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**NATIONAL CENTER FOR EDUCATION STATISTICS**

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**Methodology Report**

**August 2000**

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**1999 National Household Education Survey**

**NHES:1999**  
**Methodology Report**





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## **NHES:1999**

# **Methodology Report**



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**U.S. Department of Education**  
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**U.S. Department of Education**

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## Table of Contents

Chapter		Page
1	INTRODUCTION.....	1
	Previous NHES Survey Topics.....	2
	NHES:1991 Survey Topics .....	2
	NHES:1993 Survey Topics .....	3
	NHES:1995 Survey Topics .....	4
	NHES:1996 Survey Topics .....	5
	NHES:1999 Instruments .....	6
	NHES:1999 Parent Interview .....	7
	NHES:1999 Youth Interview.....	9
	NHES:1999 Adult Education Interview .....	10
	NHES:1999 Adult Special Study Interview.....	11
2	SAMPLE DESIGN.....	13
	Sampling Telephone Numbers .....	13
	Oversampling Blacks and Hispanics .....	15
	Number of Sampled Telephone Numbers.....	16
	Within-Household Sampling.....	17
	Precision Requirements .....	17
	Sampling Scheme for Within-Household Sampling .....	18
	Expected Sample Yields .....	21
	Summary of the Sample Design for the Main Study .....	28
	The Adult Special Study to Examine Methodological Issues.....	29
3	QUESTIONNAIRE DESIGN.....	31
	Identification of Key Indicators .....	31
	Search for Published NHES Indicators .....	31
	Review of Strategic Plan Indicators .....	33
	Telephone Conferences with Researchers and Policy Makers .....	35
	Review of Extant Data .....	39
	Formulation of Research Questions .....	40
	Parent Interview Research Questions.....	40
	Youth Interview Research Questions.....	44
	Adult Education Interview Research Questions.....	46
	Adult Special Study Research Questions .....	48
	Cognitive Research, Phase One .....	49
	Description of the Research and Participants.....	50
	Findings .....	51

## Table of Contents (Continued)

Chapter	Page
Cognitive Research, Phase Two.....	52
Participants .....	53
Findings .....	53
Field Test.....	53
Interviewer Training Procedures .....	55
Field Test Data Collection and Interviewer Debriefing.....	56
Sources of Published NHES Indicators .....	56
4 DATA COLLECTION .....	59
Interviewer Recruitment and Training.....	59
Preparing the Sample .....	62
Advance Mailing to Respondents.....	63
Interviewing Times and Case Priorities .....	65
Scheduling of Calls.....	65
Assignment of Cases to Interviewers.....	66
Procedures for Special Circumstances .....	67
Answering Machine Messages .....	68
Language Problem Cases.....	68
Refusal Conversion Procedures .....	70
Cleaning and Refielding Introductory Refusals .....	70
Standard Refusal Conversion .....	71
Federal Express/Priority Mail Mailing to Refusal Cases.....	72
Refielding Second Refusals.....	72
Procedures for Other Nonresponse Cases.....	76
Maximum Call Cases .....	77
No Answer-Answering Machine Cases.....	79
No Answer Cases .....	79
Results of Refielding Cases.....	81
Weekly Progress in Completing Cases .....	81
Item Clarification Callbacks .....	83
Quality Control Procedures .....	84



## Table of Contents (Continued)

Chapter	Page
Quality Control Throughout the Interviewing Process.....	84
Triage .....	85
Interviewer Monitoring .....	85
Standard Reports .....	86
Coaching Sessions .....	87
Interviewer Meetings .....	87
Online Help Screens .....	87
Interview Administration Time .....	88
Screener Administration Time.....	92
Parent Interview Administration Time.....	93
Youth Interview Administration Time .....	95
Adult Education and Adult Special Study Interview Administration Times .....	95
Data Editing.....	97
Data Alignment .....	98
Range Edits.....	98
Logic Edits.....	99
Batch Data Integrity Edits.....	99
Structural Edits .....	100
Frequency and Cross-Tabulation Review .....	100
Frequency Review of Text Items .....	100
Problem Areas and Suggestions for Improvements in Future Surveys.....	101
Enumeration Errors .....	101
5    UNIT RESPONSE .....	103
Definition of Response and Completion Rates.....	103
Screener Response Rates.....	104
Spanish Language Cases.....	108
Distribution of Household Members Sampled for Extended Interviews.....	109
Profile of Screener Response Rates .....	110
Extended Interview Response Rates.....	114
Profile of Extended Interview Completion Rates.....	117

## Table of Contents (Continued)

Chapter		Page
	A Study of Nonresponse Bias in the NHES:1999 .....	122
	An External Source of Household-Level Data .....	123
	A Comparison of Estimates Based on Adjusted and Unadjusted Weights.....	127
	Conclusions.....	143
6	ITEM RESPONSE AND IMPUTATION .....	145
	Introduction .....	145
	Methodology.....	145
	Manual Imputation .....	149
	Item Response Rates .....	154
7	WEIGHTING AND VARIANCE ESTIMATION.....	179
	Weighting Methodology .....	179
	Household-Level Weights .....	179
	Person-Level Weights for the Parent Interview .....	184
	Person-Level Weights for the Youth Interview.....	187
	Person-Level Weights for the Adult Education Interview .....	194
	Person-Level Weights for the Adult Special Study Interview.....	199
	Methods for Computing Sampling Errors .....	201
	Replication Sampling Errors .....	202
	Taylor Series Approximation .....	203
	Approximate Sampling Errors .....	205
	Standardization of Weights for the Split Half Samples and Other Subsamples .....	207
8	COMPARISON OF NHES:1999 ESTIMATES WITH OTHER DATA SOURCES.....	211
	Introduction .....	211
	Populations of Interest and Data Sources.....	211
	Methodological Considerations in Data Comparisons.....	212
	General Comments on the NHES:1999 Estimates.....	214
	Methodology for Significance Testing .....	215
	Other Data Considerations.....	215
	Comparability of the NHES:1999 and 1998 CPS Distributions for Age of Persons .....	216

## Table of Contents (Continued)

Chapter	Page
The NHES:1999 Parent Interview Comparisons .....	218
The 1991, 1993, 1995, and 1996 National Household Education Surveys .....	218
The Current Population Survey (CPS) .....	218
The National Education Longitudinal Study .....	219
Parent Interview Findings .....	219
The NHES:1999 Youth Interview Comparisons .....	250
The 1993 and 1996 National Household Education Surveys .....	250
National Survey of Volunteering and Giving Among Teenagers .....	252
The National Education Longitudinal Study .....	252
The 1965 National Survey of High School Seniors .....	252
Youth Interview Findings .....	253
The NHES:1999 Adult Education Interview Comparisons .....	260
The 1991 and 1995 National Household Education Surveys .....	260
The Current Population Survey (CPS) .....	261
Integrated Postsecondary Education Data System (IPEDS).....	261
Adult Education Program Facts .....	261
Adult Education Interview Findings .....	262
References .....	275

## List of Appendixes

Appendix	Page
A Details About Sample Size Requirements and Development of the Within-Household Sampling Scheme .....	A-1
B Screener, Parent Interview, Youth Interview, Adult Education Interview, and Adult Special Study Interview Questionnaires .....	B-1
C NHES:1999 Interviewer Training Agendas.....	C-1
D Letters to Potential Respondents .....	D-1
E NHES:1999 Result Codes.....	E-1
F NHES:1999 Answering Machine Messages.....	F-1
G NHES:1999 TRC Monitoring Form.....	G-1
H NHES:1999 Range and Logic Edit Specifications .....	H-1

## Table of Contents (Continued)

### List of Appendixes (Continued)

Appendix		Page
I	Estimation of Residency Rates for Undetermined Numbers and the Implications for Response Rate Estimation for the NHES:1999.....	I-1
J	Extant Data Sources for Comparison of NHES Topics.....	J-1

### List of Tables

Table		
1-1	NHES:1999 Parent Interview: Distribution of topics by population.....	8
2-1	Percent of telephone households, by age/grade group of children or youth: CPS:1996.....	21
2-2	Distribution of the number of eligible children and youth per household, among households with eligible children or youth: CPS:1996.....	22
2-3	Distribution of household compositions expressed as the percentage of households with eligible children or youth: CPS:1996.....	23
2-4	Expected number of screened households by household composition .....	24
2-5	Expected number of children and youth sampled for the Parent Interview, by household composition.....	25
2-6	Expected number of sampled children and completed Parent Interviews, by age/grade grouping .....	26
2-7	Expected number of sampled adults, by number of adults and presence of eligible children in household .....	27
2-8	A comparison of expected sample sizes in NHES:1999 to actual sample sizes in previous survey administrations .....	28
2-9	Summary of expected and actual number of completed interviews for the NHES:1999.....	29
3-1	NHES:1999 telephone field test: Expected and completed interviews.....	55
4-1	Location and schedule of NHES:1999 interviewer training sessions .....	60
4-2	Percent of NHES:1999 sampled telephone numbers in various listed statuses, by mailable status.....	63

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
4-3	Percent of NHES:1999 sampled telephone numbers in various mailable statuses, by listed status.....	63
4-4	Results of the advance mailing effort in the NHES:1999.....	65
4-5	The NHES:1999 language problem Screener cases, by response status .....	69
4-6	Results of refusal conversion at the Screener level in the NHES:1999 .....	73
4-7	Results of refusal conversion efforts at the Parent Interview level in the NHES:1999.....	75
4-8	Results of refusal conversion efforts at the Youth Interview level in the NHES:1999.....	75
4-9	Results of refusal conversion efforts at the Adult Education Interview level in the NHES:1999 .....	76
4-10	Results of refusal conversion efforts at the Adult Special Study Interview level in the NHES:1999 .....	76
4-11	Results of refiled maximum call Screener cases in the NHES:1999.....	78
4-12	Results of refiled maximum call cases at the Parent and Youth extended interview levels in the NHES:1999.....	78
4-13	Results of refiled maximum call cases at the Adult Education and Adult Special Study extended interview levels in the NHES:1999.....	79
4-14	Results of refiled Screener no answer and no answer-answering machine cases in the NHES:1999 .....	80
4-15	Weekly progress in completing cases in the NHES:1999.....	82
4-16	Number of monitoring sheets and ratio of forms to interviewer air time for the NHES:1999, by week and cumulatively .....	86
4-17	Numbers of times NHES:1999 CATI help screens were accessed, by item .....	89
4-18	Mean, median, and quartile administration time of NHES:1999 completed Screeners, by extended interview sampling status .....	92
4-19	Mean, median, and quartile administration time of NHES:1999 completed extended interviews, by interview type.....	93

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
4-20	Mean, median, and quartile administration time of completed NHES:1999 Parent Interviews, by interview segment.....	94
4-21	Mean, median, and quartile administration time of NHES:1999 completed Youth Interviews, by interview segment .....	95
4-22	Mean, median, and quartile administration time of NHES:1999 completed Adult Education Interviews, by interview segment.....	96
4-23	Mean, median, and quartile administration time of NHES:1999 completed Adult Special Study interviews, by interview segment.....	97
5-1	Number of telephone numbers dialed, by residential status and Screener response rates .....	104
5-1A	Number and percentage of telephone numbers with unknown residential status assumed to be residential under each of the methods of estimating response rates .....	107
5-2	Number and percentage of known residential telephone numbers, by Screener response status .....	108
5-3	The NHES:1999 Spanish language Screener cases, by response status.....	109
5-4	Number and percent of households responding to the Screener, by type of extended interviews scheduled.....	110
5-5	Number of telephone numbers dialed in the Screener, by response status, response rate, and characteristics of the geographic area based on the telephone exchange .....	112
5-6	Number of enumerated, sampled, and completed interviews, weighted completion rates, and weighted response rates, by type of extended interview .....	116
5-7	Number of sampled Parent Interviews, by response status and weighted completion rates .....	118
5-8	Number of sampled Youth Interviews, by response status and weighted conditional completion rates.....	119
5-9	Number of sampled Adult Education Interviews, by response status and weighted completion rates .....	120

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
5-10	Number of sampled Adult Special Study Interviews, by response status and weighted completion rates .....	121
5-11	Comparison of business classifications from Genesys and from Acxiom .....	124
5-12	Comparison of NHES:1999 home tenure (HOWNHOME) to home tenure from Acxiom .....	125
5-13	Comparison of NHES:1999 presence of children to presence of children from Acxiom .....	125
5-14	Comparison of NHES:1999 household income (HINCOME) to income from Acxiom .....	126
5-15	Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights .....	128
5-16	Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates by race/ethnicity based on nonresponse-adjusted weights and unadjusted weights .....	130
5-17	Youth Interview: Characteristics of students in grades 6 through 12. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights.....	133
5-18	Youth Interview: Characteristics of students in grades 6 through 12. Comparison of estimates of school practice to promote student community service by selected student and school characteristics based on nonresponse-adjusted weights and unadjusted weights .....	134
5-19	Adult Education Interview: Characteristics of adults. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights .....	136
5-20	Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by race/ethnicity. Comparison of estimates based on nonresponse-adjusted and unadjusted weights.....	137
5-21	Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by sex. Comparison of estimates based on nonresponse-adjusted and unadjusted weights.....	140

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
5-22	Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by educational achievement. Comparison of estimates based on nonresponse-adjusted and unadjusted weights.....	141
6-1	Item response rates for items on the Parent Interview public use data file .....	156
6-2	Item response rates for items on the Youth Interview public use data file.....	163
6-3	Item response rates for items on the Adult Education Interview public use data file.....	167
6-4	Item response rates for items on the Adult Special Study Interview restricted use data file .....	172
7-1	NHES:1999 Screener nonresponse adjustment cells.....	182
7-2	Control totals for postratifying the NHES:1999 household-level weights.....	184
7-3	Weighting factors to account for domain sampling for children .....	188
7-4	NHES:1999 Parent Interview nonresponse adjustment cells .....	190
7-5	Control totals for raking the NHES:1999 person-level Parent Interview weights.....	191
7-6	NHES:1999 Youth Interview nonresponse adjustment cells.....	192
7-7	Control totals for raking the NHES:1999 person-level Youth Interview weights.....	193
7-8	Weighting factors to account for domain sampling for adults .....	195
7-9	NHES:1999 Adult Education Interview nonresponse adjustment cells.....	196
7-10	Control totals for raking the NHES:1999 person-level Adult Education Interview and Adult Special Study Interview weights.....	198
7-11	NHES:1999 Adult Special Study Interview nonresponse adjustment cells .....	200
8-1	Percent distribution for age of subjects of interviews: NHES:1999 Parent and Adult Education Interviews and CPS:1998.....	217
8-2	Percent distribution of 0- through 20-year-olds enrolled and not enrolled in school: NHES:1999 Parent Interview and CPS:1997 .....	220



## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
8-2A	Standard errors of the percent distribution of 0- through 20-year-olds enrolled and not enrolled in school: NHES:1999 Parent Interview .....	222
8-3	Percent of 0- through 5-year-olds not yet in kindergarten participating in center-based care, by high and low income: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, NHES:1995 ECPP, NHES:1993 SR, and NHES:1991 ECE .....	223
8-4	Percent of 0- through 5-year-olds not yet in kindergarten participating in different care arrangements, by race/ethnicity: NHES:1999 Parent Interview and NHES:1995 ECPP .....	224
8-5	Percent of 3- through 5-year-olds not yet in kindergarten who are participating in center-based care, by household income: NHES:1999 Parent Interview, NHES:1996 PFI/CI, and NHES:1995 ECPP .....	225
8-6	Number of children age 3 through 12th grade, by school type and by student grade level: NHES:1999 Parent Interview and CPS:1997 .....	226
8-7	Number and percent of children in grades K through 12 in public and private schools: NHES:1999 Parent Interview and CPS:1997.....	227
8-8	Number and percent of children enrolled in kindergarten through 12th grade in public and private schools, by race/ethnicity: NHES:1999 Parent Interview and CPS:1997 .....	228
8-9	Number and percent of children in 3rd through 12th grade in public and private school, by parents' highest level of education: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	229
8-10	Number and percent of children enrolled in kindergarten through 12th grade in public and private schools, by household income: NHES:1999 Parent Interview and CPS:1997 .....	230
8-11	Number and percent of children in 3rd through 12th grade in public and private schools, by urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	231
8-12	Percent of children in 3rd through 12 grade, by school size: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	232

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
8-13	Percent of children in 3rd through 12th grade, by family structure and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	233
8-14	Percent of children age 0 through 12th grade, by household income: NHES:1999 Parent Interview and CPS:1997 .....	234
8-15	Number and percent of children age 3 through 12th grade, by household income level and race/ethnicity: NHES:1999 Parent Interview and CPS:1997 ....	234
8-16	Number and percent of children age 3 through 2nd grade, by household income and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR.....	235
8-16A	Number and percent of children in 3rd through 12th grade, by household income level and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	236
8-17	Number and percent of children age 3 through 2nd grade, by parents' highest level of education and race/ethnicity: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR.....	238
8-17A	Number and percent of children in 3rd through 12th grade, by parents' highest level of education and race/ethnicity: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	239
8-18	Number and percent of children age 3 through 2nd grade, by parents' highest level of education and household income: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR.....	240
8-18A	Number and percent of children in 3rd through 12th grade, by parents' highest level of education and household income: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	241
8-19	Number and percent of children age 3 through 2nd grade, by parents' highest level of education and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR.....	242
8-19A	Number and percent of children in 3rd through 12th grade, by parents' highest level of education and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	243
8-20	Percent of children in grades K through 12, by race/ethnicity: NHES:1999 Parent Interview and CPS:1997.....	245

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
8-21	Number and percent of children age 3 through 2nd grade, by race/ethnicity and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR .....	245
8-21A	Number and percent of children in 3rd through 12th grade, by race/ethnicity and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	246
8-22	Percent of 8th-grade students whose parents reported selected school contacts with family: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and the National Education Longitudinal Study of 1988 (NELS:88) .....	247
8-23	Percent of students in grades 3 through 12 whose parents reported that they participated in two or three activities in their child's school during the current school year: NHES:1999 Parent Interview, NHES:1996 PFI/CI, and NHES:1993 SS&D.....	248
8-24	Percent of students in grades 3 through 12 whose parents reported that they participated in two or three activities in their child's school during the current school year, by grade-level categories: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D .....	248
8-25	Percent of 12th-graders whose parents reported their children are planning postsecondary education: NHES:1999 Parent Interview and the National Education Longitudinal Study of 1988 (NELS:88, 1992 follow up) .....	249
8-26	Percent of children age 3 through 5 whose parents reported reading or telling stories to them regularly: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, NHES:1995 ECPP, and NHES:1993 SR .....	249
8-27	Percent of children ages 3 through 8 with specific disabilities: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, NHES:1995 ECPP, and NHES:1993 SR .....	251
8-28	Percent of 6th- through 12th-graders who say their friends think it is "very important" to work hard for good grades in school: NHES:1999 Youth Interview and NHES:1993 Youth SS&D.....	253
8-29	Percent of 6th- through 12th-graders who "strongly agree" that they are challenged at school and that their teachers maintain discipline in the classroom: NHES:1999 Youth Interview, NHES: 1996 Youth CI, and NHES:1993 Youth SS&D .....	254

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
8-30	Percent of 6th- through 12th-graders who report their families set rules for homework and amount of TV viewing: NHES:1999 Youth Interview and NHES: 1996 Youth CI.....	254
8-31	Percent of 6th- through 12th-graders who report their families often talk over important family decisions with them: NHES:1999 Youth Interview and NHES:1996 Youth CI.....	255
8-32	Percent of 6th- through 12th-graders employed during the school year: NHES:1999 Youth Interview and NHES:1996 Youth CI.....	255
8-33	Percent of 6th- through 12th-graders participating in student government during the school year: NHES:1999 Youth Interview and NHES:1996 Youth CI.....	255
8-34	Percent of youth who reported participation in community service activities: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1996 Volunteering and Giving Among Teenagers .....	256
8-35	Percent of youth who report that their school requires a certain number of hours in community service: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1996 Volunteering and Giving Among Teenagers.....	257
8-36	Percent of 12th-graders who report plans for postsecondary education: NHES:1999 Youth Interview and the National Education Longitudinal Study of 1988 (NELS:88, 1992 follow up).....	257
8-37	Percent of 9th- through 12th-graders who know which job is held by Al Gore, which party is more conservative, and whose responsibility it is to determine whether a law is constitutional: NHES:1999 Youth Interview and NHES:1996 Youth CI.....	258
8-38	Percent of 12th-grade students reporting use of mass media for national news: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1965 National Survey of High School Seniors (NSHSS) .....	259
8-39	Opinion of students in 12th grade about whether a speech against churches and religion should be allowed: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1965 National Study of High School Seniors (NSHSS).....	260
8-40	Percent of adults participating in adult education: NHES:1999 Adult Education Interview, NHES:1995 Adult Education Component, CPS:1992, and NHES:1991 Adult Education component .....	262

## Table of Contents (Continued)

### List of Tables (Continued)

Table		Page
8-41	Number and percent of adults participating in adult education, by characteristics of adults: NHES:1999 Adult Education Interview and NHES:1995 Adult Education component.....	264
8-42	Percent of employed adults who took adult education, by occupation: NHES:1999 Adult Education Interview and NHES:1995 Adult Education component.....	266
8-43	Number and percent distribution of the adult population, by sex and age: NHES:1999 Adult Education Interview and CPS:1998.....	268
8-44	Number and percent distribution of the adult population, by highest educational attainment and race/ethnicity: NHES:1999 Adult Education Interview and CPS:1998.....	268
8-45	Percent distribution of the adult population, by labor force status: NHES:1999 Adult Education Interview and CPS:1998.....	269
8-46	Percent distribution of the employed adult population, by industry: NHES:1999 Adult Education Interview and CPS:1998.....	270
8-47	Percent distribution of the employed adult population, by occupation: NHES:1999 Adult Education Interview and CPS:1998.....	271
8-48	Number of adults participating in basic skills education and ESL classes: NHES:1999 Adult Education Interview and 1998 Office of Vocational and Adult Education (OVAE).....	272
8-49	Number of adults participating in credential programs: NHES:1999 Adult Education Interview and 1994-95 Integrated Postsecondary Data System (IPEDS).....	273

### List of Exhibits

Exhibit		
4-1	Time slices used for call scheduling in the NHES:1999.....	67

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## 1. INTRODUCTION

The National Household Education Survey (NHES) is a household survey conducted by the National Center for Education Statistics (NCES). The survey is a random-digit-dialed (RDD), computer-assisted telephone interview (CATI) and has been conducted in the spring of 1991, 1993, 1995, 1996, and 1999.

The NHES complements the Center's other surveys, which primarily collect data through institutional surveys. By collecting data directly from households, the NHES allows the Center to gather data on issues that cannot easily be addressed through institution-based surveys such as early education and care arrangements, children's readiness for school, parents' perceptions of school safety and discipline, participation in adult and continuing education, parents' involvement in their children's education, and civic involvement.

The NHES collects information on educational issues from a relatively large, targeted sample of households in a timely fashion. It 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. These supplemental surveys have not provided NCES with the level of detail needed for desired analyses.

The NHES provides data on the populations of special interest to NCES and education researchers. It targets these groups using specific screening and sampling procedures. 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. Furthermore, the data collection methodology is specifically designed so that relatively complex questionnaires can be handled smoothly and efficiently.

One of the major goals of the NHES is to monitor educational activities over time. To accomplish this goal, the survey collects data on the same topics on a rotating basis. For example, the NHES collected data on early childhood education in 1991, 1993, 1995, and 1999. Occasionally topics that are not intended to be studied more than once, such as school safety and discipline, are also included in the NHES.

