percent on weekends.

Monitoring rates varied across interviewers somewhat based upon experience, performance, and the results of previous monitoring sessions. Overall rates also varied across TRCs, consistent with the number of experienced versus inexperienced interviewers at the particular centers. Across the TRCs and at-home interviewers, the monitoring rate ranged from 4 to 38 percent. Initially, new interviewers were monitored more than experienced interviewers but, as the new interviewers became more proficient, the difference in the rate of monitoring between the two groups decreased. On average 11 percent of all interviewer air time hours were monitored. Table 4-8 presents the hours of interviewer air time, monitoring rate, and cumulative monitoring rate for each week of the NHES:2007 data collection.

Each week, the TRC operations manager for the study reviewed the statistics on monitoring individual interviewers. If she identified interviewers in need of focused monitoring because of a low monitoring rate in a given week or because of other performance problems such as low productivity or cooperation rates for the households called, she directed TRC supervisors accordingly. Detailed monitoring reports were also provided to the NCES on a weekly basis. They showed interviewer air time hours and the monitoring rate (weekly and cumulative).

Table 4-8. NHES interviewer monitoring rate, by week and cumulatively: 2007

Week number	Week ending	Air time (hours)[1]	Monitoring rate[2]	Cumulative monitoring rate[2]
1	January 7, 2007	1,350	12	12
2	January 14, 2007	1,840	10	11
3	January 21, 2007	2,308	9	10
4	January 28, 2007	2,374	9	10
5	February 4, 2007	2,035	10	10
6	February 11, 2007	1,615	15	11
7	February 18, 2007	2,376	9	11
8	February 25, 2007	2,143	11	11
9	March 4, 2007	2,299	11	11
10	March 11, 2007	1,721	13	11
11	March 18, 2007	1,701	12	11
12	March 25, 2007	1,370	9	11
13	April 1, 2007	661	16	11
14	April 8, 2007	869	10	11
15	April 15, 2007	802	10	11
16	April 22, 2007	232	38	11
17	April 29, 2007	299	21	11
18	May 6, 2007	112	60	11

– Not available due to problem with monitoring report for this week.
[1] Air time is the time that interviewers spend on dialing cases, contact time, and conducting interviews. Air time is rounded to whole numbers.
[2] The monitoring rate is the ratio of monitoring time to air time.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

4.9.4 Standard Reports

In addition to monitoring statistics, the CATI management system produced weekly reports presenting cooperation rates, refusal rates, and refusal conversion rates for each interviewer. These reports were used by TRC supervisors when they gave feedback to the interviewers and guided the supervisors in assigning interviewers to appropriate additional training.

Weekly statistics provided in standard reports included numbers and types of cases completed, their statuses, and the survey cooperation rate.

4.9.5 Coaching Sessions

During the first few weeks of data collection, TRC supervisors conducted coaching sessions with small groups of interviewers. These sessions included both new and experienced interviewers. Newer interviewers had by then experienced the challenges of interviewing in an RDD survey, and veteran interviewers suggested valuable strategies for meeting some of these challenges. In the coaching sessions, feedback from the monitoring was provided to the interviewers in a direct and positive way. This, in addition to feedback and suggestions given to individual interviewers by supervisors, helped to enhance the quality of interviewer-respondent interaction in NHES:2007.

4.9.6 Interviewer Meetings

Interviewer meetings led by the TRC supervisors were held from time to time at the direction of the TRC operations manager or the project director. At these meetings, clarification of questionnaire items or contact procedures was given, and general news was circulated and discussed. The meetings were scheduled so that all interviewers attended; this ensured that all interviewers received consistent information.

4.9.7 Online Help Screens

Interviewers had two reference sources for use when questions about the survey items arose. Question-by-question specifications for selected items were included in the interviewer materials for the study, in hard copy for those working at the TRCs and online (and printable) for at-home interviewers. Selected items also had CATI help screens that could be accessed at a keystroke. The selected items were chosen based on the frequency with which help screens were accessed for the same or similar items in the past and based on the complexity of concepts for new items.

4.10 Interview Administration Time

4.10.1 Screener Administration Time

Tables 4-9 and 4-10 show the administration times in minutes for the NHES:2007 Screener and three extended interviews. In previous NHES administrations, the CATI system recorded the time from when a case was served to an interviewer by the scheduler program through the end of the call. The timing was reset when a Screener was served to an interviewer again, and was reset for extended interviews that had not been started (callbacks for extended interview "restarts" maintained the initial time information for completed sections). In the NHES:2007 CATI application, the timing variable was not reset and therefore accumulated the time associated with multiple contact attempts. This inflates the timings, especially for the Screener. Because of this, only Screener cases that were completed in the first attempt are reported here. The administration times for completed Screeners categorized by the sampling status of the extended interviews that were generated in the household show a relatively small respondent burden (table 4-9). Overall, the mean Screener administration time was 3.2 minutes. The average Screener administration time was 2.4 minutes in households in which no member was sampled for an extended interview. The administration times were longer in households in which one or more members were sampled, ranging from 4.0 minutes to 6.2 minutes, and longest in households in which members were sampled for all three surveys (6.2 minutes).

4.10.2 SR, PFI, and AEWR Administration Times

The mean time to administer the SR interview was 21 minutes (table 4-10). The mean time to administer the PFI interview was 27 minutes for the elementary school path, 26 minutes for the middle school path, 26 minutes for the high school path, and 21 minutes for the home school path. The mean AEWR administration time was 18 minutes. The administration time was 12 minutes for nonparticipants and 27 minutes for participants.

Table 4-9. Mean and quartile administration time of completed Screeners, by extended interview sampling status: 2007

Completed Screeners by sampling status	Number	Interview length in minutes				
				Quartiles		
		Mean	Standard deviation	75th percentile	Median	25th percentile
Overall	17,028	3.2	1.8	4.1	2.9	1.8
No one sampled	10,485	2.4	1.3	2.7	2.0	1.7
Person sampled for SR interview only	347	4.5	1.4	4.9	4.2	3.6
Person sampled for PFI interview only	2,612	4.7	1.5	5.3	4.4	3.7
Persons sampled for SR and PFI interviews	471	5.7	1.8	6.4	5.3	4.5
Persons sampled for AEWR interview only	2,534	4.0	1.4	4.5	3.7	3.2
Persons sampled for AEWR and PFI interviews	483	5.7	1.6	6.4	5.5	4.7
Persons sampled for AEWR and SR interviews	59	5.1	1.1	5.9	5.0	4.4
Persons sampled for AEWR, PFI, and SR interviews	37	6.2	1.4	7.1	6.0	5.2

NOTE: Due to an artifact of the timing feature of the CATI system, only Screeners completed in one call are included in this table, so that accumulated contact time is not counted in the Screener administration time.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

Table 4-10. Mean administration time of completed extended interviews, by interview type: 2007

Completed extended interviews by type	Number	Interview length in minutes				
				Quartiles		
		Mean	Standard deviation	75th percentile	Median	25th percentile
Interview totals						
SR interview	2,858	20.9	7.3	24.2	20.7	17.9
PFI interview	11,712	26.4	8.8	30.4	25.2	21.3
AEWR interview						
PFI interview path						
Elementary school	4,930	27.0	9.3	33.0	25.8	21.6
Middle school	2,509	25.9	8.4	29.7	24.9	21.2
High school	3,874	26.4	8.3	30.1	25.3	21.7
Home school	399	20.6	7.7	24.5	20.1	16.3
AEWR interview path by participation						
Participants						
Nonparticipants						

NOTE: Timings include completed interviews from all NHES:2007 samples.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 2007.

4.11 Data Editing

The final product of the NHES CATI data collection process is the delivery of edited data files and associated documentation. To ensure that the data would be complete and of high quality, a series of data editing procedures was conducted. Data editing (correcting interviewer, respondent, and program errors) was performed both during administration of the interview and after completion of the interview, when updating processes were performed by data preparation staff. The latter process can potentially introduce errors in other items. Therefore, extensive post-data collection data editing procedures were conducted. These procedures included confirming that data were within the defined range of values for each item, performing logic, integrity and structural edits, reviewing cross-tabulations between data items, and reviewing frequency distributions for individual data items to ensure skip patterns were followed appropriately. After imputation of missing values was completed, these procedures were repeated to ensure that no errors were introduced during imputation.

Appendix I contains detailed information about range and logic edits, batch integrity edits, and structural edits discussed in the following sections.

4.11.1 Range Edits

The ranges of most of the items were determined by the codes available for responses (closed-ended responses). However, some items such as age did not have predefined response codes and required an entry by the interviewer (open-ended responses). To help assure that reasonable entries were made for open-ended responses, reasonable ranges were defined prior to data collection and programmed into CATI.

Range edits included both hard- and soft-range edits. A *soft range* is one that represents the reasonable expected range of values but does not include all possible values. Responses outside the soft range were confirmed with the respondent and had to be entered a second time. For example, the number of hours each week a child spent doing homework had a soft range of 1 to 14. A value outside this range could be entered and confirmed as correct by the interviewer as long as it was within the hard range of values (1 to 36). *Hard ranges* are those that have a finite set of parameters for the values that can be entered into the CATI system. Out-of-hard-range values for either open- or closed-ended questions were not accepted. If the respondent insisted that a response outside the hard range was correct, the interviewer could enter the

information in a comments data file. These comments were reviewed by data preparation staff. Out-of-hard-range values were accepted if the comments supported the response. Otherwise, the values were left as missing and later imputed.

After data collection was completed and imputation was performed, range edits for number-and-unit logic checks and hard-range-by-unit checks were rerun against the entire database to ensure that no outliers were inadvertently introduced during the post-data-collection updating process or during imputation. In addition, staff reviewed all continuous variable ranges. Therefore, any outliers that exist in the data files were reviewed during the data preparation process and originated from information entered into the comments data file.

4.11.2 Logic Edits

Consistency or logic checks examine the relationships between responses to ensure that they do not conflict with one another or that the response to one item does not make the response to another unlikely. Logic specifications for the NHES:2007 interviews were contained within the CATI system. For example, the CATI system was programmed to control skip patterns so that inappropriate items were not asked. Other types of consistency (logic) checks for the NHES:2007 interviews also were included. For example, a parent/guardian may have reported that a child was attending a grade that was outside the normal range of grades for his age. If the logic check was violated, an error message appeared that explained that the response was inconsistent and allowed the interviewer to enter a correction. If the respondent confirmed an answer that appeared to be inconsistent, the interviewer entered it as a comment. The values and interviewer comments for cases violating the edits were examined by data preparation and project staff and either the information violating the edit was kept or it was coded to "not ascertained" and later replaced with imputed data. Data were kept in circumstances where the data were judged to be plausible even though they violated the edit (e.g., an inconsistency between a child's age and his/her grade in school existed because the parent respondent indicated that the child had been accelerated in school).

4.11.3 Structural Edits

To facilitate imputation, person-level data collected in the Screener was structured vertically, one record per enumerated household member. SAS structural edits were run after imputation to ensure that

appropriate person records existed for responses gathered during the interview. For example, if a birth father was indicated as living in the household, the structural edits checked for a person record with sex equal to male and an age 12 or more years older than the child. Structural edits also checked interview completeness and parent relationship data.

4.11.4 Frequency and Cross-Tabulation Review

The frequencies of responses to all data items (both individually and in conjunction with related data items) were reviewed to ensure that appropriate skip patterns were followed and that inappropriate values were not introduced during data editing. Staff members checked each item to make sure the correct numbers of responses and legitimate skips were found. If a discrepancy was discovered, the problem case was identified and reviewed. If necessary, the audit trail for the interview, which provided a keystroke-by-keystroke record of an interview, was retrieved to determine the appropriate response. If the audit trail revealed no additional information, the item was coded as "not ascertained" and later imputed.

4.11.5 Review of "Other, Specify" Text Items

All "other, specify" text responses were reviewed to determine if they should be coded into one of the existing code categories. When a respondent gave a response other than those that were available, the interviewer entered the respondent's text response into a "specify" overlay that appeared on the screen. The "specify" responses were reviewed by the data preparation staff and, where appropriate, coded into one of the existing response categories. Review of the open-ended text responses revealed that with few exceptions, no particular text item occurred frequently enough to warrant the creation of a new response category. However, some additions were made to exiting categories in item (PN20) and (PN21) concerning television channels. Specifically, additional religious channels were added to the category including Christian/Cornerstone so that Trinity Broadcasting and others could be included there. Also, additional Spanish-language channels were added to the category including Telemundo and Galavision, so that MUN2 and others could be included there. All channels with the word "family" were included in the category for the ABC Family Channel and all sport related channels were included in a sports channel category (previously ESPN). Additionally, a number of local channels were investigated and found to be Public Broadcasting Stations (PBS) and were included in the same category. Due to the high frequency of specified responses, two new variables were added to the list of television channels: The History Channel,

and Food (or Cooking) Network. The list of channels is not read to respondents. The response categories and open-ended items that were added appear in italics on the questionnaire. Verbatim strings of "other, specify" items appear only on the restricted-use data files.

4.11.6 Coding Schools

During the PFI interview, parents were asked to provide the name and location (state) of their child's school, and the interviewers used a lookup file to identify the school. This procedure was new for the NHES:2007 data collection. The purpose of providing NCES School IDs on the PFI data files is to enable the inclusion of other types of school-related data from the Common Core of Data (CCD) and Private School Universe Survey (PSS) data files in addition to what is already provided by respondents in the School Characteristics section of the PFI survey. At the time that the PFI data were being collected, only school ID's and corresponding variables from the CCD 2004-2005 data file and the PSS 2003-2004 data file were available and these were the IDs that were programmed into the CATI lookup feature. Given that the NHES data collection took place during the 2006-2007 academic school year, some of the data extracted from the CCD or PSS data files that was merged with the PFI data for inclusion as derived school-related variables may not have been the most up-to-date information for these schools. Therefore, having the NCES School ID's on the PFI data files will enable data users' to import data from more current CCD and PSS data collections to more closely approximate certain school characteristics for the 2006-2007 academic school year.

When the correct school was identified through the CATI lookup feature, i.e. the correct school name, city, and state were verified by the respondent, a school identification number (NCES School ID) was entered into the CATI record. If interviewers could not find the school in the lookup file during the interview, the parent was asked for the name and address of the school and other questions about the child's school such as charter school status (if child was reported to be attending a public school), religious affiliation (if child was reported to be attending a private school), highest and lowest grade, and approximate numbers of students. These characteristics helped study staff to identify the school in the event that the interviewer could not find the school in the lookup file.

Using the information provided by parents, study staff attempted to identify the schools using the online school lookup functions for the Common Core of Data (CCD) and the Private School Universe Survey (http://nces.ed.gov/ccd/schoolsearch/; http://nces.ed.gov/surveys/pss/) at the U.S. Department of

Education's National Center for Education Statistics. School ID numbers were identified for a number of schools using the parent-reported data and online lookup functions, e.g. a school was located online with the same address, grade range, etc. as that given by the parent but the school names were different. If no NCES School ID number was available through this method, then the school was imputed using the general imputation procedures described in chapter 6.

Among the schools for which study staff found School IDs, there were 41 cases found in a preliminary CCD listing of new schools for the 2005–2006 academic school year. Therefore, there were no data from the CCD 2004–2005 academic school year data file that could be merged with the NHES data for these 41 cases. For these 41 cases, parent responses to several school questions appear on the data file rather than CCD data: S07CHART, school is a charter school; SCHLGRAD, the grade level classification for the child's school; and S07NUMST, the total number of students in the sampled child's school. Three flag variables on the data file enable analysts to determine which data for S07CHART, SCHLGRAD, and S07NUMST were obtained from parent reports. These are S07CHFLG, SCHGDFLG, and S07NMFLG. A code of 1 for these variables indicates that the data were obtained from the CCD file and a code of 2 for these variables indicates that the data were obtained from parent-report.

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5. UNIT RESPONSE

This chapter describes the unit response rates for the 2007 National Household Education Surveys Program (NHES:2007). Unit response rates are defined (section 5.1) and analyses of response rates are presented for the Screener (section 5.2) and for each of the three extended interviews, the School Readiness Survey (SR) interview, the Parent and Family Involvement Survey (PFI) interview, and the Adult Education for Work-Related Reasons (AEWR) interview (section 5.3).

Unit nonresponse is generally regarded as one measure of survey quality. Response rates are of concern because survey estimates could potentially suffer from nonresponse bias if those who respond to a survey are very different from those who do not, and the risk of nonresponse bias is considered greater when unit nonresponse is higher. Chapter 8 gives an overview of the design and results of a full-scale bias study that was conducted in conjunction with NHES:2007.

5.1 Definition of Unit Response Rates

A unit response rate is the ratio of the number of units with completed interviews (for example, the units could be telephone numbers, households, or persons) to the number of units sampled and eligible for the interview. In some cases, these rates are easily defined and computed, while in other cases the numerator or denominator of the ratio must be estimated.

For reporting the results from NHES:2007, the overall unit response rate indicates the percentage of possible interviews that were completed taking all survey stages into account, while the unit response rate measures the percentage of interviews that were completed for a specific stage of the survey. Specifically, household members were identified for interviews in a two-stage process. Screener interviews were conducted to enumerate and sample household members, and then questionnaires were administered for the sampled members. If a household member failed to complete the first-stage Screener, no members could be sampled for other interviews. Under this design, the unit response rate for the second stage (SR, PFI, or AEWR interviews) is the percentage of sampled persons who completed these interviews. The overall unit response rate is the product of the first- and second-stage unit response rates (i.e., the Screener unit response rate multiplied by the extended interview unit response rate).

Unit response rates and overall unit response rates can be either unweighted or weighted. The unweighted rate, computed using the raw number of cases, provides a useful description of the success of the operational aspects of the survey. The weighted rate, computed by summing the weights (usually the reciprocals of the probability of selecting the units) for both the numerator and denominator, gives a better description of the success of the survey with respect to the population sampled since the weights allow for inference of the sample data (including response status) to the population level. Both rates are usually similar unless the probabilities of selection and the unit response rates in the categories with different selection probabilities vary considerably. All of the unit response rates discussed in this chapter are weighted unless noted specifically in the text, since the main purpose of this chapter is to describe the success of the survey with respect to the survey population.

5.2 Screener Unit Response Rates

The first panel of table 5-1 shows the disposition of the 278,490 telephone numbers that were in the final sample for NHES:2007. The three major categories of response status are those identified as numbers for residential households, those identified as nonresidential numbers (primarily nonworking and business telephone numbers), and those numbers that, despite numerous attempts, could not be classified as either residential or nonresidential.

About 41 percent of the telephone numbers were identified as residential through contact with the households. This percentage is higher than that reported for NHES:2001, and about the same as that reported for NHES:1999, NHES:2003, and NHES:2005.[41] Assuming that 38 percent of the telephone numbers with unresolved residential status were residential (discussed below), the total number of residential telephone numbers would be 123,093, for a total of 29 percent of all telephone numbers that were estimated to be residential.[42]

The percentage of telephone numbers with unknown residential status was about 8 percent—lower than the 10 percent found in NHES:2001, identical to the 8 percent found in NHES:1999, NHES:2003, and NHES:2005, and higher than the 6 percent found in NHES:1995 and NHES:1996, and the 3 to 5 percent found in previous NHES studies. Virtually all of the unknown residential status numbers were called 14 times or more as in previous NHES studies (see chapter 4 for more details on this

[41]In NHES:1999 and NHES:2003, about 43 percent of all sampled telephone numbers were identified as residential. In NHES:2005, this percentage was 42. In NHES:2001, this percentage was 37.
[42]This estimated residency rate is a weighted estimate.

issue). Piekarski, Kaplan, and Prestegaard (1999) describe changes in the telephone system that are related to the increase in the proportion of telephone numbers with unresolved residency status, including factors related to the competition for local exchange service in the market. They note that while the number of telephone households increased only 11 percent from 1988 to 1998, the number of telephone numbers that could be dialed in a telephone survey[43] increased by 80 percent. Even accounting for the increase in the number of households with more than one telephone number and the increased demand for business telephone numbers, many of these newly created numbers are not assigned to any user.

