Nutrition Assistance Program Report Series
The Office of Analysis, Nutrition and Evaluation

Special Nutrition Programs | Report No. WIC-01-NSWP

NATIONAL SURVEY OF WIC PARTICIPANTS

Final

Report

United States Department of Agriculture
Food and Nutrition Service

October 2001

Non-Discrimination Policy

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenues, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

United States Department of Agriculture

Food and Nutrition Service

October 2001
Special Nutrition Programs
Report No. WIC-01-NSWP

NATIONAL SURVEY OF WIC PARTICIPANTS

Authors:
Nancy Cole
David Hoaglin
John Kirlin

Submitted by:
Abt Associates Inc.
55 Wheeler Street
Cambridge, MA 02138

Submitted to:
Office of Analysis, Nutrition and Evaluation
USDA, Food and Nutrition Service
3101 Park Center Drive
Alexandria, VA 22302-1500

Project Director:
John Kirlin

Project Officer:
Julie Kresge

This study was conducted under Contract No. 53-3198-6-011 with the Food and Nutrition Service.

This report is available on the Food and Nutrition Service website:
http://www.fns.usda.gov/oane.

Suggested Citation:
U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis Nutrition and Evaluation, *National Survey of WIC Participants, 2001 Final Report*, by Nancy Cole *et al.* Project Officer, Julie Kresge. Alexandria, VA: 2001.

Acknowledgements

The authors wish to express their gratitude to the many individuals who helped with this study and assisted with the production of this final report.

First and foremost, we express our extreme gratitude to the WIC participants who responded to our surveys and to the WIC staff who provided invaluable cooperation during the study. The National Survey of WIC Participants and Their Local Agencies (NSWP) was conducted in 178 WIC service sites from 79 local agencies throughout the country. These sites served as the location for over 3,000 interviews conducted with WIC enrollees. Local WIC personnel provided information at several stages of the study, and welcomed our data collectors into their clinics to conduct interviews.

This project has been guided from the start by Julie Kresge, the project officer at the Food and Nutrition Service (FNS). Her contributions have been invaluable throughout the project, but especially in her review and comments on early drafts of this final report. We also wish to thank all the FNS staff who reviewed the draft material and provided comments on its substance and format. Particular thanks go to Jay Hirschman, Donna Hines, and Clara French.

At Abt Associates, Bonnie Randall led the project at the beginning and served as its technical advisor at the end. We wish to thank her and all the in-house survey staff, field managers, and data collectors—now under her guidance—who helped make the NSWP a success. We also thank Martin Frankel for managing the study's sample design, with assistance from David Hoaglin. Ellen Lee assisted with computer programming, and Sheila Kennedy provided general background research and data management skills. Finally, Susan Byers Paxson ably managed the production of this lengthy report.

Contents

Executive Summary 1
- Purpose of the Study 1
- Study Methods 1
- Findings 2
- Participant Characteristics 3
  - WIC Caseload Composition and Growth, 1988 to 1998 3
  - Characteristics of WIC Participants 3
  - Characteristics of the WIC Economic Unit 5
  - Income of the WIC Economic Unit 5
  - Food Assistance, Food Spending, and Food Security 6
  - Nutritional Risk Factors 7
  - Incidence and Duration of Breastfeeding 7
  - Health Insurance Coverage 8
  - Factors Affecting Enrollment and Continued Participation 8
- WIC Income-Eligibility Determination and Errors in Income Certification 10
  - WIC Income Eligibility Guildelines 10
  - Estimates of WIC Income Certification Error for the Contiguous United States 11

Chapter 1: Introduction 13
- 1.1 Overview of the WIC Program 13
  - Program Eligibility 13
  - Benefits 14
- 1.2 The National Survey of WIC Participants 15
  - Provision of Supplemental Data 15
  - Estimates of Case and Dollar Error Rates 17
- 1.3 Organization of the Report 18