The purpose of the NHES:1999 was somewhat different than that of previous NHES surveys. Throughout the early- and mid-1990s, each NHES has included two survey components (except the NHES:1996, when three components were fielded), each addressing a certain topic in depth. In contrast, the focus of the NHES:1999 was to collect a breadth of information on educational topics previously addressed in the NHES. The NHES:1999 collected data on key indicators that had been measured in previous NHES survey cycles in order to provide the Department of Education with end-of-decade estimates for several important issues. Thus, virtually all of the items included in the NHES:1999 questionnaires have been administered in at least one previous NHES component.

### **Previous NHES Survey Topics**

The survey topics included in the NHES:1991, NHES:1993, NHES:1995, and NHES:1996 are discussed below.

### **NHES:1991 Survey Topics**

The survey topics for the NHES:1991 were early childhood education and participation in adult education. The sampled population for the Early Childhood Education (ECE) component of the NHES:1991 was 3- to 8-year-old children who were not yet in 3rd grade. There were two different interviews for the ECE component: one for parents of children who had not yet started 1st grade (called the Preprimary Interview), and one for parents of children who were enrolled in first grade or higher (called the Primary School Interview). The Preprimary Interview collected information on children's receipt of nonparental home-based child care and participation in center-based programs (such as day care centers, nursery schools, prekindergartens, and Head Start programs where children receive early childhood care and education, as opposed to home care settings such as in the home of a relative or a family day care provider). Parents of preprimary children were also asked questions concerning actual or planned entry into kindergarten and decisions to delay entry. The Primary School Interview focused on children's in-school experiences to date and collected some historical data on educational experiences prior to first grade. Issues such as entry into kindergarten and 1st grade, parental involvement in children's education, and retention in kindergarten and primary grades were included in this instrument. A few items concerning the home environment and activities with family members were included for both groups of children.



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The Adult Education component provided information about persons age 16 and older and not enrolled in elementary or secondary school and their participation in a wide array of adult education activities. The design of this component was based in part on the Current Population Survey supplement on adult education, supported by NCES and previously conducted in 1984. The findings provided important information related to the National Education Goals concerning adult literacy, ongoing training to compete in a global economy, and lifelong learning for adults. Information was collected on the number and types of courses in which adults had participated in the previous 12 months, including, for the four most recent courses, the course content, provider, location, sources of payment, and reason for taking the course. Unlike the CPS, the NHES Adult Education component was administered to a sample of nonparticipants as well, and focused on the perceived need for adult education courses, their availability, and barriers to participation.

### **NHES:1993 Survey Topics**

The NHES:1993 addressed two of the six National Education Goals, specifically, Goal 1, readiness for school, and Goal 7, safe, disciplined, and drug-free schools.

The School Readiness component of the NHES:1993 was administered to parents of children age 3 through 2nd grade (and age 7 or younger) and examined several relevant domains. It covered experiences in early childhood programs, the child's developmental accomplishments and difficulties, school adjustment and related problems, delayed kindergarten entry, early primary school experiences including repeated grades, the child's general health and nutrition status, home activities, and family characteristics, including stability and economic risk factors. The intent of collecting such data was to allow a “whole child” approach to studying school readiness. Because no existing national survey provided this broad approach to the readiness of children for school, the School Readiness component of the NHES:1993 fulfilled an important information need relative to this first National Education Goal.

The second component of the NHES:1993, the School Safety and Discipline component, included interviews with parents of children enrolled in 3rd grade through 12th grade, as well as with a subsample of their children enrolled in 6th grade through 12th grade. This component addressed parent and youth perceptions of the school learning environment; serious behavior problems or crime at school that parents and youth knew about, had witnessed, or through which students had been victimized; parents' and students' perceptions of peer approval for using alcohol and drugs and of the availability of alcohol and other drugs at school; and the kinds of alcohol/drug education provided by the school. The component also addressed parents' contributions to their children's learning environment through questions about parental

expectations for academic achievement and good behavior at school, parental efforts to educate and protect their children, and parental involvement in the school.

### **NHES:1995 Survey Topics**

The NHES:1995 addressed the same two topics as the NHES:1991, with some modifications. The Early Childhood Program Participation (ECPP) component dealt with issues related to Goal 1, readiness for school, and the Adult Education (AE) component dealt with issues related to Goal 6, adult literacy and lifelong learning.

The ECPP component of the NHES:1995 was administered to parents of children from birth through the 3rd grade and focused on children's early experiences in various types of nonparental care arrangements and educational programs. The age range for the subjects of data collection was expanded from previous NHES early childhood components to include infants and toddlers. The core of this survey component collected extensive information on children's participation and experiences in four different types of nonparental care arrangements and early childhood programs: care by relatives, care by nonrelatives, Head Start programs, and other center-based programs. The series of questionnaire items pertaining to each of these types of care arrangements or programs gathered detailed information on the extent of children's current and past participation, arrangement/program location and quality, care/program provider characteristics, the amount of time children spend in arrangements or programs, and the financial cost of these care arrangements or programs to the child's household. The items included in these sections on nonparental care/education arrangements provided information on three important domains: exposure, access, and quality. Other information collected in this component included children's kindergarten and primary school experiences, personal and household demographic characteristics, parent/guardian characteristics, literacy-related home activities, and children's health and disability status.

The AE component of the NHES:1995 focused on the participation of adults (aged 16 and older and not enrolled in grade 12 or below) in a wide range of educational activities during the past 12 months. Respondents were asked about their participation in seven broadly defined types of adult education activities: adult basic skills and general educational development (GED) preparation classes, English as a second language instruction, credential programs, apprenticeship programs, career- or job-related activities, other formal structured activities, and computer-only or video-only instruction on the job. Respondents who had participated in any of these types of adult education were asked why they participated, the number of days per week and hours per day they attended courses, the provider of the

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instruction, and whether employer or union support was received. The NHES:1995 AE component also collected information pertaining to three important issues explored in research on participation in adult education: participation rates, motivations for participation, and barriers to participation.

### **NHES:1996 Survey Topics**

The NHES:1996 included both a parent and a youth survey, each addressing the topics of Parent/Family Involvement in Education (PFI) and Civic Involvement (CI). In addition, a brief survey of only CI items was administered to a small random sample of adults. The PFI component of the NHES:1996 addressed National Education Goal 1, readiness for school, and Goal 8, parent participation. The CI component of the NHES:1996 focused on aspects of Goal 3, student achievement and citizenship, and Goal 6, adult literacy and lifelong learning, by assessing knowledge, attitudes, and behaviors that are related to responsible citizenship for adults and youth.

The sampled population for the Parent PFI/CI interview of the NHES:1996 included children from age 3 through the 12th grade. Topics addressed for the preschool population were attendance at center-based care (including Head Start), feedback from teachers or care providers about problems the child may be having in preschool or child care, home learning activities, child disability, and support and training received for parenting. For the kindergarten through grade 12 population, the parent interview collected information from parents on family involvement in the following four areas: children's schooling, communication with teachers or other school personnel, children's homework and behavior, and learning activities with children outside of school. In addition, questions were asked about school practices to involve and support families, the school environment, and barriers to family involvement. Information was also collected about potential correlates of family involvement, such as student grades, attendance, grade retention, suspension/expulsion, and characteristics of the child's school or preschool, the child, the family, and the household.

The second component of the NHES:1996, the CI component, provided an assessment of the opportunities that youth have to develop the personal responsibility and skills that would facilitate their taking an active role in civic life. The CI component gathered information from both parents and youth related to the diverse ways that parents may socialize their children for informed civic participation, such as through exposure to information about politics or national issues, through discussion of politics and national issues, and by the example of parents who participate in community or civic life. The survey component also asked parents and youth about attitudes that relate to democratic values and civic participation and included a brief assessment of knowledge about government. Students in grades 6-12 whose parents had completed a Parent PFI/CI interview were asked about involvement in several types of

activities, particularly student government, out-of-school activities, and work for pay. A major focus was on participation in ongoing community service activities, either through the school, through other organizations such as a church or synagogue, or on an individual basis. Other questions assessed the extent of school efforts to support youth community involvement. Students were asked about their opportunity to learn at school about government and national issues and to learn skills that could be transferred to the area of civic involvement.

In order to provide national estimates for all adults, not just parents of students in 6th through 12th grade, some civic involvement items were administered to a small random sample of adults. This sample contained some parents, including parents of students in 6th through 12th grade. The items measured sources of information about politics and national issues, organizational participation, civic participation, political attitudes, and knowledge of government. Included were a few items related to literacy activities and opinions about improving public education.

The NHES:1996 also included a brief topical component to examine public library use by household members. This component was administered to every household, either in the Screener interview or an extended interview. The questions included the ways in which household members used public libraries (e.g., borrowing books, lectures, story hour) and the purposes for using public libraries (e.g., for school assignments, enjoyment, work-related projects). Estimates for these items can be developed at the state level.

### **NHES:1999 Instruments**

There were two types of instruments in the NHES:1999, the screening interview (referred to as the Screener) and the extended interviews. The NHES:1999 Screener was used to identify eligible households, roster household members as needed for sampling, and sample subjects for extended interviews. It was completed by a household member age 18 or older. This person may or may not have been sampled for an extended interview. The Screener was also used to identify the appropriate parent respondents for children selected as interview subjects, that is, the parents or guardians identified as being the most knowledgeable about the child's care and education.

The NHES:1999 included four types of extended interviews: a Parent Interview, a Youth Interview, an Adult Education Interview, and a Special Study Interview for adults. As mentioned above, interviews collected information on several key educational topics that have been addressed in the NHES over the past decade. In order to choose items for the NHES:1999 extended interviews from the multitude of questions that have been asked in the NHES over the decade, several considerations were weighed

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against each other. These included identifying the items that were consistently used in published estimates by the Department of Education or other education researchers, evaluating the data needs for measuring the Department's Strategic Plan indicators, consulting with NHES data users and education researchers about issues they considered important to measure at the end of the decade, and evaluating the content of other studies that could potentially overlap the content of the NHES:1999. More detail is provided on these considerations in chapter 3.

The design of the NHES:1999 interviews reflects the information gleaned from all these sources to define key issues for inclusion in the NHES:1999. Also responding to the needs of researchers who use NHES data, an Adult Special Study was included as part of the design of the NHES:1999. This instrument was similar to the Adult Education Interview but contained additional items to address specific methodological issues, described more fully later in this chapter. It was administered to a small sample of adults.

### **NHES:1999 Parent Interview**

As outlined above, the NHES has interviewed parents about a variety of educational topics, each appropriate for certain age groups of children. To cover the breadth of these topics, the NHES:1999 Parent Interview targeted parents with children ranging from newborns to those in the 12th grade. As a result, the NHES:1999 Parent Interview had six "paths," or sets of questions appropriate for parents of six subgroups of children: infants and toddlers (children age 2 and younger), preschoolers (children age 3 through 6 years old and not yet in kindergarten), elementary school students (children in kindergarten through the 5th grade), middle or junior high school students (youth in the 6th through 8th grade), secondary or high school students (youth in the 9th through 12th grade), and children age 5 through 12th grade who were receiving home schooling.

The general topic areas covered in the NHES:1999 Parent Interview are listed below. Because not all of these topics are appropriate for each population of children, table 1-1 is designed to indicate which topics were covered with which populations.

- Demographic characteristics
- Current school or center-based program enrollment status
- Center-based program participation before school entry

Table 1-1.—NHES:1999 Parent Interview: Distribution of topics by population

Interview section	Infant/ toddler (Path I)	Preschool (Path N)		Grades				Home school (Path H)
		Not enrolle d	Center- based <sup>1</sup>	K-2 (Path E)	3-5 (Path E)	6-8 (Path M)	9-12 (Path S)	
Demographics .....	X	X	X	X	X	X	X	X
School/program status .....		X	X	X	X	X	X	X
Prior center-based experience.....				X				X
Home schooling .....								X
School characteristics.....				X	X	X	X	X <sup>2</sup>
School readiness skills .....		X	X					
Nonparental care/education .....	X	X	X					
Training/support for families.....	X	X	X					
Parents' satisfaction w/school.....				X	X	X	X	X <sup>2</sup>
Academics and behavior.....				X	X	X	X	X <sup>2</sup>
Family/school involvement.....			X	X	X	X	X	X <sup>2</sup>
Before-/after-school care .....				X	X	X		
Postsecondary plans .....						X	X	X
Family involvement out of school.....	X	X	X	X	X			X
Health and disability .....	X	X	X	X	X	X	X	X
Parent characteristics .....	X	X	X	X	X	X	X	X
Household characteristics.....	X	X	X	X	X	X	X	X

<sup>1</sup>Center-based programs include day care centers, nursery schools, preschools, and prekindergartens.

<sup>2</sup>These sections were administered if the home-schooled student attended a school for instruction at least 9 hours per week.

NOTE: The path designations are as follows: I for infants and toddlers (children age 2 and younger); N for preschoolers (children age 3 through 6 years old and not yet in kindergarten); E for elementary school students (children in kindergarten through the 5th grade); M for middle or junior high school students (youth in the 6th through 8th grade); S for secondary or high school students (youth in the 9th through 12th grade); and H for children age 5 through 12th grade who were receiving home schooling.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

- Home schooling
- School characteristics
- School readiness skills
- Participation in early childhood care and programs
- Training and support for families of preschoolers
- Parents' satisfaction with children's schools
- Children's academic performance and behavior
- Family involvement with children's schools and school practices to involve families
- Before- and after-school programs and nonparental care
- Parents' expectations about children's college plans and costs
- Family involvement in educational activities outside of school
- Child health and disability
- Parent/guardian characteristics
- Household characteristics

### **NHES:1999 Youth Interview**

The NHES:1999 Youth Interview was administered to youth in the 6th through 12th grades. It was designed to cover the topics from the previous NHES:1996 youth component on civic involvement as well as items on school environment from the NHES:1993 and new items on planning for college. The topics covered in the NHES:1999 youth interview are as follows:

- School learning environment
  - Family learning environment
  - Plans for future education
  - Participation in activities that promote or indicate personal responsibility
  - Participation in community service or volunteer activities
  - Exposure to information about politics and national issues
  - Political attitudes and knowledge
  - Skills related to civic participation
  - Type and purpose of community service
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The Youth Interview included a special section of items about community service participation not fielded in the NHES:1996. These additional questions, designed in response to specific requests from the research community, were administered to a subsample of youth who reported participation in community service. The items measured type and sponsor of the service activity and are designed to assist researchers in categorizing types and purposes of participation.

### **NHES:1999 Adult Education Interview**

Participation in adult educational activities has been the primary topic of interest in NHES surveys of adults over the decade, addressed in both the NHES:1991 and the NHES:1995. This focus was reflected in the design of the NHES:1999 Adult Education Interview; however, a few questions on other topics identified as important to measure at the end of the decade, such as the U.S. Department of Education's Strategic Plan topics, were also included. The topics included in the NHES:1999 Adult Education Interview are listed below.

- Educational background and work experience
- Participation in several types of adult education:
  - English as a second language
  - Basic skills and GED preparation courses
  - Courses as part of credential programs
  - Apprenticeship programs
  - Career- or job-related courses
  - Personal interest and development courses
- Participation in educational activities through distance learning
- Other general information about educational activities (e.g., use of Lifetime Learning tax credit)
- Literacy activities
- Community involvement
- Adult demographic characteristics
- Household characteristics



**NHES:1999 Adult Special Study Interview**

This interview was very similar to the Adult Education Interview. It differed only in that it contained additional questions to explore certain methodological issues. Follow-up questions to improve the recall of work-related and personal development educational activities were inserted. If these new follow-up questions contribute to a more accurate measure of adult education participation, differences in participation rates gathered by this instrument and by the Adult Education Interview will provide a crosswalk should the new items become part of future NHES designs. The difference in estimates will enable researchers to gauge what percentage of higher estimates might be attributable to better measures rather than to increased rates of participation, and therefore preserve comparability with estimates from the NHES:1991 and the NHES:1995. Also, race and ethnicity were measured by two sets of items, the items used in past NHES surveys and in the regular NHES:1999 survey, and the items recently developed by the Office of Management and Budget (OMB). The two sets of questions differ on two attributes: The question order and the capture of information on multiracial persons.

In the set of items traditionally used in the NHES study, the Hispanic origin question is administered after the race questions, whereas the OMB version has the Hispanic origin question preceding the race question. In the OMB version, the respondent is asked to choose all races that apply; in the standard NHES version, “more than one race/biracial/multiracial” was given as a response category. Self-identification of race and ethnicity in response to the two sets of questions can be compared. Finally, there is interest in the effect of various telephone technologies on RDD surveys. Questions in the Adult Special Study about the use of technologies such as answering machines and caller ID permit exploration of this issue. A forthcoming working paper will describe the results of the Adult Special Study.

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## 2. SAMPLE DESIGN

A key purpose of the NHES is to conduct repeated measurements of the same phenomena at different points in time, and the sample design of the NHES:1999 reflects the intent of the survey to primarily collect information on key indicators from previous NHES survey cycles. The NHES:1999 was an RDD telephone survey covering the 50 states and the District of Columbia. CATI interviews were conducted from January 3 through April 3, 1999. Households with telephones were randomly sampled, and a screening interview was administered to a household respondent 18 years of age or older. (In a few cases, there were no individuals over the age of 17 in the household. In these households, the head of household was interviewed.) Demographic information about household members was used to determine whether anyone was eligible for the Parent, Youth, Adult Education, or Adult Special Study interviews.

The Parent Interview was administered to the most knowledgeable parent or guardian of each sampled child from birth through 12th grade. Any child who did not live with a parent or guardian or with an adult at least 12 years older than the sampled child was ineligible for the Parent Interview. For the Youth Interview, children in grades 6 through 12 were interviewed. The child was not interviewed unless the child's parent had responded to the Parent Interview. The Adult Education Interview and the Adult Special Study Interview were administered to sampled persons 16 years of age or older who were not currently enrolled in 12th grade or below and not institutionalized or on active duty in the U.S. Armed Forces.

### **Sampling Telephone Numbers**

The sampling method used for the NHES:1999 was a list-assisted method described by Casady and Lepkowski (1993). This method was used previously in the NHES:1995 and the NHES:1996. 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 8 digits) in which there is at least one residential telephone number listed in the White Pages directory. This is called the listed stratum. The telephone numbers in the listed stratum include both listed and unlisted numbers and both residential and nonresidential numbers. Telephone numbers in 100-banks with no listed telephone numbers, the zero-listed stratum, are not sampled. The sampling frame for the NHES:1999 was the Genesys frame of all telephone numbers in 100-banks with one or more listed telephone numbers as of December 1998. Genesys is a commercial firm that has produced lists of telephone numbers for previous

NHES studies. As in previous NHES administrations, tritone checks for nonworking numbers and purging of business numbers were done prior to data collection to reduce the number of unproductive calls.<sup>1</sup>

Differences in telephone coverage rates, especially among population subgroups such as those defined by region, race/ethnicity, and household composition, are of concern to telephone survey methodologists because they can introduce bias in the data. The largest component of coverage bias in a telephone survey such as the NHES is probably due to the prevalence of non-telephone households and the differences between such households and those with telephones. Although black and Hispanic households are less likely to have telephones than white households, the differences in telephone coverage rates have diminished throughout the 1990s.<sup>2</sup> Raking to population totals for these subgroups is used to statistically adjust and reduce undercoverage bias. (The raking procedure used in the NHES:1999 is described in Chapter 7.)

Additionally, coverage bias arises 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 question of coverage bias associated with the zero-listed stratum. The results show that the percentage of telephone numbers in the zero-listed stratum that are residential is small (about 1.4 percent) and that about 3 to 4 percent of telephone households are in the zero-listed stratum. Because the proportion of telephone households that are in the zero-listed stratum is small and the persons living in these households are 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 et al. (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.

Various studies have been undertaken to examine the undercoverage bias for key subgroups in the NHES. Over the years, undercoverage bias has been analyzed for 3- to 5-year-olds and 14- to 21-year-olds (Brick, Burke, and West, 1992), for 0- to 2-year-olds and adults (Brick 1996), for 3- to 7-year-olds (Brick et al. 1997), and for households and adults (Montaquila et al. 1997). Results from these studies suggest that undercoverage bias in the NHES is not a significant problem. However, the undercoverage bias for smaller subgroups could be more problematic and require additional research. The undercoverage bias for most subgroups is not likely to be a major problem after the raking adjustment. However, the potential for bias is greatest for those subgroups in which a large proportion live in nontelephone

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<sup>1</sup> See Chapter 5 and appendix I for discussions of the implications of changes in the U.S. telephoning system on survey operations and response rates in RDD surveys.

<sup>2</sup> Estimates from the Current Population Survey indicate that between 1990 and 1998 the overall percentage of households with telephones increased from 93.3 percent to 94.1 percent, respectively. During that same time period, the percentage of white households with telephones increased only slightly (from 94.6 percent to 95.1 percent), while the percentage of black households with telephones increased from 83.5 percent to 87.9 percent and the percentage of Hispanic households with telephones increased from 82.7 percent to 88.4 percent.

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households. No general rule adequately addresses all the subgroups that may be analyzed. When dealing with a small subgroup that is likely to be differently undercovered, data users should consider the possible impact of different sources of error. Both sampling errors and nonsampling errors from coverage bias are likely to be relatively large for such rare groups.

An alternative considered for the NHES:1999 was designing the sample of telephone numbers to include an overlap with sampled numbers from previous NHES administrations. Sample overlap generally improves the efficiency of estimates of change over time because the correlation between estimates at different times is generally positive when there is overlap in the samples. However, this alternative was ruled out for NHES:1999 for several reasons. First, many new area codes have been created in recent years, making it difficult to keep up with changes in specific telephone numbers due to area code changes. Second, households regularly change telephone numbers due to moves, addition and deletion of extra lines, and privacy and security concerns. Third, household composition changes as the household members age; for example, a household containing a preschooler during the NHES:1995 administration may not contain a preschooler during the NHES:1999 administration. Fourth, although the same household might be contacted in the NHES:1999 and in the NHES:1995, the within-household sampling algorithm is such that either no adult or a different adult might be selected in that household, so the persons sampled in the two NHES administrations would not overlap. In combination, these reasons suggested that trying to achieve sample overlap would lead to very little improvement in estimates of change and a significant increase in administrative burden.

### **Oversampling Blacks and Hispanics**

As in previous NHES administrations, one goal of the NHES:1999 was to produce reliable estimates for race/ethnicity subdomains (in particular, blacks and Hispanics). A detailed discussion of the precision requirements and sample size requirements for blacks and Hispanics is given in Appendix A. The approach that was used to boost the sample sizes for blacks and Hispanics in the NHES:1999 is the same as that used in previous NHES collections. The sampling frame contains estimates from the 1990 Census of the race/ethnicity distributions of persons in the telephone exchange.<sup>3</sup> Telephone numbers were stratified by the minority concentration in the exchange. A high-minority exchange was defined as one in which at least 20 percent of persons are black or at least 20 percent of persons are Hispanic. The probability of selecting telephone numbers in high-minority exchanges was set at twice the probability of selecting telephone numbers in exchanges with lower minority concentrations.

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<sup>3</sup> An exchange is identified by the first six digits of the telephone number.

## Number of Sampled Telephone Numbers

The number of telephone numbers sampled was determined by incorporating information on precision requirements and estimated residency rates, response rates, and the distribution of telephone numbers by minority concentration stratum. Specifically,

- About 53 percent of telephone numbers sampled within the listed stratum were expected to be residential, but only about 49 percent were expected to be identified as households because some residential telephone numbers do not get answered even after repeated calls.
- A response rate to the household screening interview of 75 percent was assumed.
- The telephone numbers in the high-minority stratum were sampled with a probability twice as large as the probability that was used in the low-minority stratum.
- Based on sample size requirements (discussed in Appendix A) and the relatively low prevalence of households with preschoolers (7.6 percent of households), the target yield for preschoolers was the determinant of the number of completed Screeners required.