Table 5-1. Number of telephone numbers dialed, by residential status and weighted and unweighted Screener unit response rates

Screener response category	Number	Percentage of all numbers	Percentage of residential numbers
Total	278,490	100.0	†
Identified as residential	115,173	41.4	100.0
Responded	54,034	19.4	46.9
Did not respond	61,139	22.0	53.1
Identified as nonresidential	142,254	51.1	†
Unknown residential status	21,063	7.6	†
Estimated Screener unit response rates[1]	**Weighted rate (percent)**		**Unweighted rate (percent)**
Vendor-assisted unit response rate	52.8		53.2
Business office method unit response rate	52.5		53.0
CASRO unit response rate	53.9		54.0
Conservative unit response rate	46.6		48.4
Liberal unit response rate	57.4		56.7

† Not applicable.
[1]All of the unit response rates use the weighted number of responding households (for weighted rates) or the unweighted number of responding households (for unweighted rates) as the numerator. The denominators vary but are all estimated totals. For the vendor-assisted method unit response rate, the proportion of unknown residential status numbers included in the denominator was estimated using information about the cases from an outside vendor. For the estimated unit response rate using the business office method, the proportion of unknown residential status numbers included in the denominator was based upon the proportion identified in checks with telephone business offices. For the Council of American Survey Research Organizations (CASRO) unit response rate, the proportion of unknown residential status numbers included in the denominator was based upon the residency rate for the numbers with known residential status. For the conservative unit response rate, all of the unknown residential status numbers were included in the denominator. For the liberal unit response rate, none of the unknown residential status numbers were included in the denominator.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program, 2007.

[43] The number of telephone numbers that could be dialed is the number of prefixes (area code and first three digits of the telephone number) that are assigned for plain old telephone service (POTS) multiplied by 10,000 to account for all permutations of the last four digits associated with any given prefix.

The lower panel of table 5-1 shows five estimated unit response rates for the Screener based upon different assumptions about the telephone numbers with unknown residential status. Each of these rates is described below, along with the rationale for its use. Each of these approaches uses the same numerator, the number of households (weighted or unweighted, for the weighted and unweighted rates, respectively) that completed the Screener. Variability in the estimates arises because it is not possible to identify precisely the residential status for each telephone number. The difference among the rates is in the allocation of the numbers in the unknown residential status category that is used in the calculation of the denominator of the unit response rate. The numbers estimated to be residential according to each method are shown in table 5-2.

The vendor-assisted approach uses information from an outside vendor about cases for which no Screener interview was completed in the estimation of their residency rate. Because this approach uses direct information about likely residential status associated with the particular telephone number, this approach is believed to yield more accurate estimates of residency rates than the survival method that was previously used to estimate residency rates in NHES. Estimates based on the vendor-assisted method suggest that 37.6 percent of telephone numbers with unresolved residency status in NHES:2007 are residential. Therefore, the denominator of the unit response rate based on the vendor-assisted method is all the telephone numbers that were known to be residences plus 37.6 percent of the numbers with an unresolved residential status. The estimated Screener unit response rate based on the vendor-assisted method is 53 percent. If the raw count of telephone numbers was not weighted, the Screener unit response rate using the vendor-assisted method would still have been 53 percent. Because the vendor-assisted method uses more information about the telephone numbers with unknown residency status, it is a more accurate approach for estimating unit response rates in random digit dialing (RDD) surveys.

The business office method derives its name from the technique used to estimate the denominator of the rate. A random sample of 350 telephone numbers with unresolved residency status were selected in NHES:1995 and the numbers were classified by local telephone companies. The telephone companies were asked to first classify the numbers as working or not working. The companies were asked to further identify working numbers as residential or business numbers. As a result of this process, it was estimated that 40.5 percent of the numbers were residential. This percentage is nearly identical to the result from a study conducted at the end of NHES:1991. Therefore, the denominator of the unit response rate based on the business office method includes all the telephone numbers that were known to be residences plus 40.5 percent of the numbers with an unresolved residential status. The

estimated weighted Screener unit response rate using the business office method is 53 percent. There is some concern that the business office approach may be inaccurate due to the reporting practices of the telephone companies. However, in NHES:2007, the Screener unit response rate obtained using this method is similar to the one obtained from the vendor-assisted method, which is considered to be the most accurate method.

The other three unit response rates shown in table 5-1 were computed by allocating different proportions of the numbers with unknown residency status into the residential category. The Council of American Survey Research Organizations (CASRO) rate is computed by allocating the numbers with unknown residential status in the same proportion observed in the numbers with known residential status, which in NHES:2007 was 28.7 percent (table 5-2). The weighted response rate using the CASRO method is 54 percent.

Table 5-2. Number and percentage of telephone numbers with unknown residential status assumed to be residential under each of the methods of estimating unit response rates: 2007

Method of estimating unit response rates	Number	Percent
Total telephone numbers with unknown residential status	21,063	100.0
Total assumed to be residential using vendor-assisted method	7,920	37.6
Total assumed to be residential using business office method	8,531	40.5
Total assumed to be residential using CASRO method	6,045	28.7
Total assumed to be residential using conservative method	21,063	100.0
Total assumed to be residential using liberal method	0	0.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program, 2007.

The conservative and liberal unit response rates define the lower and upper bounds of the unit response rate. The conservative unit response rate is computed assuming that all of the numbers with unknown residential status are actually residential numbers. The weighted conservative unit response rate is 47 percent. The liberal rate is computed assuming that all of the numbers with unknown residential status are actually nonresidential. The weighted liberal unit response rate is 57 percent. As noted above, the variability in the estimates arises because it is not possible to identify precisely the residential status for each telephone number. For the remainder of the report, a Screener unit response rate of 53 percent, based on the vendor-assisted method, will be cited. Because this method uses more information about the

telephone numbers and their call histories, it is a more accurate approach for estimating unit response rates in random digit dialing (RDD) surveys.

The overall NHES:2007 Screener unit response rate of 53 percent is lower than that in earlier years. NHES Screener unit response rates attained in other years include 81 percent in NHES:1991, 82 percent in NHES:1993, 73 percent in NHES:1995, 70 percent in NHES:1996, 74 percent in NHES:1999, 69 percent in NHES:2001, 65 percent in NHES:2003, and 67 percent in NHES:2005. In NHES:1999, adults were enumerated during the screening interview in only a subsample of the households. By comparison, full household enumeration was used in NHES:1996. A methodological study involving a screener experiment (Brick, Collins, and Chandler 1997) demonstrated that the "screen-out" approach (i.e., enumerating households in only a subsample of households based on an eligibility screening question) is expected to result in significantly higher unit response rates compared with enumerating adults in all households. Although subsampling for adult enumeration was used in NHES:2001, the proportion of households not designated for adult enumeration was much lower than in NHES:1999, so the benefits of the screen-out approach that were observed in the previous methodological study were not obtained in NHES:2001 because few households were screened out. The benefits of the screen-out approach were also not realized in NHES:2003, NHES:2005, or NHES:2007, probably because surveys have experienced a general decline in unit response rates in recent years (Curtin, Presser, and Singer 2005).

Another measure of respondents' willingness to complete the survey is the initial cooperation rate. The numerator of the Screener initial cooperation rate is the unweighted number of households that complete the Screener or are found to be ineligible, prior to refusal conversion attempts. The denominator is equal to the numerator, plus the unweighted number of households that refuse to complete the Screener. During data collection, the initial cooperation rate is used as a measure of the operational success of the survey, and is monitored regularly. The overall initial cooperation rate for NHES:2007 was 37 percent. As discussed in chapter 4, the sample was released in two waves, each of which was a random subsample of the full sample. The initial cooperation rates for waves 1 and 2 were 36 percent and 38 percent, respectively.

Table 5-3 provides a further breakdown of the responding and nonresponding residential telephone numbers. The responding numbers are classified by whether or not any other interviews were scheduled for the household, and the nonresponding numbers are classified by the reason for nonresponse. About 86 percent of all the nonresponse in the Screener was due to an adult household member refusing to answer the screening items. The next largest category is the 10 percent classified as maximum calls, which includes those households that never completed the Screener after numerous calls. (These cases could have received up to 39 calls; the vast majority received between 10 and 26 calls.) While these households did not explicitly refuse to participate, potential respondents were not available to complete the screening items despite many attempts to reach them. Language problems accounted for 3 percent of nonresponse. The language problem cases are discussed in more detail below.

Table 5-3. Number and percentage of known residential telephone numbers, by Screener response status: 2007

Screener response category	Number	Percent
Responding residential phone numbers	54,034	100.0
Households with no extended interviews scheduled	29,309	54.2
Households with at least one extended interview scheduled	24,725	45.8
Not responding residential phone numbers	61,139	100.0
Refusals	52,618	86.1
Maximum calls	6,236	10.2
Language problems	1,963	3.2
Other problems[1]	322	0.5

[1] *Other problems* include household members being unavailable in field period and household members being too sick to respond.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program, 2007.

5.2.1 Spanish Language Cases

As discussed in chapter 4, language problem cases were divided into Spanish language cases, other non-English language cases, and other language problems (e.g., hearing and/or speech disabilities). In NHES:2007, 5,771 Screener cases were designated as Spanish language cases by interviewers and, among these, 2,701 were completed. The unweighted unit response rate for these cases was 47 percent.

Records for all completed extended interviews contain a variable indicating whether the interview was conducted in English or Spanish; a total of 1,060 completed extended interviews were conducted in Spanish.

5.2.2 Distribution of Household Members Sampled for Extended Interviews

Table 5-4 shows the number of screened households in which household members were sampled for extended interviews. In the NHES:2007 sample, 2 percent had only and SR interview scheduled, 18 percent had only a PFI interview scheduled, about 4 percent had SR and PFI interviews scheduled, 17 percent had only an AEWR interview scheduled, about 4 percent had PFI and AEWR interviews scheduled, less than one percent had SR and AEWR interviews scheduled, and less than one percent had all three types of interviews scheduled. The number and percentage of cases that were sampled for an AEWR survey alone or in combination with a child survey were lower than they would have been if the AEWR survey had not been ended.

Table 5-4. Number and percent of households responding to the Screener, by type of extended interviews scheduled: 2007

Type of interview scheduled	Number of households	Percent of households
Total	54,034	100.0
SR interview only	1,305	2.4
PFI interview only	9,846	18.2
SR and PFI interview	1,988	3.7
AEWR interview only	9,157	16.9
PFI and AEWR interviews	2,016	3.7
SR and AEWR interviews	242	0.4
SR, PFI, and AEWR interviews	171	0.3
No extended interview	29,309	54.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program, 2007.

5.2.3 Profile of Screener Unit Response Rates

In most RDD surveys, it is difficult to obtain and examine the characteristics of households that do not respond to the screening interview. Consequently, the ability to examine nonresponse bias at

this stage of the survey is limited. In this section, unit response rates are given by characteristics of the telephone number, by characteristics of the geographic area of the households (obtained using the ZIP code that has the most households associated with telephone numbers in the exchange) based on the 2000 Census, and by whether an answering machine message was left during the study. These characteristics were considered because they are available for all telephone numbers and have the potential to be associated with response propensity.

Table 5-5 presents the Screener unit response rate by selected geographic area characteristics and characteristics of telephone numbers. The unit response rate was higher for telephone numbers with mailable addresses[44] than for those without mailable addresses, and was also higher for households where no answering machine message was left. [1-2] The Screener unit response rate also varied by region of the country, with the highest unit response rates in the West North Central and East North Central divisions and the lowest unit response rates in the Pacific division. [32-67] Areas with higher proportions of Whites generally had higher unit response rates than those with lower proportions of Whites [3-8], and areas with lower proportions of Hispanics, Blacks, and Asians had higher unit response rates than those with higher proportions in these subgroups. [9, 17, 18-20] Areas with lower median home values generally had higher unit response rates than those with higher median home values. [10-13] Areas with higher proportions of renters had lower response rates than those with lower proportions of renters. [14] As discussed later in this section, a Chi-Square Automatic Interaction Detection (CHAID) analysis was conducted to identify the characteristics most associated with Screener unit response, and to identify the optimal groupings of categories of those characteristics. This resulted in the differences in the categories presented in table 5-5.

The profile of Screener unit response rates by the characteristics of the areas given in table 5-5 is difficult to interpret because there are so many characteristics to consider. In addition, some of the characteristics are correlated, and this profile does not explore these relationships. Consequently, a multivariate analysis was performed to examine the interrelationship of the characteristics and the unit response rates.

[44]Mailable addresses received different levels of advanced incentives (see section 4.2). Unit response rates were lowest (32.4 percent) for wave 2 cases receiving the $2 advance incentive, higher (35.1 percent) for reserve cases receiving the $5 advance incentive, and highest (38.2) percent for reserve cases receiving the $10 advance incentive. The wave 2 and reserve cases did not receive the followup treatment that the wave 1 cases received. In the calculation of all other response rates, an adjustment was made to account for the subsampling of cases for followup.

Table 5-5. Number of telephone numbers dialed in the Screener, by response status, weighted unit response rate, and characteristic of the geographic area based on the telephone exchange

Characteristic	Total	Residential, responded	Residential, did not respond[1]	Non-residential	Unknown residential status	Estimated unit response rate (percent)[2]
Total	278,490	54,034	61,139	142,254	21,063	52.8
Mailable status						
Mailable address	152,261	51,323	56,312	30,239	14,387	54.4
No mailable address	126,229	2,711	4,827	112,015	6,676	43.3
Answering machine message indicator						
No message left	202,706	22,329	32,254	10,133	11,068	65.7
One or more messages left	75,784	31,705	28,885	132,121	9,995	42.3
Percent White						
Less than 30 percent	36,973	5,884	3,273	18,920	2,896	43.4
30 to 39 percent	16,950	2,619	3,583	9,364	1,384	46.1
40 to 59 percent	52,974	9,110	11,586	27,870	4,408	47.8
60 to 69 percent	34,345	6,420	7,530	17,661	2,734	49.7
70 to 79 percent	33,694	6,813	7,255	17,141	2,485	52.8
80 to 89 percent	33,382	6,826	7,165	16,814	2,577	53.6
90 percent or more	70,172	16,362	14,747	34,484	4,579	58.0
Percent Black						
0 to 49 percent	259,388	50,993	57,170	131,405	19,820	53.0
50 percent or more	19,102	3,041	3,969	10,849	1,243	48.3
Percent Asian						
Less than 10 percent	211,010	42,948	45,760	107,609	14,693	54.7
10 to 19 percent	49,839	8,408	11,022	25,850	4,559	47.6
20 to 29 percent	10,739	1,691	2,550	5,435	1,063	44.4
30 percent or more	6,902	987	1,807	3,360	748	39.2
Percent Hispanic						
0 to 39 percent	250,838	49,401	54,168	128,451	18,818	53.4
40 percent or more	27,652	4,633	6,971	13,803	2,245	44.7
Median home value						
1st decile	26,441	5,154	5,366	14,601	1,320	57.6
2nd through 4th deciles	83,127	17,420	17,200	43,298	5,209	57.0
5th through 6th deciles	56,373	11,403	12,108	28,612	4,247	54.3
7th through 9th deciles	84,794	15,623	20,011	41,705	7,455	49.3
10th decile	27,755	4,431	6,454	14,038	2,832	44.2
Percent renters						
0 to 49 percent	239,046	49,103	53,638	118,723	17,582	53.8
50 percent or more	39,444	4,931	7,501	23,531	3,481	42.3

See notes at end of table.

Table 5-5. Number of telephone numbers dialed in the Screener, by response status, weighted unit response rate, and characteristic of the geographic area based on the telephone exchange – (Continued)

Characteristic	Total	Residential, responded	Residential, did not respond[1]	Non-residential	Unknown residential status	Estimated unit response rate (percent)[2]
Percent college graduates						
Less than 20 percent	55,666	10,707	12,364	29,163	3,432	54.2
20 to 29 percent	104,188	21,090	23,485	52,213	7,400	54.0
30 percent or more	118,636	22,237	25,290	60,878	10,231	51.3
Metropolitan status						
In county in central city	108,958	19,091	23,123	58,323	8,421	50.6
In county not in central city	51,820	10,415	12,547	24,553	4,305	51.0
Subcounty of MSA or MSA its own county	68,464	13,706	15,640	33,528	5,590	52.2
Non-MSA	49,248	10,822	9,829	25,850	2,747	59.1
Median income						
1st through 4th deciles	107,159	20,103	22,318	57,789	6,949	54.3
5th and 6th deciles	56,590	11,268	12,852	28,269	4,201	53.6
7th decile or higher	114,741	22,663	25,969	56,196	9,913	54.5
Census region						
Northeast	49,177	9,210	11,580	24,349	4,038	49.9
Midwest	55,900	11,961	10,577	29,889	3,473	59.3
South	110,002	21,033	23,760	57,462	7,747	52.6
West	63,411	11,830	15,222	30,554	5,805	49.2
Census division						
New England	11,293	2,322	2,684	5,553	732	51.9
Middle Atlantic	37,884	6,888	8,896	18,796	3,304	49.1
East North Central	39,889	8,202	7,837	21,160	2,690	57.3
West North Central	16,011	3,759	2,740	8,729	783	64.0
South Atlantic	59,460	11,407	13,017	30,598	4,438	51.6
East South Central	16,046	3,362	3,417	8,425	842	56.7
West South Central	34,496	6,264	7,326	18,439	2,467	52.3
Mountain	18,085	3,658	3,729	9,368	1,330	55.8
Pacific	45,326	8,172	11,493	21,186	4,475	46.5

[1] The "residential, did not respond" counts include those nonrespondents not selected for extensive followup (i.e., the nonrespondents in wave 2).

[2] The estimated unit response rate is the vendor-assisted method unit response rate (i.e., the number of completed interviews divided by the sum of the number of completed interviews, nonresponses, and 37.6 percent of telephone numbers with an unknown residency status, weighted by the probability of selection).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program, 2007.

The goal of the multivariate analysis was to better understand the complex relationships among the characteristics by examining the characteristics simultaneously with regard to unit response

rates, and to determine if groups of households had extremely different unit response rates. Nonresponse bias in the estimates may appear when the characteristics of the respondents and nonrespondents are different. By identifying groups with different unit response rates, the characteristics of the respondents and nonrespondents can be used as an indicator of the potential for nonresponse bias and thus using these characteristics to form cells for nonresponse adjustment may reduce nonresponse bias (Little 1986). The characteristics of the telephone numbers and of the geographic areas corresponding to the telephone numbers sampled were used to identify groups with different unit response rates. The variables included in the analysis were characteristics of the telephone numbers and their geographic areas that were available and thought to be correlated with the unit response rate.

The multivariate analysis was done using a categorical search algorithm called Chi-Square Automatic Interaction Detection (CHAID). This algorithm is very similar to the continuous search algorithms LISREL and Automatic Interaction Detector (AID) that have been used for a number of years, but it is designed especially to handle categorical data like those available for NHES:2007. CHAID first identifies the characteristic of the data that is the best predictor of response. Then, within the levels of that characteristic, CHAID identifies the next most likely response predictor(s), and so forth, until a tree is formed with all potential response predictors. The final result is a division of the entire data set into cells by attempting to determine sequentially the cells that have the greatest discrimination with respect to the unit response rates. In other words, it divides the data set into groups so that the unit response rate within cells is as constant as possible, and the unit response rate between cells is as different as possible. This automatic procedure was done by specifying that the minimum number of households in any group had to be greater than or equal to 100 and the split of the variables into subgroups had to be statistically significant using a chi-square test at the 95 percent significance level.