Chapter 2: NSWP Sample Design, Survey Operations, and Sample Representativeness 19
- 2.1 Sample Design 20
  - First Stage 22
  - Second Stage 22
  - Third Stage 22
  - Fourth Stage 23
- 2.2 Response Rates 24
- 2.3 Weighting 24
- 2.4 Calculations of Variances 25
- 2.5 Data Collection 26
  - In-Person Interviews 26
  - In-Home Interviews 28
  - Telephone Follow-up Survey 29
  - Nutritional Risk Checklist 29
  - Certification Forms 29

Local Agency Survey 30
2.6 Sample Representativeness 30
Representativeness of Sampled WIC Service Sites 31
Representativeness of Sampled Participants/Enrollees 32
Representativeness of Survey Respondents 33
Overall Sample Representativeness 33

Chapter 3: Characteristics of WIC Participants and Households 39
3.1 Caseload Composition and Growth 40
3.2 Characteristics of WIC Participants 44
3.3 Characteristics of the WIC Economic Unit 51
3.4 Income of WIC Participants 61
Measuring Family Income 61
Adjunctive and Automatic Income Eligibility 62
Sources of Income and Reporting of Income Data 63
Total Family Income and Income as a Percentage of Poverty Guidelines . . . 71
Changes in Employment Status and Adjunct Program Participation Four Months after Certification 82
3.5 Nutritional Risk Factors 86
Response Rate to Nutritional Risk Checklists 90
Number and Types of Nutrition Risks Prevalent Among WIC Participants . 90
Assessment of Nutrition Risks 92
3.6 Food Assistance, Food Spending, and Food Security 100
Participation in Other Food and Nutrition Assistance Programs 100
Average Weekly Food Spending of WIC Families 100
Reported Food Security of WIC Families 105
3.7 Health Insurance Coverage 118
Medicaid 118
Health Insurance Services 123
3.8 Participants' History with the WIC Program 125
3.9 Incidence and Duration of Breastfeeding 131
3.10 Factors Affecting Enrollment and Continued Participation 135
Referrals to WIC 136
Perceived Barriers to WIC Participation 136
Satisfaction with Prescribed Foods 141
WIC Benefits Ratings 141
WIC Appointments 145
Shopping and Benefit Redemption 145

Chapter 4: WIC Income-Eligibility Determination and Errors in Income Certification 149
4.1 WIC Income Eligibility 150
Federal Regulations 150
USDA Guidance to State WIC Agencies 154
Summary of Federal Regulations and Guidance 157
4.2 Review of State WIC Agency Income Eligibility Guidelines 158
WIC Policies and Procedures Manuals 159

Adjunct and Automatic Income Eligibility 159
Income Guidelines 159
The WIC Economic Unit 160
WIC Countable Income 165
Timeframes for Determining Income 168
Implications of Variation in Guidelines Across States 168
4.3 Methodology for the NSWP In-Home Survey 170
Overview of the Survey 170
The Sample 172
Response Rates 172
The Survey Instrument 176
Verification of Income-Eligibility Information 177
Provision of Income Documents 179
Provision of Documents and Income Reporting by Type of Income 184
4.4 Estimates of WIC Income-Certification Error 187
Methodology for Determining WIC Income Eligiblity 189
Certification Error Rate for the Contiguous United States 193
Dollar Error in the Contiguous United States 194
Characteristics Associated with Income-Eligibility Error 195

Appendix A Sample Design, Weights, and Standard Errors
Sample Design A-1
First-Stage Selection A-3
Second-Stage Selection A-6
Third-Stage Selection A-8
Fourth-Stage Selection A-9
Weights A-9
Variances and Standard Errors A-11

Appendix B Imputation of Unreported Data Items
Imputation Based on Within-Household Data B-1
Items Imputed Based on Within-Household Data B-2
Imputation Based on Estimates B-3
Wage and Salary Income B-3
Methods of Imputation B-5
Regression Specifications B-6

Appendix C Food Security Measurement and Food Spending per Adult Male Equivalent
Procedures for Calculating the Food Security Scale and Assigning Food Security
Food Security Status to Households C-1
Households with Complete Data C-2
Households with Incomplete Data C-2
Procedures for Calculating Food Spending per Adult Male Equivalent C-4

Appendix D Survey Instruments
In-Person Survey D-1
In-Home Survey D-15

Appendix E Supplemental Exhibits
The Standard Error of a Difference E-1
Multiplicity E-2
Comparison of Distributions E-3

Executive Summary

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is administered by the Food and Nutrition Service of the U.S. Department of Agriculture (USDA). WIC was established in 1972 to counteract the negative effects of poverty and poor nutrition on prenatal and pediatric health. WIC provides a combination of direct nutritional supplementation, nutrition education and counseling, and increased access to health care and social service providers for pregnant, breastfeeding, and postpartum women; infants; and children up to age five.