A key sample design goal was to ensure that enough interviews about preschoolers were completed to allow comparisons between the 1995 and 1999 collections. The goal was to allow detection of a 10-15 percent relative change in an estimate of 30-60 percent. In order to allow for this level of precision, 4,100 completed interviews about preschoolers were needed in the NHES:1999. Assuming that 7.6 percent of all households had preschoolers and a completion rate of 90 percent for Parent Interviews about preschoolers, screening interviews had to be completed in about 60,000 households [ $4,100 / (0.076 \bullet 0.900) \approx 60,000$ ]. Because only 49 percent of all telephone numbers sampled were expected to result in contacts with households and because 75 percent of contacted households were expected to agree to answer a screening interview, the number of telephone numbers needed for the study was about 163,300 [ $60,000 / (0.49 \bullet 0.75) \approx 163,300$ ]. The primary purpose of the screening interview (referred to as the Screener) in the NHES:1999 was to assess the eligibility of members of the household for the extended interviews. As discussed later in this chapter, a separate sample of telephone numbers was selected for the Adult Special Study.

## Within-Household Sampling

The sampling of persons (within households that responded to the Screener) for the Parent, Youth, and Adult Education Interviews is described here. One key criterion in the development of the sampling scheme for the NHES:1999 was minimizing respondent burden. Considerations of the numbers

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of persons within a household sampled for extended interviews and the combinations of extended interviews weighed heavily in the development of the sampling scheme.

### Precision Requirements

In the NHES:1999, the overall screening sample was largely determined by the need to produce precise estimates of indicators for young children, particularly preschoolers. Since the NHES:1999 was intended to be used primarily to estimate change, it was useful to assess how the NHES:1999 sample could be combined with estimates from earlier NHES surveys to examine change over time. In a simple comparison, a t-test statistic is

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

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 sample size requirements for detecting change are highly dependent on the sample sizes in previous surveys. Thus, increasing the sample size in the NHES:1999 drastically above the levels of previous surveys would not substantially improve the precision of estimates of change over time.

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 the 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.

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 sample of children, a general precision requirement of detecting a relative change of at least 10 to 15 percent for statistic in the range of 30 to 60 percent was used. As a result, target sample sizes of about 4,500 for infants (age 0 to 2 years), 4,500 for preschoolers (age 3 through 5 and not yet enrolled in kindergarten), 10,000 for younger children (grades kindergarten through 5), and 10,800 for older children (grades 6 through 12) were established. Details of the derivation of these sample sizes are provided in appendix A.

For adults, key sample size determinants were the requirements to detect changes in estimates of participation in adult education activities (overall) and participation in credential programs and work-related courses, as well as the requirement to detect differences in adult education participation between

different racial-ethnic groups. Based on these requirements, a target sample size of about 10,000 adults was established. Adult education participants were sampled at a higher rate than nonparticipants in order to improve the precision of estimates of characteristics of participants. Details of the derivation of sample sizes for adults are given in appendix A.

The sample requirements for the extended interviews were determined based on a set of assumptions about extended interview completion rates. Specifically, the assumed completion rates were as follows:

- 90 percent for the Parent Interview,
- 75 percent for the Youth Interview (not conditional on completing the Parent Interview), and
- 80 percent for the Adult Education Interview.

### **Sampling Scheme for Within-Household Sampling**

The sampling scheme for within-household sampling was designed to satisfy the sample requirements discussed above 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:1999.

- Since sample requirements were most stringent for preschoolers (children ages 3-6 not yet in kindergarten), one preschooler in every household that had such children was sampled.
- No more than three persons per household (up to three children, or up to two children and one adult) were sampled, with a maximum of four extended interviews per household. (Four extended interviews would result if three persons were sampled and one of the sampled persons was an eligible youth, enrolled in grades 6 through 12.)
- Since the numbers of adults and infants (0-2 years) identified in all screened households exceeded the sample requirements, either an adult, an infant, or neither (but not both) was sampled in any given household; that is, there were no households in which both an infant and an adult were sampled.

In order to carry out this sampling scheme, several flags were set prior to screening (i.e., at the time the sample of telephone numbers was drawn). The first specified whether adults in the household were to be enumerated, as well as the conditions under which an adult was to be sampled. Each telephone number received one of five possible designations:



- (1) Household designated for adult enumeration and for sampling of an adult;
- (2) Household designated for adult enumeration, but for sampling an adult only if there was at least one adult education participant in the household or the household had more than two eligible adults;
- (3) Household designated for adult enumeration, but for sampling an adult only if there were no eligible children;
- (4) Household designated for adult enumeration only if there were no eligible children and if either there was at least one adult education participant in the household or the household had more than two eligible adults; or
- (5) Household was not designated for adult enumeration.

This flag was set such that households without eligible children/youth were sampled for an Adult Education Interview at approximately twice the rate of households with eligible children/youth (about 26 percent vs. 13 percent). Additionally, this flag enabled one- and two-adult households with no adult education participants to be further subsampled at a fixed, prespecified rate (25 percent for one-adult households and 75 percent for two-adult households).

The second flag designated whether an infant was to have been sampled, if the household had two other sampled children/youth (about 50 percent of households with no adult sampling were expected to be so-designated). The third flag designated whether a younger child or an older child was to be sampled, if the household had children in both groups and only one was to be selected.

The Screener contained a “screen-out” question used to determine whether there might be 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.

Sampling proceeded as described below for each scenario.

**Households with no eligible children:**

Sample

- One adult, if the household had been designated to have a sampled adult

**Households with no preschoolers and no infants:**

Sample

- One younger child (kindergarten through 5th grade), if any were in the household
- One older child (6th through 12th grade), if any were in the household
- One adult, if the household was designated for sampling of an adult

**Households with no preschoolers and at least one infant:**

Sample

- One younger child (kindergarten through 5th grade), if any were in the household
- One older child (6th through 12th grade), if any were in the household
- One infant (age 0-2), if the household was not designated for sampling of an adult and contained only one sampled younger or older child or if the household had not been designated for sampling of an adult but was designated for a sampled infant and one sampled younger child and one sampled older child.
- One adult, if the household was designated for sampling of an adult

**Households with at least one preschooler but no infants:**

Sample

- One preschooler
- One younger child (kindergarten through 5th grade), if any were in the household and no older children (grades 6 through 12) were in the household
- One older child (grades 6 through 12), if any were in the household and no younger children (kindergarten through 5th grade) were in the household
- One younger (kindergarten through 5th grade) or older (grades 6 through 12) child, depending on which was designated to be sampled, if both were in the household
- One adult, if the household was designated for sampling of an adult

**Households with at least one preschooler and at least one infant:**

Sample

- One preschooler
- One younger child (kindergarten through 5th grade), if any were in the household and no older children (grades 6 through 12) were in the household
- One older child (grades 6 through 12), if any were in the household and no younger children (kindergarten through 5th grade) were in the household
- One younger (kindergarten through 5th grade) or older (grades 6 through 12) child, depending on which was designated to be sampled, if both were in the household
- One infant, if the household was designated for sampling of an infant and not for sampling of an adult
- One adult, if the household was designated for sampling of an adult

In households in which an adult was to be sampled, each adult education participant was given a probability of selection 2.5 times as large as the probability of selection assigned to non-participants.

## Expected Sample Yields

**Parent Interviews.** The Parent Interview was conducted with the parents of a sample of children from birth through 12th grade. Estimates from the October 1996 Current Population Survey were used to determine the sampling rates for sampling children for the Parent Interview and to develop the sampling scheme.

Tabulations of the October 1996 CPS data show that about 37 percent of telephone households were expected to have at least one eligible child or youth. Estimates of the percentage of telephone households with eligible children or youth by age/grade group are given in table 2-1. The estimates in this table indicate that the subdomain with the lowest prevalence in telephone households was the “age 3 or older, not yet in kindergarten” subdomain (hereafter called the “preschooler” subdomain). Thus, the sampling scheme for NHES:1999 involved sampling one preschooler in every household in which a preschooler was present.

Table 2-1.—Percent of telephone households, by age/grade group of children or youth: CPS:1996

Household subdomain	Percent of households
Households with children newborn through grade 12.....	37.1
Households with at least one child 0 through 2 years.....	9.8
Households with at least one child age 3 or older, not yet in kindergarten .....	7.6
Households with at least one child enrolled in kindergarten through grade 5 .....	17.4
Households with at least one child enrolled in grades 6 through 12 .....	18.5

NOTE: Because some households contain children in more than one age/grade group, the percentages for households with children in each age/grade category sum to greater than 37.1 percent (the overall percentage of households with eligible children).

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

Table 2-2 shows that 42.5 percent of all households with children were expected to have exactly one eligible child or youth. Thus, it was expected that almost half of all screened households with children would have no more than two persons (one child and one adult) sampled for an extended interview. In fact, the majority of these households would have only one person sampled for an extended interview, since adults would be sampled in a relatively low proportion of households, as described later in this chapter.

Table 2-2.—Distribution of the number of eligible children and youth per household, among households with eligible children or youth: CPS:1996

Household subdomain	Percent of households with children	Subcategory percent
Households with exactly one eligible child .....	42.5	
Households with exactly one child 0 through 2 years.....		22.6
Households with exactly one child age 3 or older, not yet in kindergarten.....		10.4
Households with exactly one child enrolled in kindergarten through grade 5.....		23.7
Households with exactly one eligible child enrolled in grades 6 through 12.....		43.3
Households with exactly two eligible children .....	37.1	
Households with more than two eligible children.....	20.4	

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

The percentage distribution of household compositions for telephone households with eligible children is given in table 2-3. Table 2-4 shows the resulting expected distribution of the target of 60,000 screened households. The majority of screened households (about 37,763 households) were expected to have no eligible children or youth. Thus, the sampling scheme for within-household sampling was developed such that the screened households with children (about 22,237 households) would provide the sample sizes needed to meet the precision requirements while holding the respondent burden to a minimum.

Table 2-3.—Distribution of household compositions expressed as the percentage of households with eligible children or youth: CPS:1996

Household subdomain	Percent distribution of households by presence of children enrolled in grades kindergarten through 12			
	No younger or older children (K-12)	At least one younger child (K-5) but no older child (6-12)	At least one older child (6-12) but no younger child (K-5)	At least one younger child (K-5) and at least one older child (6-12)
Households with no children age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	0.0	16.7	29.3	13.6
One child age 0 through 2 years.....	9.6	4.8	1.6	1.2
Two or more children age 0 through 2 years.....	1.6	0.6	0.1	0.1
Household with one child age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	4.4	5.6	1.3	1.6
One child age 0 through 2 years.....	3.5	1.5	0.3	0.4
Two or more children age 0 through 2 years.....	0.4	0.1	(a)	(a)
Households with two children age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	0.5	0.3	0.1	0.1
One child age 0 through 2 years.....	0.2	0.1	(a)	0.1
Two or more children age 0 through 2 years.....	(a)	(a)	(a)	(a)
Households with more than two children age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	(a)	(a)	(a)	(a)
One child age 0 through 2 years.....	(a)	(a)	(a)	(a)
Two or more children age 0 through 2 years.....	(a)	(a)	(a)	(a)

NOTE: Due to rounding, estimated percentages do not add to 100 percent.

(a) indicates that the estimated percentage of households with the specified composition is less than 0.05 percent.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

Table 2-4.—Expected number of screened households by household composition

Household subdomain	Distribution of households by presence of children enrolled in grades kindergarten through 12			
	No younger or older children (K-12)	At least one younger child (K-5) but no older child (6-12)	At least one older child (6-12) but no younger child (K-5)	At least one younger child (K-5) and at least one older child (6-12)
Households with no children age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	37,763	3,718	6,513	3,031
One child age 0 through 2 years.....	2,139	1,076	363	264
Two or more children age 0 through 2 years.....	350	141	30	28
Household with one child age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	983	1,247	288	347
One child age 0 through 2 years.....	776	342	70	83
Two or more children age 0 through 2 years.....	84	21	6	0
Households with two children age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	116	64	28	24
One child age 0 through 2 years.....	34	20	5	18
Two or more children age 0 through 2 years.....	3	0	0	3
Households with more than two children age 3 or older, not yet in kindergarten				
No children age 0 through 2 years.....	5	9	0	0
One child age 0 through 2 years.....	4	0	1	0
Two or more children age 0 through 2 years.....	1	0	2	0

NOTE: The distribution in this table assumes 60,000 screened households for the NHES:1999. No eligible children or youth were expected in 37,763 screened households (approximately 62.9 percent of screened households). To obtain the remaining table entries, the percentage distributions from table 2-3 were applied to the 60,000 screened households. Due to rounding, numbers do not add to 60,000.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

Table 2-5 presents the expected number of children and youth, by household composition, sampled for the Parent Interview. As shown here, more than half of the sampled children and youth were expected to come from households with no infants or preschoolers. This is due in part to the larger sample requirements for older and younger children and the distributions of household compositions, and in part to the fact that two children, one older and one younger child, were eligible to be selected only in households with no preschoolers.

Table 2-5.—Expected number of children and youth sampled for the Parent Interview, by household composition

Household subdomain	Distribution of households by presence of children enrolled in grades kindergarten through 12				Total
	No younger or older children (K-12)	At least one younger child (K-5) but no older child (6-12)	At least one older child (6-12) but no younger child (K-5)	At least one younger child (K-5) and at least one older child (6-12)	
Households with no children age 3 or older, not yet in kindergarten					
No children age 0 through 2 years.....	0	3,718	6,513	6,062	16,293
At least one child age 0 through 2 years.....	2,168	2,278	736	709	5,890
Households with at least one child age 3 or older, not yet in kindergarten					
No children age 0 through 2 years.....	1,104	2,639	633	742	5,118
At least one child age 0 through 2 years.....	1,688	932	207	254	3,081

NOTE: The distributions in this table assume 60,000 screened households for the NHES:1999. That number was applied to the percentage distributions from table 2-3. Numbers given in this table are expected numbers of sampled children; they do not reflect nonresponse to the extended interviews. Due to rounding, subdomain counts may not add to totals.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

Table 2-6 shows the expected numbers of sampled children and youth and the expected numbers of completed Parent Interviews (assuming a completion rate of 90 percent), by age/grade grouping. A total of about 27,343 [= (30,382) (0.9)] Parent Interviews were expected to be completed.<sup>4</sup>

<sup>4</sup> A total of 24,600 Parent Interviews were actually completed (see Chapter 5).

Table 2-6.—Expected number of sampled children and completed Parent Interviews, by age/grade grouping

Age/grade subdomain	Expected number of sampled children	Expected number of completed Parent Interviews
Infants (age 0 through 2 years) .....	4,732	4,258
Preschoolers (age 3 or older, not yet in kindergarten).....	4,585	4,126
Younger children (grades K through 5).....	10,198	9,178
Older children (grades 6 through 12).....	10,867	9,780
Total .....	30,382	27,343

NOTE: Due to rounding, age/grade group sample sizes may not add to total.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

**Youth Interviews.** All children in grades 6 through 12 whose parents completed a Parent Interview were eligible for the Youth Interview. The expected 9,780 completed Parent Interviews for older children were expected to yield about 8,150 completed Youth Interviews,<sup>5</sup> assuming a completion rate, conditional on completing the Parent Interview, of 83.3 percent. (This, together with the 90 percent completion rate for the Parent Interview, is equivalent to a 75 percent completion rate for the Youth Interview, not conditional on completion of the Parent Interview.)

In most households, no more than one child was expected to be sampled for a Youth Interview. However, it was possible that a child sampled as a younger child during the Screener (enrolled in grades kindergarten through 5) would subsequently be found to be an older child (enrolled in grades 6 through 12) through information given in the Parent Interview (an interview with the most knowledgeable parent of the sampled child). In such cases, the child was administered a Youth Interview. All interviews with youth were conducted after the Parent Interview was completed.

**Adult Education Interviews.** Persons 16 years of age or older who are not enrolled in 12th grade or below, not institutionalized, and not on active duty in the U.S. Armed Forces were eligible for the Adult Education Interview. The practice of surveying the civilian, noninstitutionalized population is consistent with other federal surveys such as the CPS.

Because sampling adults for Adult Education Interviews was required in only about 17 percent of screened households, adults were enumerated during the screening interview only for a subsample of the households. This approach is very similar to that used in the NHES:1991. A methodological study involving a screener experiment (Brick, Collins, and Chandler, 1997) demonstrated

<sup>5</sup> A total of 7,913 Youth Interviews were actually completed (see Chapter 5).



that this approach was expected to result in significantly higher response rates compared with enumerating adults in all households.

Table 2-7 shows the expected number of adults sampled for an Adult Education Interview, by number of adults in the household and presence of eligible children. It was expected that 6,022 adults would be sampled as adult education participants and 4,205 adults would be sampled as nonparticipants. In the NHES:1991, about 11 percent of those sampled as adult education nonparticipants who completed extended interviews were found to be participants, and about 14 percent of persons sampled as participants who completed extended interviews were identified as nonparticipants. Higher percentages of sampled adults were “switchers” in the NHES:1995. In the NHES:1995, 17 percent of those sampled as participants were found to be nonparticipants, and 23 percent of those sampled as nonparticipants were found to be participants. Taking into account the NHES:1995 “switching” rates and assuming completion rates of 83.3 percent for adults sampled as participants and 75.3 percent for adults sampled as nonparticipants observed in the NHES:1995 (for an overall completion rate of 80 percent for the Adult Interview), it was expected that about 4,892 Adult Education Interviews  $[(6,022 \cdot 0.833 \cdot 0.83) + (4,205 \cdot 0.753 \cdot 0.23) = 4,892]$  would be completed with participants and about 3,290  $[(6,022 \cdot 0.833 \cdot 0.17) + (4,205 \cdot 0.753 \cdot 0.77) = 3,290]$  Adult Education Interviews would be completed with nonparticipants for a total of 8,182 completed Adult Education Interviews.<sup>6</sup>

Table 2-7.—Expected number of sampled adults, by number of adults and presence of eligible children in household

Number of adults in household	Children in household?	Expected number of sampled adults		
		Sampled as adult education participants	Sampled as nonparticipants	Total
1 .....	Yes	355	133	489
1 .....	No	1,205	452	1,657
2 .....	Yes	785	635	1,420
2 .....	No	2,661	2,155	4,816
3 .....	Yes	167	140	308
3 .....	No	568	476	1,043
4 .....	Yes	52	40	92
4 .....	No	177	136	313
5 or more.....	Yes	12	9	20
5 or more.....	No	40	29	69
Overall.....		6,022	4,205	10,227

NOTE: Due to rounding, details may not add to total.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations). School Enrollment Supplement data file.

<sup>6</sup> A total of 6,697 Adult Education Interviews were actually completed (see Chapter 5).

**Summary of the Sample Design for the Main Study**

To facilitate comparison with previous NHES administrations, expected numbers of persons sampled for extended interviews in the NHES:1999 are given in table 2-8 along with numbers of persons sampled for extended interviews in the NHES:1991, NHES:1993, NHES:1995, and NHES:1996. Table 2-9 summarizes the expected number of completed interviews for the NHES:1999.

Table 2-8.—A comparison of expected sample sizes in NHES:1999 to actual sample sizes in previous survey administrations

Subdomain	Survey administration				
	NHES:1991	NHES:1993	NHES:1995	NHES:1996	NHES:1999
Number of completed Screeners .....	60,314	63,884	45,465	55,838	60,000
Number of persons sampled for an extended interview					
Infants (0 through 2 years) .....	—	—	4,341	—	4,732
Preschoolers (age 3 or older, not yet in kindergarten) .....	9,925 <sup>1</sup>	5,635	4,372	3,594 <sup>4</sup>	4,585
Grades K through 2 .....	9,967 <sup>1</sup>	7,270 <sup>2</sup>	5,227	4,460	10,198
Grades 3 through 5 .....	—	2,882	1,841 <sup>3</sup>	4,847	10,198
Grades 6 through 12 .....	—	11,650	—	10,934 <sup>4</sup>	10,867
Adults .....	14,226	—	24,538	2,600	10,227
Total .....	34,118	27,437	40,319	26,435	40,609

—Indicates that persons in this category were not eligible for extended interviews.

<sup>1</sup>Children identified in the Screener as ages 2 years through 9 years old were sampled for the NHES:1991 Early Childhood Education (ECE) component; however, only children found to be ages 3 through 8 were eligible for the ECE interview.

<sup>2</sup>The sample size for grades K through 2 includes 158 children who were enrolled in transitional kindergarten, prefirst, special education, or ungraded.

<sup>3</sup>The sample size for grades 3 through 5 includes only 3rd grade; this sample size includes 36 children enrolled in special education or ungraded.

<sup>4</sup>The sample size for preschoolers includes children up to age 7 who are not enrolled. The sample size for grades 6 through 12 includes 5 children whose grade was unknown and 9 children who were enrolled in special education or ungraded.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1991, 1993, 1995, 1996; U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) (October 1996, independent tabulations).

Table 2-9.—Summary of expected and actual number of completed interviews for the NHES:1999

Interview type	Expected completion rate (percent)	Expected number of completed interviews	Actual number of completed interviews
Screeners .....	75	61,500	57,278
Parent Interviews .....	90	27,342	24,600*
Infants (0 through 2 years) .....		4,258	3,378
Preschoolers (age 3 or older, not yet in kindergarten) .....		4,126	3,561
Younger children (grades K through 5) .....		9,178	8,372
Older children (grades 6 through 12).....		9,780	9,004
Youth Interviews .....	75	8,150	7,913
Adult Education Interviews.....	80	8,182	6,697
Participants.....		4,892	3,996
Nonparticipants .....		3,290	2,701
Adult Special Study Interviews .....	80	1,200	1,082

\*Details do not add to total because 285 interviews conducted with parents of home schooled children are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

### The Adult Special Study to Examine Methodological Issues

The Adult Special Study was designed to address three specific questions. First, would changes in question wording improve estimates of participation in work-related and personal development educational activities? Second, what is the impact of telephone technologies such as answering machines and caller ID on RDD surveys? Third, how does self-identification of race and ethnicity vary in response to questions usually asked in NHES collections versus new questions devised by the Office of Management and Budget (OMB)?

The Adult Special Study was designed to sample about 1,500 adults. Assuming a completion rate of 80 percent for the Adult Special Study extended interview, this sample was expected to yield Adult Special Study interviews with about 1,200 adults. This sample size would be sufficient to detect a relative difference of 10 percent in the estimate of overall participation in adult education activities (e.g., 44 percent vs. 40 percent). It would also be sufficient to detect a relative difference of 15 percent in the estimate of participation in work-related courses or the same relative difference in the estimate of participation in personal development courses (e.g., 24 percent vs. 21 percent). Because the participation rates for basic skills education and ESL are very low and have a smaller base (adults without a high school diploma or the equivalent and adults with limited English proficiency, respectively), this sample size would not be

sufficient to detect any meaningful difference in the participation rates for basic skills or for ESL programs. Changes in participation rates among those in credential programs have similar limitations. (The difference would have to be very large to be detected.) However, concerns about underreporting of participation are much greater for informal, nontraditional adult education activities such as work-related and personal development than for formal, traditional adult education activities such as basic skills education, ESL, and credential programs. Thus, this sample size was expected to be sufficient to accomplish the primary goals of the study.

A separate sample of telephone numbers was used for the Adult Special Study, and one adult per household was sampled. Assuming a residency rate of 49 percent and a Screener completion rate of 75 percent, a sample of 4,082 [=  $1,500 / (0.49 \cdot 0.75)$ ] additional telephone numbers was required.

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### 3. QUESTIONNAIRE DESIGN

The NHES:1999 collected data on key indicators that have been measured in previous NHES survey cycles in order to provide NCES with end-of-decade estimates for important educational issues. In the design phase of each previous NHES survey, policy makers and researchers had been consulted in-person or by telephone to ascertain the specific areas within the topical components selected for the survey for which national data were needed. These were prioritized, and items measuring the most important dimensions were constructed. The NHES:1999 interviews could contain only a portion of the items previously included in NHES surveys. Therefore, the first task of the questionnaire design process was to identify key NHES indicators critical for remeasuring in the NHES:1999.