Since many of the variables in the CHAID model, such as median home value, have multiple response categories, the program must take this into account. The CHAID software does this in two ways. First, it allows the data set to be split into subgroups separately within each level of the characteristic chosen in the previous round of CHAID selection. For example, Census region categories are split differently within different median home value categories. Second, the procedure selects variables irrespective of the number of response categories that variable may have since the procedure collapses categories together to get meaningful categories.

An example may help to explain the methods used in CHAID. All of the characteristics in the model are tested, and the one with the response categories having the largest discrimination with respect to the unit response rates is identified.[45] Table 7-2 (in chapter 7) contains the summary of this analysis as it relates directly to weighting the data. In this example, percent White in the exchange of the telephone number was the variable chosen as most associated with response propensity; the categories identified by CHAID were the 10 deciles. Note, for example, that within percent White decile categories the data were tested again; among cases in the first three deciles for percent White in the exchange, the indicator of whether an answering machine message was left was then used to split the data. The process continued until the final 56 cells shown in the table were formed. In addition to percent White in the exchange and number of answering machine messages left, the final 56 cells were formed using percent Hispanic in the exchange, median home value, percent high school graduates in the exchange, percent Asian in the exchange, Census division, mailable address status, percent Black in the exchange, MSA status, percent renters in the exchange, median income in the exchange, and Census region. Note that the variables in table 7-2 are not listed strictly in the order of their strength of association with response propensity. Although the variables percent owners in the exchange, minority stratum, percent income $100,000 or higher in the exchange, percent income $75,000 or higher in the exchange, percent age 65 or older in the exchange, and percent income $75,000-100,000 in the exchange were considered in the CHAID analysis, they were not selected as discriminators of response propensity in this multivariate analysis, given the other characteristics. The range of unit response rates among some of the cells suggests that interactions among some characteristics may be present. For example, for cells 2-11 (percent White in first three deciles and at least one answering machine message left), unit response rates range from 42 to 81 percent.

In a study conducted using data from the 1997 National Survey of America's Families, Groves and Wissoker (1999) found that there is a slight tendency for households with higher socioeconomic status to require more effort to complete an interview. As described above and depicted in chapter 7, some characteristics of the geographic area associated with socioeconomic status, including median home value, median income, and percent renters, were used in forming cells for Screener nonresponse adjustment. Table 7-2 shows that the unit response rates by median home value and percent renters are in line with the 1997 study findings (e.g., the categories that indicate higher socioeconomic

[45] Variables identified in previous analyses as being associated with response propensity were selected from among the variables available for both responding and nonresponding units. In an RDD survey, little information is available for nonresponding units, limiting the selection of characteristics for the CHAID analysis. Information associated with key characteristics of interest, such as participation in early childhood programs, activities, or adult education, and correlates of these such as maternal employment or educational attainment, are not available for nonrespondents and therefore cannot be used for nonresponse adjustment purposes.

status have the lower unit response rates). However, the unit response rates by median income are not in line with the 1997 study findings (e.g., the categories that indicate higher median household income have similar unit response rates to the categories that indicate lower median household income).

The range of unit response rates among the 56 cells suggested that the key characteristics identified by CHAID should be used in creating weighting adjustments. The results indicated that the CHAID analysis identifies characteristics associated with nonresponse that, when used in weighting adjustments, may reduce any nonresponse bias that may exist . Thus, these 56 cells were used in the adjustment for Screener nonresponse, as discussed in chapter 7.

5.3 Extended Interview Unit Response Rates

During the screening interview, all children were enumerated in households with eligible children; adults were enumerated in only a subsample of households. After the enumeration, children or adults within the household were selected for the SR-NHES:2007, PFI-NHES:2007, and/or AEWR-NHES:2007 surveys. The person who was identified as the most knowledgeable about the sampled child's care and education (nearly always a parent and most often the child's mother) became the respondent for the SR or PFI interview. The AEWR interview was conducted with the sampled adult.

The number of persons enumerated and sampled, and those with completed interviews for each survey of NHES:2007, are given in table 5-6. Of the enumerated 4,030 children eligible for sampling for the SR interview, a sample of 3,706 children was selected. Of the sampled children, 116 (3.1 percent) were actually eligible for the PFI survey and therefore completed PFI interviews, and 239 (6.4 percent) of the children were classified as ineligible. Completed SR interviews were obtained for 2,633 of the sampled children (17 of whom were initially sampled for PFI interviews) for an estimated 77 percent unit response rate and an overall unit response rate of 41 percent. The bulk of the unit nonresponse for the SR interview was due to refusal of the parent/guardian to respond (48.3 percent of nonresponse). Other reasons for SR interview nonresponse (not included in the table) were inability to make contact with the parent/guardian (35.2 percent of nonresponse), language problems (2.0 percent of nonresponse), and other miscellaneous reasons such as the parent/guardian being unavailable for an interview during the field period (14.4 percent of nonresponse).

The number of children enumerated, sampled, and the final status of each sampled child for the PFI interview are also given in table 5-6. Of the 23,882 enumerated children in kindergarten through grade 12, 14,021 were sampled for the PFI interview. Of the sampled students, 17 (0.1 percent) were later determined to be eligible for the SR survey and therefore completed SR interviews, and 92 (0.7 percent) were ineligible for the PFI survey. In all, 10,681 PFI interviews were completed with parents or guardians of sampled children, including 116 who were initially sampled for an SR interview. The estimated unit response rate for the PFI interview is 74 percent, and the overall unit response rate is 39 percent. The main reason for PFI interview nonresponse was the refusal of the parent/guardian to complete the interview (49.4 percent of PFI interview nonresponse). Other reasons for nonresponse to the PFI interview (not included in the table) were inability to complete the interview with the parent/guardian respondent despite many attempts (37.3 percent of PFI interview nonresponse), language problems (1.8 percent of PFI interview nonresponse), and other miscellaneous reasons for nonresponse such as the parent/guardian being unavailable for an interview during the field period (11.5 percent of nonresponse).

The bottom section of table 5-6 gives the numbers of adults enumerated and sampled, and the final status of the AEWR interview for sampled adults. Due to the decision not to release AEWR data to the public, adults were enumerated in only a subsample of households to obtain sufficient data for the nonresponse bias analysis described in chapter 8.[46] Of the 31,314 enumerated adults, 11,586 were sampled for AEWR interviews. A total of 7,710 adults completed the AEWR interview. The estimated unit response rate for the AE interview is 62 percent and the overall unit response rate is 33 percent. Almost all of those sampled were eligible for the interview; those classified as ineligible (236 adults) were either in the military or currently enrolled in high school. For the AEWR interview, the bulk of the nonresponse was due to refusal of the sampled adult to respond (55.1 percent of nonresponse). Other reasons for AEWR interview nonresponse (not included in the table) were inability to make contact with the sampled adult (26.2 percent of nonresponse), language problems with the sampled adult (2.9 percent of nonresponse), and other miscellaneous reasons such as the sampled adult being unable to respond due to illness (15.8 percent of nonresponse).

Following a pattern observed since NHES:2001, the unit response rates for NHES:2007 extended interviews are lower than those attained in the earlier NHES surveys. In the earlier surveys, unit response rates for surveys of parents of sampled children have generally been 89 to 90 percent. Among

[46]Note that the number of adults sampled and the number of completed interviews with adults are lower than the expected numbers presented in chapter 3 as a result of this decision. However, the decision to not enumerate adults in a subsample of households originally designated for adult enumeration does not affect response rates. This decision affected which cases were designated for adult enumeration prior to release but did not affect the protocol for the cases that had already been released and designated for adult enumeration.

adults sampled for AEWR surveys, unit response rates have generally been 80 to 85 percent. The lower rates observed in NHES:2007 are a reflection of the increasing difficulty in obtaining cooperation in RDD surveys (Curtin, Presser, and Singer 2005).

Table 5-6. Number of enumerated children, enumerated adults, completed interviews, and weighted unit response and overall unit response rates, by type of extended interview

Type of interview	Number	Estimated unit response rate (percent)	Estimated overall unit response rate (percent)[1]
SR interview		77.0	40.7
Enumerated	4,030		
Sampled[2]	3,706		
Ineligible	239		
Did not respond	735		
Total complete	2,633		
Sampled as PFI, completed as SR	17		
Sampled as SR, completed as SR	2,616		
PFI interview		74.1	39.1
Enumerated	23,882		
Sampled[2]	14,021		
Ineligible	92		
Did not respond	3,347		
Total complete	10,681		
Sampled as SR, completed as PFI	116		
Sampled as PFI, completed as PFI	10,565		
AEWR interview		62.4	33.0
Enumerated	31,314		
Sampled	11,586		
Ineligible	236		
Did not respond	3,640		
Complete	7,710		

[1]The estimated overall unit response rate is computed by multiplying the Screener unit response rate of 52.8 percent by the appropriate extended interview unit response rate.

[2]The number sampled for the SR interview includes the number sampled as SR, completed as SR (2,616); the number sampled as SR, completed as PFI (116); the number ineligible (239); and the number that did not respond (735). The number sampled for the PFI interview includes the number sampled as PFI, completed as PFI (10,565); the number sampled as PFI, completed as SR (17); the number ineligible (92); and the number that did not respond (3,347).

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Readiness (SR) and Parent and Family Involvement in Education (PFI) Survey of the National Household Education Surveys Program , 2007; and Adult Education for Work-Related Reasons Survey of the National Household Education Surveys Program, 2007.

5.3.1 Profile of Extended Interview Unit Response Rates

The unit response rates for the extended interviews can be examined by Screener variables available for both respondents and nonrespondents. The variables examined here were considered because they are available for all extended interview respondents and nonrespondents and, in some cases, have been associated with extended interview unit response rates in previous NHES surveys. The variables shown for the SR interview are Census region (based on the telephone number) and age or grade of the sampled child, which was collected during the Screener. Table 5-7 shows the number of sampled children by response status and unit response rate for each of these variables. For the SR survey, the unit response rates do not differ across the enrollment status categories [7] or across Census regions [1-6] .

For the PFI interview, three variables about each sampled child were used for examining the response profile: Census region, grade of the child, and type of school (i.e., regular school vs. homeschool). Census region was obtained based on the telephone number, and grade and type of school were obtained in the Screener. The distribution of cases for these variables and the estimated unit response rates are shown in table 5-8. The unit response rate is higher in the South and West census regions as compared with the Northeast. [8-13] There is no difference in unit response rates by type of school [26], or by grade. [14-25]

For the AEWR interview, three variables were considered in examining the response profile: sex (from the Screener), whether the adult attended classes or workshops in the past 12 months (as reported by the Screener respondent), and an indicator of whether the sampled adult was the Screener respondent (from the Screener) (table 5-9). The unit response rate for females is higher than that for males [27]. Sampled adults who were the Screener respondents completed the AEWR interview at a higher rate (77 percent) than those who were not the Screener respondents (44 percent) [28]. There was no difference between unit response rates according to whether the adult was reported by the Screener respondent to have attended classes or workshops in the past 12 months [29].

Table 5-7. Number of sampled SR interviews, by response status and weighted unit response rates

SR interviews and status at sampling	Total	Responded[1]	Did not respond	Ineligible	Estimated unit response rate
Total	3,706	2,732	735	239	77.0
Census region					
Northeast	640	458	147	35	74.0
South	825	628	145	52	79.3
Midwest	1,323	955	267	101	75.9
West	918	691	176	51	78.5
Grade of child (Screener)					
Unenrolled/unknown	1,354	936	257	161	77.0
Preschooler	2,352	1,796	478	78	77.0

[1]Includes all completed interviews that were sampled for the SR interview, regardless of whether the interview completed was the SR interview or the PFI interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Readiness (SR) Survey of the National Household Education Surveys Program , 2007.

Table 5-8. Number of sampled PFI interviews, by response status and weighted unit response rates

PFI interviews and status at sampling	Total	Responded[1]	Did not respond	Ineligible	Estimated unit response rate
Total	14,021	10,582	3,347	92	74.1
Census region					
Northeast	2,456	1,818	626	12	71.9
South	3,060	2,386	655	19	75.7
Midwest	5,176	3,849	1,294	33	73.1
West	3,329	2,529	772	28	75.6
Grade of child (Screener)					
Kindergarten	1,031	761	270	0	71.6
1st grade	1,093	795	296	2	72.5
2nd grade	1,025	762	259	4	73.5
3rd grade	942	700	240	2	71.8
4th grade	937	704	230	3	73.0
5th grade	967	732	232	3	73.5
6th grade	910	723	184	3	77.4
7th grade	965	765	196	4	77.9
8th grade	1,043	798	240	5	75.7
9th grade	1,102	820	274	8	72.2
10th grade	1,137	895	236	6	76.6
11th grade	1,213	920	289	4	73.8
12th grade	1,242	900	315	27	72.4
Other/unknown[2]	414	307	86	21	75.0
School (Screener)					
Regular school	13,493	10,192	3,235	66	78.2
Homeschool	422	343	74	5	74.0
Unknown	106	47	38	21	56.6

[1]Includes all completed interviews that were sampled for the PFI interview, regardless of whether the interview completed was the SR interview or the PFI interview.
[2]Other included ungraded and special education.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education (PFI) Survey of the National Household Education Surveys Program , 2007.

Table 5-9. Number of sampled AEWR interviews, by response status and weighted unit response rates: 2007

AEWR interviews and status at sampling	Total	Responded	Did not respond	Ineligible	Estimated unit response rate (percent)
Total	11,586	7,710	3,640	236	62.4
Sex (Screener)					
Female	6,470	4,544	1,828	98	65.6
Male	5,116	3,166	1,812	138	55.5
Screener respondent (Screener)					
Sampled adult	6,841	5,449	1,339	53	77.1
Person other than sampled adult	4,745	2,261	2,301	183	43.8
Took classes in past 12 months (Screener)					
Took classes in past 12 months	5,735	3,852	1,713	170	61.3
Did not take classes in past 12 months	5,851	3,858	1,927	66	60.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education for Work-Related Reasons Survey of the National Household Education Surveys Program, 2007.

6. ITEM RESPONSE AND IMPUTATION

6.1 Introduction

In the School Readiness (SR), Parent and Family Involvement in Education (PFI), and Adult Education for Work-Related Reasons (AEWR) Surveys of the 2007 National Household Education Surveys Program (NHES:2007), as in most surveys, the responses to some data items are not obtained for all interviews. There are numerous reasons for item nonresponse. Some respondents do not know the answer for the item or do not wish to respond for other reasons. Some item nonresponse arises when an interview is interrupted and not continued later, leaving items at the end of the interview blank. Item nonresponse may also be encountered because responses provided by the respondent are not internally consistent, and this inconsistency is not discovered until after the interview is completed. In these cases, the items that were not internally consistent were set to missing.

For the School Readiness (SR) and Parent and Family Involvement in Education (PFI) Surveys, the median item response rates were 99.28 percent and 99.04 percent, respectively, and the median total response rates (the product of the item response rates and overall unit response rates) were 40.41 percent and 38.72 percent, respectively. Numeric and categorical data items with missing data on the file were imputed. (In general, character string variables, such as countries of origin, languages, or "other/specify" responses were not imputed. School characteristics merged to the PFI data file from the Common Core of Data (CCD) and Private School Survey (PSS) files also were not imputed.) The imputations were done for two reasons. First, complete responses were needed for the variables used in developing the sampling weights. Second, users will be computing estimates employing a variety of methods and complete responses should aid their analyses.

Because the decision was made only to complete AEWR surveys with cases needed to obtain data for the nonresponse bias analysis and not to release a data file to the public, imputation was done only for weighting variables and key analytical variables for the nonresponse bias study (chapter 8).

6.2 Imputation Methodology

The methodology used for imputation in NHES:2007 was very similar to that used in previous NHES survey administrations. The imputation procedures were developed based on the procedures for imputing items in the NHES:1996 surveys, the NHES:1999 surveys, the NHES:2001 surveys, the NHES:2003 surveys, and the NHES:2005 surveys.

A hot-deck procedure was used to impute most missing responses. In this approach, the entire file was sorted into cells defined by characteristics of households or respondents that are likely to be associated with differences in item response propensities. These characteristics, or boundary variables, were used to group respondents into those most likely to have the same response or the same response propensity for the data item to be imputed. Two types of boundary variables were used. *Hard* boundary variables were considered to be so important that the donor and the recipient were required to match exactly. For other sort variables, called *soft* boundary variables, the values did not have to match exactly. In effect, the hard boundary variables were matching variables and the soft boundary variables were used to order the cases within the matching variables. The variables used as boundary variables in the imputation of items in NHES:1996, NHES:1999, NHES:2001, NHES:2003, and NHES:2005 were considered in order to arrive at a final set of standard imputation sort variables for each of the NHES:2007 surveys.

The WesDeck software was used to implement the hot-deck imputation procedure. WesDeck is a proprietary SAS macro developed by Westat to form hot-deck cells, impute using the hot-deck method, and generate output to verify the imputation.

The standard set of sort order variables[47] for the household-level items collected in the SR and PFI surveys consisted of the following:

- CENREG—the census region in which the household was located;
- HINCOME or HINCMRNG—household income category (specific or broad, respectively);
- KIDINHH—a variable derived specifically for imputation from the age (Screener variable AGE) of household members indicating whether or not children under age 18 resided in the household; and

[47]Some sort order variables were created specifically for imputation and do not appear on the data files.

- HOWNHOME—whether the home was rented versus owned or other arrangement.

The items from the SR and PFI interview surveys were imputed together. This maximized the efficiency of the programming and statistical review efforts. For this combined imputation, the standard hard boundary variable ALLGRADR was used to ensure that cases from one survey (e.g. SR) were not used as donors for cases from the other survey (e.g., PFI). That is, although the imputation of the questionnaire items was done simultaneously, the imputations for the two surveys were independent.

The standard hard boundary variables for the person-level items on the SR and PFI interview files were as follows:

- ALLGRADR—a variable derived specifically for imputation that indicates the grade/grade equivalent of the sampled child, derived from variables GRADE and GRADEEQ;
- SEX—sex of the sampled child;
- PARGRADS—a variable derived specifically for imputation that indicates the highest education level attained by either parent in the household as less than high school diploma, high school diploma but no bachelor's degree, or college graduate. This variable was derived from MOMGRADE1/2, MOMDIPL1/2, DADGRADE1/2, and DADDIPL1/2; and
- HHPARNS—a variable derived specifically for imputation from HHMOM1, HHMOM2, HHDAD1, and HHDAD2 indicating whether there were two parents in the household or not.

The standard sort order variables for the person-level items from the AEWR interview file were as follows:

- EDUC—a variable derived specifically for imputation that indicates whether or not the adult has at least a high school diploma or the equivalent. This variable was derived from IBGRADE and IBDIPL;
- AGECAT—a variable derived specifically for imputation from AAGE2006 for the respondent with the categories 16 through 29 years, 30 through 49 years, and 50 or older;
- ARACETH—a variable derived specifically for imputation that classifies the respondent as Black, non-Hispanic; Hispanic; or other. This variable was derived from AWHITE, ABLACK, AAMIND, AASIAN, APACI, and ARACEOTH; and
- HINCOME—the specific household income range.