Since 1992, FNS has produced biennial reports on WIC participant and program characteristics based on the WIC Minimum Data Set (MDS) compiled from state management information systems. The 20 items included in the MDS are collected as part of ongoing WIC operations and consist primarily of information related to participant eligibility.

This report presents findings from the National Survey of WIC Participants and Their Local Agencies (NSWP). The NSWP was fielded in spring of 1998 and collected information about WIC participants and their families, through interviews conducted in WIC service sites throughout the country. The NSWP was the first national survey of WIC enrollees since 1988. Over that ten-year period, the WIC program vastly expanded, with the number of enrollees growing from approximately 3.4 million in 1988 to over 8 million in 1998.

Purpose of the Study

The NSWP had two primary goals: to provide demographic information about WIC participants and their families, and to provide national estimates of the case error rate and dollar error within the WIC program.

To achieve the first goal, NSWP interviewed approximately 3,000 WIC participants at 178 WIC service sites throughout the country. These interviews collected information about household composition, family income, nutrition and health risks, participation in other food assistance programs, food security, health insurance coverage, and the family's history of WIC enrollment.

Estimates of the WIC case error rate are based on a second, follow-up survey conducted in the homes of approximately 900 WIC participants. This second survey collected detailed information about family income and sought documentation of family income for verification.

Study Methods

The NSWP was designed to provide information on the characteristics of a nationally representative sample of WIC participants in the contiguous United States, certified for WIC during spring 1998. The sample is based on a multi-stage sample design, with 50 geographic primary sampling units (PSUs) selected at the first stage, 79 local WIC agencies selected at the second stage, and 178 WIC service sites selected at the third stage. WIC participants were randomly sampled for the study at the 178 WIC service sites as they appeared for WIC certification.

The NSWP consists of three surveys of WIC participants and a survey of the local WIC agencies certifying those WIC participants:

- **In-person survey.** In-person interviews were completed with 3,114 WIC participants at 178 WIC service sites throughout the contiguous United States. WIC participants were randomly sampled at the time of their WIC certification and most interviews were conducted in WIC clinics following certification. This survey achieved a response rate of 77 percent and provides most of the information for the first goal of the study—to describe the demographic characteristics of WIC participants and their families.

- **In-home survey.** Approximately one out of every three persons selected for in-person interviews was also selected for a follow-up interview in their home. The in-home survey was designed to verify income information through review of household income documents. In-home interviews were completed with 931 respondents. Data from this survey were used to estimate WIC certification error rates—the second goal of the study.

- **Telephone follow-up.** Approximately two-thirds of respondents to both the in-person and in-home surveys were chosen for telephone follow-up interviews. The telephone follow-up survey collected information about employment status and participation in adjunct programs four months into the WIC certification period. This survey was completed with 558 respondents.

- **Local agency survey.** The local agency survey was conducted with the 79 agencies certifying WIC participants selected for the in-person survey. This mail survey collected information about local WIC agency organization and operations.

In addition to these surveys, WIC clinic staff completed nutritional risk checklists for each WIC participant with a completed in-person interview.

Findings

Key findings of the study are summarized here in an order corresponding to the structure of the report. A summary of caseload composition and growth is based on administrative data, followed by key findings from the NSWP surveys for the following topics:

Participant Characteristics

- Characteristics of WIC women and mothers of WIC infants and children
- Characteristics of the WIC economic unit
- Income of WIC participants
- Food assistance, food spending, and food security
- Nutritional risk factors
- Incidence and duration of breastfeeding
- Health insurance coverage
- Factors affecting enrollment and continued participation

WIC Income-Eligibility Determination and Errors in Income Certification

- Review of state WIC agency income eligibility guidelines
- Estimates of WIC income certification error

NSWP findings should be interpreted with the knowledge that a substantial number of WIC participants had prior WIC participation. Determining WIC's potential influence on patterns of participant characteristics is outside the scope of the NSWP report.