#### **Identification of Key Indicators**

Several strategies were used to identify key NHES indicators in order to maximize the utility of the NHES:1999 to the research community. First, a search of the published literature for NHES indicators was undertaken, and a summary report of the results of that search was compiled. Second, consideration was given to the U.S. Department of Education's Strategic Plan of 1998-2002, in which specific education objectives are identified as key in the assessment of the nation's progress toward achieving the National Education Goals for year 2000. Strategic Plan indicators that could be addressed with NHES data were identified. In addition, telephone conferences were conducted with as many of the authors who published NHES data as were possible to contact. Their views on the utility of remeasuring previously published data and data collected in previous NHES surveys, whether published or not, were sought. Finally, a search of extant data sources was conducted to ensure that the items in the NHES:1999 were not redundant with those in other comparable surveys.

#### **Search for Published NHES Indicators**

The literature was searched to determine which education indicators from previous NHES surveys were used in reports published by the Federal Government and cited most often by researchers in the field. The search covered the years 1991 through 1997 and included the key words National Household Education Survey and the names of its major component topics. Special emphasis was placed on examining government sources and reports; therefore, compilations of government data, such as *Condition of Education*, *Digest of Education Statistics*, *Youth Indicators*, and *The National Education Goals*

*Report*, were investigated. A search of databases of publications, for example, Periodicals Plus Index, Educational Resource Information Center (ERIC), EcononLit, and Current Index to Statistics, was also undertaken, as was a comprehensive review of indexes of scholarly journals through such DIALOG databases as Sociological Abstracts, Criminal Justice Periodical Index, PsychINFO, Social Science Abstracts, Government Printing Office Publication Reference File, and Social SciSearch. An Internet search for references to the National Household Education Survey was conducted at the following sites: General Accounting Office, Labor Department, Bureau of Labor Statistics, Health and Human Services, Department of Education, FBI Crime Statistics, and the Census Bureau. The international online library catalog was also consulted. A list of sources of published NHES indicators is given at the end of this chapter.

Below is a summary of the indicators, organized according to the population groups of parent, youth, and adult, and according to the degree to which they are emphasized in the literature. The number of published sources found making reference to each indicator is given in parentheses, and a bibliography of sources is attached at the end of this chapter.

**Indicators from the Parent Interviews.** Several indicators relating to preschool children have been published. For 0- to 2-year-olds, preschool enrollment and daily reading to the child were the only indicators found in the literature (1 source each). For 3- to 5-year-olds, center-based participation was the most common indicator found (12 sources), followed by home educational activities (10 sources), and number of hours spent watching television (3 sources). The home educational activities most commonly referred to were activities related to literacy, such as reading to the child (8 sources), going to the library (7 sources), story telling (4 sources), and songs and music (4 sources). Fewer mentions were found for risk factors among preschoolers, such as minority status, poverty, and disability (2 sources) and support for preschool parents (1 source).

For children in kindergarten through 2nd grade, home activities were the most commonly published indicators (6 sources). Literacy activities, such as going to the library (5 sources), reading to the child (4 sources), and story telling (4 sources), were the home activities most often referred to. Other indicators were related to parents' involvement in school (3 sources), participation in center-based programs before 1st grade (1 source), and grade retention (2 sources). Additional indicators included risk factors, school practices to involve parents, school learning environment, television watching, behavioral or academic problems (2 sources each), and parental involvement in schoolwork, student outcomes (e.g., behavior problems, grade retention), health care utilization, home schooling, and involvement of nonresident fathers in children's education (1 source each).

For children in grades 3 through 5, student outcomes, specifically grade retention and suspension/expulsion, were the most common indicators (3 sources). Other indicators (2 sources each) included parental involvement in school, number of hours of and rules about television watching, and the literacy activities, reading and story telling. Indicators related to parental involvement in schoolwork, nonresident fathers, and school choice issues were each cited in one source each.

Finally, for children in grades 6 through 12, student outcomes, specifically grade retention and suspension/expulsion, and school safety issues were the most common indicators (3 sources). Other indicators related to parents' involvement in school and television watching (2 sources each), and indicators related to the school learning environment, school choice issues, nonresident fathers, parental involvement in schoolwork, and issues related to drugs and alcohol (1 source each).

**Indicators from the Youth Interviews.** Indicators related to school safety were the most commonly cited (3 sources), especially indicators having to do with student victimization at school (2 sources). Other indicators for this age group included peer approval of and ease of access to drugs and alcohol (2 sources), and school learning environment, presence of gangs and weapons in school, being witness to peer use of drugs or alcohol at school, and discussing drugs with parents (1 source each).

**Indicators from the Adult Education Interviews.** The most common NHES indicators relating to adults were general participation in adult educational activities (12 sources) and characteristics of that participation (10 sources). General participation in adult educational activities included participation in English as a second language (6 sources), work-related courses (6 sources), basic skills or GED classes (4 sources), credential courses (4 sources), and literacy courses (4 sources). Characteristics of participation that have been of interest include types of courses taken (8 sources), full- or part-time college enrollment status (7 sources), employer support (6 sources), and reasons for participation (7 sources), in particular, whether or not participation was required by an employer (4 sources). Indicators found less frequently included barriers to participation (2 sources), and interest in participation among nonparticipants, library use, adherence to certain democratic principles, and participation by parents of preschoolers (1 source each).

## **Review of Strategic Plan Indicators**

The Strategic Plan for the U.S. Department of Education outlines priorities that the Department has established to help focus its efforts on improvement of education. As part of the design process for the NHES:1999, Strategic Plan Objectives and their indicators were reviewed to discover

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which might appropriately be measured by data that the NHES could provide. As a result, the NHES:1999 includes some new and some previously fielded questions that are intended to provide data related to the following Strategic Plan Objectives.

- Objective 1.1: States develop and implement challenging standards and assessments for all students in the core academic subjects.
  - Indicator 10. By 2002, increasing percentages of the general public and parents will be aware of the importance of challenging academic standards for all children, including at least the majority of parents from low-income families.
- Objective 1.4: A talented and dedicated teacher is in every classroom in America.
  - Indicator 25. The percentage of teachers and principals across the nation who are rated by supervisors, parents, and peers as very effective will increase annually.
- Objective 1.5: Families and communities are fully involved with schools and school improvement efforts.
  - Indicator 31. The percentage of young children who read regularly at home with their parents and on their own will increase to 90 percent by 2002.
  - Indicator 32. The percentage of parents who meet with teachers about their children's learning will show continuous improvement, reaching 90 percent by 2002.
  - Indicator 33. The percentage of parents who say that the school actively encourages and facilitates family involvement will show continuous improvement.
  - Indicator 34. By 2002, the number of children participating in after-school programs will double, from 1.7 million to 3.4 million children.
- Objective 1.6: Greater public school choice will be available to students and families.
  - Indicator 35. By 2002, 25 percent of all public school students in grades 3-12 will attend a school that they or their parents have chosen.
- Objective 2.1: All children enter school ready to learn.
  - Indicator 2. The disparity in preschool participation rates between children from high-income families and children from low-income families will decline year by year.
  - Indicator 3. The percentage of children from birth to 5 years old whose parents read to them or tell them stories regularly will continually increase.



- Objective 3.1: Secondary school students get the information and support they need to prepare successfully for postsecondary education.
  - Indicator 2. Increasing percentages of students from age 12 through high school and their parents will have an accurate assessment of the cost of attending college and the aid available for college by 2002.
- Objective 3.4: Adults can strengthen their skills and improve their earning power over their lifetime through lifelong learning.
  - Indicator 19. The percentage of persons who are aware of and use the Lifetime Learning tax credit will increase annually.

### **Telephone Conferences with Researchers and Policy Makers**

The third strategy for selecting key end-of-decade indicators involved conferring by telephone with those responsible for the publication of the NHES data with government and nongovernment researchers knowledgeable in the topical areas covered by NHES, many of whom served as advisors during the design phases of previous NHES surveys. In all, 25 researchers and policy makers were consulted. Several commented on topics appropriate to more than one interview; therefore, 14 researchers gave opinions about potential Parent Interview topics, 9 spoke about possible Youth Interview topics, and 9 offered suggestions on topics related to the Adult Education Interview. Before each telephone conference, materials related to the NHES were sent to the conferees. The discussions focused on the importance of remeasuring the indicators in 1999, priorities for new data, and the demographics most useful to analyze the data.

Overall, the participants in the conferences put forth three general guidelines for the NHES:1999. First, covering a breadth of topics was judged to be more important to their work than including followup questions to provide the depth that may have been covered in previous NHES topical components. Second, it was recommended that higher priority be given to indicators that have been measured since 1991 or more than one time during the decade. Third, it was suggested that in order to preserve comparability, the wording of previously administered NHES questions not be changed. The specific topics covered in the telephone conferences with data users varied according to the particular research interests of the persons speaking; however, some consensus emerged for the key indicators for the Parent, Youth, and Adult Education Interviews.

**Parent Interview.** Most often mentioned as the most important topic for the Parent Interview by the 14 researchers consulted was nonparental care and program participation. The National Education Goals focus on this issue and there is a current interest in welfare-to-work programs that include day care

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provision. The NHES is the only source of nationally representative data for all children in the target age range. The consensus was that it would be vital to obtain such data for children from birth to entry into kindergarten and also useful to obtain data about before- and after-school care for children in kindergarten through 5th or 6th grade. The in-school and out-of-school activity questions were also of particular interest and fit well with the care questions.

To better study nonparental care, the researchers recommended that data about specific type of care (relative, nonrelative, center-based), location of the care (child's home or other location), number of programs, and total numbers of hours in nonparental care were most important to obtain in the NHES:1999. It was also suggested that questions that discriminate between day care centers, nursery schools, and preschools be added as well as a question about early Head Start. However, cognitive laboratory work for previous NHES administrations indicates that it is doubtful whether all parents could distinguish among those types of arrangements. Also identified as useful were some questions about care arrangement characteristics, specifically the age range of the children in the care arrangement and the adult-to-child ratio, information that parents could most likely reliably provide. Another item requested was the parent's assessment of the quality of the child care; however, the items available during the design of the questionnaire were considered to be too unreliable for inclusion. Researchers were concerned that they would elicit overly positive responses.

Additional items regarded as important for the NHES:1999 Parent Interview were the home activities and indicators of readiness for school. In the former category, the consensus was that the activities directly involving literacy (i.e., reading; story telling; teaching letters, words, or numbers; and visiting a library) were the most important to assess. Next in priority were the items that measure arts and crafts; going to a play, concert, or live show; visiting an art gallery, museum, or historical site; and visiting a zoo or aquarium. The other family activity items were considered to be less useful by most conferees, although some indicated they liked the range of activity items measured in the NHES.

The items measuring accomplishment of developmental tasks were mentioned as important for measuring at the end of the decade as well. Some researchers commented that parent assessments of developmental milestones (e.g., identifying colors, counting, etc.) were more reliable than their assessments of deficits (e.g., stumbles easily, short attention span). Several conferees also mentioned the importance of the disability items and the items measuring the child's general health as well as receipt of medical and dental care. As a follow up to the disability series, it was recommended that parents be asked whether the child was currently receiving services for the disability. It was also suggested that the same disability series be asked of parents of children from birth through grade 12.

The importance of indicators of family involvement in school was mentioned by several researchers. It was noted that the topic is appropriate for preschoolers in center-based programs as well as for school-age children. The four parent involvement items from the NHES:1996 (attended a general school meeting, attended a regularly scheduled parent-teacher conference, attended a school or class event, or acted as a volunteer) were judged to be adequate for that population as well as for older children, and it was recommended that the NHES:1999 again gather information on who in the family or household took part. Family involvement in homework was also identified as useful to measure, as were family rules and schedules for meals and bedtime. Endorsement for measuring school practices to involve parents was also received.

Other indicators mentioned as important by at least one of the conferees were the parent's perception of the school learning environment, participation in community service activities, satisfaction with the child's school and teachers, school choice, and indicators of the child's academic and behavioral problems, including grade retention (especially in kindergarten and 1st grade) and suspension or expulsion. One demographic item that was requested in addition to those usually included in the NHES was the immigrant status of the child and his or her mother and father. It was also suggested that more detailed information about types of schools, e.g., charter schools, magnet schools, schools-within-a-school, etc., would be useful to researchers.

**Youth Interview.** The topics related to safety at school were judged by the nine researchers contacted to be the most important to include in the NHES:1999 Youth Interviews, largely because they did not know of other good sources for those data. Identified as the most important school safety items to include were student victimization and fear of victimization, student strategies to avoid harm at school, and the safety practices of schools. Also important was to obtain end-of-decade data on the presence of gangs at school.

Topics related to the use of tobacco, alcohol, and other drugs were recommended for inclusion in the Youth Interviews, although it was noted that sources other than the NHES exist for some important indicators. Researchers suggested that the NHES:1999 include measures of peer approval of tobacco, alcohol, and other drugs at school, ease of obtaining these substances at school, and witnessing students under the influence of alcohol or drugs at school. Because it is important for researchers to examine links with programs that address problems at school, the inclusion of items on alcohol/drug education programs was also deemed important.

It was recommended that the school learning environment items also be included in the youth interview in order to capture positive aspects of the school climate. In a similar vein, youth participation in

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community service was mentioned as important for the NHES:1999 to remeasure. For this indicator, it was judged useful to measure regularity and frequency of participation, as well as the items that measure school practices that encourage, require, and/or integrate service projects into the curriculum. More indepth information about community service was also requested.

There was considerable interest in including items on school and out-of-school activities for youth, because of research that shows the benefits of out-of-school activities to disadvantaged youth, and in estimating the percentage of youth who hold regular, wage-earning jobs after school.

Immigrant status of the youth and his or her parents was specified as a useful demographic variable to include in the NHES:1999, although it was not measured in previous NHES collections.

**Adult Education Interview.** The nine researchers with interest in topics related to the Adult Education Interview focused on items that measure participation in educational activities. Participation in any adult educational activity was named as the most important indicator to remeasure in the NHES:1999, and there was wide support for measuring participation in the specific types of education that were measured in the NHES:1995. Researchers provided reasons why national estimates for basic skills education, English as a second language (ESL) participation, work-related educational activities, and credential programs were all important to obtain. Measures of employer support, especially financial support, were also specified as key indicators for the NHES:1999. Cost to the individual and hours of participation were given high priority, although it was noted that except for participants in credential programs, the latter may be difficult for respondents to estimate.

Of less importance, but still judged to be useful, were the items measuring reasons for participation in educational activities. There was general agreement that these items capture an essential aspect of motivation and should be retained even though there was some concern about their reliability. Some researchers thought the term “instructional provider” might confuse respondents because they might interpret this term to mean the location where the course was provided as opposed to the school, organization, or business that provided the instruction.

Because some researchers are interested in the employment-related outcomes of adult education, it was suggested that work and work history, including salary or wages, would be useful to obtain. Considered of lower priority for the NHES:1999 were the items concerning barriers to participation. Some researchers commented that these items were not reliable, were of limited utility, and should not be repeated; however, at least one researcher contacted had used the barrier items.

Finally, there was interest in asking the NHES:1991 library use questions of adults and asking the NHES:1996 community service participation questions. It also was suggested that an item measuring distance learning would be useful, and that distance learning should not be solely defined as computer-based instruction. For participants in adult basic education, an item measuring participation in a family literacy program (e.g., Even Start) was recommended. Demographics that were suggested in addition to the ones that ordinarily have been measured in the NHES included immigrant status, marital status, and parental status.

The recommendations of the researchers were largely adopted in the design of the questionnaires for the NHES:1999. The notable exception was elimination of the topic of school safety from the survey content. This topic is now a periodic supplement to the National Crime Victimization Survey conducted by the Department of Justice, and to include it in the NHES would have been a replication of effort.

### **Review of Extant Data**

The final step in the process of identifying topics for the NHES:1999 was the review of extant surveys to ensure that the NHES:1999 did not overlap with comparable existing sources of data. A report was compiled providing detailed information about each extant survey, its purpose, design, content, periodicity, and limitations. In general, it was found that the NHES:1999 would provide unique and needed information to researchers in the field. Many of the other surveys reviewed were found to use a limited sample, either in size, populations represented, and/or the degree to which the sample was nationally representative. A second limitation of many extant surveys was that they gave a more peripheral treatment to topics central to the NHES. For instance, the NHES component on adult education captures participation in a wide range of adult educational activities, while other surveys were more focused on one or two types such as ESL or Adult Basic Education/General Educational Development (ABE/GED). No other existing survey was found to contain the same content as the NHES presented in an educational context. Finally, because a majority of surveys were conducted only once or with a specific cohort of the population, the NHES was found to be uniquely suited to providing data on cross-sectional trends in education over the past decade. As noted above, the exception was the topic of school safety that is now being surveyed in depth as part of the National Crime Victimization Survey.

## Formulation of Research Questions

Guided by the information gathered during the design procedures noted above, research questions deemed most important for inclusion in the NHES:1999 were formulated. All of these research questions (listed below) were addressed to some extent in the NHES:1999 instruments.

### Parent Interview Research Questions

The design of the Parent Interview was guided by 14 research questions that were intended to also guide the analyses of data and the development of descriptive reports. The age/grade subgroups of interest for analysis are infants and toddlers (children age 2 and younger), preschoolers (children aged 3 to 6 years old and not yet in kindergarten), elementary school students (children in kindergarten through the 5th grades), middle or junior high school students (youth in the 6th through 8th grades), secondary or high school students (youth in the 9th through 12th grades), and children age 5 through 12th grade who are receiving home schooling. The following list of research questions notes when a question is related to one of these specific subgroups.

1. To what extent do children participate in nonparental care and early childhood programs? (*0- to 2-year-olds, preschoolers*)
  - In what different types of care arrangements and programs do children participate (relative, nonrelative, Head Start and early Head Start programs, other center-based programs)?
  - Is participation in different types of care arrangements and programs related to child and family characteristics? To what extent do disabled preschool children participate in center-based programs?
  - Where are arrangements and programs located?
  - How much time per week do children spend in arrangements and programs?
  - What is the child/staff ratio at arrangements and programs?
  - How much do children's households pay for the cost of arrangements and programs?
2. To what extent have children participated in center-based programs before enrolling in kindergarten or first grade? (*K through 2nd-graders*)
  - Is participation in center-based programs before school entry related to measures of current school performance (academic and behavioral)?

- To what extent did children who are currently homeschooled participate in center-based programs before kindergarten or 1st grade? How many of these children were home schooled for preschool or kindergarten?
3. What types of literacy and numeracy skills do preschool children possess? (*preschoolers*)
- Are literacy and numeracy skills related to participation in center-based programs?
  - Are literacy and numeracy skills related to participation in home educational activities?
4. To what extent are children attending schools that were chosen by their parents? (*K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders*)
- How are child and family characteristics related to the likelihood of attending a chosen school?
5. How many children are reported to be home schooled? (*K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders*)
- How is the likelihood of being home schooled related to child and family characteristics?
  - To what extent do home schooled students also attend schools to receive some of their instruction?
  - What are parents' reasons for home schooling their children?
  - To what extent do public schools or districts offer support or services to home schooling parents and students? How many parents and students use such support services?
6. In what ways are parents involved in their children's preschool programs or schools? (*K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders*)
- Are parents more likely to be involved in one type of school activity versus another (attending general school meeting, parent-teacher conference, school event, volunteering)?
  - Are fathers as likely to be involved in their children's school activities as mothers?
  - How frequently have parents attended school meetings or participated in school activities?
  - How are school characteristics related to parent involvement?
  - How is children's academic performance and behavior in school related to parent involvement?
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7. To what extent do parents report that their children's schools and preschool programs have practices to encourage involvement in their children's education? (*K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders*)
  - Are school practices related to parents' reports of their involvement in school activities?
  - Are school practices related to participation in learning activities at home?
  - How are school characteristics related to reports of school practices?
8. In what types of before- and after-school activities are elementary and middle school children involved? (*K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders*)
  - What percentage of children are being cared for by relatives before or after school? By nonrelatives? Where are these types of arrangements located? How much do parents pay for these arrangements?
  - What percentage of children are attending center-based or school-based programs before or after school? Where are these programs located? How much do they cost?
  - To what extent are children taking part in other activities after school (e.g., music lessons, sports) in order to have adult supervision?
  - To what extent are children taking care of themselves (i.e., without an adult or older child responsible) before or after school?
  - How much time each week before and after school do children spend in nonparental care arrangements, before/after-school programs, activities for adult supervision, and self-care?
9. Are parents of preschoolers receiving the training and support they may need? (*0- to 2-year-olds, preschoolers*)
  - Do parents attend parenting classes or parenting support groups?
  - Have parents ever gone to family support centers or received home visits from trained professionals?
10. How recently have preschoolers had routine medical and/or dental care? (*0-to 2-year olds, preschoolers*)
  - How many preschoolers have received medical care within the last year?
  - How many preschoolers have received dental care within the last year?
11. In what types of educational activities do parents participate with their children at home? (*0- to 2-year-olds, preschoolers, (K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders)*)



- In what types of activities do parents and children engage that are directly related to children's literacy (e.g., reading to child; telling stories; teaching letters, words or numbers; visiting libraries)?
  - In what types of other activities do parents and children participate to stimulate children's educational development (e.g., teaching songs or music, working on arts and crafts, doing errands or chores, and visiting museums or zoos)?
  - How frequently do parents and children take part in home educational activities?
  - Is participation in home educational activities related to children's performance in school?
12. To what extent are children having academic or behavioral problems in school? (*K through 2nd-graders, 3rd- through 5th-graders, 6th- through 12th-graders*)
- For what percentage of children have teachers contacted parents about behavior and schoolwork problems?
  - How are children performing in school as far as grades received or class ranking?
  - How many children have repeated grades?
  - How many children have been suspended or expelled?
13. What are parents' expectations about their children's postsecondary school attendance and costs? (*6th- through 12th-graders*)
- What percentage of 6th- through 12th-grade students are expected by their parents to attend school after high school? To graduate from a 4-year college?
  - Do parents have accurate estimates of the average cost of college tuition?
  - Are parents saving money or making other financial plans for the cost of postsecondary education?
  - To what extent have children's parents talked with or read materials from schools or financial institutions about financial aid opportunities for postsecondary education?
  - To what extent have children's parents talked with schoolteachers or counselors about the academic requirements for postsecondary education?
  - Do reports of plans and expectations differ between parents of middle school students and parents of high school students?
  - Are reports of plans and expectations related to children's school performance?
14. How satisfied are parents of students in grades 6 through 12 with their children's schools and teachers? (*6th- through 12th-graders*)
- How satisfied are parents with their children's schools?
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- How satisfied are parents with their children's teachers?
- How satisfied are parents with the academic standards of their children's schools?
- How satisfied are parents with the order and discipline at their children's schools?

### **Youth Interview Research Questions**

The development of the Youth Interview was guided by the following research questions.

1. How do 6th- through 12th-grade students perceive the learning environment of the school?
  - Is school enjoyable?
  - Is school challenging?
  - Do teachers and administrators maintain discipline?
  - Are the opinions of students listened to?
  - Do peer norms support learning and good behavior in school?
  - Are reports of school learning environment related to school characteristics?
2. Do 6th- through 12th-grade students report a supportive learning environment at home?
  - Do students report family rules for bedtime/curfew, homework, and television viewing?
  - To what extent are students involved in family decision making?
  - To what extent are students involved in activities with their families?
  - Are reports of a supportive learning environment at home related to family characteristics?
3. To what extent do 6th- through 12th-grade students engage in activities that promote or indicate personal responsibility, cooperative behavior, and/or leadership opportunities?
  - Do students participate in co- and extracurricular activities at school?
  - Do students participate in learning activities outside of school that promote or indicate personal responsibility?
  - Does participation in school activities that promote personal responsibility, cooperation, and/or leadership opportunities vary by school characteristics?