For items that were sometimes skipped, a *trigger* variable was included as one of the hard boundary variables. The trigger variable ensured that the skip pattern in the questionnaire was maintained. The trigger variable could be either a single variable or a set of conditions that determine whether the respondent is eligible for the particular question (i.e., whether the variable in question should be answered or skipped). In some cases, an item was originally coded -1 (inapplicable) because of nonresponse to a component of the trigger, but the item became applicable as a result of the imputed value for the trigger component. In such cases, the item was recoded from -1 to -9 (not ascertained) and imputed. If, on the other hand, the trigger indicated that the item should have been skipped, the variable was set equal to -1 (if it was not already equal to -1) in the program that prepared the data for imputation prior to imputation of that variable.[48]

All of the observations were sorted into cells defined by the responses to the sort variables, and then divided into two classes within the cell depending on whether or not the item was missing. For an observation with a missing value, a value from a randomly selected donor (observation in the same cell but with the item completed) was used to replace the missing value. This method is called a hot-deck procedure because actual values are imputed from donors selected from the current data set as opposed to an external data set. After the imputation was completed, edit programs were run to ensure the imputed responses did not violate skip patterns or edit rules. If any violations occurred, the program was adjusted and imputation was rerun, or if only a few cases were affected, they were manually imputed.[49]

After values had been imputed for all observations with missing values, the distribution of the item prior to imputation, (i.e., the respondents' distribution) was compared to the post-imputation distributions of the imputed values alone and of the imputed values together with the observed values. For most items, the comparisons revealed similar item distributions pre- and post-imputation. Only one item from the PFI survey (CHISPAN, the child's Hispanic origin classification) showed a significant difference in the pre- and post-imputation distributions. There were three variables--DADSPEAK1 (father's primary language spoken at home), MOMSTAT2 (second mother's marital status), and MBLACK2 (second mother's indicator of a race of Black)--that had a different number of categories after imputation. In each of these cases, the difference noted was the result of manual imputation (see section 6.2.2), which considered characteristics of other household members. There were no significant differences between the pre- and post-imputation distributions among items in the SR or AEWR survey.

[48] In order to maintain the correct skip patterns during imputation, variables were imputed in *rounds*. That is, before a set of variables could be imputed, the trigger variables for that set had to be imputed. Thus, the process of recoding and imputing described here was done in a sequential manner.

[49] Manual imputation is discussed later in this chapter.

This comparison is an important step in assessing the potential impact of item nonresponse bias and ensuring that the imputation procedure reduces this bias, particularly for items with relatively low item response rates (less than 90 percent).

For each data item for which any values were imputed, an imputation flag variable was created. If the response for the item was not imputed, the imputation flag was set equal to 0. If the response was imputed, the flag was set to either 1, 2, 3, or 4. The value of the imputation flag indicates the specific procedure used to impute the missing value. The assignment of these values follows.

The imputation flag was typically set to 1 if the missing value was imputed using the standard hot-deck approach. In some cases, variables had to be recoded to be consistent with the skip patterns of the questionnaire prior to being imputed using the standard hot-deck approach. The procedure for hot-deck imputation only recognizes missing value codes as those that need to be replaced by imputed values. For NHES:2007, the missing code -7 equaled *refused* and -8 equaled *don't know*. In some cases, variables that originally had values of -1 (inapplicable) had to be recoded to a missing value code (i.e., -9 equaled not ascertained) for some cases prior to being imputed using the standard hot-deck approach. For these cases the imputation flag was set to 2.[50] If an item was imputed manually, the flag was set to 3. The imputation flag was set to 4 if the original value was *don't know* prior to imputation using the standard hot-deck approach.

The imputation flags were created to enable users to identify imputed values. Users can employ the imputation flag to delete the imputed values, use alternative imputation procedures, or account for the imputation in computation of the reliability of the estimates produced from the data set. For example, some users might wish to analyze the data with the missing values rather than the imputed values. If there is no imputation flag corresponding to the variable, no values for that variable were imputed. If the imputation flag corresponding to the variable is equal to 1, 2, 3, or 4, the user can replace the imputed response with a missing value to accomplish this goal. This method could also be used to replace the imputed value with a value imputed by some user-defined imputation approach.

Imputation can affect the precision of survey estimates, especially when large numbers of cases are imputed for a given measure (this is generally not the case in the NHES surveys). If the user

[50]For example, in the PFI file, if the value of SCHOICE equaled -8 for a child, then SDISRCT was not asked and thus was equal to -1 (inapplicable). During the imputation process for this child, if SCHOICE was imputed to 2 (chosen), then SDISRCT was first be recoded from -1 (inapplicable) to -9 (not ascertained) before the imputation procedure recognized SDISRCT as a variable that should be imputed to equal either 1 (school is in assigned school district) or 2 (school is not in assigned school district). In this case, the imputation flag for SDISRCT was set to 2.

wishes to account for the fact that some of the data were imputed when computing sampling errors for the estimates, the missing values could be imputed using multiple imputation methods or flagged so that variance procedures that reflect imputation variance could be used (Rao and Shao 1992 and Rubin 1987).

6.2.1 Imputation Approach for Missing SCHLID

The variable SCHLID (school identification number from CCD or PSS) was checked to make sure all values were valid by reviewing a frequency of SCHLID, and a cross tab of SPUBLIC*SCHLID. These tabulations were reviewed and if there were problems, the SRPFI file and the school lookup file were merged by SCHLCITY and SCHLSTAT and a new SCHLID variable called SCHLID2 was created; the old variable (SCHLID) was retained. Any cases remaining were reviewed to try to assign a SCHLID as described in chapter 4. After the merge, a frequency of SCHLID2 and cross tabs of SCHLID*SCHLID2, and SPUBLIC*SCHLID2 were reviewed.

If a school ID was unable to be assigned using the parent-reported information such that school ID remained missing, then the procedures described were used to impute school ID. Once a donor school was identified, that school ID and all the school related variables were copied over to the case being imputed. First, for any cases with a PATH of E (elementary), M (middle school) or S (senior high school), non-matches to CCD or PSS of SCHLID were reset to -9 and an imputation flag called SCHLIF was created, which took a value of 1 for all cases with -9, and 0 otherwise. Before imputation, a cross tab of SCHLIF*SCHLID was reviewed.

Then, new versions of the six school characteristics variables were created as follows:

SCHARTER_R = SCHARTER (whether the child attends a charter school);
SRELGON_R = SRELGON (whether the child's school is affiliated with a religion);
SCATHLIC_R = SCATHLIC (whether child's school is a Catholic school);
SLOW_R = SLOW (lowest grade at the child's school);
SHIGH_R = SHIGH (highest grade at the child's school);
SNUMSTUD_R = SNUMSTUD (number of students in the child's school);

Using these six school characteristics variables as hard boundaries for imputation preserved respondent reported information about the school and allowed for appropriate matching to a SCHLID donor. In addition, the data were subset to cases with missing SCHLID AND the following conditions:

SCHARTER_R NE -99 and SRELGON_R NE -99 and SCATHLIC_R NE -99 and SLOW_R NE -99 and SHIGH_R NE -99 and SNUMSTUD_R NE -99. This restricted the donor pool to school IDs that had valid information for all of the school characteristics.

Imputation was performed using Wesdeck on a file sorted by BASMID. After the Wesdeck run, staff reviewed a frequency of SCHLIF and cross tab of SCHLIF*SCHLID. For cases that did not impute due to deficient cells, manual review was used to find an appropriate donor.

6.2.2 Manual Imputation

For some items, the missing values were imputed manually rather than using the hot-deck procedure. In NHES:2007, manual imputation was done (1) to impute certain person-level demographic characteristics; (2) to impute whether a child is home schooled, whether the child attends regular school for some classes, and the number of hours the child attends regular school; (3) to correct for a small number of inconsistent imputed values; and (4) to impute for a few cases when no donors with matching sort variable values could be found. Tables 6-1 and 6-2 show the variables from the SR and PFI surveys, respectively, for which manual imputation was conducted and the percentage of values manually imputed.

Some person-level characteristics from the Screener, from the Age Confirmation, Household Relationships, and Child & Parent Language section of the SR and PFI interviews, and from the Initial Background and Remaining Background sections of the AEWR interview were imputed manually because these variables typically involve complex relationships and/or constraints that would have required extensive programming in order to impute using a hot-deck procedure. The same is true of the items indicating whether a child is home schooled, whether the child attends regular school for some classes, and the number of hours the child attends regular school. Furthermore, the reasonableness of imputed values for these person-level characteristics can often be assessed by examining the values of these variables for other members of the household. The use of the manual imputation approach in this situation permits the review of the characteristics of household members when imputing the missing values on the person-level variables.

For manual imputation of the person-level demographic items and of the home schooling items, three sort variables were used.[51] State was used as the first sort variable; that is, whenever possible, all values were imputed from within-state donors. Because there is some geographic clustering of subpopulations within states, the three-digit ZIP code (i.e., the first three digits of the ZIP code associated with the telephone exchange) was used as the second sort variable. Cases were sorted by the person identification number. Because all household members share the first eight digits of their identification numbers, this resulted in all household members being grouped together. The general approach used to find a donor was to search upward in the sorted list. When no donor was found (within three-digit ZIP Code, within state), a downward search was used. If there was no eligible donor within the same three-digit ZIP Code, the three-digit ZIP Code restriction was lifted and the search was expanded (first upward, then downward if necessary) within state.

Manual imputation was also used to correct for inconsistent values following post-imputation data editing. Following imputation, edit programs were run to ensure that the imputed responses did not violate edit rules. When violations or inconsistencies were detected, manual imputation was used to reimpute for a very small number of cases. The distribution of the item was used to arrive at the new values; typically, a modal value was imputed. In some cases, the overall mode was imputed, and in other cases, a modal value for a subgroup was imputed.

The final use of manual imputation was to impute for a few cases when no donors with matching hard boundary variable values could be found. For these cases, when relaxing the hard boundary variable requirements still did not produce a donor, manual imputation was done. The distribution of the item was used to assign imputed values; typically, a modal value was imputed. In some cases, the overall mode was imputed, and in other cases, a modal value for a subgroup was imputed. The following is a description of the specifications used to manually impute specific items.

Age and year of birth. (AGE*n*; SR and PFI variables CDOBYY and CDOBMM; AEWR variables ADOBYY and ADOBMM). In the SR and PFI interviews, year of birth (CDOBYY) had to have been given by the respondent in order for the interview to be conducted; thus, AGE2006 was available for every child with a completed SR or PFI interview. In households with children and two parents, when the age of one parent was missing and the age of the other parent was available, the other parent was used as the donor in the imputation of age. In other situations with SR or PFI interviews in the

[51]Throughout this document, the term *boundary variable* is used to refer to a variable that is used to create cells for hot-deck imputation; the term *sort variable* is used to refer to a variable that is used to sort the file for hand imputation.

household and at least one adult with missing age, the relationship of the adult with missing age to the child sampled for the SR or PFI interview was used as a hard boundary variable in the imputation of age.

When the value of age for an adult was missing in the AEWR and there was no SR or PFI interview in the household, the missing age was imputed as the average age of the other adult household members. When the adult for whom age was missing was the only adult in the household, the age of the adult in the previous single-adult household on the data set (within the same state and within the same three-digit ZIP code, if possible) was used as the imputed value.

For adults sampled for an AEWR interview with missing year of birth (ADOBYY), year of birth was updated based on reported age or imputed after imputing age, such that the year of birth was consistent with age.

Sex. Sex (SEX and SEX*n*) was imputed in two ways. First, deductive imputation was used when the information in the household suggested an appropriate answer. For example, if there were two household members and one reported that he or she was married, and one was male and the other was missing on sex, the latter person was imputed as female. For cases in which an appropriate answer could not be deduced, the value of sex was imputed as either male or female with equal probability.

Race (including "other" race) and Hispanic origin. (AEWR variables AHISPANI, AWHITE, ABLACK, AAMIND, AASIAN, APACI, and ARACEOTH; and SR/PFI variables CHISPAN, CWHITE, CBLACK, CAMIND, CASIAN, CPACI, CRACEOTH, MHISPAN, MWHITE, MBLACK, MAMIND, MASIAN, MPACI, MRACEOTH, DHISPAN, DWHITE, DBLACK, DAMIND, DASIAN, DPACI, and DRACEOTH). Note that there are two sets of mom (or dad) variables in households with two mothers (or two fathers). Race and Hispanic origin were imputed in different ways, depending on the information available about the household members. First, when race and Hispanic origin were available for other household members, this information was used to impute race and Hispanic origin for the person for whom the data were missing. In particular, if a child had missing race and Hispanic origin, then their parent or sibling who had race or Hispanic origin information available was used as a donor. Similarly, if a parent had missing race and Hispanic origin, their child who had race and Hispanic origin information available was used as a donor. When race and Hispanic origin were not available for any household members, the first enumerated household member in the previous within-state, within three-digit ZIP code household was used as the donor.

Country of birth and first language. (AEWR variables ABORNUS, IBLANG, and IBSPEAK; and SR and PFI variables CBORNUS, CSPEAK, MOMLANG, MOMSPEAK, MOMBORN, DADLANG, DADSPEAK, and DADBORN). The country of birth and first language variables were imputed using the same procedure as described earlier for race and Hispanic origin. Note that there were two sets of mom (or dad) variables in households with two mothers (or two fathers).

Marital status. (AEWR variables AMARSTAT and ALIVWITH; and SR and PFI variables MOMSTAT, MOMLIVW, DADSTAT, and DADLIVW). In the imputation of marital status, the number of adults in the household (classified as *one adult* or *more than one adult*) was used as a hard boundary. If the donor household had more than one adult, the adult in the donor household nearest in age to the recipient was used as the donor, provided the donor's value was plausible. If the donor's value was not plausible, the same procedure was repeated with the second-nearest household having the same number of adults. Note that there were two sets of mom (or dad) variables in households with two mothers (or two fathers).

Active duty status and household residency. (Screener variables XACTVDUT). To avoid imputing a sampled adult to be ineligible for the AEWR interview, active duty military status (XACTVDUT) was imputed to *not currently serving on active duty in the U.S. Armed Forces*. This imputation was necessary because adults were eligible for sampling if their active duty status was not reported by the Screener respondent.

Homeschooling. (SR and PFI variables HOMESCHL and HOMEALL). The homeschooling variable HOMESCHL was imputed for persons age 4 through age 18. For persons ages 4 and older who were missing HOMESCHL, the value of the homeschooling question HOMESCHL was imputed to *no*. It was expected that this would have a negligible effect on the distribution of HOMESCHL. Furthermore, there were numerous opportunities throughout the instrument for the respondent to indicate that questions were not applicable if the child was solely homeschooled (e.g., questions on school characteristics). Thus, imputing HOMESCHL to *no* seems reasonable. For children having a response to HOMESCHL but missing HOMEALL or HOMSCHR, whenever possible, donors were located within the three-digit ZIP code or within the state.

Grade in school/highest grade completed/high school diploma. (SR and PFI variables GRADE, GRADEEQ, MOMGRADE, MOMGRAD1, MOMGRAD2, MOMVOTEC, MOMDIPL, DADGRADE, DADGRAD1, DADGRAD2, DADVOTEC, DADDIPL; AEWR variables IBGRADE,

IBGRAD1, IBGRAD2, IBVOCDIP, and IBDIPL). In the SR and PFI interviews, if the respondent refused to provide or could not provide GRADE, the value of GRADE from the Screener was used. If no Screener GRADE was available, GRADE was set based on AGE. Thus, GRADE will never be missing for a sampled child. Grade equivalent (GRADEEQ) and highest grade completed for parents or adults (MOMGRADE, MOMGRAD1, MOMGRAD2, DADGRADE, DADGRAD1, DADGRAD2, IBGRADE, IBGRAD1, IBGRAD2) were imputed using age as an additional sort variable. When the person with the missing value was age 25 or younger, the donor was of the same age, unless there was no donor of the same age available; in this case, the donor was within 1 year of age in either direction. When the person was over age 25 and was married, the educational attainment of the spouse was used; otherwise, the donor was the person closest in age to the recipient within the state and three-digit ZIP code whose high school diploma status was the same as the person with the missing variable, if available. When grade in school did not need to be imputed but a following item was missing (e.g., MOMDIPL, MOMVOTEC, DADDIPL, DADVOTEC, IBDIPL, IBVOCDIP), the donor was the person with the same grade or educational attainment who was closest in age within state and three-digit ZIP code. Note that there are two sets of mom (or dad) variables in households with two mothers (or two fathers).

Relationship. (Screener variable RESRELN and SR and PFI variables RELATN*n*). When a household member's relationship to the sampled child was missing, the variable RESRELN or RELATN*n* was imputed manually. The age, gender, and relationship of all household members to the subject child, as well as the mother's (or female guardian's) and father's (or male guardian's) marital status and related variables were examined to determine the likely relationship of the person missing on that variable.

6.2.3 Updates and Imputations

Some of the values that changed during the manual imputation process were actually updates. This occurred when a value was missing on one data file but was available from another source in the database. For example, when an adult had a missing value on the variable IBDIPL (high school diploma), the database was checked to see if that person was the mother or father of a sampled child and, if so, the value of MOMDIPL or DADDIPL (as appropriate) was used to update IBDIPL. Conversely, when IBDIPL was available for the mother or father but MOMDIPL or DADDIPL had missing values, the value of IBDIPL was used to update MOMDIPL or DADDIPL. Very few values were updated in this way. This process is not considered imputation because the response is obtained from the household, and these updates are not reflected in the imputation flags.

If the response to an item that appeared in more than one survey instrument could not be obtained from either interview in the household, one variable (e.g., IBDIPL) was imputed, and the imputed value was then copied into the other variable (e.g., MOMDIPL). Likewise, the value of the imputation flag for the first variable was copied into the value of the imputation flag for the second variable because the process involved some imputation, not just updating.

6.3 Item Response Rates

For most of the data items collected in NHES:2007, the item response rate was very high. The tables in this chapter show the item response rates and total response rates for items on the public-use data files.[52] The number of cases for which each item was attempted and the percentage of cases for which a valid response was obtained are shown, as well as the percentage of imputed cases that were manually imputed. Tables 6-1 and 6-2 show the rates for items on the SR and PFI files, respectively. For the SR and PFI surveys, the median item response rates were 99.28 percent and 99.04 percent, respectively, and the median total response rates were 40.41 and 38.72, respectively. There were 18 items in the SR file with item response rates of less than 90 percent, and 5 such items in the PFI file. For items that are rarely asked (e.g., the items pertaining to the second mother in the SR or PFI interview), a small number of missing values could result in a low item response rate.

As shown in table 6-1, most items on the SR public use data file have item response rates over 90 percent. Among items with item response rates of less than 90 percent are number of hours per week child goes to school for instruction (HOMSCHR); and items that apply to only a small number of cases (MOMTYPE2, MOMNEW2, MOMLANG2, MOMSPEAK2, MOMBORN2, MHISPAN2, MWHITE2, MBLACK2, MAMIND2, MASIAN2, MPACI2, MRACEOTH2, MOMGRADE2, MOMWORK2, MOMHOURS2, MOMMTHS2, and MOMENROL2). For items that are asked only of a small subgroup of respondents, a small number of missing values could result in a low item response rate.

Items with item response rates of less than 90 percent on the PFI public file (table 6-2) include items that apply to only a small number of cases (MOMDIPL2, MOMVOTEC2, MOMSTAT2, and MOMLEAVE2); and one item pertaining to whether a scholarship or grant was applied for (SESCHOL). As noted previously, for items that are asked only of a small subgroup of respondents, a small number of missing values could result in a low item response rate. The relatively high nonresponse to the item

[52]The total response rate for a given item is the product of the overall unit response rate for the survey and the item response rate for the item.

pertaining to scholarships or grants could indicate some sensitivity of the issue of family finances, or could also be due to the respondent not having had an opportunity yet to research scholarships or grants, in particular for parents of 11th grade students.