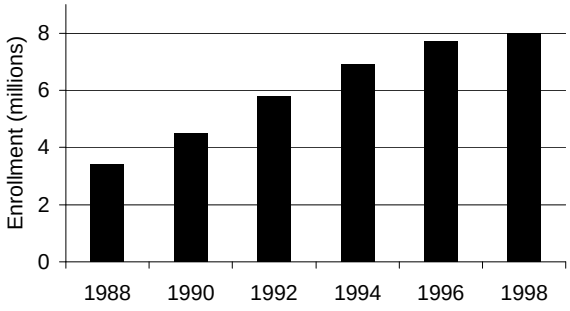
The NSWP sample is a nationally representative sample of WIC participants in spring 1998, interviewed at the time of WIC certification. Most WIC participants are certified for periods of 6 months; States may certify infants for up to one year and pregnant women for the duration of their pregnancy. Administrative data for spring 1998 show that 88 percent of WIC infants were certified for WIC within three months of birth; however, only 79 percent of WIC infants in the NSWP sample were certified within three months of birth. The characteristics of infants described in this report should be viewed in this context.

Participant Characteristics

WIC Caseload Composition and Growth, 1988 to 1998

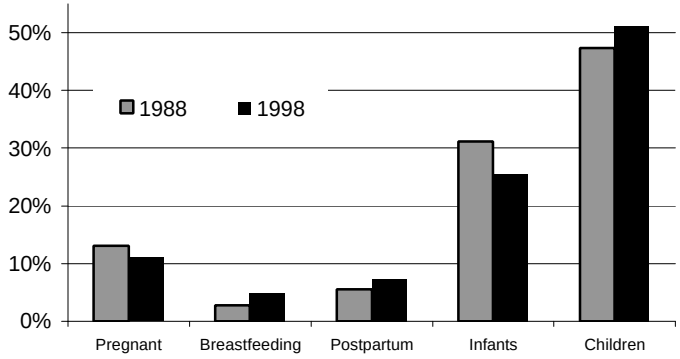
The NSWP provides the first detailed picture of WIC participant characteristics and family circumstances since 1988. Over the ten years from 1988 to 1998, the WIC program more than doubled in size. As shown in Figure 1, average monthly WIC enrollment grew from about 3.4 million in 1988 to 8.0 million in 1998; over the same period annual WIC food expenditures grew from about $1.4 billion to $2.8 billion.

Figure 1. WIC Caseload Growth, 1988 to 1998



Along with caseload growth, there were substantial changes in the composition of the WIC caseload, as documented throughout the period by WIC administrative data.[1] A disproportionate amount of WIC caseload growth occurred in the Western states, which accounted for 13 percent of total WIC participants in 1988, and 24 percent of WIC participants in 1998.[2] This regional shift is reflected in the racial/ethnic distribution of WIC participants, with Hispanics becoming a larger proportion of the caseload (Hispanics were 21 percent of the caseload in 1988 and 32 percent in 1998).

Figure 2. Distribution of Caseload by Category



[1] USDA, Food and Nutrition Service, *WIC Participant and Program Characteristics* (bienially: 1988, 1990, 1992, 1994, 1996, 1998).

[2] The Western region, as defined by FNS for program administration, includes Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, Washington, the territories of American Samoa and Guam, and three Indian Tribal Organizations.