- Do students have paid employment during the school year?
  - Is participation in student activities related to participation in community service activities?
4. To what extent do 6th- through 12th-grade students participate in service activities?
- In what community service activities do students participate?
  - Are service activities encouraged or mandated by the school?
  - Are current school-sponsored service activities linked with classroom learning through structured discussion with other students and teachers or counselors, written reports submitted in class, or grades?
  - Does participation in school-sponsored service activities vary with the characteristics of the schools students attend?
5. To what extent are 6th- through 12th-grade students engaging in activities that promote civic awareness?
- Do students read about national or local news in a newspaper or listen to or watch national news?
  - Do students watch the national news or discuss politics or national issues with members of their families?
  - Do 9th- through 12th-grade students who report family discussions about politics and national issues score higher than those who do not report such discussions on a brief knowledge of government test?
  - Do 9th- through 12th-grade students who report having taken classes that require them to pay attention to government, politics, or national issues score higher than those who do not report such classes on a brief knowledge of government test?
  - Is the level of political interest that students report related to school courses on government, politics, and national or local issues or to discussions with parents on these topics?
  - Do students report feeling confident about their ability to express themselves in a letter to someone in the government or in a statement at a community meeting?
6. To what extent do 6th- through 12th-grade students anticipate and plan for their future education?
- Do students report having discussions with their families about future educational plans and issues related to the cost of postsecondary education?
  - Do students report having discussions with a teacher or counselor at school about future educational plans and issues related to the cost of postsecondary education?
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- Do 9th- through 12th-grade students know the average cost of college tuition?
  - Have 9th- through 12th-grade students prepared for college admission by taking college admission tests such as the PSAT, SAT, or ACT?
  - How are students' educational plans related to family characteristics?
7. When 6th- through 12th-grade students engage in community service, what sorts of activities are they doing?
- What sorts of activities do youth consider to be community service?
  - To what extent are service activities organized by parents, youth themselves, or other various organizations?
  - To what degree do youth service activities benefit selected persons, groups, or organizations?

### **Adult Education Interview Research Questions**

The development of the Adult Education Interview was based on the following research questions:

1. To what extent do adults participate in educational activities?
  - What is the overall participation rate in adult educational activities?
  - What is the participation rate in English as a second language (ESL) classes?
  - What is the participation rate in basic skills education?
  - What is the participation rate in credential programs?
  - What is the participation rate in apprenticeship programs?
  - What is the participation rate in career- or job-related courses?
  - What is the participation rate in personal development courses?
  - What is the participation rate in adult educational activities through distance education?
  - How is participation in adult educational activities related to labor force status and employment characteristics?

2. What are the characteristics of participation in adult educational activities?
    - What are the main reasons for participating in ESL classes, basic skills education, credential programs, career- or job-related courses, and personal development courses?
    - How much time have adults spent participating in ESL classes, basic skills education, credential programs, career- or job-related courses, and personal development courses during the past 12 months?
    - To what extent do adults take ESL classes, basic skills education, credential programs, career- or job-related courses, and personal development courses provided by various types of institutions or organizations?
    - To what extent do adults participate in apprenticeship programs sponsored by various types of institutions or organizations?
    - What percentage of adults participating in credential programs are full-time only students, part-time only students, or both?
    - What percentage of adults know about and are using the Lifetime Learning tax credit?
    - What percentage of adults know about and are using the HOPE Scholarship tax credit?
  3. To what extent do adults who participate in educational activities receive employer support?
    - What percentage of participating adults receive employer support for their participation in educational activities overall and in ESL classes, basic skills education, credential programs, and career- or job-related courses in particular?
    - What types of employer support do participating adults receive for educational activities overall and in ESL classes, basic skills education, credential programs, and career- or job-related adult education in particular?
    - What percentage of participating adults are required by employers to participate in educational activities overall and in ESL classes, basic skills education, credential programs, and career- or job-related adult education in particular?
    - How is employer support related to the characteristics of adults' employment?
  4. To what extent are adults informed about and involved in the community?
    - What percentage of adults read newspapers in English once a month or more?
    - What percentage of adults have read books in English in the past 6 months?
    - What percentage of adults look at or read magazines in English on a regular basis?
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- What percentage of adults have used public library services in the past month or in the past year?
- To what extent do adults participate in regular community service?
- What strategies do adults believe will improve public education?

### **Adult Special Study Research Questions**

The following research questions guided the design of the Adult Special Study Interview:

1. What effects do increasing the number of examples in the question about participation have on reports of adult education participation?
  - Are estimates of work-related activities higher?
  - Are estimates of personal development activities higher?
2. To what extent do households report having types of telephone technology that might have an impact on telephone surveys?
  - What percentage of households report having caller ID, cellular phones, or telephone answering machines or answering services?
  - What percentage of households that report having cellular phones include those cellular phone numbers when asked for number of residential telephone numbers in the household?
  - To what extent do households use caller ID or an answering machine to screen calls?
  - To what degree does receiving an answering machine message ahead of time make respondents more willing to complete the survey?
  - What percentage of households have separate telephone numbers dedicated to computers or fax machines that they also answer?
  - What percentage of households that report having separate telephone numbers for computers or fax machines include those telephone numbers when asked for the number of residential telephone numbers in the household?
3. How might race and ethnicity estimates reported in the NHES change with the implementation of the new race and ethnicity question formats recently approved by OMB?
  - What percentage of respondents who did not report being Hispanic when asked the old ethnicity question reported being Hispanic or Latino when asked the new question?

- What percentage of respondents report belonging to more than one racial group when answering the new race question, and what was the racial category they reported in response to the original question?

### **Cognitive Research, Phase One**

Following identification of the key indicators for the NHES:1999, formulation of the research questions, and development and review of the survey instruments, cognitive research was conducted. An overview of the cognitive research conducted for the NHES:1999 is given below; it is described more fully in Nolin et al. (forthcoming). The NHES:1999 design differed from that of previous NHES surveys in that it was intended to remeasure key indicators from previous NHES surveys. Thus, rather than centering on two topical components as is usual for this survey, the NHES:1999 encompassed a variety of topics in interviews conducted with parents of children from birth through 12th grade, youth in grades 6 through 12, and adults age 16 or older and not enrolled in 12th grade or below.

The first phase of cognitive research for the NHES:1999 focused on the Parent, Youth, and Adult Education Interviews. Each interview contained questions drawn from several topical components that have been fielded in the past. The most eclectic was the Parent Interview. It included questions as varied as emerging literacy and numeracy, early childhood care and education, parent involvement in education and school practices to involve parents, before- and after-school care for elementary and middle school children, parent expectations about college, and family educational activities, among others. The Youth and Adult Education Interviews were more narrowly focused. The majority of the Youth Interview concerned civic involvement, specifically community service, and political knowledge and attitudes; however, it also included questions about school and family involvement and planning for future education. The Adult Education Interview focused on participation in educational activities, yet also contained questions on literacy activities, community involvement, and opinions about the education of youth.

Given the character of the NHES:1999, the main purpose of the cognitive research was to assess respondents' reactions to interviews that were composed of several different topics and the clarity of questions in this new context. Meanings may vary in the context of a new interview, and the research was designed to test participants' understanding of some terms used in previously administered questions to ensure that all items were still salient and unambiguous. In addition, special attention was given to respondent comprehension of the few new items that had been added to the questionnaires. Other purposes of the cognitive interviews were to evaluate the flow of the questions and get an approximate timing of each component. Although based on a small number of interviews and therefore inexact, preliminary timings

can indicate an interview of reasonable length or point out a likely need for eliminating some items. (The field test provides more accurate timings.)

The method chosen as most appropriate for these purposes was the individual interview. 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. All interviews were in person, except for one which was conducted over the telephone for the convenience of the respondent. The interviews were conducted by project staff using semi-structured protocols. The protocols noted what items were to be given particular attention and the direction of the probe or the likely utility of having the respondent think about the question and provide the response out loud. At their discretion, interviewers used either concurrent or delayed probes and “think aloud” procedures. With the concurrent methodology, participants are asked to think out loud as they produce a response, or 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. Alternatively, delayed probes can elicit specific information from the participant in a debriefing after the interview has been completed, or participants can be asked to think aloud retrospectively, but these methods lack immediacy and the respondent may not recall thoughts or feelings accurately after even a short time has elapsed. Cognitive research for the NHES:1999 relied primarily on delayed methodologies because testing the interview flow was a central purpose, and immediacy of response was not crucial to the testing of items that had been previously administered.

### **Description of the Research and Participants**

**Recruiting criteria.** In recruiting for the NHES:1999 cognitive research, consideration was given to the survey populations and the value of obtaining a range of opinions that might emerge from different life experiences. Specific recruiting goals were established for each interview in addition to general goals for the cognitive research as a whole. As in past NHES administrations, diversity among the participants was an important goal.

**Recruiting and procedures.** Participants for the interviews were recruited by Westat from their database of volunteers for cognitive research. The database consists of volunteers recruited by means of fliers posted in public places such as grocery stores and recreation centers, mailed advertisements such as Val-Pak, contacts with institutions such as local businesses, schools, and day care centers, and the personal networks of Westat employees and previous cognitive research participants. (Westat employees and their immediate families are not eligible to participate.)



The interviews were conducted in a manner to maximize the number of interviews for the number of participants. Each parent participant was administered the Screener and two interviews. Those who had two children of ages or grades that put them in different questionnaire paths (e.g., a baby of 6 months and a child of 5 years) were administered two Parent Interviews. Parents with only one child or with children in the same interview path were administered one Parent Interview and the Adult Education Interview. Some of the participants recruited specifically for the Adult Education Interview also had children and were administered a Parent Interview in addition to the Adult Education Interview; one participant was administered the Screener and Adult Education Interview only. Four Youth Interviews were administered, two with youth whose parents also were interviewed. In all, 20 volunteers participated in 35 cognitive interviews: 22 Parent Interviews, 4 Youth Interviews, and 9 Adult Education Interviews. Most of the interviews were in person; only one was conducted over the telephone to accommodate the participant. Each participant was paid an honorarium of \$40.

**Cognitive research participants.** Sixteen adults were interviewed about their children's educational activities, their own educational activities, or both. Seven were white, six were black, two were Asian, and one was Hispanic. Fourteen females and two males were administered Parent and Adult Education Interviews. Six participants had a high school diploma or less, two had some college, one had 2 years of business school, and two had associate's degrees. The remaining five participants had at least a bachelor's degree. Three participants lived in a rural area. Thirteen lived in a suburb of Washington, DC.

Three interviews were conducted in the infant path, three in the preschool path, eight in the elementary school path, five in the middle school path, and three in the high school path. A range of grades and nonparental care arrangements was represented. Of the nine Adult Education Interviews administered, six were conducted with those who had participated in educational activities in the past year. To test the Youth Interview, two male and two female students, two of whom were Asian, one black, and one white, were interviewed. Two were from households in which the highest education was a high school diploma; two were from households with more educated parents. Two of the youth were in middle school and two were in high school.

## **Findings**

The cognitive research indicated that the instruments were working well, and that the eclectic nature of the instruments was not problematic for respondents. Not surprisingly, most recommendations concerned the few new items in the instruments that were added in response to the Strategic Plan or the concerns of topical experts consulted in the design phase.

Only one minor wording change was recommended in the Screener. This change, which was made, emphasizes the researchers' interest in adults as well as children, in order to cue households without children that they are of interest to the study.

Recommended changes in the Parent Interview concerned clarification of new concepts contained in the interviews, such as magnet and charter schools and after-school activity programs. Parents were unfamiliar with the term "charter school" and uncertain of the definition of "magnet school," which was often confused with gifted and talented programs. Because of this confusion, items on charter and magnet schools were not included in the final instrument. Items on parents' expectations concerning the average cost of college tuition revealed significant problems; the vast majority of parents indicated that they had no idea. It was recommended that this item be replaced with a question concerning sources of information about college costs or linked with questions related to having obtained information about college costs. Other minor changes were recommended in a small number of individual items. Finally, it was proposed that a specific time estimate be provided when informing parents of the request to interview a youth.

Recommendations to emerge from the cognitive interviews with youth concerned revisions to specific questions. For instance, it was recommended that questions about college costs be focused on the types of schools respondents will likely attend. Another recommended change concerned the need to develop strategies or criteria for classifying students' service activities by type and sponsor.

The transition from the adult education questions to items about other activities in the Adult Education Interview was found to be awkward, and a transition statement was added to alleviate this. Some respondents had difficulty in identifying a main reason for taking courses and gave multiple responses rather than one; a change in the method of asking the question was recommended. Other changes were made in new items on distance education and the Lifetime Learning tax credit to make the questions clearer to respondents.

### **Cognitive Research, Phase Two**

A second round of cognitive interviews was conducted to test the new, in-depth items that gathered detailed information on community service for a subsample of youth in the Youth Interview and the Adult Special Study Interview. Participants were recruited from the same pool of volunteers as the participants in phase one.

## **Participants**

Five adults were administered the Adult Special Study Interview in phase two of the cognitive research for the NHES:1999. Due to interest in testing the new racial questions, recruiting was based on participants' minority background; efforts were aimed especially at those who were of multiple racial or ethnic backgrounds. The participants were one Asian, one white, and three biracial adults.

Recruiting for the Youth Interviews was guided by whether or not potential respondents had participated in community service. Five youth were interviewed. Participants included one female in 6th grade, two males in 8th grade, one male in 9th grade, and one female in 11th grade.

## **Findings**

In the Adult Special Study, one participant was successfully prompted by the follow-up work-related questions that were intended to reveal additional participation; however, another reported courses previously reported in another part of the interview. An instruction was subsequently added to the probing questions to reduce the likelihood of this repetition occurring. No difficulties in flow or comprehension were reported for the items related to telephone technology. Although it was believed that three of the participants were biracial, only one participant selected multiple racial groups when allowed to do so in the new race items. However, participants felt it was a positive change to allow people to select more than one racial group.

The findings for the Youth Interview community service follow-up items, which were designed to describe the nature of the service activities, did not indicate the need for changes in the questionnaire items. It was noted that the initial set of community service items did not capture service participation that involved many short-term (i.e., one day) activities that were done through membership in an organization that regularly serves the community, such as the Boy Scouts. However, the follow-up items did capture this information in the item that asked what group organized the youth's participation. No difficulties in wording or comprehension were noted.

## **Field Test**

Following OMB clearance of the survey, a field test of the NHES:1999 was conducted. The purpose of the field test was to test the instruments under actual survey conditions and to make sure the CATI system was operating correctly, with particular attention to skip patterns, logic checks, etc. In addition, the field test provided an opportunity to identify areas of respondent confusion, lack of knowledge, and related measurement issues. Efforts to evaluate these issues were largely focused on the few new items or revised items that were included in the NHES:1999, since most items in the survey had appeared before in previous administrations of the NHES. Because of the familiar content of the NHES:1999, it was anticipated that few problems would be revealed by the field test, and thus, a single-phase field test with a goal of 255 completed interviews was conducted.

Three thousand telephone numbers for the NHES:1999 field test sample were purchased from GENESYS Sampling Systems. For cost efficiency and simplification of scheduling of interviewers for the field test, the sample included listed, residential telephone numbers from the eastern and central time zones only. This was done to reduce the complexity of case management and eliminate the need to schedule late-night interviewer hours to cover other time zones. This is common practice for field testing and does not have any negative implications as far as evaluating the performance of the survey instruments.

The Marketing Systems Group (MSG) at GENESYS Sampling Systems provided the sample for the field test. To help maximize the chances of completing the desired number of interviews during the field test period, GENESYS was instructed to draw the numbers from the most recent MSG sampling frame and to use demographic data to ensure that the set of numbers for the field test included a higher prevalence of households with children aged 18 or younger than would be found in a random sample. The MSG frame comprises all working 100-banks with at least one listed telephone number. (A 100-bank is a set of telephone numbers having the same first eight digits, including the area code.) This frame is updated quarterly. Demographic data are attached to about half of the telephone numbers on the frame, although they are not guaranteed to be accurate. Of course, the field test sample also included households without children. The sampling algorithms programmed into the CATI system were the same as those to be used for the full-scale data collection.

Goals were established for the number of interviews conducted in the field test to correspond to each major path or subpopulation of interest in the NHES:1999. Table 3-1 shows the targets for the numbers of completed interviews and the actual numbers of completed field test interviews.

### Interviewer Training Procedures

Interviewer training was conducted at Westat's Frederick, Maryland, Telephone Research Center (TRC) on the evenings of September 22 and 23, and was led by project staff and the TRC manager for the NHES:1999. Fourteen interviewers were trained for the field test, all of whom had experience conducting a previous NHES study. Training (and field test data collection) was conducted for the English-speaking version of the instruments only (i.e., the Spanish instruments were not included).

The training session, which lasted approximately 4 hours, included four interactive lecture scripts that presented several scenarios in which household members were sampled and interviewed, and a review of questions commonly asked by respondents and some appropriate answers. Training presented information on the mechanics and flow of each of the NHES:1999 interviews, important substantive concepts in each interview, as well as some strategies for refusal avoidance. Also, interviewers were given a copy of the NHES:1999 questionnaires and associated question-by-question specifications, and were encouraged to note comments they may have had on these documents so they would be available for the interviewer debriefing session.

Table 3-1.—NHES:1999 telephone field test: Expected and completed interviews

Interview type	Target number of interviews	Completed interviews
Screener.....	(*)	427
Parent Interviews .....		
Infant/toddlers .....	20	28
Preschoolers .....	20	23
Elementary schoolers .....	20	58
Middle and high schoolers .....	80	91
Home schoolers .....	(*)	6
Total .....	140	206
Youth Interviews.....	40	67
Adult Education Interviews .....		
Participants.....	(*)	41
Nonparticipants .....	(*)	20
Total .....	50	61
Adult Special Study Interviews.....	25	40

\*No targets were set for the Screener or for Parent Interviews with home schoolers. As many Screeners as needed to complete the targeted number of extended interviews were conducted. It was not anticipated that any home schoolers would be encountered in the small field test sample. The target established for the Adult Education Interviews was not broken out into targets for participants and nonparticipants in educational activities.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES) Field Test, 1999.

### **Field Test Data Collection and Interviewer Debriefing**

The data collection for the field test started on Thursday, September 24. The cooperation rate was 62.5 percent, and by the end of Saturday, September 26, all targets for completed interviews had been met, so interviewing was concluded except for one interviewer who worked on Sunday, September 27, to cover appointments that had been made for that day. During data collection, project staff, TRC supervisors, and NCES staff monitored interviews extensively and documented questionnaire-related matters, such as respondent questions or confusion, recall problems, and awkward question wording.

A meeting to debrief interviewing staff was held on Tuesday, September 29, to review any problems or suggestions. It was attended by Westat project staff, TRC staff, and NCES staff. This meeting focused on obtaining interviewers' observations about the overall flow of the questionnaires, specific questionnaire items that had been targeted for analysis, respondent cooperation problems, concepts or issues that should be emphasized in interviewer training, and any additional feedback interviewers may have had.

A report was submitted to NCES describing the administration time for the Screener and each type of interview, as well as any difficulties with respondent comprehension that had been observed. The report suggested few revisions to the instrument. Following NCES approval, most were made, and a memorandum documenting the changes was prepared for OMB and submitted along with the full field test report and the revised instruments. Appendix B contains the final NHES:1999 instruments.

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## 4. DATA COLLECTION

This chapter provides an overview of the data collection procedures for the NHES:1999. Included are descriptions of interviewer recruitment and training, advance mailings to respondents, interviewing times and case priorities, special procedures for language problem and refusal cases, and refielding of nonresponse cases.

### **Interviewer Recruitment and Training**

Recruitment of interviewers to conduct the NHES:1999 began in November 1998. Interviewers who had successfully worked on the previous NHES data collections were the first priority for the NHES:1999 recruitment. All such interviewers who were available were assigned to the project. Next, interviewers who had experience conducting other random-digit-dialed (RDD) and/or Computer Assisted Telephone Interview (CATI) studies were contacted and asked to work on the NHES:1999. Finally, new interviewers were recruited through the personal networks of Westat employees and by means of advertisements placed in local newspapers. After staffing the project with as many experienced interviewers as were available, new interviewers were then hired to complete the large interviewing staff needed for the NHES:1999. Approximately 60 percent of the interviewing staff were experienced interviewers and about 11 percent of the total interviewing staff were experienced NHES interviewers.

Some training sessions were conducted in December so that interviewers would be available to begin data collection on January 3. December training sessions were attended only by experienced interviewers, who received a total of 14 hours of training, 12 hours in December and 2 hours in January just prior to the commencement of interviewing. Additional training sessions were held throughout the month of January. These sessions included both new interviewers and experienced interviewers who were unable to attend the December training classes. January training sessions consisted of 18 hours of instruction to accommodate the new interviewers, all of whom had completed General Interviewer Training and Teltrain, which is training on the use of the CATI system, prior to attending project-specific training.

Interviewer training sessions were conducted in all of Westat's Telephone Research Centers (TRCs), which were located in Frederick, Rockville, and Chestertown, Maryland; Toledo, Ohio; Toms River, New Jersey; and Sarasota, Florida. December sessions were held in Rockville, Frederick, Toledo, and Chestertown, where experienced interviewers were available. January sessions were held at each of the TRCs except Toledo. Table 4-1 shows dates of the training sessions and the total number of interviewers trained at each TRC location.

Table 4-1.—Location and schedule of NHES:1999 interviewer training sessions

TRC location	Mid-December/early January	January	Total number trained
Rockville .....	12/12-13 & 1/3 12/14-16 & 1/4	6-10 13-18* 30-31 & Feb. 1	162
Frederick .....	12/12-13 & 1/3 12/14-16 & 1/4	6-10 23-25	132
Toledo .....	12/12-13 & 1/3 12/14-16 & 1/4		35
Chestertown.....	12/14-17 & 1/4	5-7 & 10	39
Toms River.....		11-17*	23
Sarasota.....		18-24*	30
Total trained in all TRCs .....			421

\*These were double sessions in which some sessions were conducted for one large group and others, including the session focusing on the role plays, were conducted for two smaller groups.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

The NHES:1999 training sessions included detailed information on the study, interactive lectures familiarizing the interviewers with the questions and the flow of the interviews, and special components emphasizing sets of questions that required more indepth study. Some sessions focused on contact procedures and strategies for gaining respondent cooperation. (See appendix C for the training agendas.) The last part of training employed role play scripts so that interviewers could practice mock interviews. Interviewers were intensively monitored during this process and began conducting live interviews only after they were judged to be fully ready. Interviewers were also monitored throughout the data collection period, and feedback on interviewing techniques was provided by supervisors and project staff.

A total of 421 interviewers began training for the NHES:1999, and 416 completed the sessions; however, 16 interviewers never reported for work on the project. From a peak of 400 interviewers at the end of training, the number working on the NHES:1999 dwindled due to various factors.

Early in the data collection period, 21 interviewers resigned without explanation, and 4 were released due to inadequate performance. Later, 7 interviewers were promoted to supervisory status, and 21 resigned for personal reasons, including poor health and having obtained another job. The active interviewing force stabilized at 347 interviewers which was very close to the goal of having 350 interviewers working at the peak of data collection. As the type and number of cases changed during data collection, the number of interviewers working the cases was reduced. Later in the data collection period, as the nature of the work changed from primarily initial contact cases to nonresponse cases, some interviewers were released to other studies.

The interviewing staff included 21 bilingual interviewers who were trained on the Spanish CATI approximately 2 weeks after they had been conducting interviews in English. Following that training, they were able to switch the CATI to either English or Spanish versions to administer interviews. Bilingual interviewers attempted to conduct interviews in all households that were identified as “non-

All NHES interviewers participated in ongoing coaching sessions to perfect strategies designed to gain respondent cooperation. There was no significant response variation among interviewers. Some interviewers were identified as particularly skilled in this regard; they were given additional training in refusal conversion, the attempt to persuade respondents who have declined to participate to change their minds. The training sessions were conducted by TRC supervisors and lasted approximately 1.5 hours. Training covered such topics as typical respondent concerns and how to address them and discussion and practice of refusal conversion strategies. Trained interviewers were then able to access cases in which a household member had previously refused to participate in the study. As the interviewing staff was reduced to reflect the amount and nature of the remaining cases in the second half of the data collection period, virtually all interviewers remaining on the study had been trained in refusal conversion.