Table 6-1. Item response rates and hand imputation rates for items on the SR-NHES:2007 data file

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
AGE2006	CHILD'S AGE AS OF DEC 31, 2006	2633	100.00	40.70	0.00
SEX	CHILD'S SEX	2633	100.00	40.70	0.00
RESPSEX	PARENT RESPONDENT'S SEX	2633	100.00	40.70	0.00
RESRELN	PARENT R'S RELATIONSHIP TO CHILD	2633	100.00	40.70	0.00
MOMAGE2	MOM'S AGE - 2	4	100.00	40.70	0.00
DADAGE2	DAD'S AGE - 2	1	100.00	40.70	0.00
DADTYPE2	SPECIFIC RELAT OF FATHER TO CHILD - 2	1	100.00	40.70	0.00
SEX1	O/HH MEM - #1'S SEX	2302	100.00	40.70	0.00
SEX2	O/HH MEM - #2'S SEX	1171	100.00	40.70	0.00
SEX3	O/HH MEM - #3'S SEX	508	100.00	40.70	0.00
SEX4	O/HH MEM - #4'S SEX	210	100.00	40.70	0.00
RELATN4	O/HH MEM - #4'S RELATION TO CHILD	210	100.00	40.70	0.00
SEX5	O/HH MEM - #5'S SEX	91	100.00	40.70	0.00
RELATN5	O/HH MEM - #5'S RELATION TO CHILD	92	100.00	40.70	0.00
AGE6	O/HH MEM - #6'S AGE	22	100.00	40.70	0.00
SEX6	O/HH MEM - #6'S SEX	22	100.00	40.70	0.00
HOMEALL	PB5-FULL OR PARTIAL HOME SCHOOL	72	100.00	40.70	0.00
GRADE	PB7-GRADE/YR CHILD IS ATTENDING	1709	100.00	40.70	0.00
GRADEEQ	PB8-GRADE EQUIV/HOME SCHOOL/SP ED/UNGRD	73	100.00	40.70	0.00
MOMLIVW2	PS3-MOM CURRENTLY LIVE W/ PARTNER - 2	4	100.00	40.70	0.00
MOMVOTEC	PS10-MOM HAS VOC/TECH DIPL - 2	1	100.00	40.70	0.00
MOMDIPL2	PS11-MOM HAS HS DIPLOMA OR GED - 2	1	100.00	40.70	0.00
DADLEAVE	PT12-DAD ON LEAVE OR VACATION LST WK - 1	119	100.00	40.70	0.00
DADSTAT2	O/HH MEM - #4'S SEX	1	100.00	40.70	0.00
DADLIVW2	PT2-DAD CURRENTLY LIVE W/ PARTNER - 2	1	100.00	40.70	0.00
DADLANG2	PT3-FIRST LANGUAGE SPOKEN BY DAD - 2	1	100.00	40.70	0.00
DADSPEAK	PT4-LANG SPOKEN MOST AT HOME BY DAD - 2	1	100.00	40.70	0.00
DADBORN2	PT5-COUNTRY DAD WAS BORN IN - 2	1	100.00	40.70	0.00
DHISPAN2	PT6-DAD IS HISPANIC - 2	1	100.00	40.70	0.00
DWHITE2	PT7-DAD IS WHITE - 2	1	100.00	40.70	0.00
DBLACK2	PT7-DAD IS BLACK OR AFRICAN AMERICAN - 2	1	100.00	40.70	0.00
DAMIND2	PT7-DAD IS AMER INDIAN/ALASKAN NAT - 2	1	100.00	40.70	0.00
DASIAN2	PT7-DAD IS ASIAN - 2	1	100.00	40.70	0.00
DPACI2	PT7-DAD IS NATV HAWAIIAN/PACIF ISLDR - 2	1	100.00	40.70	0.00
DRACEOTH	PT7-DAD'S RACE - 2	1	100.00	40.70	0.00
DADGRADE	PT8-HIGHEST GRADE/YR DAD COMPLETED - 2	1	100.00	40.70	0.00
DADWORK2	PT11-DAD WORKED FOR PAY LAST WEEK - 2	1	100.00	40.70	0.00
DADLEAVE	PT12-DAD ON LEAVE OR VACATION LST WK - 2	1	100.00	40.70	0.00
DADHOURS	PT13-HRS PER WEEK DAD WORKS FOR PAY - 2	1	100.00	40.70	0.00
DADMTHS2	PT14-MONTHS DAD WORKED IN PAST YEAR - 2	1	100.00	40.70	0.00
DADENROL	PT17-DAD ENROLLED IN SCHOOL - 2	1	100.00	40.70	0.00
ENROLL	PB2-CHILD ENROLLED/ATTENDING SCHOOL	2633	99.96	40.68	100.00
HAPRETND	PN8-DOES CHILD PRETEND TO READ BOOKS	2296	99.96	40.68	0.00
RESPEAK	PA7-LANG RESP SPEAKS MOST AT HOME	2633	99.92	40.67	100.00

See notes at end of table.

Table 6-1. Item response rates and hand imputation rates for items on the SR-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
FOREADTO	PN2-TIMES READ TO CHILD PAST WK	2633	99.92	40.67	100.00
FATHERMG	PN3-FATHER/MG READ CHILD PAST WK	2633	99.92	40.67	100.00
HALEAPPD	PN10-ANY ELECTR PRODS HELP CHILD READ	2633	99.92	40.67	0.00
FOCRAFT1	PN11D-DID ARTS/CRAFTS WITH CHILD PAST WK	2633	99.92	40.67	0.00
FOSPORT1	PN11E-PLAYED SPORTS WITH CHILD PAST WK	2633	99.92	40.67	0.00
FODINNER	PN14-# TIMES FAM ATE TOGETHER PAST WK	2633	99.92	40.67	0.00
RPSHARE	PO1B-IMPORTANCE TEACH CHILD ABT SHARING	2633	99.92	40.67	0.00
HDWEIGHT	PQ8-DOCTOR EVR EXPR CONCERN CHILD'S WGHT	2633	99.92	40.67	0.00
FOMUSEUM	PN15D-VISITED ART GALLERY/MUSEUM PST MO	2633	99.89	40.66	0.00
FOZOO	PN15E-VISITED ZOO/AQUARIUM PAST MO	2633	99.89	40.66	0.00
RPALPHA	PO1A-IMPORTANCE TEACH CHILD ALPHABET	2633	99.89	40.66	0.00
RPNUMB	PO1D-IMPORTANCE TEACH CHILD NUMBERS	2633	99.89	40.66	0.00
HDDISTRB	PQ10D-CHILD HAS EMOTIONAL DISTURBANCE	2633	99.89	40.66	0.00
FOTLKSTR	PN5D-HOW OFT TALK ABOUT STORY WHEN DONE	2557	99.88	40.65	0.00
AGE1	O/HH MEM - #1'S AGE	2302	99.87	40.65	100.00
CSPEAK	PA6-LANG CHILD SPEAKS MOST AT HOME	2633	99.85	40.64	100.00
DPCOLOR	PE1-CHILD CAN IDENTIFY COLORS	2633	99.85	40.64	0.00
FOLIBRAY	PN15A-VISITED LIBRARY W/CHILD PST MO	2633	99.85	40.64	0.00
PARREAD	PN25-HOW OFT ADLT READ IN HH IN PST WK	2633	99.85	40.64	0.00
RPPENCIL	PO1E-IMPORTANCE SHOW CHILD HOLD PENCIL	2633	99.85	40.64	0.00
HDRETARD	PQ10B-CHILD HAS MENTAL RETARDATION	2633	99.85	40.64	0.00
CBORNUS	PR1-CHILD'S BIRTH COUNTRY	2633	99.85	40.64	100.00
RELATN1	O/HH MEM - #1'S RELATION TO CHILD	2302	99.83	40.63	100.00
RELATN2	O/HH MEM - #2'S RELATION TO CHILD	1171	99.83	40.63	100.00
FOCONCRT	PN15C-WENT TO PLAY/CNCRT/SHOW PST MO	2633	99.81	40.62	0.00
RPDISCP	PO1F-IMPORTANCE DISCP CHILD WHN MISBEHAV	2633	99.81	40.62	0.00
HDHEALTH	PQ6-RATING OF CHILD'S HEALTH	2633	99.81	40.62	0.00
HDCHINS	PQ7-CHILD COVERED BY HEALTH INSURANCE	2633	99.81	40.62	0.00
HDLEARN	PQ10A-CHILD HAS SPEC LRNING DISABILTY	2633	99.81	40.62	0.00
HDSPEECH	PQ10C-CHILD HAS SPEECH OR LANGUAGE DELAY	2633	99.81	40.62	0.00
HDORTHO	PQ10G-CHILD HAS ORTHOPEDIC IMPAIRMENT	2633	99.81	40.62	0.00
DADAGE1	DAD'S AGE - 1	2228	99.78	40.61	100.00
FOLETTR	PN5B-HOW OFT STOP READ POINT OUT LTRS	2557	99.77	40.61	0.00
FOGROUP	PN15F-ATTD EVENT SPON COMM/RELIG/ETH GRP	2633	99.77	40.61	0.00
FOSPRTEV	PN15G-ATTD ATHL EVENT CHILD NOT PLAYER	2633	99.77	40.61	0.00
RPREAD	PO1C-IMPORTANCE TEACH CHILD TO READ	2633	99.77	40.61	0.00
HDDEAFIM	PQ10E-CHILD HAS DEAFNESS/HEARING PROBLEM	2633	99.77	40.61	0.00
HDBLIND	PQ10F-CHILD HAS BLINDNESS/VISUAL PROBLEM	2633	99.77	40.61	0.00
HDPDD	PQ10J-CHILD W/ PERVAS DEVLPMNTL DISORDR	2633	99.77	40.61	0.00
HDOTHER	PQ10K-CHILD HAS OTHR HLTH PROB 6 MOS+	2633	99.77	40.61	0.00
AGE2	O/HH MEM - #2'S AGE	1171	99.74	40.59	100.00
RESPAGE	PARENT RESPONDENT'S AGE	2633	99.73	40.59	100.00
CPNNOW	PD1-CHILD ATTENDS CTR BSD PROGRAM	2633	99.73	40.59	0.00
FOPICTR	PN5A-HOW OFT STOP READ ASK ABOUT PICTURE	2557	99.73	40.59	0.00
FOCHREAD	PN5C-HOW OFT ASK CHILD READ SAME TIME	2557	99.73	40.59	0.00

See notes at end of table.

Table 6-1. Item response rates and hand imputation rates for items on the SR-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
HDAUTISM	PQ10H-CHILD HAS AUTISM	2633	99.73	40.59	0.00
HDADD	PQ10I-CHILD HAS ADD OR ADHD	2633	99.73	40.59	0.00
CHISPAN	PR3-CHILD IS OF HISPANIC ORIGIN	2633	99.73	40.59	100.00
MOMTYPE1	SPECIFIC RELAT OF MOM TO CHILD - 1	2537	99.72	40.59	100.00
FOWORDS	PN11B-TGHT CHILD LTS/WDS/NBS PAST WK	2633	99.70	40.58	0.00
FOBOOKST	PN15B-VISITED A BOOKSTORE W.CHILD PST MO	2633	99.70	40.58	0.00
DADTYPE1	SPECIFIC RELAT OF FATHER TO CHILD - 1	2228	99.69	40.57	100.00
SISBRO	PN3-SISTER/BROTHER READ CHILD PAST WK	2557	99.69	40.57	100.00
SOMEONEL	PN3-SOMEONE ELSE READ CHILD PAST WK	2557	99.69	40.57	100.00
MOMAGE1	MOM'S AGE - 1	2537	99.68	40.57	100.00
CPNEVER	PD2-CHILD EVER GONE TO CTR BSD PROGRAM	874	99.66	40.56	0.00
HASTORY	PN6-CAN CHILD READ STORY BOOKS ON OWN	2633	99.66	40.56	0.00
FOGAMES1	PN11F-PLAYED GAMES WITH CHILD PAST WK	2633	99.66	40.56	0.00
MOTHERFG	PN3-MOTHER/FG READ CHILD PAST WK	2557	99.65	40.56	100.00
MOMLEAVE	PS13-MOM ON LEAVE OR VACATION LST WK - 1	1080	99.63	40.55	25.00
DPLETTER	PE2-CHILD RECOGNIZES LETTERS	2633	99.62	40.55	0.00
FOCHLRD	PN9-# TIMES PAST WK CHILD READ TO OTHER	2582	99.61	40.54	0.00
MOMLOOK1	PS16-MOM LOOKING FOR WORK PAST 4 WKS - 1	1022	99.61	40.54	0.00
DPCOUNT	PE3-HOW HIGH CHILD CAN COUNT	2633	99.58	40.53	0.00
ANOTADLT	PN3-ANOTHER ADLT HH READ CHILD PAST WK	2557	99.57	40.52	100.00
FOMUSIC	PN11C-TGHT CHILD SONGS/MUSIC PAST WK	2633	99.54	40.51	0.00
HDDOCTOR	PQ11C-RECEIVES SERVICES FROM DR/CLINIC	435	99.54	40.51	0.00
HDSOURCE	PQ11D-RECEIVES OTHER SERVICES	435	99.54	40.51	0.00
CWHITE	PR4-CHILD IS WHITE	2633	99.54	40.51	100.00
CBLACK	PR4-CHILD IS BLACK OR AFRICAN AMERICAN	2633	99.54	40.51	100.00
CAMIND	PR4-CHILD IS AMER INDIAN/ALASKAN NATIVE	2633	99.54	40.51	100.00
CASIAN	PR4-CHILD IS ASIAN	2633	99.54	40.51	100.00
CPACI	PR4-CHILD IS NATV HAWAIIAN/PACIF ISLNDR	2633	99.54	40.51	100.00
CRACEOTH	PR4-CHILD'S RACE	2633	99.54	40.51	100.00
DPNAME	PE4-CHILD CAN WRITE FIRST NAME	2633	99.51	40.50	0.00
MOMWORK1	PS12-MOM WORKED FOR PAY LAST WEEK - 1	2591	99.50	40.50	0.00
MOMENROL	PS18-MOM ENROLLED IN SCHOOL - 1	2591	99.50	40.50	0.00
FOINTHM	PU1-ACCESS TO INTERNET AT HOME	2633	99.43	40.47	0.00
MOMDIPL1	PS11-MOM HAS HS DIPLOMA OR GED - 1	1036	99.42	40.46	100.00
RELATN3	O/HH MEM - #3'S RELATION TO CHILD	509	99.41	40.46	100.00
DPSPEAK	PE9-CHILD SPEECH UNDERSTOOD BY OTHERS	2633	99.39	40.45	0.00
MOMBORN1	PS6-COUNTRY MOM WAS BORN IN - 1	2591	99.38	40.45	100.00
MHISPAN1	PS7-MOM IS HISPANIC - 1	2591	99.38	40.45	100.00
HDSCHL	PQ11A-RECEIVES SERVICES FROM SCHOOL DIST	463	99.35	40.44	0.00
HWIC	PU3C-RECEIVED WIC PAST 12 MONTHS	2633	99.35	40.44	0.00
HFOODST	PU3D-RECEIVED FOOD STAMPS PAST 12 MNTHS	2633	99.35	40.44	0.00
MOMSTAT1	PS2-MOM'S MARITAL STATUS - 1	2591	99.31	40.42	100.00
MOMLANG1	PS4-FIRST LANGUAGE SPOKEN BY MOM - 1	2591	99.31	40.42	100.00
HSECN8	PU3G-RCVD SEC 8 HOUSE ASSIS PAST 12 MOS	2633	99.28	40.41	0.00
MOMSPEAK	PS5-LANG SPOKEN MOST AT HOME BY MOM - 1	2591	99.27	40.40	100.00

See notes at end of table.

Table 6-1. Item response rates and hand imputation rates for items on the SR-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
HWELFTAN	PU3A-RECEIVED TANF PAST 12 MONTHS	2633	99.24	40.39	0.00
FORDDAY	PN4-HOW MANY MINUTES READ CHILD PER DAY	2557	99.18	40.37	0.00
DADBORN1	PT5-COUNTRY DAD WAS BORN IN - 1	2254	99.16	40.36	100.00
HDPRMTR4	PQ3-CHILD BORN MORE THAN 4 WKS PREMATURE	2633	99.13	40.35	0.00
MOMAGN1	PS17A-MOM CHECKED WITH EMPLOY AGENCY - 1	115	99.13	40.35	0.00
MOMEMPL1	PS17B-MOM CHECKED W/EMPLYER DIRECTLY - 1	115	99.13	40.35	0.00
MOMANSAD	PS17D-MOM PLCD/ANSW ADS/SENT RESUME - 1	115	99.13	40.35	0.00
DADSTAT1	PT1-DAD'S MARITAL STATUS - 1	2254	99.11	40.34	100.00
DADSPEAK	PT4-LANG SPOKEN MOST AT HOME BY DAD - 1	2254	99.11	40.34	100.00
DHISPAN1	PT6-DAD IS HISPANIC - 1	2254	99.11	40.34	100.00
DADWORK1	PT11-DAD WORKED FOR PAY LAST WEEK - 1	2254	99.11	40.34	0.00
DADENROL	PT17-DAD ENROLLED IN SCHOOL - 1	2254	99.11	40.34	0.00
H3YRMOVE	PU4-# TIMES MOVED OVER PAST 3 YEARS	2633	99.09	40.33	0.00
HDGOVT	PQ11B-RECEIVES ST/LOCL/SOCL SERVICES	435	99.08	40.33	0.00
MWHITE1	PS8-MOM IS WHITE - 1	2591	99.07	40.32	100.00
DADLANG1	PT3-FIRST LANGUAGE SPOKEN BY DAD - 1	2254	99.07	40.32	100.00
AGE4	O/HH MEM - #4'S AGE	210	99.05	40.31	100.00
TVHRWKDY	PN16-CHILD WTCH TV/VIDS TYP WKDY	2633	99.05	40.31	28.00
HWELFST	PU3B-RECEIVED STATE WELF PAST 12 MONTHS	2633	99.05	40.31	0.00
HMEDIC	PU3E-RECEIVED MEDICAID PAST 12 MONTHS	2633	99.05	40.31	0.00
FORTVPRG	PN22-FAM RULES ABT TV WATCHING FOR CHILD	2504	99.04	40.31	29.17
MBLACK1	PS8-MOM IS BLACK OR AFRICAN AMERICAN - 1	2591	99.04	40.31	100.00
MAMIND1	PS8-MOM IS AMER INDIAN/ALASKAN NAT - 1	2591	99.04	40.31	100.00
MASIAN1	PS8-MOM IS ASIAN - 1	2591	99.04	40.31	100.00
MPACI1	PS8-MOM IS NATV HAWAIIAN/PACIF ISLDR - 1	2591	99.04	40.31	100.00
MRACEOTH	PS8-MOM'S RACE - 1	2591	99.04	40.31	100.00
AGE3	O/HH MEM - #3'S AGE	508	99.02	40.30	100.00
TVHRWKND	PN18-CHILD WTCH TV/VIDS TYP WKND DAY	2553	99.02	40.30	28.00
FOSTORY1	PN11A-TOLD CHILD STORY PAST WK	2633	99.01	40.30	0.00
MOMNEW1	PS1-AGE OF MOM FIRST BECAME MOTHER - 1	2591	99.00	40.29	19.23
MOMMTHS1	PS15-MONTHS MOM WORKED IN PAST YEAR - 1	2591	99.00	40.29	11.54
DADLOOK1	PT15-DAD LOOKING FOR WORK PAST 4 WKS - 1	98	98.98	40.28	0.00
HDWEIGHT	PQ9-CONCERN ABT BEING OVER OR UNDER WGHT	285	98.95	40.27	0.00
AGE5	O/HH MEM - #5'S AGE	91	98.90	40.25	100.00
TVWKNDNU	PN19-HW MANY HRS CHILD WTCH TYP WKND DAY	2633	98.86	40.24	23.33
HCHIP	PU3F-RECEIVED CHIP PAST 12 MONTHS	2633	98.82	40.22	0.00
HAWORDS	PN7-DOES CHILD READ OR PRTND READ WORDS	337	98.81	40.22	0.00
MOMGRADE	PS9-HIGHEST GRADE/YR MOM COMPLETED - 1	2591	98.80	40.21	100.00
DWHITE1	PT7-DAD IS WHITE - 1	2254	98.80	40.21	100.00
PCEVRHD	PD5-CHILD EVER ATTEND (EARLY) HEAD START	2633	98.78	40.20	0.00
DBLACK1	PT7-DAD IS BLACK OR AFRICAN AMERICAN - 1	2254	98.76	40.20	100.00
DAMIND1	PT7-DAD IS AMER INDIAN/ALASKAN NAT - 1	2254	98.76	40.20	100.00
DASIAN1	PT7-DAD IS ASIAN - 1	2254	98.76	40.20	100.00
DPACI1	PT7-DAD IS NATV HAWAIIAN/PACIF ISLDR - 1	2254	98.76	40.20	100.00
DRACEOTH	PT7-DAD'S RACE - 1	2254	98.76	40.20	100.00

See notes at end of table.