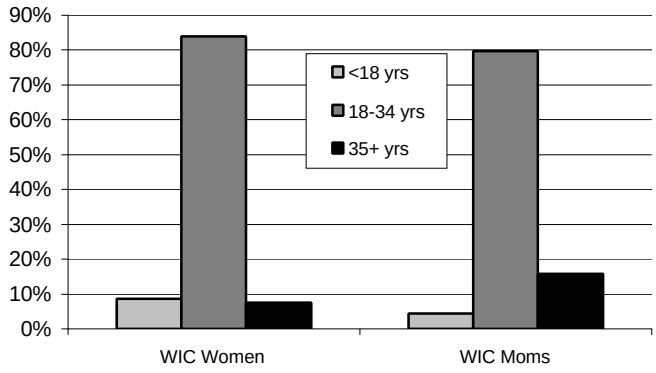
From 1988 to 1998, pregnant women and infants decreased slightly as a percent of all WIC participants; breastfeeding women more than doubled; and children rose as a percentage of all WIC participants, from 47 percent in 1988 to 51 percent in 1998 (Figure 2).[3]

Characteristics of WIC Participants

The strength of the NSWP, in contrast to data available from WIC administrative files, is the detailed picture it provides of WIC participants and their families. This report describes the characteristics of WIC families in a consistent manner regardless of whether the sampled WIC participant was a woman, infant, or child. In particular, the report describes the characteristics of the mothers and mothers-to-be who come to the WIC program—that is, the WIC women (pregnant, breastfeeding, or postpartum) and mothers of WIC infants and children.

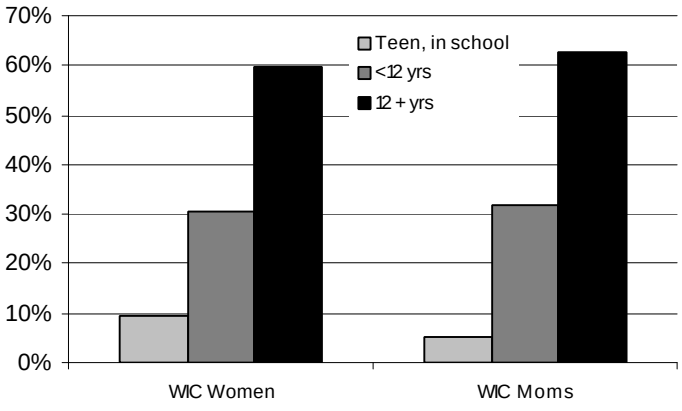
Most women enrolled in WIC are in the prime childbearing years, ages 18 to 34. In 1998, less than 10 percent of women in WIC were under age 18 years, and only 7 percent were over age 35. Mothers of WIC infants and children were somewhat older, with less than 5 percent under age 18 and about 16 percent over age 35 (Figure 3). Only 44 percent of women enrolled in WIC were married, whereas 51 percent of mothers of WIC infants and children were married.

Figure 3. Age of WIC Women and WIC Moms



The majority of WIC women and mothers have completed 12 years of education, but approximately 30 percent are beyond high school age and have not completed high school (Figure 4). Approximately 13 percent of WIC women are enrolled in college full-time or part-time at the time they enroll in WIC; and 15 percent of mothers of infants and children are enrolled in college full-time or part-time.

Figure 4. Education of WIC Women and WIC Moms

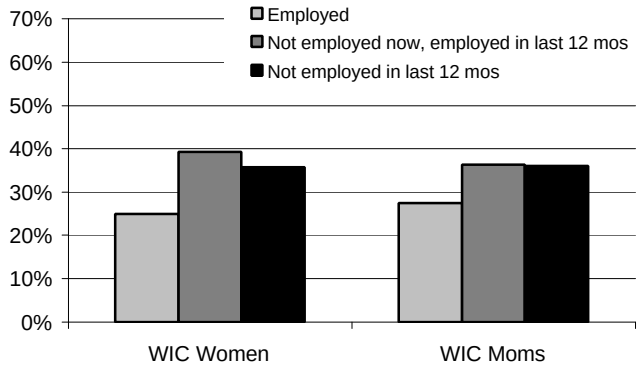


Approximately one-quarter of WIC women are employed at the time that they apply to the WIC program, and about 28 percent of WIC mothers are employed. The employment rate is highest among WIC pregnant women, with 32 percent employed.

[3] The distributions of WIC participants by certification category in 1988 and 1998 are shown in Exhibit 3-1 of Chapter 3.

For both WIC women and WIC mothers, more than half of those not employed were employed in the past year (Figure 5). The most common reason for not working is "keeping house" (this reason was given by 44 percent of pregnant women who were not working and over 60 percent of breastfeeding women, postpartum women, and mothers of infants and children who were not working).