More information is provided below on the outcome of special strategies used with language problem, refusal, and other nonresponse cases.

### **Preparing the Sample**

The sample for the NHES:1999 was drawn by Genesys Sampling Systems. Details regarding criteria for the sample are given in chapter 2. In all, 184,084 telephone numbers were drawn, including a basic sample of 167,347 (including the 4,082 numbers needed for the Adult Education Special Study) and a reserve sample of 16,737 numbers, which was not used. After the sample was drawn, Genesys checked

the numbers for a tritone sound indicating they were nonworking and matched the numbers with yellow page and white page listings to identify business numbers. Telematch, another commercial firm, provided addresses for as many sampled numbers as possible so that various letters could be sent to the households. (See discussions below.)

Conducting tritone and listing checks enabled the classification of many numbers without dialing them. Any number that evoked the tritone signal on two computerized checks was declared to be nonworking. A final result code indicating that status was assigned to the case. A total of 17,682 nonworking numbers were so identified in the basic sample. Any telephone number located in the yellow page (business) listings but not in the white page (residential) listings was classified as a business number. (Telephone numbers located in both the business and residential listings are likely used for both home and business purposes and were eligible for the study.) A final result code was assigned to the cases identified as business through listing checks, and 7,527 numbers in the basic sample were so coded. For purposes of completion and response rates, the tritone and business numbers identified during these initial tests were treated as ineligible numbers.

It is the usual practice not to send numbers identified as business or nonworking for address matching. However, for the NHES:1999, the selection of the sample was delayed in order to allow for the sample to be based on the fourth quarter 1998 Genesys database. Due to this unusual time constraint, it was necessary for all telephone numbers in the sample to be sent to Telematch for address processing while the tritone checks and white and yellow pages matches were being conducted by Genesys. Thus, addresses were obtained for some numbers later determined to be business or nonworking numbers. As a result, the data in tables 4-2 and 4-3 include numbers later identified as business or nonworking by Genesys.

Table 4-2.—Percent of NHES:1999 sampled telephone numbers in various listed statuses, by mailable status

Mailable status of telephone number	Number of cases	Percent in each status			
		Listed in yellow pages only	Listed in white pages	Unlisted	Total
Mailable address.....	44,505	0	75	25	100
Postmaster returned address.....	7,802	0	52	48	100
No matched address.....	115,040	7	9	84	100

NOTE: The white pages category includes telephone numbers found in both the white and yellow pages.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, 1999.

Table 4-3 presents the relationship between mailable status and listed status in a different way. Only a small percent of unlisted numbers were matched with an address (13 percent). Seventy-eight percent of the 48,321 telephone numbers listed in the white pages had matched addresses, and 70 percent of the white-page-listed numbers had mailable addresses.

Table 4-3.—Percent of NHES:1999 sampled telephone numbers in various mailable statuses, by listed status

Listed status of telephone number	Number of cases	Percent in each status			
		Mailable address	Postmaster returned address	No matched address	Total
Yellow pages only.....	7,527	0	0	100	100
White pages.....	48,321	70	8	22	100
Unlisted.....	111,499	10	3	87	100

NOTE: The white pages category includes telephone numbers found in both the white and yellow pages.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, 1999.

### Advance Mailing to Respondents

In order to give survey participants advance notice that they would be contacted and to supply them information supporting the legitimacy of the study, a first-class letter was sent to all households for which an address was available through Telematch. In late December, prior to the beginning of data collection, 52,307 letters were mailed from the Department of Education. The letter, signed by the NHES COTR, introduced the survey topics in broad terms, named the sponsoring agency, and briefly explained how the household had been selected. A toll-free 800 number was given so the respondent could call and set an appointment or obtain further information about the study. Commonly

asked questions and their answers were printed on the reverse side of the letter. The letters were mailed in two waves in concert with the time when sampled telephone numbers were expected to be dialed so that they would arrive shortly before the initial call into the household. (See appendix D for copies of all of the letters mailed to respondents in conjunction with the NHES:1999.) About 15 percent of the letters (7,802) were returned by the Postmaster as undeliverable, and mailing files were updated with this information.

Telematch provided addresses for approximately 30 percent of the sampled numbers. The addresses were checked for completeness, and those missing any address field were deleted from the file as unavailable. The relationship between the mailable status and listed status of the telephone number was assessed for telephone numbers in the NHES:1999 sample, and results are shown in table 4-2. (The percents in table 4-2 and 4-3 are rounded to whole numbers. Therefore, the percents in the tables cannot be used to arrive exactly at the numbers reported in the text.) The initial letter mailed to some of the addresses with which numbers were matched were returned by the Postmaster. Such numbers are identified as “Postmaster returned,” while those numbers matched with addresses for which the mail was not returned are identified as “mailable.” Seventy-five percent of the 44,505 telephone numbers with mailable addresses were listed in the white pages, and 25 percent were unlisted. Of the 7,802 telephone numbers with postmaster returned addresses, 52 percent were listed in the white pages and 48 percent were unlisted. The majority of numbers for which no address was obtained were unlisted numbers (84 percent).

A higher percentage of cases for which an address was obtained and a letter mailed were completed versus those for which an address was not obtained (77 percent versus 56 percent). (“Completed” cases are those for which a screening interview was fully completed. Numbers identified as nonworking and business only through listings and tritone checks are included in the “ineligible telephone number” cases.) As table 4-4 shows, 79 percent of the cases to which letters were mailed that were not returned were completed versus 65 percent of cases to which letters were mailed that were returned and 56 percent of cases not mailed an advance letter.

Table 4-4.—Results of the advance mailing effort in the NHES:1999

Screener final result	Advance letter mailed				No advance letter mailed	
	Letter not returned		Letter returned by postmaster			
	Number	Percent of eligible telephone numbers	Number	Percent of eligible telephone numbers	Number	Percent of eligible telephone numbers
Complete.....	29,155	79	2,906	65	25,217	56
Refusal.....	4,889	13	713	16	7,061	16
Maximum call.....	501	1	92	2	755	2
Other nonresponse.....	2,405	7	786	17	11,865	26
Ineligible telephone number.....	7,555	—	3,305	—	70,142	—
Total.....	44,505	100	7,802	100	115,040	100

NOTE: Maximum call cases were finalized after having received up to 25 attempts without contact; see discussion on pp 78-80. Other nonresponse includes 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); see discussions beginning on p. 68.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

### Interviewing Times and Case Priorities

Data collection was conducted from January 3 through April 3, 1999. The interviewing strategy followed for the NHES:1999 was designed with the goal of contacting all cases as quickly as possible in order to use the interviewing staff efficiently and to have sufficient time for repeated call attempts to nonresponding households.

### Scheduling of Calls

NHES:1999 data collection took place at Westat's TRCs in Rockville, Frederick, and Chestertown, Maryland; Toledo, Ohio; Toms River, New Jersey; and Sarasota, Florida. All of these interviewing centers use a common CATI system and share 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. One after-midnight working session was held to ensure complete coverage of cases located in Alaska and Hawaii.

Because the 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 for the NHES:1999 took this into consideration. Approximately 30 percent of interviewing labor hours were scheduled on week days (Monday through Friday from 9:00 a.m. to 6:00 p.m.), 40 percent on weekday evenings, and 30 percent on weekends.

### **Assignment of Cases to Interviewers**

The priority with which cases were assigned to interviewers by the CATI scheduler at the outset of data collection was specifically designed for the NHES:1999 and differed from previous NHES collections in which new cases had the lowest priority. In order 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 appointments for a specific date and time;
- Cases for which the interviewers received a busy signal (reassigned 15 minutes later for up to four attempts within an hour);<sup>7</sup>
- Cases that had resulted in noncontact at a scheduled appointment time;
- New cases for the initial day and evening call attempts;
- Cases that had unspecified appointment/general callback times; and
- Cases that were attempted during a previous time period with no contact. (These were tried during other specific time frames according to the “time slice” protocol described below.)

Calling times were organized into eight time periods or “time slices,” as depicted in Exhibit 4-1. Six of the time slices were on week days or weekday evenings during the following periods: 9:00 a.m. to 2:00 p.m., 9:00 a.m. to 6:00 p.m., 2:00 p.m. to 6:00 p.m., 6:00 p.m. to 7:30 p.m., 6:00 p.m. to 9:00 p.m., and 7:30 p.m. to 9:00 p.m. Two were on weekends: Saturday 10 a.m. to 6 p.m., and Sunday 2 p.m. to 9 p.m. (All times are respondent times.) Initially, Westat placed one daytime and one evening call to establish contact with a telephone number. If contact was not made in one of these first two calls, the number was called once in each of the remaining six time slices until contact was made. Therefore, up to

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<sup>7</sup> Additional attempts made for busy signals were not counted as separate call attempts; the entire series counted as one attempt.



six additional calls followed the initial day and evening attempts to complete the Screener. If the Screener was not completed as a result of those eight calls, and the respondent had not refused, the case was assigned the status “maximum call” (if contact with a household member had been made), the status of “no answer-answering machine” (if only an answering machine but never a human had been reached), or “no answer” if neither a human or an answering machine had been reached. (Maximum call status for extended interviews was reached after 10 attempts, not including the Screener calls.) 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 E shows a listing of status classifications for both Screener and extended interview cases.

Exhibit 4-1.—Time slices used for call scheduling in the NHES:1999

Time slice description	Day(s) of week	Hours (respondent time)
Weekday, 1st half of the day	Monday through Friday	9:00 a.m. – 2:00 p.m.
Weekday, 2 <sup>nd</sup> half of the day	Monday through Friday	2:00 p.m. – 6:00 p.m.
Weekday, 1st half of evening	Monday through Friday	6:00 p.m. – 7:30 p.m.
Weekday, 2 <sup>nd</sup> half of evening	Monday through Friday	7:30 p.m. – 9:00 p.m.
Weekday, unrestricted day	Monday through Friday	9:00 a.m. – 6:00 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 Survey (NHES), 1999.

In the NHES:1999, contact via the telephone was often made within one or two telephone call attempts. Approximately half of all completed Screeners (29,280 out of 57,278) were completed in one or two calls. Similarly, only a few calls were required to identify the majority of nonworking and nonresidential numbers. Seventy percent of the Screener numbers identified to be nonworking when they were dialed (27,268 out of 38,755) and 65 percent of the numbers identified as business only when they were dialed (11,051 out of 17,039) were finalized within two calls.

### Procedures for Special Circumstances

The NHES:1999 followed specific procedures when special circumstances were encountered during data collection. Many of these procedures had been established during previous NHES collections; others were inaugurated with the NHES:1999.

### **Answering Machine Messages**

Leaving a message on an answering machine serves a purpose similar to mailing an information letter in advance of data collection; it lets respondents know why they are being called and tells them that efforts to contact them will continue. In previous NHES collections, CATI displayed a message to be read the first time an answering machine was reached in the household at both the Screener or extended interview levels. In the NHES:1999, a message was displayed the first time an answering machine was reached at the Screener and extended interview levels and also if the case changed from initial status to language problem or refusal status. Three messages were created, one for Screener or extended 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 the sponsor of the study and also gave the 800 number for respondents to call for more information or to make an appointment. The messages that were delivered are shown in appendix F.

Later in the data collection period, a fourth answering machine message was left when an answering machine was reached even if the case had not changed status. Thursday, February 18, Saturday, February 27, and Wednesday, March 17, (i.e., during weeks 7, 8, and 11 of data collection) were designated for this purpose. One message was created and distributed to interviewers on “answering machine days”; the message was read whenever a telephone number was answered by a machine on that date, provided CATI did not display a message (for instance, one appropriate for a case that had changed strategy). Finally, on Wednesday, March 31 in week 13, 4 days before the end of data collection, another message telling respondents that the research was coming to a close and reiterating the importance of their participation was left whenever a machine was reached. Appendix F contains the NHES:1999 answering machine messages.

### **Language Problem Cases**

When English-only interviewers encountered a case in which the respondent indicated 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 two interim language problem statuses: hearing/speech problem or non-English language problem. The latter category was further divided into probable Spanish language or other language by the interviewer. 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-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 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 4-5 shows response rates for language problem Screener cases. There were 56 cases identified as hearing/speech problems, and only one was completed. Seventy-seven percent of the 2,591 cases identified as Spanish-speaking problems were completed, most in Spanish (72 percent in Spanish versus 5 percent in English). Of those cases identified as other languages, 22 percent were completed. Two cases were completed in Spanish and 203 in English.

Table 4-5.—The NHES:1999 language problem Screener cases, by response status

Problem	Number*	Percent
<b>Hearing/speech problems</b>		
Total .....	56	100
Completed in English .....	0	0
Completed in Spanish .....	1	2
Refusals.....	0	0
Language problems.....	55	98
Other .....	0	0
<b>Identified as Spanish-speaking problems</b>		
Total .....	2,591	100
Completed in English .....	130	5
Completed in Spanish .....	1,845	72
Refusals.....	209	8
Language problems.....	111	4
Other .....	296	12
<b>Identified as other language problems</b>		
Total .....	931	100
Completed in English .....	203	22
Completed in Spanish .....	2	<1
Refusals.....	45	58
Language problems.....	609	65
Other .....	72	8

\*Unweighted numbers.

NOTE: Because of rounding, percents may not add to 100. "Other" includes maximum call and no answer cases as well as cases identified to be nonworking or nonresidential on call back.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

The NHES:1999 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 Adult Education Interview or the Youth Interview. For the Parent Interview, however, the parent or guardian who was most knowledgeable about the child's care and education 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 Parent Interview. If successful, the Parent Interview was conducted with him or her.

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; however, like all completed interviews, they carry a designation as to whether the interview was conducted in English or Spanish.

### **Refusal Conversion Procedures**

Refusal cases comprise the majority of overall Screener nonresponse in the NHES. Substantial effort was expended in the NHES:1999 to gain cooperation in households in which a member had refused to participate in the study. In the NHES:1999, cases in which a household member hung up at the introduction screen the first time the number was called were re-released to a special set of procedures. Refusals occurring for those cases on subsequent call attempts and any refusals obtained after the introduction was read were subject to different procedures, including special mailings to households for which addresses were known.

### **Cleaning and Refielding Introductory Refusals**

In the NHES, as in other RDD surveys, Screener refusals often occur at the introduction. In many of these cases, the respondent hangs up the telephone without saying anything or makes a short statement such as "I'm busy" or "I'm not interested." There was little, if any, engagement in the study, and many of these respondents may not have even heard the introduction. It is likely that some of these respondents thought they were receiving a telemarketing call. A "hang-up" screen was implemented in the NHES:1999 so that these cases could be identified, and "cleanref," a CATI system scheduler utility for

screening refusal cases, was used to “clean out” and re-release first-time introductory refusal cases as new work; that is, they were accorded the priority of initial cases. Releasing the cleaned cases as new work gave them another chance to be completed, perhaps by a different household member, without having to be assigned to specially trained refusal conversion interviewers or to undergo other refusal treatments. Cases that were released through the cleanref utility retained a marker indicating that this had been done, so the procedure could be taken into consideration if other refusal conversion strategies were required. Cleanref cases were released as new cases in 12 days, 1 day before they would have been released to specially trained interviewers for refusal conversion. About 12,000 cases were processed through the cleanref utility. Twenty-three percent of them were completed without special refusal conversion handling, and 40 percent were later completed by refusal conversion interviewers.

### **Standard Refusal Conversion**

Whenever a refusal occurred, the interviewer recorded demographic information about the refusing respondent and the respondent's reasons for refusing to participate if any had been proffered. Interviewers also rated the strength of the refusal as mild, firm, or hostile. Standard refusal conversion procedures were to call back most cases one time and attempt to gain the respondent's cooperation. In the NHES:1999, any mild or firm refusal case was released after a 13-day hold for a conversion attempt. 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.

At the extended interview level, refusal conversion attempts were conducted with the refusing person himself or herself. That is, attempts were made to convert the parent who refused the Parent Interview and the adult who refused the Adult Education Interview. For the Youth Interview, refusal conversion efforts were also targeted to the person who refused. If the parent refused for the youth, then the refusal conversion attempt was with the parent. Attempts to complete an interview with a youth were never made unless the parent gave permission. If the youth himself or herself refused, the conversion attempt was with the youth.

### **Federal Express/Priority Mail Mailing to Refusal Cases**

Recent experiments conducted at Westat indicated that sending refusal conversion letters via Federal Express significantly increases the refusal conversion rate for these initial refusal cases. Furthermore, Westat receives a special reduced rate from Federal Express, making such a mailing economical, especially when the labor time for refusal conversion is considered. Therefore, refusal conversion letters were sent to Screener initial refusal cases in the NHES:1999 and to “cleanref” cases that received a refusal after being re-released. The letters were sent by Federal Express if the address was acceptable to that service and by Priority Mail if they were not (e.g., post office boxes, RFD, etc.) Prior to sending these letters, address files had been updated and inaccurate addresses deleted based on Postmaster returns from the initial mailing. A total of 10,356 refusal conversion letters were sent by Federal Express, and 572 by Priority Mail. The letter gave a brief explanation of the NHES:1999 study, emphasized the importance of the household’s participation, and provided Westat’s toll-free 800 number for respondents to call for information about the study or to schedule appointments (see appendix D).

The refusal conversion letters were sent to households for which an address had been obtained from Telematch, so these households perhaps had also received a letter from the sponsoring agency by first-class mail prior to the initial contact with the household. However, a second letter was sent to refusal cases because first-class letters may not receive the attention from household members that Federal Express or Priority Mail letters do. Furthermore, 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 the day after the letter was scheduled to arrive.

### **Refielding Second Refusals**

In each previous cycle of the NHES, at least some of the “final” Screener refusal cases, those for which two refusals had been received, were refiled for another conversion attempt by the most skilled refusal conversion interviewers. In the NHES:1999, Screener cases that had received two refusals were refiled if neither refusal had been coded hostile. Refiling of Screener refusal cases began February 16, 1999, during week seven of data collection. Although cases that had been processed through the cleanref utility could be considered to have received three refusals counting the hang-up that was “cleaned,” it was decided to release these cases for another conversion attempt as well. 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. Cases were held for a period of 13 days before being released for an

additional conversion attempt until the last weeks of the data collection period when some cases had a shorter hold period due to lack of time. Overall, the completion rate for Screener cases that ever received a refusal was about 50 percent. (Cases that were processed through “cleanref” that were not coded a refusal on a subsequent call are not included.)

Table 4-6 shows the results of various refusal conversion efforts in the NHES:1999 for Screener cases. In all, 27,254 cases had provided at least one refusal. (Cases that were processed through “cleanref” that were not coded a refusal on a subsequent call are not included.) After the initial refusal, those for which an address was obtained were mailed a Federal Express or Priority Mail letter; 10,928 cases were mailed a letter and 16,326 were not. The completion rate was greater for the cases that were mailed a Federal Express or Priority Mail letter (60 percent) than for the cases to which a letter was not mailed (44 percent). In addition, 1,650 cases were identified as ineligible when they were called.

Some of the cases that incurred a second refusal were refiled, and this effort resulted in the completion of additional Screeners. Twenty-two percent of the 13,264 refusal cases refiled after having received two refusals (not including “cleanref” cases that were not subsequently coded refusals) were completed (2,872 cases), and 439 cases were identified as ineligible.

Table 4-6.—Results of refusal conversion efforts at the Screener level in the NHES:1999

Final result	Initial refusal cases				Cases refiled after two refusals	
	Federal Express or Priority Mail letter		No Federal Express or Priority Mail letter		Number	Percent of eligible telephone numbers
	Number	Percent of eligible telephone numbers	Number	Percent of eligible telephone numbers		
Complete .....	6,327	60	6,573	44	2,872	22
Refusal .....	4,087	39	8,241	55	9,849	77
Other nonresponse .....	145	1	231	1	104	1
Ineligible telephone number.....	369	—	1,281	—	439	—
Total.....	10,928	100	16,326	100	13,264	100

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Final extended interview refusals have not been refiled in previous NHES data collections because persuading the sampled person to respond to a 15-minute interview tends to be a more difficult endeavor than persuading a household member to respond to potentially very few questions. However, in an effort to maximize the NHES:1999 response rate, extended cases with two refusals that were both coded mild, and thus most likely to be converted, were refiled. Also, a small group of highly skilled and sensitive interviewers attempted to convert parents who had refused permission for their child to be interviewed. Both strategies were worthwhile.

Overall, approximately 37 percent of the refusals incurred at the extended interview level were completed. Tables 4-7 through 4-10 present the results of refusal conversion strategies at the extended level. Thirty-four percent of the 2,914 Parent Interview initial refusals were completed on the first attempt, and 26 percent of the 504 cases that were refiled after a second refusal were completed, as shown in table 4-7.

Not only could parents refuse to complete the Parent Interview, they could, after having responded themselves, refuse to permit a Youth Interview to be conducted with their 6th- through 12th-grade children. Even if parents gave their permission, the youth could, of course, also refuse. The results of efforts to convert both types of Youth Interview refusal cases are shown in table 4-8. Out of 490 cases in which a parent had initially refused to permit his or her child to be interviewed, a single refusal conversion attempt resulted in the completion of 198 (41 percent). In 471 cases, parents had agreed to permit the youth to be interviewed, but the youth at first declined. Forty-seven percent of these cases were converted on the first attempt.

Refusal conversion results for the Adult Education Interview are presented in table 4-9. Of the 1,258 cases coded a refusal, 437 (35 percent) were completed on the initial conversion attempt. Two hundred fifty-two cases were refiled after two refusals, and 83 (33 percent) were completed.

The Adult Special Study was conducted with a relatively small sample. Of 232 initial refusals subjected to a conversion attempt, 94 cases (41 percent) were completed (table 4-10). Sixty-three of the second refusal cases were refiled, and 29 cases (47 percent) were completed.



Table 4-7.—Results of refusal conversion efforts at the Parent Interview level in the NHES:1999

Final result	Initial refusal cases		Cases refiled after two refusals	
	Number	Percent	Number	Percent
Complete or ineligible person .....	992	34	131	26
Refusal .....	1,724	59	357	71
Other nonresponse .....	195	7	16	3
Ineligible telephone number.....	3	<1	0	0
Total.....	2,914	100	504	100

NOTE: Ineligible persons are those whose age, enrollment status, or grade is outside the study range. Ineligible telephone numbers are those found to be nonresidential or nonworking, and these extended cases were treated as nonresponse. Other nonresponse includes 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).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 4-8.—Results of refusal conversion efforts at the Youth Interview level in the NHES:1999

Final result	Parent refusals to permit youth to be interviewed		Youth refusals	
	Number	Percent	Number	Percent
Complete or ineligible person .....	198	41	222	47
Refusal .....	240	49	221	47
Other nonresponse .....	49	10	28	6
Ineligible telephone number.....	3	1	0	0
Total.....	490	100	471	100

NOTE: Ineligible persons are those whose age, enrollment status, or grade is outside the study range. Ineligible telephone numbers are those found to be nonresidential or nonworking, and these extended cases were treated as nonresponse. Other nonresponse includes 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). Refusals include parent/guardian refusal to give permission. Because of rounding, percents do not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 4-9.—Results of refusal conversion efforts at the Adult Education Interview level in the NHES:1999

Final result	Initial refusal cases		Cases refiled after two refusals	
	Number	Percent	Number	Percent
Complete or ineligible person .....	437	35	83	33
Refusal .....	735	58	158	63
Other nonresponse .....	82	7	11	4
Ineligible telephone number.....	4	<1	0	0
Total.....	1,258	100	252	100

NOTE: Ineligible persons are those whose age, enrollment status, or grade is outside the study range. Ineligible telephone numbers are those found to be nonresidential or nonworking, and these extended cases were treated as nonresponse. Other nonresponse includes 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). Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 4-10.—Results of refusal conversion efforts at the Adult Special Study Interview level in the NHES:1999

Final result	Initial refusal cases		Cases refiled after two refusals	
	Number	Percent	Number	Percent
Complete or ineligible person .....	94	41	29	46
Refusal .....	124	53	32	51
Other nonresponse .....	14	6	1	2
Ineligible telephone number.....	0	0	1	2
Total.....	232	100	63	100

NOTE: Ineligible persons are those whose age, enrollment status, or grade is outside the study range. Ineligible telephone numbers are those found to be nonresidential or nonworking, and these extended cases were treated as nonresponse. Other nonresponse includes 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). Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

### Procedures for Other Nonresponse Cases

Cases that were finalized as maximum call (households that received eight call attempts with no completed interview), no answer-answering machine, and no answer were also subject to additional contact attempts in the NHES:1999. The maximum call condition applied to both Screener and extended interviews, but the no answer conditions applied only to Screeners. Refiling of finalized maximum call cases was not begun until all sampled telephone numbers had been attempted at least twice. (This

condition was met by the end of January, and refielding was begun on February 10 in week six of data collection.) Cases were released in waves so they would be held for a time prior to additional contact attempts to reduce the perception of badgering a household. Also, for no answer cases, the waiting period allowed time for a recording to be attached to a nonworking number so that it might be correctly classified or for household members away from home for a period of time to return.