Table 6-1. Item response rates and hand imputation rates for items on the SR-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
TVWKDYNU	PN17-HW MANY HRS CHILD WTCH TYP WKDY	2633	98.71	40.17	20.59
MOMLIVW1	PS3-MOM CURRENTLY LIVE W/ PARTNER - 1	300	98.67	40.16	100.00
CDOBYY	PA1-YEAR OF BIRTH	2633	98.63	40.14	100.00
HDSPCLED	PQ14-ENROLLED IN SPECIAL ED	435	98.62	40.14	0.00
DPPENCIL	PE7-CHILD HOLDS A PENCIL	2633	98.56	40.11	0.00
DPFIDGET	PE8-CHILD FIDGETING VS OTHER CHILDREN	2633	98.56	40.11	0.00
DADMTHS1	PT14-MONTHS DAD WORKED IN PAST YEAR - 1	2254	98.54	40.11	0.00
HDBRTHW5	PQ1-CHILD WEIGHED LT 5 1/2 PNDS AT BIRTH	2633	98.52	40.10	0.00
KPENROLL	PF2-WHEN ENROLL CHILD IN KINDERGARTEN	2608	98.50	40.09	0.00
HOMESCHL	PB3-CHILD BEING SCHOOLED AT HOME	1535	98.44	40.07	100.00
DADGRADE	PT8-HIGHEST GRADE/YR DAD COMPLETED - 1	2254	98.31	40.01	100.00
MOMHOURS	PS14-HRS PER WEEK MOM WORKS FOR PAY - 1	1556	98.26	39.99	0.00
MOMREL1	PS17C-MOM CHECKED W/FRIENDS/RELS - 1	115	98.26	39.99	0.00
HABOOKS	PN1-# OF BOOKS CHILD HAS	2633	98.21	39.97	0.00
MOMVOTEC	PS10-MOM HAS VOC/TECH DIPL - 1	391	98.21	39.97	100.00
TVOTHER	PN20-ANOTHER CHANNEL	2504	98.08	39.92	14.58
TVCHMOST	PN21-CHANNEL CHILD WATCHES MOST OFTEN	2415	98.01	39.89	29.17
CDOBMM	PA1-MONTH OF BIRTH	2633	97.95	39.87	0.00
HDAFFECT	PQ16-DISABILITY AFFECT ABILITY TO LEARN	435	97.93	39.86	0.00
DADHOURS	PT13-HRS PER WEEK DAD WORKS FOR PAY - 1	2140	97.90	39.85	0.00
HDHOSP	PQ4-# DAYS CHILD IN HOSP AFTER BORN	2633	97.87	39.83	0.00
CTNCHRIS	PN20-CTN (CHRISTIAN/CORNERSTONE)	2504	97.84	39.82	20.37
DISCOVER	PN20-DISCOVERY CHANNEL/KIDS	2504	97.84	39.82	20.37
DISNEYCH	PN20-DISNEY CHANNEL	2504	97.84	39.82	20.37
ESPN	PN20-ESPN	2504	97.84	39.82	20.37
FAMILYCH	PN20-FAMILY CHANNEL	2504	97.84	39.82	20.37
MTVVH1	PN20-MTV/VH-1	2504	97.84	39.82	20.37
NICKELOD	PN20-NICKELODEON/NICK-AT-NITE	2504	97.84	39.82	20.37
NEWSNET	PN20-NEWS NETWORK (E.G. CNN, FOX NEWS)	2504	97.84	39.82	20.37
NOGGIN	PN20-NOGGIN	2504	97.84	39.82	20.37
PBSSPRT	PN20-PBS/PBS SPROUT/PBS KIDS	2504	97.84	39.82	20.37
GALATELE	PN20-GALAVISION/TELEMUNDO/UNIVISION	2504	97.84	39.82	20.37
LEARNCH	PN20-THE LEARNING CHANNEL	2504	97.84	39.82	20.37
TVLAND	PN20-TV LAND	2504	97.84	39.82	20.37
VIDNOTV	PN20-CHILD ONLY WATCHES VIDEOS, NOT TV	2504	97.84	39.82	20.37
ABCCBSWB	PN20-ABC, CBS, NBC, FOX, UPN, WB	2504	97.80	39.8	20.00
ANIMPLAN	PN20-ANIMAL PLANET	2504	97.80	39.80	20.00
CARTOONS	PN20-BOOMERANG/CARTOON NETWORK/NICKTOONS	2504	97.80	39.80	20.00
MOMGRAD2	PS9-ACTUAL GRADE 9-11 MOM COMPLETED - 1	136	97.79	39.80	100.00
DADDIPL1	PT10-DAD HAS HS DIPLOMA OR GED - 1	768	97.79	39.80	100.00
HDIFSP	PQ5-CHILD RCVD SVCS, HAD IFSP BEF AGE 3	2633	97.68	39.76	0.00
CMOVEAGE	PR2-AGE WHEN CHILD MOVED TO US	85	97.65	39.74	100.00
MOMGRAD1	PS9-ACTUAL GRADE 0-8 MOM COMPLETED - 1	120	97.50	39.68	100.00
DADAGN1	PT16A-DAD CHECKED WITH EMPLOY AGENCY - 1	39	97.44	39.66	0.00
HDBRTHW3	PQ2-CHILD WEIGHED LT 3 PNDS AT BIRTH	194	96.91	39.44	0.00

See notes at end of table.

Table 6-1. Item response rates and hand imputation rates for items on the SR-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
KPSTART	PF1-WHEN CHILD TO START KINDERGARTEN	2633	96.58	39.31	0.00
SEENJOY	PH1-CHILD ENJOYS SCHOOL	1895	96.36	39.22	0.00
HDCOMMU	PQ15A-SATISFACTION W/ SCHOOL COMMUNICATN	173	95.95	39.05	0.00
HDTCHR	PQ15B-SATISFACTION WITH SPCL NEEDS TCHR	173	95.95	39.05	0.00
HDACCOM	PQ15C-SAT W/ SCHL SPCL NEEDS ACCOMOD	173	95.95	39.05	0.00
HDCOMMIT	PQ15D-SAT W/ SCHL COMMIT HELP CHILD LRN	173	95.95	39.05	0.00
DADGRAD2	PT8-ACTUAL GRADE 9-11 DAD COMPLETED - 1	118	95.76	38.97	100.00
DADLIVW1	PT2-DAD CURRENTLY LIVE W/ PARTNER - 1	159	95.60	38.91	100.00
DADVOTEC	PT9-DAD HAS VOC/TECH DIPL - 1	245	95.51	38.87	100.00
RELATN6	O/HH MEM - #6'S RELATION TO CHILD	22	95.45	38.85	100.00
DPSTSND	PE6-CHILD CAN RECOG BEG SOUNDS OF WORDS	2633	95.44	38.84	0.00
DADGRAD1	PT8-ACTUAL GRADE 0-8 DAD COMPLETED - 1	106	95.28	38.78	100.00
DADEMPL1	PT16B-DAD CHECKED W/EMPLYER DIRECTLY - 1	39	94.87	38.61	0.00
DADREL1	PT16C-DAD CHECKED W/FRIENDS/RELS - 1	39	94.87	38.61	0.00
DADANSAD	PT16D-DAD PLCD/ANSW ADS/SENT RESUME - 1	39	94.87	38.61	0.00
HDIEP	PQ12-RECEIVES SERVICES THRU IEP	347	94.52	38.47	0.00
HDDEVIEP	PQ13-HH WORKED WITH SCHL DEVELOP IEP	142	93.66	38.12	0.00
HINCMRNG	PU5-TOTAL HH INCOME BELOW/ABOVE $25K	2633	93.51	38.06	0.00
SEDOWELL	PH6-SCHOOL CONTACT ABOUT WHAT DOING WELL	1895	92.98	37.84	0.00
DPRHYME	PE5-CHILD CAN RHYME WORDS	2633	92.25	37.55	0.00
HINCM50K	PU5OV1-TOTAL HH INCOME BELOW/ABOVE $50K	2158	92.17	37.51	0.00
CPHRS	PD3-# HRS/WK ATTENDS PROGRAM	1895	91.45	37.22	0.00
CPVISIT	PD4-# OF VISITS TO PROGRAM	1895	90.77	36.94	0.00
HINCOME	PU5OV2-TOTAL HH INCOME RANGE	2633	89.67	36.50	0.00
HOMSCHR	PB6-HRS/WK HOME SCHOOLED CHILD IN SCHOOL	9	88.89	36.18	100.00
MOMTYPE2	SPECIFIC RELAT OF MOM TO CHILD - 2	4	75.00	30.53	100.00
MOMNEW2	PS1-AGE OF MOM FIRST BECAME MOTHER - 2	4	75.00	30.53	0.00
MOMLANG2	PS4-FIRST LANGUAGE SPOKEN BY MOM - 2	4	75.00	30.53	100.00
MOMSPEAK	PS5-LANG SPOKEN MOST AT HOME BY MOM - 2	4	75.00	30.53	100.00
MOMBORN2	PS6-COUNTRY MOM WAS BORN IN - 2	4	75.00	30.53	100.00
MHISPAN2	PS7-MOM IS HISPANIC - 2	4	75.00	30.53	100.00
MWHITE2	PS8-MOM IS WHITE - 2	4	75.00	30.53	100.00
MBLACK2	PS8-MOM IS BLACK OR AFRICAN AMERICAN - 2	4	75.00	30.53	100.00
MAMIND2	PS8-MOM IS AMER INDIAN/ALASKAN NAT - 2	4	75.00	30.53	100.00
MASIAN2	PS8-MOM IS ASIAN - 2	4	75.00	30.53	100.00
MPACI2	PS8-MOM IS NATV HAWAIIAN/PACIF ISLDR - 2	4	75.00	30.53	100.00
MRACEOTH	PS8-MOM'S RACE - 2	4	75.00	30.53	100.00
MOMGRADE	PS9-HIGHEST GRADE/YR MOM COMPLETED - 2	4	75.00	30.53	100.00
MOMWORK2	PS12-MOM WORKED FOR PAY LAST WEEK - 2	4	75.00	30.53	0.00
MOMHOURS	PS14-HRS PER WEEK MOM WORKS FOR PAY - 2	4	75.00	30.53	0.00
MOMMTHS2	PS15-MONTHS MOM WORKED IN PAST YEAR - 2	4	75.00	30.53	0.00
MOMENROL	PS18-MOM ENROLLED IN SCHOOL - 2	4	75.00	30.53	0.00