Figure 5. Employment Status of WIC Women/Moms

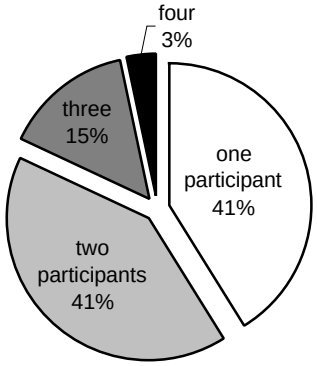


Characteristics of the WIC Economic Unit

The average size of the WIC family or economic unit is 4.0 persons. Most WIC participants reside in single-family households, but 15 percent reside with extended family in multi-family households.

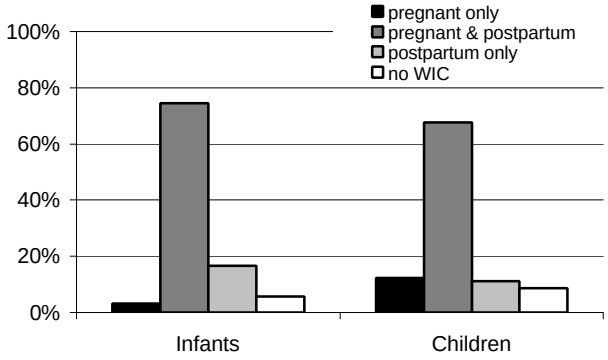
The number of WIC participants per family is shown in Figure 6. The majority of WIC participants (58 percent) have at least one other family member also participating in WIC.

Figure 6. Number WIC Participants Per Family



Evidence shows that WIC provides continuity of care for participants and their families. Nearly 80 percent of mothers of WIC infants and children participated in WIC when pregnant with their children (first two columns of Figure 7). When pregnant women participate in WIC while pregnant, both mother and child benefit; additionally, prenatal WIC enrollment is associated with earlier WIC enrollment for infants. Enrollment of infants within the first month of life is twice as likely to occur when the mother participated in WIC while pregnant.

Figure 7. Mothers' WIC Participation

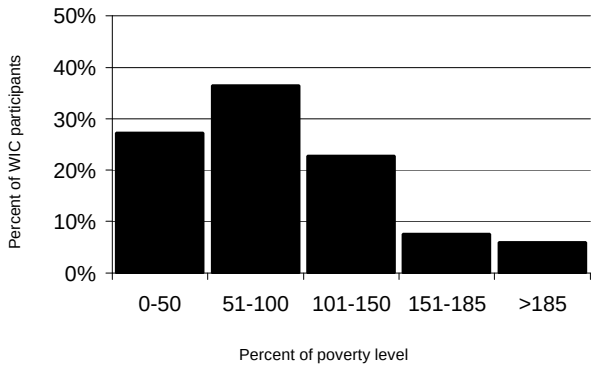


Slightly less than half (45 percent) of WIC infants and children have siblings who are also age-eligible for WIC. Most age-eligible siblings also participate in WIC. The likelihood of a sibling's participation, however, declines with the sibling's age: 94 percent of siblings under 1 year old participate in WIC, compared to 70 percent of siblings who are 4 years old.

Income of the WIC Economic Unit

The income cutoff for WIC eligibility is 185 percent of the federal poverty level. Nearly two-thirds of WIC participants reside in families with income below the poverty level and 23 percent have income between 100 and 150 percent of the poverty level (Figure 8). Six percent of WIC participants have income above 185 percent of poverty; some of these participants qualify for WIC on the basis of established eligibility for Medicaid, whereas others were certified in error, as is discussed further in a later section.