### **Maximum Call Cases**

The CATI system utility used for refielding maximum call cases allows for the selection of maximum call cases that have not previously been refiled (“fresh” cases) or the selection of all maximum call cases, including those having been held for the appropriate amount of time and those that had been released previously for additional call attempts. Cases not previously refiled were refiled for 14 additional attempts on a weekly or more frequent basis. Cases that had previously been refiled were released for additional attempts twice at the end of data collection; however, at that time cases that had already received 25 or more attempts were finalized, so that they would receive no more calls. This approach was designed to place the greatest effort on the cases most likely to be productive.

Prior to refielding, letters were sent to Screener maximum call cases for which addresses had been obtained. Letters were sent via first class mail in 9- by 12-inch envelopes in order to draw respondents’ attention to the letter. A special flag set in the CATI database ensured that households were not sent both a refusal conversion letter and a maximum call letter, so that members of the household would not feel that they were being harassed. A copy of the letter can be found in appendix D.

Table 4-11 shows the results of refielding maximum call cases at the Screener level. Of the 5,672 Screener maximum call cases, 2,028 were mailed a letter and 3,644 were not. The completion rates for the two groups were similar, 49 percent and 44 percent, respectively. This suggests that the mailing strategy for this type of case should be reexamined.

Results of refielding maximum call cases at the extended interview level are shown in table 4-12 for the Parent and Youth Interviews. Of the 2,764 Parent Interview cases that were refiled for additional call attempts, 45 percent (1,230 cases) were completed. Fifty-nine percent of the 567 Youth Interview maximum call cases were completed after refielding.

Table 4-11.—Results of refiled maximum call Screener cases in the NHES:1999

Final result	First class letter mailed		No first class letter mailed	
	Number	Percent of eligible telephone numbers	Number	Percent of eligible telephone numbers
Complete .....	931	49	1,437	44
Refusal .....	469	25	971	30
Maximum call .....	452	24	769	24
Other nonresponse .....	43	2	81	2
Ineligible telephone number.....	133	—	386	—
Total.....	2,028	100	3,644	100

NOTE: Ineligible telephone numbers are those found to be nonresidential or nonworking. Other nonresponse includes 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).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 4-12.—Results of refiled maximum call cases at the Parent and Youth extended interview levels in the NHES:1999

Final result	Parent		Youth	
	Number	Percent	Number	Percent
Complete or ineligible person .....	1,230	45	337	59
Refusal .....	695	25	102	18
Maximum call .....	725	26	99	17
Other nonresponse .....	63	2	24	4
Ineligible telephone number.....	51	2	5	1
Total.....	2,764	100	567	100

NOTE: Ineligible persons are those whose age, enrollment status, or grade is outside the study range; such cases were treated as ineligible. Ineligible telephone numbers are those found to be nonresidential or nonworking after the Screener was completed and are treated as nonresponse. Other nonresponse includes 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). Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Refielding efforts yielded similar results for the Adult Education and Adult Special Study maximum call cases (table 4-13). Forty-seven percent of the 861 Adult Education and 45 percent of the 133 Adult Special Study maximum call cases that were refiled were completed.

Table 4-13.—Results of refiled maximum call cases at the Adult Education and Adult Special Study extended interview levels in the NHES:1999

Final result	Adult Education		Adult Special Study	
	Number	Percent	Number	Percent
Complete or ineligible person .....	404	47	60	45
Refusal .....	206	24	37	28
Maximum call .....	203	24	27	20
Other nonresponse .....	35	4	6	5
Ineligible telephone number.....	13	2	3	2
Total.....	861	100	133	100

NOTE: Ineligible persons are those whose age, enrollment status, or grade is outside the study range; such cases were treated as ineligible. Ineligible telephone numbers are those found to be nonresidential or nonworking after the Screener was completed and are treated as nonresponse. Other nonresponse includes 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). Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

### No Answer-Answering Machine Cases

This category of Screener cases includes those for which the only contact has been with an answering machine. These cases were refiled for eight additional call attempts after all telephone numbers in the NHES:1999 sample had been attempted at least twice. Like the maximum call cases described above, these cases were refiled in two stages, with those not previously refiled being released first, since they were most likely to be productive. A letter was sent via first class mail to no answer-answering machine cases for which mailable addresses were available prior to calling those cases. A copy of the letter is shown in appendix D.

### No Answer Cases

No answer Screener cases are those at which neither a person nor an answering machine has been reached. Like the maximum call and no answer-answering machine cases, these cases were refiled in week six of data collection, beginning February 10. Historically, very few completed Screeners have resulted from refiled these cases, but the process has resulted in the identification of a portion of these numbers as nonworking or nonresidential. Letters were sent to the no answer cases for which addresses were available, and all of these mailable cases were refiled for eight additional call attempts. (A copy of the letter is shown in appendix D.) To ensure that interviewing hours were spent on the cases most likely to be productive, not all of the nonmailable no answer cases were refiled; half were randomly sampled and

only those were refiled. Weighting procedures at the close of data collection accounted for the subsampling of the cases in the computation of response rates; the results of those cases that were attempted were weighted up to the total number of nonmailable, no answer cases.

Table 4-14 presents the results of refiled the NHES:1999 Screener no answer and no answer-answering machine cases. The numbers presented in the table reflect only the cases that were refiled, not the random subsample of nonmailable cases that were finalized after they received eight calls. As expected, the nonmailable no answer cases were the least productive. Only 3 percent of the 5,764 nonmailable no answer cases were completed versus 13 percent of the 1,318 mailable no answer cases, and 26 percent of the 5,356 no answer-answering machine cases. However, the refiled of no answer and no answer-answering machine cases allowed identification of 1,652 cases as ineligible across all categories, a positive outcome of the refiled effort.

Table 4-14.—Results of refiled Screener no answer and no answer-answering machine cases in the NHES:1999

Final result	No answer cases				No answer-answering machine cases	
	Mailable no answer cases		Subsampled, nonmailable no answer cases		Number	Percent of eligible telephone numbers
	Number	Percent of eligible telephone numbers	Number	Percent of eligible telephone numbers		
Complete .....	149	13	139	3	1,159	26
Refusal .....	73	6	98	2	644	14
Maximum call .....	37	3	67	1	215	5
No answer .....	889	75	4,714	93	2	<1
No answer, answering machine .....	27	2	61	2	2,485	55
Other nonresponse .....	10	<1	4	<1	13	<1
Ineligible telephone number .....	133	—	681	—	838	—
Total .....	1,318	100	5,764	100	5,356	100

NOTE: No answer cases are those for which neither a person nor an answering machine had answered on any attempt. The numbers and percentages of nonmailable no answer cases do not include nonmailable cases that were randomly subsampled and not refiled. No answer- answering machine cases are those that had been answered by machines only on any attempts resulting in contacts. Ineligible telephone numbers are nonworking or nonresidential numbers, and these extended cases are treated as nonresponse. Other nonresponse includes 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). Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

### **Results of Refielding Cases**

The intensive working of nonresponse cases in the NHES:1999 was beneficial. After initial refusal conversion procedures had been exhausted (50 percent of the Screener refusals were completed using these procedures), some refusal cases were refielded, and 22 percent were completed. Overall, about 46 percent of the refielded maximum call cases were completed, as were 26 percent of the no answer-answering machine cases. As expected, refielding no answer cases was less productive, with 11 percent finalized as ineligible telephone numbers and about 5 percent of the eligible numbers resulting in completed Screeners. Data collection for the NHES:1999 closed on the scheduled date of April 3, 1999, with an estimated Screener response rate of 74 percent. (See chapter 5 for more details on the response rate.)

### **Weekly Progress in Completing Cases**

The goal of the calling strategy for the NHES:1999 was to attempt initial contact with all cases as quickly as possible. Therefore, as noted above, new cases had relatively high calling priority, rather than the lowest calling priority as in previous NHES collections. This strategy allowed the “easiest” cases, those with cooperative respondents, to be completed quickly and as many business and nonworking telephone numbers as possible to be identified early in the data collection period, when the interviewing staff was at its peak. As the nature of the work changed to encompass a preponderance of the more difficult cases to complete, it was more appropriate to have the majority of the interviewing staff composed of skilled refusal conversion interviewers and bilingual interviewers, with others released to different studies. Table 4-15 presents the number of cases completed each week of data collection, the number of interviewer hours worked, and the interviewer work hours per completed extended interview.

All sampled telephone numbers had been attempted at least twice by January 31, 1999, the end of the fourth week of data collection. At that point in data collection, Screeners had been completed with 34,512 households, 60 percent of the number eventually completed. Also, 306 screener cases were in maximum call status, 66 in language problem status, and 1,458 were in final refusal status, having incurred two refusals. Other cases, 46,038 of them, had been resolved as business or nonworking numbers, and 59,718 cases were in various interim statuses, including 16,974 that had received one refusal. About half of the extended interviews (20,549 out of 40,292) had also been completed. During February, some of the “final” refusals were refielded for another conversion attempt; cases that had reached maximum call and no answer status were refielded also.

Table 4-15.—Weekly progress in completing cases in the NHES:1999

Week	Week ending	Screeners completed	Extended interviews completed	Interview hours	Hours per completed interview
1	January 10	5,174	2,722	2,305	0.85
2	January 17	7,368	4,134	3,479	0.84
3	January 24	12,131	6,775	5,922	0.87
4	January 31	9,839	6,918	6,039	0.87
5	February 7	6,840	5,051	5,850	1.16
6	February 14	4,322	3,915	4,471	1.14
7	February 21	4,003	3,317	4,101	1.24
8	February 28	2,835	2,348	3,532	1.50
9	March 7	1,705	1,542	2,231	1.45
10	March 14	1,054	1,081	1,805	1.67
11	March 21	887	912	1,770	1.94
12	March 28	743	807	1,634	2.03
13	April 4	377	592	899	1.52
	After data collection	—	179	—	—
	Total	57,278	40,293	44,038	1.10

NOTE: Hours per completed interview equals the number of interviewer labor hours divided by the number of completed extended interviews. Extended interviews completed after April 4 represent the Parent Interviews not completed at the close of data collection that were determined to have sufficient information to be included in the data set. One extended interview respondent was found to be ineligible, and that interview was deleted after data collection closed. Therefore, there are 40,292 extended interviews in the data files.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

By the beginning of March (week nine), 52,512 Screeners, 92 percent of the total, had been completed. At that time, the number of cases identified as business or nonworking had reached 54,393, and only 13,952 screener cases were in an interim status, including 3,815 that had received one refusal. In contrast, 8,507 Screener cases were in final refusal status. (Some had been refiled and had received a third, and absolutely final, refusal.) Eighty-seven percent of the extended interviews (35,180 out of the 40,292 that were eventually completed) were completed at this time. Efforts in the last month of data collection focused on working refiled final refusal, maximum call, and no answer Screener cases that had already fulfilled the standard calling protocol of 2 refusals or 8 no contact attempts and completing extended interviews.

Some Parent Interviews were declared complete even though not all questions had been answered by the respondent. A total of 179 interviews were completed up to parent/guardian characteristics, and the remainder of the items were set to missing and imputed. No partially completed Youth or Adult Education Interviews were declared complete.



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## Item Clarification Callbacks

There was little need in the NHES:1999 to call back into households for data retrieval or clarification. Callbacks into households included 33 cases in which enrollment information was incomplete either because an age range rather than a specific age had been given or a Screener respondent between the age of 18 and 20 failed to enumerate him or herself. In all of the cases, correct enrollment information was obtained, and extended interviews were generated, if appropriate. There was also one case in which a callback was necessary to determine whether a sampled college student had been a household member on the date of screening and, if so, to gather contact information. In six cases, an adult over age 60 was sampled for an Adult Education or Adult Special Study Interview but initially coded as active duty military and thus ineligible for the study. Because older adults serving on active duty are so rare, these cases were refiled to obtain correct information.

In previous NHES surveys, 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:1999, however, a comments screen was added so the interviewer could record more detailed information if available. Respondents in 49 households indicated that the number dialed by CATI was not theirs. In four cases the number was another in the household, and in five cases, there had been a change in area code or exchange. In three cases, telephone numbers had been forwarded to another number. One case was refiled with explicit interviewer instructions because the correct household had not been enumerated because of call forwarding. Thirty-seven respondents reported that the sampled telephone number was not their number, and they were unable to provide an explanation; that is, they gave no indication that they recognized the sampled telephone number. There is evidence to suggest that these situations could be the result of secondary telephone numbers that are assigned by telephone companies and used for billing and accounting purposes only. The households are unaware that these secondary numbers exist. Genesys, the vendor that provided the sample of telephone numbers for the NHES:1999, reported this phenomenon in a methodological bulletin early in 1999.<sup>8</sup> These households may be sampled through this secondary number as well as the telephone numbers they believe they have been assigned. In order to properly account for their dual probability of selection, records for the case were set to indicate the household had another telephone number.

In approximately 750 interviews, an interviewer received the response “never heard of that person” when he or she called back into a household to administer an extended interview. Although some of these instances were covert refusals, some were caused by incorrect information having been recorded at the time the household was initially screened. Most of these households (93 percent or 696 cases) were

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<sup>8</sup> “Methodological Alert,” Winter/Spring 1999.

called back to investigate the problem. (Cases that occurred near the end of data collection were not called back and were finalized as enumeration errors by TRC supervisors.) In 19 percent of the refiled interviews, the interviewer reached the respondent and was able to continue with the interview. In 12 percent of the cases, the entire household enumeration was identified as incorrect, the Screener data were cleaned out, and rescreening was attempted. In 25 percent of the cases, the telephone number was identified as nonworking or nonresidential. In 10 percent of the cases, overt refusals were given. If those refusals were mild or firm, the cases were attempted again. As is standard practice, cases with hostile refusals were not called back but were assigned a final refusal code. In 14 percent of the cases, another final disposition code, such as maximum calls or language problem, was assigned. In the remaining 20 percent, it was determined that the person was enumerated incorrectly and was never a household member, and the case was given a final status code of enumeration error. These cases were treated the same as cases in which the sampled person was ineligible.

### **Quality Control Procedures**

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

### **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. These 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.

### **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.

### **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. Monitoring sheets were completed for each monitoring session, which was 15 minutes in length. (See appendix G for a sample monitoring sheet.) All of the TRCs can be monitored from terminals located at the Rockville TRC through Westat's telephone system, so project staff and Westat's most experienced supervisors were able to provide feedback to interviewers no matter where they were located. Monitoring hours were allocated in proportion to 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. Most of the TRCs approached the goal of having 10 percent of interviewer hours monitored, and one exceeded that goal. Twelve percent of interviewing hours were monitored at the Chestertown TRC and 9 percent each at Toms River, Sarasota, and Toledo. Five percent of the interviewer hours were monitored at Rockville and 6 percent at Frederick. On average across all TRCs, 6 percent of interviewer hours were monitored. Table 4-16 presents the number of monitoring sheets and ratio of forms to interviewer air time for each week of the NHES:1999 data collection.

Table 4-16.—Number of monitoring sheets and ratio of forms to interviewer air time for the NHES:1999, by week and cumulatively

Week number	Week ending	Air time (hours) <sup>1</sup>	Total forms	Monitoring rate <sup>2</sup>	Cumulative monitoring rate <sup>2</sup>
1	January 10	2,104	355	0.04	0.04
2	January 17	2,490	362	0.04	0.04
3	January 24	4,234	999	0.06	0.05
4	January 31	4,382	1,152	0.07	0.05
5	February 7	4,049	971	0.06	0.06
6	February 14	2,902	834	0.07	0.06
7	February 21	2,660	873	0.08	0.06
8	February 28	2,401	773	0.08	0.06
9	March 7	1,565	589	0.09	0.06
10	March 14	1,222	364	0.07	0.07
11	March 21	1,189	280	0.06	0.07
12	March 28	1,256	229	0.05	0.06
13	April 4	885	95	0.03	0.06

<sup>1</sup>Air time is rounded to whole numbers.

<sup>2</sup>Monitoring rate is the ratio of forms multiplied by 0.25 (because monitoring was done in 0.25 hour increments) to air time.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

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, she directed TRC supervisors accordingly. Detailed monitoring reports were also provided to NCES on a weekly basis. They showed interviewer hours spent working cases, the total number of monitoring sheets, and the monitoring rate. (The monitoring rate is the number of monitoring sheets divided by 4, to reflect that monitoring was done in one-quarter hour increments, divided by the number of interviewing hours). The report included weekly statistics and cumulative totals.

### Standard Reports

In addition to monitoring statistics, the CATI management system produced weekly reports presenting response 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 training. Copies of the reports were also sent to NCES weekly.

### **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. Having some experience on the phones made the challenges of interviewing in an RDD survey apparent to newer interviewers, and experienced 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 the NHES:1999.

### **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, memos containing clarification of questionnaire items or contact procedures were distributed, and general news was circulated and discussed. For example, early in data collection memos reviewing the proper way to handle range violations and to schedule appointments requested by respondents outside of normal interviewing hours were discussed. Correct probing for parents who did not respond with the child's average grade in school and careful articulation of children's activities for adult supervision was also reviewed. The meetings were scheduled so that all interviewers attended; this ensured that all interviewers received consistent information.

### **Online Help Screens**

Interviewers had two reference sources for use when questions about the survey items arose. Question-by-question specifications were provided in the Interviewer's Manual given to each interviewer at training and reviewed periodically throughout the training sessions. Those specifications were also included in the CATI system. At a keystroke, an interviewer could access the online help screen for the question he or she was administering.

There were 457 CATI help screens in the NHES:1999; 113 of them (25 percent) were never accessed. Of those that were accessed, 183 (53 percent) were accessed 10 times or fewer, and 76 (22 percent) were accessed between 10 and 24 times. Eighty-five screens were accessed by interviewers 25 times or more, and they are shown in table 4-17. A few questions were accessed 200 or more times, 9 in

the Parent Interview, 1 in the Youth Interview, and 2 in the Adult Interview. Some of these questions were about unfamiliar issues, for instance, the Lifetime Learning and Hope Scholarship tax credits. Other help screens were likely accessed in order for interviewers to clarify or confirm respondents' definitions of terms such as Head Start or specific disabilities. One series, how well the child's school communicates with families, appears awkward for telephone administration and this should be addressed in future survey administrations.

### **Interview Administration Time**

The time it takes respondents to complete survey interviews is thought to be an important factor in response rates and response quality (Bogen 1996 reviews various studies on this topic.) A survey must balance the need to include all the analytic variables pertinent to its topic with the desire to avoid both response burden and response fatigue for survey respondents.

Interview administration times for each of the interviews in the NHES:1999, the Screener, the Parent Interview, the Youth Interview, the Adult Education Interview, and the Adult Special Study Interview, were automatically recorded on the CATI database. The data include the time it took to administer the entire completed interview as well as the time for specific interview paths and specific sections; therefore, the relative burden of various sections of the interviews can also be assessed.

The timings recorded by the CATI system for each interview are automatic and triggered by the accessing of certain CATI screens. If an interruption in the survey process occurs due to the respondent having to leave the phone for a few minutes, for instance, to answer the door, there is no way for the interviewer to record why the interview is taking longer than usual. Monitoring interviews during data collection revealed that these interruptions do occur. In order to have a more accurate estimate of response burden, the recorded times that were extreme outliers were edited by assigning the mean administration times according to the following systematic process.

Table 4-17.—Numbers of times NHES:1999 CATI help screens were accessed, by item

CATI screen*	Item	Times help accessed
<i>Screeners</i>		
SINTRO	Introduction	93
S7	Attending enrolled in school	68
S8	Child having home schooling/tutoring	41
S16	Take classes/programs/courses past 12 months	182
<i>Parent</i>		
PA1	Month and year of birth	30
PA4	Child is of Hispanic origin	128
PC3	Prior to Kindergarten child attend Head Start	652
PC4	Prior to Kindergarten child attend Nursery School	55
PD2	School assigned or chosen	40
PD6	Lowest grade at child's school	48
PF1	Receives care from relative	43
PH1	Child attends Head Start	207
PI1	Child attends center-based program	33
PJ1	Attended support group/parenting class for parents	90
PJ2	Gone to family support center or home visit	64
PK1	Satisfaction with child's school	204
PL3	Teachers contact family/behavior problems	53
PL4	Teachers contact household regarding school work	51
PL7	Child ever suspended/expelled	33
PL8	Child has been suspended/expelled	74
PM1	Family involvement with school program	110
PM2	How often went to school meetings/events	214
PM3	How well school communicates with family	455
PM4	School puts parents on committees	127
PN1	Receives care from relative	38
PN2	Number of relative care arrangements	33
PO1	Receives care from relative	26
PP1	Attends center-based program	175
PP2	Number of center-based arrangements	27
PQ1	Parents arrange after-school activities	117
PQ6	Child cares for self on regular basis	46
PR3	Child like to attend public/private college	32
PR16	Lifetime Learning/Hope Scholarship tax credit	494
PS3	Family activities at home in past week	215
PS4	Family activities outside home in past month	190
PT1	Child developmentally delayed	64
PT5	Disabilities	729
PT6	Child has severe developmental delay	313

Table 4-17.—Numbers of times NHES:1999 CATI help screens were accessed, by item—continued

CATI screen*	Item	Times help accessed
PT9	Disability affects ability to learn	32
PT10	Receives services from school district	129
PU7V6	Mom worked for pay last week	31
PU10	Months mom worked in past year	52
<i>Youth</i>		
YA1	School learning environment series	98
YC1	School has student government	291
YC3	Participated in school activities	28
YD1	Does community service activity	40
YD2	Service activity-specify	37
YD4	Service activity schedule	26
YD8	School arranges services activities	39
YE8	Political knowledge series	30
YE13	Political skills series	33
YF18	Talk about financial aid with parent	32
<i>Adult</i>		
AA1	Highest grade or year of school completed	45
AA4	High School diploma through GED	32
AD1	Participation in credential programs	54
AD2	Type of credential program	40
AD6	Was 2/4 year public/private institute	31
AD8	Employer support for credential program	57
AEINTRO1	Initial introductory statement	124
AE1	Apprenticeship program	74
AF1	Career or job-related courses	206
AF2	Names of career-or-job-related courses	97
AF7	Instructional provider for	60
AF8	Work related instructed/provider/employer	103
AF9	Employer support for work-related courses	27
AF11	Instruction/distant education/work related	26
AG1	Participation in personal development courses	114
AH1	Recalled participation in other courses	98
AH2	Types of other courses	36
AH3	Lifetime Learning/Hope Scholarship tax credits	306
AI1	Frequently read newspaper	52
AI2	Number of different magazines look at/regular basis	86
AI3	Read any book/past six months	168
AI4	Use public library/past month	27
AI6	Does community service	36
AI7	Ways to improve public education	169
AJ4	Hispanic	35
AJ12	Months worked for pay last year	79



Table 4-17.—Numbers of times NHES:1999 CATI help screens were accessed, by item—continued

CATI screen*	Item	Times help accessed
AJ14	Hours worked per week	49
AJ15	Earnings	82
AJ18	Continuing educational requirements	103
<i>Household</i>		
PW1AK1	Own, rent home/other arrangements	28
PW3AK3	Number of other phone numbers/home use	25
PW5AK5	Receipt of WIC/Food stamps/TANF	87
PW6AK6	Household income range	72

\*Includes only those screens accessed 25 times or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

The editing process for the Screener involved examining the distributions of administration time by final Screener disposition. In some households, no one was sampled, and the screening interview was very short. In households selected for an Adult Education or Adult Special Study Interview, all members were enumerated, and in households not so designated, only children age 20 or younger, if any, were enumerated. Thus, it would be expected that screening households with children who were sampled for a Parent Interview (and possibly a Youth Interview) that were also sampled for the Adult Education Interview would involve more time. Also, households without children had a higher probability of selection for an Adult Education Interview, which would bring the average administration time down for Screeners resulting in sampling a person for an Adult Education Interview only. Likewise, the timings for the extended interviews would vary depending on the sections of the interview that were administered. Therefore, the administration times for the four extended interviews were analyzed by interview segment. (There were 23 segments in the Parent Interview, 7 Youth Interview segments, and 12 segments in the Adult Education and Adult Special Study Interviews.) Unusually low administration times could result when a case had to be reconstructed from an audit trail, for example. An example of a situation that could result in an unusually high administration time is if the respondent had to break from the interview temporarily to change an infant's diaper. Thus, for each of these segments, the mean time was assigned to the top and bottom 1 percent of all outlying times.