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Readiness Survey of the National Household Education Surveys Program, 2007.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
RESPSEX	PARENT RESPONDENT'S SEX	10681	100.00	39.10	0.00
MOMAGE2	MOM'S AGE - 2	10	100.00	39.10	0.00
DADAGE2	DAD'S AGE - 2	2	100.00	39.10	0.00
DADTYPE2	SPECIFIC RELAT OF FATHER TO CHILD - 2	2	100.00	39.10	0.00
SEX2	O/HH MEM - #2'S SEX	4019	100.00	39.10	0.00
SEX3	O/HH MEM - #3'S SEX	1516	100.00	39.10	0.00
AGE4	O/HH MEM - #4'S AGE	534	100.00	39.10	0.00
SEX4	O/HH MEM - #4'S SEX	534	100.00	39.10	0.00
SEX5	O/HH MEM - #5'S SEX	208	100.00	39.10	0.00
RELATN5	O/HH MEM - #5'S RELATION TO CHILD	208	100.00	39.10	0.00
SEX6	O/HH MEM - #6'S SEX	52	100.00	39.10	0.00
RELATN6	O/HH MEM - #6'S RELATION TO CHILD	52	100.00	39.10	0.00
AGE7	O/HH MEM - #7'S AGE	7	100.00	39.10	0.00
SEX7	O/HH MEM - #7'S SEX	7	100.00	39.10	0.00
RELATN7	O/HH MEM - #7'S RELATION TO CHILD	7	100.00	39.10	0.00
ENROLL	PB2-CHILD ENROLLED/ATTENDING SCHOOL	10681	100.00	39.10	0.00
HSINTPUB	PC11-INSTRUCTION PROV BY PUBLIC SCHOOL	27	100.00	39.10	0.00
MOMHOURS	PS14-HRS PER WEEK MOM WORKS FOR PAY - 2	6	100.00	39.10	0.00
DADSTAT2	PT1-DAD'S MARITAL STATUS - 2	2	100.00	39.10	0.00
DADLANG2	PT3-FIRST LANGUAGE SPOKEN BY DAD - 2	2	100.00	39.10	0.00
DADSPEAK	PT4-LANG SPOKEN MOST AT HOME BY DAD - 2	2	100.00	39.10	0.00
DADBORN2	PT5-COUNTRY DAD WAS BORN IN - 2	2	100.00	39.10	0.00
DHISPAN2	PT6-DAD IS HISPANIC - 2	2	100.00	39.10	0.00
DWHITE2	PT7-DAD IS WHITE - 2	2	100.00	39.10	0.00
DBLACK2	PT7-DAD IS BLACK OR AFRICAN AMERICAN - 2	2	100.00	39.10	0.00
DAMIND2	PT7-DAD IS AMER INDIAN/ALASKAN NAT - 2	2	100.00	39.10	0.00
DASIAN2	PT7-DAD IS ASIAN - 2	2	100.00	39.10	0.00
DPACI2	PT7-DAD IS NATV HAWAIIAN/PACIF ISLDR - 2	2	100.00	39.10	0.00
DRACEOTH	PT7-DAD'S RACE - 2	2	100.00	39.10	0.00
DADGRADE	PT8-HIGHEST GRADE/YR DAD COMPLETED - 2	2	100.00	39.10	0.00
DADWORK2	PT11-DAD WORKED FOR PAY LAST WEEK - 2	2	100.00	39.10	0.00
DADHOURS	PT13-HRS PER WEEK DAD WORKS FOR PAY - 2	2	100.00	39.10	0.00
DADMTHS2	PT14-MONTHS DAD WORKED IN PAST YEAR - 2	2	100.00	39.10	0.00
DADENROL	PT17-DAD ENROLLED IN SCHOOL - 2	2	100.00	39.10	0.00
SEX1	O/HH MEM - #1'S SEX	8526	99.98	39.09	100.00
AGE2006	CHILD'S AGE AS OF DEC 31, 2006	10681	99.96	39.08	100.00
SEX	CHILD'S SEX	10681	99.95	39.08	100.00
GRADE	PB7-GRADE/YR CHILD IS ATTENDING	10370	99.94	39.08	100.00
FATHERMG	PN3-FATHER/MG READ CHILD PAST WK	10681	99.93	39.07	100.00
RESRELN	PARENT R'S RELATIONSHIP TO CHILD	10681	99.88	39.05	100.00
AGE1	O/HH MEM - #1'S AGE	8526	99.87	39.05	100.00
AGE2	O/HH MEM - #2'S AGE	4019	99.85	39.04	100.00
TVWKDYNU	PN17-HW MANY HRS CHILD WTCH TYP WKDY	10681	99.81	39.03	0.00
TVWKNDNU	PN19-HW MANY HRS CHILD WTCH TYP WKND DAY	10681	99.81	39.03	0.00
HOMESCHL	PB3-CHILD BEING SCHOOLED AT HOME	10644	99.80	39.02	100.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
DADAGE1	DAD'S AGE - 1	8341	99.75	39.00	100.00
SSAMSC	PG23-CHILD SAME SCHL SINCE BEG SCHL YEAR	10370	99.73	38.99	0.00
HALEAPPD	PN10-ANY ELECTR PRODS HELP CHILD READ	2477	99.72	38.99	0.00
HDHEALTH	PQ6-RATING OF CHILD'S HEALTH	10681	99.72	38.99	0.00
RESPEAK	PA7-LANG RESP SPEAKS MOST AT HOME	10681	99.71	38.99	100.00
SERECNEW	PH11D-CHILD EVER REQ CHNG SCHLS BEHV PRB	5828	99.71	38.99	0.00
HDBLIND	PQ10F-CHILD HAS BLINDNESS/VISUAL PROBLEM	10681	99.71	38.99	0.00
FORELCLS	PN24B-CHURCH, TEMPLE OR RELIGIOUS PGM	10679	99.69	38.98	0.00
HDSPEECH	PQ10C-CHILD HAS SPEECH OR LANGUAGE DELAY	10681	99.69	38.98	0.00
HOMEALL	PB5-FULL OR PARTIAL HOME SCHOOL	311	99.68	38.97	100.00
HSCREL	PC8H-SOURCE RETAIL BOOK STORE/OTHR STORE	311	99.68	38.97	0.00
HSOPRIV	PC9D-SVCS FROM PRIVATE SCHOOL	311	99.68	38.97	0.00
HSDISABL	PC14D-CHILD HAS DISABILITY	311	99.68	38.97	0.00
HSOTHER	PC14H-OTHER REASON FOR HOME SCHOOLING	311	99.68	38.97	0.00
FOZOO	PN15E-VISITED ZOO/AQUARIUM PAST MO	10681	99.68	38.97	0.00
FOMUSLES	PN24A-MUSIC LESSONS	10679	99.68	38.97	0.00
HDOTHER	PQ10K-CHILD HAS OTHR HLTH PROB 6 MOS+	10681	99.68	38.97	0.00
FOCHLRD	PN9-# TIMES PAST WK CHILD READ TO OTHER	2456	99.67	38.97	0.00
FODINNER	PN14-# TIMES FAM ATE TOGETHER PAST WK	10681	99.67	38.97	0.00
FOORGSPR	PN24C-ORGANIZED SUPERVISED SPORTS	10679	99.67	38.97	0.00
HDRETARD	PQ10B-CHILD HAS MENTAL RETARDATION	10681	99.67	38.97	0.00
RESPAGE	PARENT RESPONDENT'S AGE	10681	99.65	38.96	100.00
FSSPORT	PI1D-ATTENDED SCHOOL/CLASS EVENT	10370	99.65	38.96	0.00
FSVOL	PI1E-VOLUNTEERED AT SCHOOL/COMMITTEE	10370	99.65	38.96	0.00
FOMUSEUM	PN15D-VISITED ART GALLERY/MUSEUM PST MO	10681	99.65	38.96	0.00
HDWEIGHT	PQ8-DOCTOR EVR EXPR CONCERN CHILD'S WGHT	10681	99.65	38.96	0.00
HDDEAFIM	PQ10E-CHILD HAS DEAFNESS/HEARING PROBLEM	10681	99.65	38.96	0.00
MOMAGE1	MOM'S AGE - 1	9869	99.64	38.96	100.00
CSPEAK	PA6-LANG CHILD SPEAKS MOST AT HOME	10681	99.64	38.96	100.00
SPUBLIC	PG1-CHILD ATTENDS PUBL/PRIV SCH	10370	99.64	38.96	0.00
SEEXPEL	PH11C-HAS CHILD EVER BEEN EXPELLED?	5828	99.64	38.96	0.00
FOREADTO	PN2-TIMES READ TO CHILD PAST WK	2477	99.64	38.96	0.00
FOCONCRT	PN15C-WENT TO PLAY/CNCRT/SHOW PST MO	10681	99.64	38.96	0.00
FOGROUP	PN15F-ATTD EVENT SPON COMM/RELIG/ETH GRP	10681	99.64	38.96	2.63
PARREAD	PN25-HOW OFT ADLT READ IN HH IN PST WK	2477	99.64	38.96	0.00
CSPARCMT	PP1-# PRNTS TALK REG /CHILDREN SAME AGE	10681	99.64	38.96	0.00
FSMTNG	PI1A-ATTENDED GENERAL SCHOOL MEETING	10370	99.63	38.96	0.00
FPPRVAL	PL3D-PRNTS RESP TEACH CHILDREN VALU EDUC	10370	99.63	38.96	0.00
FOSPRTEV	PN15G-ATTD ATHL EVENT CHILD NOT PLAYER	10681	99.63	38.96	2.50
FOSCOUTS	PN24D-SCOUTING OR CLUB ACTIVITIES	10679	99.63	38.96	0.00
HDCHINS	PQ7-CHILD COVERED BY HEALTH INSURANCE	10681	99.63	38.96	0.00
HDORTHO	PQ10G-CHILD HAS ORTHOPEDIC IMPAIRMENT	10681	99.63	38.96	0.00
CBORNUS	PR1-CHILD'S BIRTH COUNTRY	10681	99.63	38.96	100.00
SEENJOY	PH1-CHILD ENJOYS SCHOOL	2395	99.62	38.95	0.00
FOSPORT2	PN12C-PLAYED SPORTS WITH CHILD PAST WK	4683	99.62	38.95	0.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
FSCOMMTE	PI1G-SERVED ON A SCHOOL COMMITTEE	10370	99.60	38.94	0.00
FOTLKSTR	PN5D-HOW OFT TALK ABOUT STORY WHEN DONE	2260	99.60	38.94	0.00
MOMLEAVE	PS13-MOM ON LEAVE OR VACATION LST WK - 1	3013	99.60	38.94	0.00
FSATCNFN	PI1C-GONE TO PARENT-TEACHER CONF	10370	99.59	38.94	0.00
FSFUNDRS	PI1F-PARTICIPATED IN SCHOOL FUNDRAISING	10370	99.59	38.94	0.00
FSPHONE	PJ1C-SCHOOL CALLED YOU ON THE PHONE	10370	99.59	38.94	0.00
FPPRATND	PL3E-PRNTS RESP ATTND SCHL MEETINGS	10370	99.59	38.94	0.00
FOCRAFT2	PN12B-DID ARTS/CRAFTS WITH CHILD PAST WK	4683	99.59	38.94	0.00
FOLIBRAY	PN15A-VISITED LIBRARY W/CHILD PST MO	10681	99.59	38.94	0.00
FCSCHOOL	PK1A-SATISFACTION WITH SCHOOL	10370	99.58	38.94	0.00
FOARTS	PN24F-PERFORMING AND OTHER ARTS	10679	99.58	38.94	0.00
SESUSOUT	PH11A-OUT-OF-SCHOOL SUSPENSION	5828	99.57	38.93	0.00
FOSPORT3	PN13B-PLAYED SPORTS WITH CHILD PAST WK	5998	99.57	38.93	0.00
HDDOCTOR	PQ11C-RECEIVES SERVICES FROM DR/CLINIC	2530	99.57	38.93	0.00
HDSOURCE	PQ11D-RECEIVES OTHER SERVICES	2530	99.57	38.93	0.00
FOLETTR	PN5B-HOW OFT STOP READ POINT OUT LTRS	2260	99.56	38.93	0.00
FOCHREAD	PN5C-HOW OFT ASK CHILD READ SAME TIME	2260	99.56	38.93	0.00
FSNOTES	PJ1A-SCHOOL SENT FAMILY PERSONAL NOTES	10370	99.55	38.92	0.00
HDLEARN	PQ10A-CHILD HAS SPEC LRNING DISABILTY	10681	99.55	38.92	0.00
AGE3	O/HH MEM - #3'S AGE	1516	99.54	38.92	100.00
FOBUILD2	PN13A-WORKED PROJECT WITH CHILD PAST WK	5998	99.53	38.92	0.00
AGE5	O/HH MEM - #5'S AGE	208	99.52	38.91	100.00
SCHOICE	PG2-SCHOOL ASSIGNED OR CHOSEN	8978	99.52	38.91	0.00
SEREPEAT	PH9-CHILD HAS REPEATED A GRADE	10370	99.52	38.91	0.00
FSMEMOS	PJ1B-SCHOOL SENT MEMOS/NEWSLETTERS HOME	10370	99.52	38.91	0.00
HAWORDS	PN7-DOES CHILD READ OR PRTND READ WORDS	2094	99.52	38.91	0.00
HDDISTRB	PQ10D-CHILD HAS EMOTIONAL DISTURBANCE	10681	99.52	38.91	0.00
FORDDAY	PN4-HOW MANY MINUTES READ CHILD PER DAY	2260	99.51	38.91	0.00
FOBOOKST	PN15B-VISITED A BOOKSTORE W.CHILD PST MO	10681	99.51	38.91	0.00
SCONSIDR	PG5-CONSIDER OTHER SCHOOLS FOR CHILD	10370	99.49	38.90	0.00
HDAUTISM	PQ10H-CHILD HAS AUTISM	10681	99.49	38.90	0.00
HASTORY	PN6-CAN CHILD READ STORY BOOKS ON OWN	2477	99.48	38.90	0.00
HAPRETND	PN8-DOES CHILD PRETEND TO READ BOOKS	383	99.48	38.90	0.00
RELATN1	O/HH MEM - #1'S RELATION TO CHILD	8526	99.47	38.89	100.00
FSPTMTNG	PI1B-ATTENDED MEETING PAR/TCHR ORG	10370	99.46	38.89	0.00
FORTVPRG	PN22-FAM RULES ABT TV WATCHING FOR CHILD	2386	99.46	38.89	0.00
HDPDD	PQ10J-CHILD W/ PERVAS DEVLPMNTL DISORDR	10681	99.46	38.89	0.00
CHISPAN	PR3-CHILD IS OF HISPANIC ORIGIN	10681	99.45	38.88	100.00
FOGAMES2	PN12F-PLAYED GAMES WITH CHILD PAST WK	4683	99.44	38.88	0.00
FORESPON	PN13C-DISC TIME MGT SKILLS CHILD PAST WK	5998	99.43	38.88	0.00
MOMSPEAK	PS5-LANG SPOKEN MOST AT HOME BY MOM - 1	10287	99.43	38.88	100.00
FPTALK	PL4-CONTACT SCHL WHEN DISAGREE DECISIONS	10370	99.42	38.87	0.00
FOPICTR	PN5A-HOW OFT STOP READ ASK ABOUT PICTURE	2260	99.42	38.87	0.00
FOBUILD1	PN12D-WORKED PROJECT WITH CHILD PAST WK	4683	99.42	38.87	0.00
HSKACTIV	PC7-CHILD PARTIC ACTIV HS KIDS	170	99.41	38.87	0.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
FPPTRUST	PL3B-TRUST STAFF AT CHILD'S SCHL	10370	99.41	38.87	0.00
MOMTYPE1	SPECIFIC RELAT OF MOM TO CHILD - 1	9869	99.40	38.87	100.00
KPFULDAY	PF4-CHILD GOES K FULL-DAY OR PART-DAY	838	99.40	38.87	0.00
STLKPAR	PG7-TALK TO OTHER PARENTS ABOUT SCHOOLS	3501	99.40	38.87	0.00
SNEIGHBR	PG10-MOVED SO CHILD CAN ATTEND CUR SCHL	8978	99.40	38.87	0.00
FOSCHACT	PN23-CHILD PARTC SCHL ACTIVS DUR SCHL YR	10370	99.40	38.87	0.00
MOMLOOK1	PS16-MOM LOOKING FOR WORK PAST 4 WKS - 1	2849	99.40	38.87	0.00
HDADD	PQ10I-CHILD HAS ADD OR ADHD	10681	99.39	38.86	0.00
TVHRWKND	PN18-CHILD WTCH TV/VIDS TYP WKND DAY	2406	99.38	38.86	0.00
HDBRTHW3	PQ2-CHILD WEIGHED LT 3 PNDS AT BIRTH	161	99.38	38.86	0.00
HSASSN	PC5-FAM PARTIC LOCAL HOMESCHOOLING ASSOC	311	99.36	38.85	0.00
HSCPRIV	PC8G-SOURCE PRIVATE SCHOOL	311	99.36	38.85	0.00
HSOLIBR	PC9A-SVCS FROM PUBLIC LIBRARY	311	99.36	38.85	0.00
HSOPUBL	PC9C-SVCS FROM PUBLIC SCHL OR SCHL DIST	311	99.36	38.85	0.00
HSRELIGN	PC14C-PROVIDE RELIGIOUS/MORAL INSTRUC	311	99.36	38.85	0.00
HSILL	PC14E-CHILD HAS TEMPORARY ILLNESS	311	99.36	38.85	0.00
HSSPCLND	PC14F-CHILD HAS SPECIAL NEEDS	311	99.36	38.85	0.00
SEBEHAVR	PH4-TCHRS CONTACT ABOUT BEHAV PROB	10370	99.36	38.85	0.00
HDSCHL	PQ11A-RECEIVES SERVICES FROM SCHOOL DIST	2801	99.36	38.85	0.00
FPSWELCM	PL3C-CHILD'S SCHL WELCOMING TO FAMILY	10370	99.34	38.84	0.00
FOETHNIC	PN15H-TALKED CHILD ABT ETHNIC HERITAGE	5998	99.33	38.84	0.00
FHOTHTUT	PM11-CHILD RECVD OTHR TUTORING SCHL YR	10370	99.32	38.83	0.00
FOHIST	PN12E-TALKED CHILD ABT FAM HIST PAST WK	4683	99.32	38.83	0.00
FSCOUNSL	PI1H-MET WITH GUIDANCE COUNSELOR IN PERS	10370	99.30	38.83	0.00
SPERFORM	PG6-INFO ON THE PERFORMANCE OF SCHOOLS	3501	99.29	38.82	0.00
DADTYPE1	SPECIFIC RELAT OF FATHER TO CHILD - 1	8341	99.28	38.82	100.00
FPHLPCHD	PL3A-KNOW HOW HELP CHILD DO WELL IN SCHL	10370	99.28	38.82	0.00
RELATN3	O/HH MEM - #3'S RELATION TO CHILD	1516	99.27	38.81	100.00
FOSTORY2	PN12A-TOLD CHILD STORY PAST WK	4683	99.27	38.81	0.00
CWHITE	PR4-CHILD IS WHITE	10681	99.27	38.81	100.00
CBLACK	PR4-CHILD IS BLACK OR AFRICAN AMERICAN	10681	99.27	38.81	100.00
CAMIND	PR4-CHILD IS AMER INDIAN/ALASKAN NATIVE	10681	99.27	38.81	100.00
CASIAN	PR4-CHILD IS ASIAN	10681	99.27	38.81	100.00
CPACI	PR4-CHILD IS NATV HAWAIIAN/PACIF ISLNDR	10681	99.27	38.81	100.00
CRACEOTH	PR4-CHILD'S RACE	10681	99.27	38.81	100.00
MOMLANG1	PS4-FIRST LANGUAGE SPOKEN BY MOM - 1	10287	99.27	38.81	100.00
MOMBORN1	PS6-COUNTRY MOM WAS BORN IN - 1	10287	99.27	38.81	100.00
FSSPPERF	PJ2A-SCHOOL INFORMS YOU HOW CHILDS DOING	10370	99.26	38.81	0.00
RELATN2	O/HH MEM - #2'S RELATION TO CHILD	4018	99.25	38.81	100.00
SISBRO	PN3-SISTER/BROTHER READ CHILD PAST WK	2260	99.25	38.81	100.00
SOMEONEL	PN3-SOMEONE ELSE READ CHILD PAST WK	2260	99.25	38.81	100.00
MOMSTAT1	PS2-MOM'S MARITAL STATUS - 1	10287	99.24	38.80	100.00
SESUSPIN	PH11B-IN-SCHOOL SUSPENSION	5828	99.23	38.80	0.00
FOCOLEXM	PN24E-COLLEGE ENTRANCE EXAM PREP	3644	99.23	38.80	0.00
MOMWORK1	PS12-MOM WORKED FOR PAY LAST WEEK - 1	10287	99.23	38.80	0.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
SEFAMPAY	PH13-PLAN TO PAY FOR EDUCATION AFTER HS	5604	99.21	38.79	0.00
TVHRWKDY	PN16-CHILD WTCH TV/VIDS TYP WKDY	2477	99.19	38.78	30.00
FOINTHM	PU1-ACCESS TO INTERNET AT HOME	10681	99.19	38.78	0.00
SESCHWRK	PH5-SCHOOL CONTACT ABOUT SCHLWK PROB	10370	99.18	38.78	0.00
FHHOME	PM1-HOW OFTEN HOMEWRK DONE OUTSIDE SCHL	10370	99.18	38.78	0.00
MHISPAN1	PS7-MOM IS HISPANIC - 1	10287	99.18	38.78	100.00
MOTHERFG	PN3-MOTHER/FG READ CHILD PAST WK	2260	99.16	38.77	100.00
MOMENROL	PS18-MOM ENROLLED IN SCHOOL - 1	10287	99.15	38.77	0.00
HDGOVT	PQ11B-RECEIVES ST/LOCL/SOCL SERVICES	2530	99.13	38.76	0.00
FHPLACE	PM4-PLACE IN HOME FOR HOMEWORK	9787	99.11	38.75	0.00
SREASON	PG8-MAIN REASON CHOSE SCHOOL	4945	99.09	38.74	0.00
FORHW	PM5-FAMILY RULES ABOUT DOING HOMEWORK	9787	99.07	38.74	0.00
ANOTADLT	PN3-ANOTHER ADLT HH READ CHILD PAST WK	2260	99.07	38.74	100.00
MOMDIPL1	PS11-MOM HAS HS DIPLOMA OR GED - 1	4196	99.07	38.74	100.00
HWIC	PU3C-RECEIVED WIC PAST 12 MONTHS	10681	99.05	38.73	0.00
HSTUTOR	PC2-ANY OF HOME INSTR TAUGHT BY TUTOR	311	99.04	38.72	0.00
HSCLIBR	PC8A-SOURCE PUBLIC LIBRARY	311	99.04	38.72	0.00
HSCPUBL	PC8F-SOURCE PUBLIC SCHL OR SCHL DISTRICT	311	99.04	38.72	0.00
HSCNET	PC8I-SOURCE INTERNET OR WWW	311	99.04	38.72	0.00
HSOCHUR	PC9B-SVCS FROM CHURCH,SYNAGOGUE OR RELIG	311	99.04	38.72	0.00
HSOOTH	PC9E-HOME SCHLR USED SVCS FROM OTHR SRCE	311	99.04	38.72	0.00
HSSAFETY	PC14A-CONCERNED ABOUT SCHOOL ENVIRONMENT	311	99.04	38.72	0.00
FPTCHCAR	PL2-FREQ LACK CHILDCARE KEPT FR MEETINGS	7599	99.04	38.72	21.92
FHCHECK	PM6-CHECK TO SEE THAT HOMEWORK IS DONE	9787	99.04	38.72	0.00
HDWEIGHT	PQ9-CONCERN ABT BEING OVER OR UNDER WGHT	1454	99.04	38.72	0.00
DADSPEAK	PT4-LANG SPOKEN MOST AT HOME BY DAD - 1	8564	99.04	38.72	100.00
HFOODST	PU3D-RECEIVED FOOD STAMPS PAST 12 MNTHS	10681	99.03	38.72	0.00
H3YRMOVE	PU4-# TIMES MOVED OVER PAST 3 YEARS	10681	99.01	38.71	0.00
CMOVEAGE	PR2-AGE WHEN CHILD MOVED TO US	594	98.99	38.71	100.00
HSECN8	PU3G-RCVD SEC 8 HOUSE ASSIS PAST 12 MOS	10681	98.99	38.71	0.00
HDSPCLED	PQ14-ENROLLED IN SPECIAL ED	2530	98.97	38.70	0.00
FCSUPPRT	PK1E-SATISFACTION W/ STAFF INTERAC PRNTS	10370	98.93	38.68	0.00
MOMGRADE	PS9-HIGHEST GRADE/YR MOM COMPLETED - 1	10287	98.91	38.67	100.00
HMEDIC	PU3E-RECEIVED MEDICAID PAST 12 MONTHS	10681	98.91	38.67	0.00
DADLANG1	PT3-FIRST LANGUAGE SPOKEN BY DAD - 1	8564	98.90	38.67	100.00
DADBORN1	PT5-COUNTRY DAD WAS BORN IN - 1	8564	98.90	38.67	100.00
FHHELP	PM7-HOW OFTEN HELPED WITH HOMEWORK	9787	98.89	38.67	0.00
MWHITE1	PS8-MOM IS WHITE - 1	10287	98.89	38.67	100.00
RELATN4	O/HH MEM - #4'S RELATION TO CHILD	534	98.88	38.66	100.00
FSSPROLE	PJ2E-PROVIDES INFO EXPECTED ROLE AT SCHL	10370	98.88	38.66	0.00
MBLACK1	PS8-MOM IS BLACK OR AFRICAN AMERICAN - 1	10287	98.87	38.66	100.00
MAMIND1	PS8-MOM IS AMER INDIAN/ALASKAN NAT - 1	10287	98.87	38.66	100.00
MASIAN1	PS8-MOM IS ASIAN - 1	10287	98.87	38.66	100.00
MPACI1	PS8-MOM IS NATV HAWAIIAN/PACIF ISLDR - 1	10287	98.87	38.66	100.00
MRACEOTH	PS8-MOM'S RACE - 1	10287	98.87	38.66	100.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
FCTEACHR	PK1B-SATISFACTION WITH TEACHERS	10370	98.86	38.65	0.00
DADWORK1	PT11-DAD WORKED FOR PAY LAST WEEK - 1	8564	98.86	38.65	0.00
HWELFTAN	PU3A-RECEIVED TANF PAST 12 MONTHS	10681	98.86	38.65	0.00
DHISPAN1	PT6-DAD IS HISPANIC - 1	8564	98.84	38.65	100.00
DADSTAT1	PT1-DAD'S MARITAL STATUS - 1	8564	98.81	38.63	100.00
HDPRMTR4	PQ3-CHILD BORN MORE THAN 4 WKS PREMATURE	2477	98.79	38.63	0.00
MOMVOTEC	PS10-MOM HAS VOC/TECH DIPL - 1	1614	98.76	38.62	100.00
HWELFST	PU3B-RECEIVED STATE WELF PAST 12 MONTHS	10681	98.76	38.62	0.00
MOMMTHS1	PS15-MONTHS MOM WORKED IN PAST YEAR - 1	10287	98.73	38.60	12.98
DADENROL	PT17-DAD ENROLLED IN SCHOOL - 1	8564	98.73	38.60	0.00
HSWHO	PC1-PERSON WHO MAINLY HOMESHOOLS CHILD	311	98.71	38.60	0.00
HSCHSPUB	PC8B-SOURCE HOME SCHOOL PUBLISHER	311	98.71	38.60	0.00
HSCCHUR	PC8E-SOURCE CHURCH,SYNAGOGUE, RELIG ORG	311	98.71	38.60	0.00
HDBRTHW5	PQ1-CHILD WEIGHED LT 5 1/2 PNDS AT BIRTH	2477	98.71	38.60	0.00
DADLEAVE	PT12-DAD ON LEAVE OR VACATION LST WK - 1	621	98.71	38.60	12.50
FSDIFENG	PL5-LEVEL DIFFIC PARTIC SCHL-LANG PROBS	1155	98.70	38.59	0.00
MOMNEW1	PS1-AGE OF MOM FIRST BECAME MOTHER - 1	10287	98.69	38.59	4.44
TVOTHER	PN20-ANOTHER CHANNEL	2386	98.62	38.56	0.00
DWHITE1	PT7-DAD IS WHITE - 1	8564	98.61	38.56	100.00
SECOLACT	PH14-FAM STARTED EDUC SAVINGS ACCOUNT	4700	98.60	38.55	0.00
DBLACK1	PT7-DAD IS BLACK OR AFRICAN AMERICAN - 1	8564	98.59	38.55	100.00
DRACEOTH	PT7-DAD'S RACE - 1	8564	98.59	38.55	100.00
HCHIP	PU3F-RECEIVED CHIP PAST 12 MONTHS	10681	98.59	38.55	0.00
DAMIND1	PT7-DAD IS AMER INDIAN/ALASKAN NAT - 1	8564	98.58	38.54	100.00
DPACI1	PT7-DAD IS NATV HAWAIIAN/PACIF ISLDR - 1	8564	98.58	38.54	100.00
DASIAN1	PT7-DAD IS ASIAN - 1	8564	98.56	38.54	100.00
KPENROLL	PF2-WHEN ENROLL CHILD IN KINDERGARTEN	2395	98.54	38.53	0.00
HDAFFECT	PQ16-DISABILITY AFFECT ABILITY TO LEARN	2530	98.54	38.53	0.00
S1STCHOI	PG9-SCHL CHILD ATTENDS IS FIRST CHOICE	10370	98.53	38.53	0.00
MOMREL1	PS17C-MOM CHECKED W/FRIENDS/RELS - 1	409	98.53	38.53	0.00
FCSTDS	PK1C-SATISFACTION W/ ACADEMIC STANDARDS	10370	98.52	38.52	0.00
FCORDER	PK1D-SATISFACTION W/ SCHOOL DISCIPLINE	10370	98.51	38.52	0.00
FHAMOUNT	PM3-FEELINGS ABOUT AMOUNT OF HOMEWORK	9787	98.48	38.51	0.00
SEFUTURE	PH12-EXPECTATION FOR CHILD'S EDUCATION	5998	98.45	38.49	0.00
SMVMTH	PG24-MONTH CHILD STARTED AT CURRENT SCHL	257	98.44	38.49	0.00
HSDAYS	PC3-# DAYS EACH WEEK HOMESCHOOLED	311	98.39	38.47	0.00
HSINTNET	PC10-HOMESCHOOL INSTRUCTION VIA INTERNET	311	98.39	38.47	0.00
ABCCBSWB	PN20-ABC, CBS, NBC, FOX, UPN, WB	2386	98.37	38.46	10.26
ANIMPLAN	PN20-ANIMAL PLANET	2386	98.37	38.46	10.26
CARTOONS	PN20-BOOMERANG/CARTOON NETWORK/NICKTOONS	2386	98.37	38.46	10.26
CTNCHRIS	PN20-CTN (CHRISTIAN/CORNERSTONE)	2386	98.37	38.46	10.26
DISCOVER	PN20-DISCOVERY CHANNEL/KIDS	2386	98.37	38.46	10.26
DISNEYCH	PN20-DISNEY CHANNEL	2386	98.37	38.46	10.26
ESPN	PN20-ESPN	2386	98.37	38.46	10.26
FAMILYCH	PN20-FAMILY CHANNEL	2386	98.37	38.46	10.26