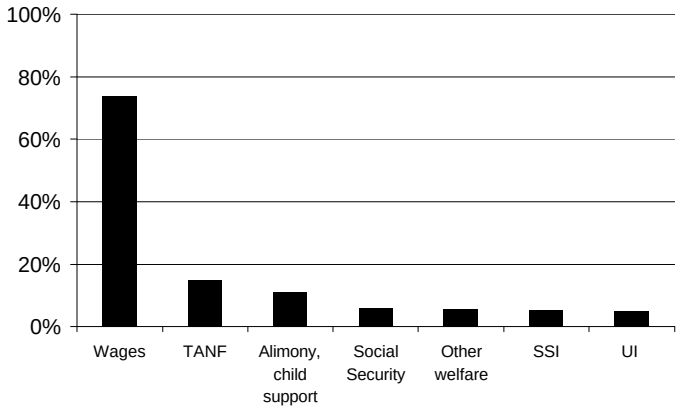
Figure 8. Income as Percent of Poverty Level



Although WIC families are low-income, nearly three-fourths of all WIC participants reside in families with wage earners. In addition to wages, the most common sources of income for WIC families are TANF (received by 15 percent of families) and alimony or child support (received by 11 percent). As shown in Figure 9, income from unemployment insurance, social security, Supplemental Security Income (SSI), or other welfare programs is received by fewer than 6 percent of WIC families.

On average, WIC families with wage income receive about $1,400 per month in wage income. For other income sources, the average amounts received by those with income are: TANF ($386), alimony ($289), Social Security ($635), other welfare ($385), and SSI ($529). Due to the low rates of receipt of non-wage income, the average receipt of non-wage income is less than $200 per month when measured across all WIC families.

Figure 9. Percent of Families with Income Source

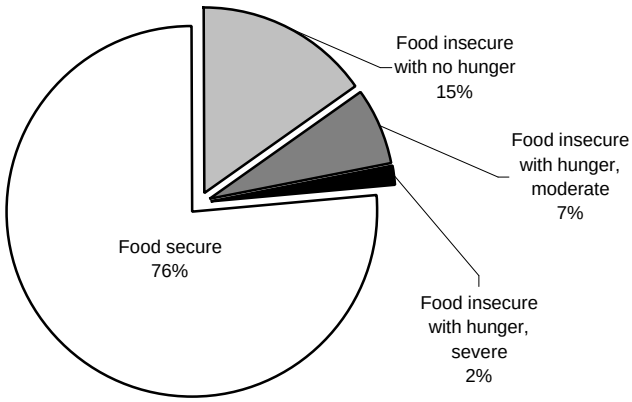


Food Assistance, Food Spending, and Food Security

The NSWP found that nearly one-half (47 percent) of families with WIC participants received some other source of food assistance at the time that they enrolled in WIC. USDA programs were the most common source of assistance, with 33 percent of families receiving food stamps, 27 percent participating in the National School Lunch Program, and 21 percent participating in the School Breakfast Program. Local food pantries were a source of food assistance for fewer than 5 percent of WIC families.

On average, WIC families spend 25 dollars per person on food each week, with the great majority (85 percent) of food spending for food at home. Based on their experiences in the 12 months prior to WIC certification, slightly less than one-fourth of WIC families lack food security. Food security is a new composite measure based on responses to 18 survey questions developed by USDA.[4] Fifteen percent of WIC participants are "food insecure without hunger," 7 percent are "food insecure with hunger, moderate" and about 2 percent are "food insecure with hunger, severe" (Figure 10).

Figure 10. Food Security Status of WIC Families

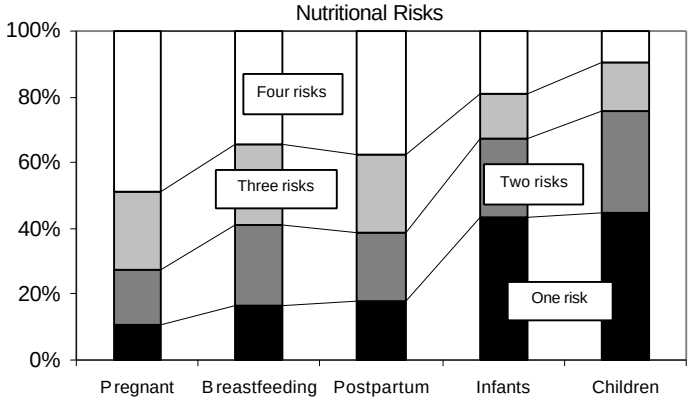


Nutritional Risk Factors

Applicants to the WIC program must demonstrate nutritional risk, defined by detrimental or abnormal nutritional conditions, nutritionally related medical conditions, dietary deficiencies that impair or endanger health, or conditions that predispose persons to inadequate nutritional patterns or nutritionally related medical conditions. One of the goals of NSWP was to collect comparable data on the incidence of nutrition risks for all sampled persons.