It should also be noted that when more than one child was sampled from a household as subject for a Parent Interview, some data items were collected only once per household. Similarly, when a Parent Interview respondent was also sampled for an Adult Education Interview, some items about the respondent were asked only in the first extended interview. This reduces respondent burden but affects the

administration times for the segments of the interviews that collect parent/respondent information and household information. It slightly suppresses the mean time to complete Parent and Adult Education Interviews.

**Screener Administration Time**

Tables 4-18 through 4-23 show the administration times in minutes for the NHES:1999 Screener and four extended interviews. 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 4-18). The average Screener administration time was under 2 minutes in households in which no member was sampled for an extended interview, slightly more than half of the households contacted. The next lowest Screener administration time was in households in which only an adult was sampled for an Adult Education Interview, 2.9 minutes. It took about one-half a minute longer to administer the Screener in households sampled for only Parent Interviews (3.5 minutes) or for an Adult Special Study Interview (3.4). In households in which a youth was sampled as the subject of a Parent and Youth Interview, the administration time, 3.9 minutes, probably reflects the likelihood of a greater number of children in the household. It should be kept in mind that up to two children could have been sampled in a household in which a Parent Interview was generated, depending upon the ages of the children in the household. The highest Screener administration times were recorded in households in which members were sampled for Parent and Adult Education Interviews and Parent, Youth and Adult Education interviews, 4.3 and 4.8 minutes, respectively. In these households, all members would have been enumerated, not just children, and questions identifying a parent respondent for each Parent Interview would have been administered.

Table 4-18.—Mean, median, and quartile administration time of NHES:1999 completed Screeners, by extended interview sampling status

Completed Screeners by sampling status	Number	Interview length in minutes		Quartiles		
		Mean	Standard deviation	75 percent	Median	25 percent
No one sampled .....	29,690	1.9	0.7	2.1	1.6	1.4
Sampled for Parent Interview .....	8,418	3.5	1.1	4.0	3.3	2.7
Sampled for Parent and Youth Interview .....	9,494	3.9	1.3	4.5	3.7	3.0
Sampled for Adult Interview .....	6,264	2.9	0.9	3.2	2.7	2.3
Sampled for Parent and Adult Education Interview .....	864	4.3	1.2	4.8	4.0	3.4
Sampled for Parent, Youth, and Adult Education Interview .....	1,199	4.8	1.5	5.6	4.5	3.7
Sampled for Adult Special Study Interview .....	1,349	3.4	1.2	3.9	3.1	2.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

### Parent Interview Administration Time

The mean time to administer the Parent Interview was 13.9 minutes (table 4-19); however, the average timings for the Parent Interview varied by interview path. At about 15 minutes each, the preschool and elementary paths were the longest. The middle/high school path was 13.7 minutes on average, and the home school path took 11.6 minutes. At about 10 minutes on average, the infant path was the shortest Parent Interview.

The most time-consuming segment of the Parent Interview was the one containing questions on family involvement with school and school practices (2.7 minutes, table 4-20). One other segment, plans for postsecondary education, exceeded 2 minutes, and the segments on demographic characteristics and family involvement outside of school approached 2 minutes in mean administration time. Sixteen of the 23 segments in the Parent Interview took 1 minute or less to administer.

Table 4-19.—Mean, median, and quartile administration time of NHES:1999 completed extended interviews, by interview type

Completed extended interviews	Number	Interview length in minutes				
		Mean	Standard deviation	Quartiles		
				75th percentile	Median	25th percentile
<b>Interview totals:</b>						
Parent Interview.....	24,600	13.9	4.6	16.5	13.5	10.5
Youth Interview.....	7,913	12.4	3.4	14.2	11.9	10.0
Adult Education Interview.....	6,697	11.7	3.7	13.7	11.2	8.9
Adult Special Study Interview.....	1,082	15.5	4.6	17.8	15.0	12.1
<b>Parent Interview by path:</b>						
Infants.....	3,378	10.3	3.0	12.1	9.8	8.2
Preschoolers.....	3,561	14.9	4.7	17.9	14.6	11.7
Elementary schoolers.....	8,372	15.2	4.5	17.7	14.6	12.1
Middle or high school schoolers.....	9,004	13.7	4.5	16.2	13.2	10.5
Home school.....	285	11.6	4.6	13.9	10.7	8.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 4-20.—Mean, median, and quartile administration time of completed NHES:1999 Parent Interviews, by interview segment

Parent Interview segment	Number	Interview length in minutes*				
		Mean	Standard deviation	Quartiles		
				75th percentile	Median	25th percentile
Demographic characteristics (INTRO-PA10)...	24,600	1.9	0.8	2.2	1.7	1.3
Current school status (PB1-PB7).....	24,600	0.3	0.1	0.3	0.3	0.3
Center-based participation before school entry/home schooling (PC1-PC9) .....	4,546	0.5	0.7	0.5	0.3	0.3
School characteristics (PD1-PD9) .....	17,397	0.9	0.4	1.0	0.8	0.6
Emerging literacy and numeracy (PEINTRO-PE8).....	3,560	1.3	0.3	1.5	1.3	1.1
Early childhood care and programs:						
Relative care (PFINTRO-PF13OV).....	6,938	1.0	0.9	1.0	0.5	0.5
Nonrelative care (PG1-PG12OV).....	6,938	0.6	0.7	0.5	0.4	0.3
Head Start programs (PH1-PH12OV) .....	6,938	0.2	0.4	0.2	0.1	0.1
Center-based programs (PI1-PI14OV).....	6,938	0.9	1.1	1.9	0.1	0.1
Training and support for families of preschoolers (PJINTRO-PJ2) .....	6,938	0.7	0.2	0.7	0.6	0.5
Parent satisfaction with school (PK1).....	17,397	0.7	0.4	0.8	0.6	0.5
Student academic performance and behavior (PL1-PL9).....	17,396	1.0	0.4	1.1	0.9	0.7
Family involvement and school practices (PMINTRO-PM4).....	19,576	2.7	0.9	3.1	2.5	2.1
Before- and after-school programs:						
Relative care (PNINTRO-PN13OV).....	12,399	1.0	0.7	1.0	0.6	0.5
Nonrelative care (PO1-PO12OV).....	12,399	0.4	0.4	0.4	0.3	0.2
Center-based programs (PP1-PP14OV) .....	12,399	0.5	0.8	0.3	0.1	0.1
After school activities/self-care (PQ1-PQ12) .....	12,399	0.9	0.4	1.1	0.8	0.6
Plans for postsecondary education (PRINTRO-PR20).....	9,146	2.1	0.8	2.5	2.0	1.6
Family involvement outside of school (PSINTRO-PS4) .....	15,454	1.8	0.9	2.4	1.8	1.2
Health and disability (PTINTRO-PT10) .....	24,600	0.9	0.5	1.1	0.7	0.5
Mother items (PUINTRO-PU13).....	17,251	1.3	0.6	1.6	1.2	1.0
Father items (PVINTRO-PV11) .....	13,172	0.8	0.4	1.0	0.7	0.6
Household characteristics (PWINTRO-PW6OV) .....	16,688	1.5	0.4	1.7	1.5	1.3

\*Based on all cases that got into the segment of the interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999.

### Youth Interview Administration Time

Table 4-19 presents the average administration time for the Youth Interview (12.4 minutes) and table 4-21 shows mean administration times for each segment. The sections on activities that promote civic involvement and the followup questions on service activities were the most time consuming at 3.3 and 3.5 minutes, respectively. Both involved obtaining open-ended names or descriptions of activities. A relatively short segment on school environment took 2 minutes; these questions required respondents to choose from a response scale, which may have been difficult for youth respondents. Additional questions about plans for postsecondary education took approximately 2 minutes.

Table 4-21.—Mean, median, and quartile administration time of NHES:1999 completed Youth Interviews, by interview segment

Interview segment	Number	Interview length in minutes*				
		Mean	Standard deviation	Quartiles		
				75th percentile	Median	25th percentile
School environment (YAINTRO-YA3).....	7,913	2.0	0.5	2.2	1.9	1.6
Family environment (YBINTRO-YB3).....	7,913	1.3	0.3	1.4	1.3	1.1
Activities that promote or indicate personal responsibility (YCINTRO-YC7).....	7,913	1.1	0.3	1.2	1.1	0.9
Service activities (YDINTRO-YD13).....	7,913	2.1	1.4	3.0	1.9	0.9
Activities that promote civic involvement (YE1-YE13).....	7,913	3.3	1.3	4.2	3.5	2.0
Plans for postsecondary education (YF1-YF19)	7,913	1.9	0.6	2.2	1.8	1.6
Additional items on service activities (YGINTRO-YG8).....	1,515	3.5	1.6	4.5	3.0	2.2

\*Based on all cases that got into the segment of the interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999.

### Adult Education and Adult Special Study Interview Administration Times

Overall, the Adult Education Interview took 11.7 minutes to administer (table 4-19). Table 4-22 shows that the most time-consuming segments were those containing questions on literacy activities and community involvement (2.2 minutes) and employment characteristics (2.1 minutes).

Table 4-22.—Mean, median, and quartile administration time of NHES:1999 completed Adult Education Interviews, by interview segment

Interview segment	Number	Interview length in minutes*				
		Mean	Standard deviation	Quartiles		
				75th percentile	Median	25th percentile
Initial background (AEINTRO1-AA11).....	6,697	1.3	0.5	1.5	1.1	0.9
English as a second language (AINTRO3-AB14).....	490	0.8	0.9	0.7	0.5	0.4
Basic skills and GED preparation (AC1-AC15)	981	1.0	1.0	0.9	0.6	0.5
Credential programs (AD1-AD12) .....	6,697	1.0	1.2	0.9	0.4	0.3
Apprenticeship programs (AE1-AE4).....	6,697	0.2	0.1	0.2	0.2	0.1
Career- or job-related courses (AF1-AF12).....	6,697	1.4	1.8	2.6	0.4	0.4
Personal interest/development courses (AG1-AG5).....	6,697	0.7	0.7	1.0	0.4	0.3
General information about educational activities (AH1-AH5).....	6,697	0.5	0.4	0.5	0.4	0.3
Literacy activities and community involvement (INTRO4-AI7).....	6,697	2.2	0.8	2.5	2.0	1.8
Remaining background (AJ1-AJ6A).....	6,697	0.7	0.3	0.8	0.6	0.5
Employment characteristics (AJ7-AJ18).....	6,697	2.1	1.0	2.6	2.1	1.6
Household characteristics (HHINTRO-AK6OV).....	6,697	1.3	0.4	1.5	1.2	1.0

\*Based on all cases that got into the segment of the interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999.

Overall, the Adult Special Study Interview, which was designed to contain all the Adult Education items plus additional questions about participation in certain types of educational activities, household telephone use, and race and ethnicity, took nearly 4 minutes longer than the Adult Education Interview, i.e., 15.5 minutes (table 4-19). The longest administration times were generally recorded for the segments that contained the additional items (table 4-23), those focusing on career- or job-related courses (2.8 minutes) and household characteristics (3.1 minutes). Other segments that contained the same items as in the Adult Education Interview showed nearly identical administration times. For instance, the segment on literacy activities and community involvement took 2.2 and 2.3 minutes in the two interviews, and the segment on employment characteristics took 2.1 and 2.0 minutes.

Table 4-23.—Mean, median, and quartile administration time of NHES:1999 completed Adult Special Study interviews, by interview segment

Interview segment	Number	Interview length in minutes*				
		Mean	Standard deviation	Quartiles		
				75th percentile	Median	25th percentile
Initial background (PEINTRO-AA11) .....	1,082	1.3	0.6	1.5	1.2	0.9
English as a second language (AINTRO3-AB14).....	69	0.7	0.7	0.7	0.5	0.4
Basic skills and GED preparation (AC1-AC15)	177	0.7	0.6	0.7	0.6	0.5
Credential programs (AD1-AD12) .....	1,082	0.8	1.0	0.6	0.4	0.3
Apprenticeship programs (AE1-AE4).....	1,082	0.2	0.1	0.2	0.2	0.1
Career- or job-related courses (AF1-AF16).....	1,082	2.8	2.2	4.3	1.5	1.2
Personal interest/development courses (AG1-AG10).....	1,082	1.7	1.2	2.1	1.1	0.9
General information about educational activities (AH1-AH5).....	1,082	0.4	0.3	0.5	0.4	0.3
Literacy activities and community involvement (INTRO4-AI7).....	1,082	2.3	0.8	2.5	2.1	1.8
Remaining background (AJ1-AJ6A).....	1,082	0.7	0.3	0.8	0.6	0.5
Employment characteristics (AJ7-AJ18).....	1,082	2.0	0.9	2.5	2.0	1.6
Household characteristics (HHINTRO-AK21) ..	1,082	3.1	0.8	3.6	3.0	2.5

\*Based on all cases that got into the segment of the interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Special Study Interview, 1999.

## Data Editing

The final product of the NHES CATI data collection process is the delivery of edited data files and associated documentation. In order to ensure that the data were complete and of high quality, a series of data editing procedures were conducted. Data editing (correcting interviewer, respondent, and program errors) was performed throughout the data collection. It was possible for these edits to introduce other errors in data items that had been checked during the CATI administration. Therefore, extensive *post* data collection data editing procedures were instituted. These procedures included checking data alignment; 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 that skip patterns were followed appropriately. After the imputation of missing values was completed, these procedures were repeated to ensure that no errors were introduced during imputation.

### Data Alignment

At the conclusion of data collection, alignment edits were run against the entire database to ensure appropriate alignment of data. These edits verify that character data are left justified (“John ”) and numeric data are right justified (“ 200.5”). This provided for efficient frequency review by representing all identical values together. For example, “ 1” and “1 ” were represented in the database as “ 1.”

### Range Edits

The ranges of responses for closed-ended items in the NHES CATI was determined by the permissible response codes. For open-ended items that required an entry by the interviewer (such as ages, dates, number of hours worked for pay, etc.), there was not a specific set of responses. Therefore, reasonable ranges were defined in the Cheshire Data Dictionary and applied to these items. See appendix H for the NHES:1999 Range and Logic Edit Specifications.

Range edits included both “hard” and “soft” ranges. A **soft range** was one that represented the reasonable expected range of values, but did not include all possible values. Responses outside the soft range triggered a message during data collection that the response was *unlikely*. The interviewer confirmed the response with the respondent and reentered it. For example, the number of hours each week a preschool-aged child attended a center-based program had a soft range of 1 to 50. A value outside this range may have been entered and confirmed as correct by the interviewer as long as it was within the hard range of values (1 to 70). A **hard range** represented the finite set of parameters for the values that could be entered into the CATI system. Responses outside the hard range triggered a message to the interviewer that the response was *unacceptable*. The interviewer, even with confirmation, could not exceed hard ranges. For example, the range of possible values for the hours per week a youth worked during the school year was 1 to 40. It is extremely rare that a youth would work more than 40 hours per week while going to school. If the respondent reiterated that more than 40 hours were worked per week, the interviewer recorded a response of “don’t know” to permit the interview to continue, and recorded the out of range response in comments. All comments and problem sheets were reviewed by data preparation staff who had the ability to override hard ranges to input the value. Definitions of hard and soft ranges were reviewed after the field test and were not found to be overly restrictive. They were not changed after the field test or during data collection.



### **Logic Edits**

Logic edits (see appendix H) involved the comparison of two or more items. They were used to examine the relationships between responses to be sure that they did not conflict with one another, and that the response to one item did not make the response to another item unlikely. If a difference among responses was encountered during administration of the interview, an error message was displayed and the interviewer attempted to reconcile the difference while on the telephone with the respondent. Logic edits were implemented in the CATI system using “confirmation screens” and “until statements.” **Confirmation screens** displayed the discrepant items again and prompted the interviewer to reconfirm the responses. New values may have been entered or the old responses retained by pressing “enter” at each entry field. An example of a confirmation screen is the age/grade edit check. If a child was attending a grade that was outside the normal range of grades for his age, the interviewer was prompted to read the child's age and grade again and correct any errors (if they existed). **Until statements** were somewhat stricter than confirmation screens. With until statements, the interviewer was unable to leave a screen until he/she entered a response that met the consistency edit criteria. Questions in which a number and a unit were collected were programmed using until statements that required an entry within the hard range for each unit before the screen could be exited. For example, if a Parent Interview respondent verified that the cost of relative care to the household was really \$11 per hour, the until statement edit did not permit entry of such an amount and time unit. The interviewer entered “don’t know” and recorded the out-of-range response in comments to continue with the interview. Comments were reviewed and updates posted to the data after the interview was complete.

After data collection and editing by data preparation staff, the logic edits were rerun for all completed cases as part of a batch program. Any cases that violated the batch edits were written to an error report that was reviewed by data preparation staff, and corrective action was taken. These batch edits were also programmed in SAS and were run on the post-imputation data to verify that item imputation was consistent with the range and logic guidelines.

### **Batch Data Integrity Edits**

Batch data integrity edits were run after interview administration was complete. They checked complicated skip patterns and consistency among data items copied from one interview to another. These data integrity edits were used by data preparation staff to be sure all post-interview updates were done correctly and that a change to one item did not adversely affect others. They are outlined in appendix H.

The batch logic edits and data integrity edits were run periodically during data collection to assist in cleaning efforts. They were also run after imputation of the data, during the file preparation task.

### **Structural Edits**

The relationships of database records were often dependent on values of variables contained in other database records. Structural edits ensured the structural integrity of the database (i.e., all database records that should have existed did exist, and those that should not have existed did not exist) by checking these variable values and the existence/nonexistence of concomitant records. The structural edits were run against completed interviews only. They were grouped into four logical categories: edits that verified interview completeness, edits that confirmed the presence of appropriate person records, edits that verified parent relationships in the household, and edits that verified consistency of common items. The specification for the structural edits is included in appendix H. Appendix H also contains the NHES:1999 database design diagram that displays the database hierarchy graphically. It may be helpful to refer to the diagram when reviewing the structural edits.

### **Frequency and Cross-Tabulation Review**

The frequencies of responses to all data items (both individually and in conjunction with related data items) were reviewed during and after data collection to ensure that appropriate skip patterns were followed. Members of the data preparation team checked each item to make sure the correct number of responses was represented. If a difference was discovered, the problem case was identified and reviewed. If data were incorrectly stored in the database, the audit trail for the interview (which provided a keystroke-by-keystroke record of all responses entered) was retrieved to determine the appropriate response. If the audit trail revealed no additional information, an item clarification callback (attempting to recontact the respondent and administer the missing items) was made or the item was coded as “not ascertained.” (“Not ascertained” responses were later imputed.)

### **Frequency Review of Text Items**

The “Other, Specify” open-ended text responses (identified by variable names that end in “OS”) were reviewed to determine if they should have been coded into one of the existing code categories. If so, the recoding was done. Review of the open-ended text responses revealed that only two questions had text items recorded frequently enough to warrant the creation of new response categories. They were the

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same questions in the Parent and Youth Interviews obtaining the reasons that youth are not planning to pursue postsecondary education, and so two response categories (indicated by italics on the questionnaires in Appendix B) were added to these questionnaire items.

### **Problem Areas and Suggestions for Improvements in Future Surveys**

The NHES:1999 survey was largely a remeasure of key indicators from past NHES collections. Therefore, this collection had the benefit of the resolution of problems identified in the past. Only one issue, enumeration errors, stood out as being worthy of note.

#### **Enumeration Errors**

Inaccuracies in the enumeration of household members in the Screener is a recurring difficulty in RDD household surveys and occasionally causes problems for correctly sampling individuals for extended interviews and/or administering extended interviews on later callbacks into the household. Problems in the NHES:1999 stemmed largely from two factors, both related to the decision to enumerate only children age 20 or younger in households not selected for potential sampling for an Adult Education Interview. This strategy was designed to reduce Screener respondent burden and lead to a higher response rate.

The first type of problem occurred in some households in which the Screener respondent was age 20 or younger and neglected to enumerate himself or herself in the Screener. Therefore, the enrollment question was not asked about this person, and he or she had no chance of being sampled as the subject of a Parent Interview (if enrolled in grade 12 or below) or for an Adult Education Interview (if older than 16 and not enrolled in grade 12 or below). When these cases were identified, a call was placed to the household to obtain enrollment status; the chief statistician reviewed all of these cases to determine eligibility for an extended interview.

Second, in households that were not selected for a potential Adult Education Interview, only children were enumerated in the Screener, and complete household composition and the relationship of each member to the sampled child was collected early in the Parent Interview. At that point, the information gathered in the Screener was verified with the extended interview respondent, and additional household members were enumerated. When the household was called back, sometimes persons listed in the Screener matrix, perhaps even the sampled child or adult or the person previously identified as the appropriate

person to respond to the Parent Interview, were claimed not to be members of the household. In the NHES:1999, special procedures were established for each of subtype these cases. In the case of a sampled child or adult, the interviewer ascertained whether the person in question had been a member of the household on the date the household was screened. An appropriate final status code that indicated household membership on the screening date was assigned to the case. If the child or adult had not been a household member on the screening date or was declared to be unknown, the case was coded a problem and the household was called back in an effort to resolve the problem. (The dispositions of those cases are described in the section on callbacks to households.) In cases in which the designated respondent to the Parent Interview was not a household member, but the sampled child was, a new parent respondent in the household was identified. In the case of other persons claimed not to be household members, the new information was deemed to be correct, and a flag was set to mark the person-level record for deletion so it was not included in household counters or the delivery files.

Despite these difficulties, no change to the enumeration procedure used in the NHES:1999 is recommended. The standard enumeration includes a verification question and interviewers are carefully trained on enumeration procedures. Furthermore, fully enumerating only a portion of households in the Screener reduces screening burden and likely leads to a higher Screener response rate.