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
MTVVH1	PN20-MTV/VH-1	2386	98.37	38.46	10.26
NICKELOD	PN20-NICKELODEON/NICK-AT-NITE	2386	98.37	38.46	10.26
NEWSNET	PN20-NEWS NETWORK (E.G. CNN, FOX NEWS)	2386	98.37	38.46	10.26
NOGGIN	PN20-NOGGIN	2386	98.37	38.46	10.26
PBSSPRT	PN20-PBS/PBS SPROUT/PBS KIDS	2386	98.37	38.46	10.26
GALATELE	PN20-GALAVISION/TELEMUNDO/UNIVISION	2386	98.37	38.46	10.26
LEARNCH	PN20-THE LEARNING CHANNEL	2386	98.37	38.46	10.26
TVLAND	PN20-TV LAND	2386	98.37	38.46	10.26
VIDNOTV	PN20-CHILD ONLY WATCHES VIDEOS, NOT TV	2386	98.37	38.46	10.26
MOMHOURS	PS14-HRS PER WEEK MOM WORKS FOR PAY - 1	7283	98.37	38.46	0.00
FHSCHTUT	PM8-RCVD INFO SCHL/DISTR ABOUT TUTORING	10370	98.36	38.46	0.00
DADMTHS1	PT14-MONTHS DAD WORKED IN PAST YEAR - 1	8564	98.35	38.45	2.84
SEDOWELL	PH6-SCHOOL CONTACT ABOUT WHAT DOING WELL	10370	98.33	38.45	0.00
FPMTGWRK	PL1-FREQ SCHL HOLDS MEETINGS MEET SCHDL	10370	98.31	38.44	0.00
MOMAGN1	PS17A-MOM CHECKED WITH EMPLOY AGENCY - 1	409	98.29	38.43	0.00
HOME11	PC13-HOME SCHOOL 11TH GRADE	57	98.25	38.42	0.00
HSFREQ	PC6-# TIMES FAM PARTIC MEEETINGS ASSOC	170	98.24	38.41	0.00
DADGRADE	PT8-HIGHEST GRADE/YR DAD COMPLETED - 1	8564	98.24	38.41	100.00
SEGRADES	PH2-CHILD'S GRADES ACROSS ALL SUBJECTS	10370	98.22	38.40	0.00
SEGRADEQ	PH3-RATING OF CHILD'S SCHOOL WORK	2275	98.20	38.40	0.00
DADDIPL1	PT10-DAD HAS HS DIPLOMA OR GED - 1	3003	98.17	38.38	100.00
DADLOOK1	PT15-DAD LOOKING FOR WORK PAST 4 WKS - 1	527	98.10	38.36	0.00
AGE6	O/HH MEM - #6'S AGE	52	98.08	38.35	100.00
HSMOST	PC15-MOST IMPORTANT REASON FOR HOME SCHL	311	98.07	38.35	0.00
MOMEMPL1	PS17B-MOM CHECKED W/EMPLYER DIRECTLY - 1	409	98.04	38.33	0.00
MOMANSAD	PS17D-MOM PLCD/ANSW ADS/SENT RESUME - 1	409	98.04	38.33	0.00
FSSPHW	PJ2B-HELPS YOU HELP CHILD W/ HOMEWORK	10370	98.01	38.32	0.00
TVCHMOST	PN21-CHANNEL CHILD WATCHES MOST OFTEN	2312	98.01	38.32	15.22
SEREPTK	PH10-CHILD REPEATED KINDERGARTEN	894	97.99	38.31	0.00
FSFREQ	PI2-# TIMES GONE MTGS/ACTIVS SCHL YR	10370	97.96	38.30	4.25
MOMGRAD2	PS9-ACTUAL GRADE 9-11 MOM COMPLETED - 1	490	97.96	38.30	100.00
GRADEEQ	PB8-GRADE EQUIV/HOME SCHOOL/SP ED/UNGRD	341	97.95	38.30	100.00
SEREPT1	PH10-CHILD REPEATED 1ST GRADE	876	97.95	38.30	0.00
HABOOKS	PN1-# OF BOOKS CHILD HAS	2477	97.94	38.29	0.00
CDOBYY	PA1-YEAR OF BIRTH	10681	97.92	38.29	100.00
FHWKHRS	PM2-HOURS SPENT ON HOMEWRK OUTSIDE SCHL	9787	97.91	38.28	0.00
SDISRCT	PG3-SCHOOL IN ASSIGNED SCHOOL DISTRICT	1453	97.87	38.27	0.00
MOMLIVW1	PS3-MOM CURRENTLY LIVE W/ PARTNER - 1	1487	97.85	38.26	100.00
SEREPT2	PH10-CHILD REPEATED 2ND GRADE	832	97.84	38.26	0.00
HDHOSP	PQ4-# DAYS CHILD IN HOSP AFTER BORN	2477	97.82	38.25	0.00
SEREPT3	PH10-CHILD REPEATED 3RD GRADE	778	97.81	38.24	0.00
SEREPT4	PH10-CHILD REPEATED 4TH GRADE	729	97.81	38.24	0.00
DADHOURS	PT13-HRS PER WEEK DAD WORKS FOR PAY - 1	7815	97.77	38.23	0.00
HOMALLGR	PC12-HOME SCHOOLED SOME OR ALL GRADES	307	97.72	38.21	0.00
FHGETTUT	PM9-CHILD RECVD FREE TUTORING IN SCHL YR	4552	97.69	38.20	0.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
SEADPLC	PH7-CHILD ENROLLED IN ADVANCED CLASSES	3543	97.66	38.19	0.00
HDIFSP	PQ5-CHILD RCVD SVCS, HAD IFSP BEF AGE 3	2477	97.66	38.19	0.00
SEREPT6	PH10-CHILD REPEATED 6TH GRADE	595	97.65	38.18	0.00
FHPDTSAT	PM12-LEVEL OF SATISFACTION OTHR TUT SVCS	1279	97.65	38.18	0.00
SEREPT5	PH10-CHILD REPEATED 5TH GRADE	668	97.60	38.16	0.00
KPAGEYR	PF3-AGE CHILD STARTED KINDERGARTEN - YRS	2395	97.58	38.15	0.00
HOME1	PC13-HOME SCHOOL 1ST GRADE	284	97.54	38.14	42.86
SEREPT7	PH10-CHILD REPEATED 7TH GRADE	525	97.52	38.13	0.00
FSSPCOUR	PJ2C-TELLS WHY CHILD'S IN CERTAIN CLASS	10370	97.46	38.11	0.00
MOMGRAD1	PS9-ACTUAL GRADE 0-8 MOM COMPLETED - 1	432	97.45	38.10	100.00
HSHOURS	PC4-TOTAL HOURS PER WEEK HOMESCHOOLED	311	97.43	38.10	0.00
HSCEDPUB	PC8C-SOURCE OTHER ED PUBLISHER	311	97.43	38.10	0.00
CDOBMM	PA1-MONTH OF BIRTH	10681	97.40	38.08	0.00
HOMEK	PC13-HOME SCHOOL KINDERGARTEN	307	97.39	38.08	62.50
HOME2	PC13-HOME SCHOOL 2ND GRADE	256	97.27	38.03	42.86
HOME4	PC13-HOME SCHOOL 4TH GRADE	208	97.12	37.97	50.00
HSDISSAT	PC14B-DISSATISFIED WITH ACADEMIC INSTRUC	311	97.11	37.97	0.00
HSALT	PC14G-INTERESTED NONTRAD EDUC APPROACH	311	97.11	37.97	0.00
FSSPCOLL	PJ2D-SCH TELLS HOW TO PLAN COLL/VOC SCHL	5828	97.10	37.97	0.00
SEREPT8	PH10-CHILD REPEATED 8TH GRADE	442	97.06	37.95	0.00
HDACCOM	PQ15C-SAT W/ SCHL SPCL NEEDS ACCOMOD	929	96.99	37.92	0.00
HDCOMMIT	PQ15D-SAT W/ SCHL COMMIT HELP CHILD LRN	929	96.99	37.92	0.00
FSTRANSL	PL6B-SCHL HAS MATERIALS TRANSL IN LANG	1155	96.97	37.92	0.00
HOME3	PC13-HOME SCHOOL 3RD GRADE	229	96.94	37.90	57.14
SEREPT9	PH10-CHILD REPEATED 9TH GRADE	358	96.93	37.90	0.00
HOME5	PC13-HOME SCHOOL 5TH GRADE	189	96.83	37.86	33.33
FHTUTSAT	PM10-LEVEL OF SATISFACTION WITH TUTORING	1370	96.79	37.84	0.00
HSCORG	PC8D-SOURCE HOME SCHOOLING ORG	311	96.78	37.84	0.00
HDCOMMU	PQ15A-SATISFACTION W/ SCHOOL COMMUNICATN	929	96.77	37.84	0.00
HDIEP	PQ12-RECEIVES SERVICES THRU IEP	2036	96.71	37.81	0.00
HOME7	PC13-HOME SCHOOL 7TH GRADE	149	96.64	37.79	40.00
FHTUCOST	PM13-HOW MUCH FAMILY PAY FOR TUTORING	1279	96.64	37.79	0.00
DADAGN1	PT16A-DAD CHECKED WITH EMPLOY AGENCY - 1	173	96.53	37.74	0.00
HOME6	PC13-HOME SCHOOL 6TH GRADE	170	96.47	37.72	33.33
HDTCHR	PQ15B-SATISFACTION WITH SPCL NEEDS TCHR	929	96.45	37.71	0.00
SEREPT11	PH10-CHILD REPEATED 11TH GRADE	166	96.39	37.69	0.00
HOMSCHR	PB6-HRS/WK HOME SCHOOLED CHILD IN SCHOOL	54	96.30	37.65	100.00
SEREPT12	PH10-CHILD REPEATED 12TH GRADE	80	96.25	37.63	0.00
SEREPT10	PH10-CHILD REPEATED 10TH GRADE	262	96.18	37.61	0.00
FHTUUNIT	PM13-UNIT FOR TUTORING PAYMENTS	494	96.15	37.59	0.00
HOME10	PC13-HOME SCHOOL 10TH GRADE	77	96.10	37.58	33.33
DADVOTEC	PT9-DAD HAS VOC/TECH DIPL - 1	1087	96.04	37.55	100.00
HOME12	PC13-HOME SCHOOL 12TH GRADE	24	95.83	37.47	0.00
DADEMPL1	PT16B-DAD CHECKED W/EMPLYER DIRECTLY - 1	173	95.38	37.29	0.00
DADREL1	PT16C-DAD CHECKED W/FRIENDS/RELS - 1	173	95.38	37.29	0.00

See notes at end of table.

Table 6-2. Item response rates and hand imputation rates for items on the PFI-NHES:2007 data file—Continued

Variable	Label	Number applicable	Item response rate	Total response rate	Percent hand imputed
HDDEVIEP	PQ13-HH WORKED WITH SCHL DEVELOP IEP	734	95.37	37.29	0.00
HOME8	PC13-HOME SCHOOL 8TH GRADE	125	95.20	37.22	33.33
DADLIVW1	PT2-DAD CURRENTLY LIVE W/ PARTNER - 1	580	95.17	37.21	100.00
HOME9	PC13-HOME SCHOOL 9TH GRADE	103	95.15	37.20	40.00
DADGRAD2	PT8-ACTUAL GRADE 9-11 DAD COMPLETED - 1	391	95.14	37.20	100.00
DADANSAD	PT16D-DAD PLCD/ANSW ADS/SENT RESUME - 1	173	94.80	37.07	0.00
DADGRAD1	PT8-ACTUAL GRADE 0-8 DAD COMPLETED - 1	339	94.69	37.02	100.00
SEESL	PH8-CHILD ENROLLED IN ENGL AS 2ND LANG	689	94.34	36.89	0.00
KPAGEMO	PF3-AGE CHILD STARTED KINDERGARTEN - MOS	2395	93.99	36.75	61.81
HINCMRNG	PU5-TOTAL HH INCOME BELOW/ABOVE $25K	10681	93.94	36.73	0.00
FSINTERP	PL6A-SCHL HAS INTERPRETERS FOR MEETINGS	1155	92.55	36.19	0.00
SCHLID	PG12-SCHOOL ID FROM LOOKUP	10370	92.53	36.18	28.77
HINCM50K	PU5OV1-TOTAL HH INCOME BELOW/ABOVE $50K	8966	92.47	36.16	0.00
MOMBORN2	PS6-COUNTRY MOM WAS BORN IN - 2	12	91.67	35.84	100.00
MHISPAN2	PS7-MOM IS HISPANIC - 2	12	91.67	35.84	100.00
MWHITE2	PS8-MOM IS WHITE - 2	12	91.67	35.84	100.00
MBLACK2	PS8-MOM IS BLACK OR AFRICAN AMERICAN - 2	12	91.67	35.84	100.00
MAMIND2	PS8-MOM IS AMER INDIAN/ALASKAN NAT - 2	12	91.67	35.84	100.00
MASIAN2	PS8-MOM IS ASIAN - 2	12	91.67	35.84	100.00
MPACI2	PS8-MOM IS NATV HAWAIIAN/PACIF ISLDR - 2	12	91.67	35.84	100.00
MRACEOTH	PS8-MOM'S RACE - 2	12	91.67	35.84	100.00
HINCOME	PU5OV2-TOTAL HH INCOME RANGE	10681	90.45	35.37	0.00
MOMTYPE2	SPECIFIC RELAT OF MOM TO CHILD - 2	10	90.00	35.19	100.00
MOMNEW2	PS1-AGE OF MOM FIRST BECAME MOTHER - 2	10	90.00	35.19	0.00
MOMLIVW2	PS3-MOM CURRENTLY LIVE W/ PARTNER - 2	10	90.00	35.19	100.00
MOMLANG2	PS4-FIRST LANGUAGE SPOKEN BY MOM - 2	10	90.00	35.19	100.00
MOMSPEAK	PS5-LANG SPOKEN MOST AT HOME BY MOM - 2	10	90.00	35.19	100.00
MOMGRADE	PS9-HIGHEST GRADE/YR MOM COMPLETED - 2	10	90.00	35.19	100.00
MOMWORK2	PS12-MOM WORKED FOR PAY LAST WEEK - 2	10	90.00	35.19	0.00
MOMMTHS2	PS15-MONTHS MOM WORKED IN PAST YEAR - 2	10	90.00	35.19	0.00
MOMENROL	PS18-MOM ENROLLED IN SCHOOL - 2	10	90.00	35.19	0.00
SPUBCHOI	PG4-CHOOSE SCHOOL IN ANY SCHOOL DISTRICT	10370	89.75	35.09	0.00
MOMDIPL2	PS11-MOM HAS HS DIPLOMA OR GED - 2	6	83.33	32.58	100.00
SESCHOL	PH15-FAM APPLD FOR SCLRSHIP/GRANT CHILD	1880	78.30	30.62	0.00
MOMVOTEC	PS10-MOM HAS VOC/TECH DIPL - 2	4	75.00	29.33	100.00
MOMSTAT2	PS2-MOM'S MARITAL STATUS - 2	10	70.00	27.37	100.00
MOMLEAVE	PS13-MOM ON LEAVE OR VACATION LST WK - 2	3	66.67	26.07	0.00

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program, 2007.