NSWP found that the majority of WIC participants have more than one nutrition risk at the time they enroll in the program. The number of nutrition risks varies substantially, however, by participant category. Figure 11 shows the distribution of participants by number of risks. Only 15 percent of all women have a single risk, whereas 42 percent have four or more risks. In contrast, 44 percent of infants and children have a single risk, and 13 percent have four or more risks.

Figure 11. Percent of WIC Participants By Number of Nutritional Risks

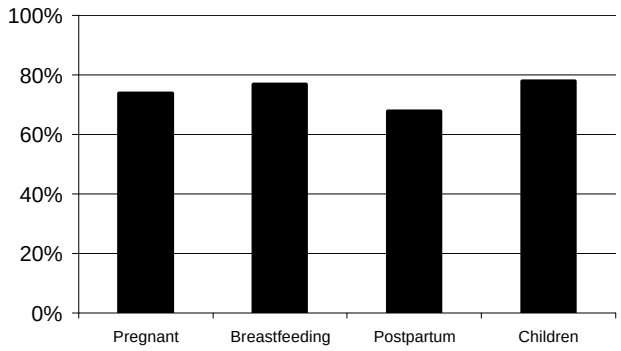


By far, the most prevalent nutrition risk among all WIC enrollees is the failure to meet dietary guidelines. More than two-thirds of all women and children who enroll in WIC are at dietary risk (Figure 12). Other common risks for women are overweight (43 percent) and risk of anemia (30 percent). The risks most common among children, other than failure to meet dietary guidelines, are risk of anemia (24 percent), overweight (17 percent), and short stature (14 percent). Many infants do

[4] The survey questions identify specific conditions of household food insufficiency, reduced quality and variety of foods, patterns of reduced food intake, and direct hunger for adults and children.

not exhibit a specific nutrition risk but are enrolled in WIC on the basis of their mother's current enrollment and documented risk; 42 percent of all infants have no other risk.

Figure 12. Percent not Meeting Dietary Guidelines



Incidence and Duration of Breastfeeding

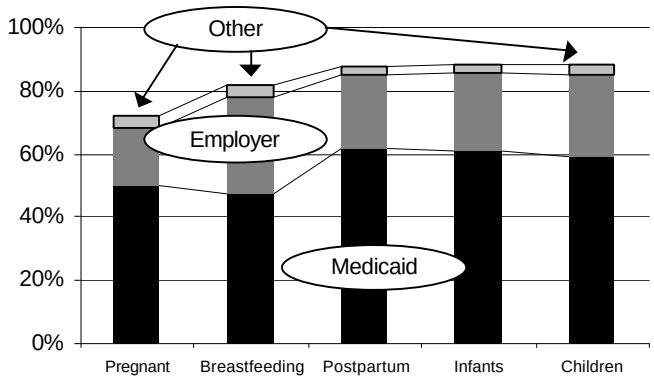
NSWP examined the breastfeeding experience of WIC participants and their siblings. One-half of WIC children and 56 percent of WIC infants had been breastfed for at least some period of time. Among WIC children who were breastfed, the median duration of breastfeeding was about 4 months and 85 percent were breastfed at least one month. The median duration of breastfeeding among infants was not determined because 60 percent of infants who were breastfed were still breastfeeding at the time of the NSWP interview.

NSWP found that the decision to breastfeed carries over multiple children in a family. Among WIC infants with siblings, 78 percent of breastfed infants had siblings who were breastfed, wheras only 17 percent of non-breastfed infants had siblings who were breastfed. Similarly, among WIC children with siblings, 86 percent of breastfed children had siblings who were breastfed, whereas only 18 percent of non-breastfed children had siblings who were breastfed.

Health Insurance Coverage

WIC is not a health care provider, but to ensure that WIC participants receive health care, WIC provides screening and referrals to other health, welfare and social service agencies. NSWP found that 83 percent of WIC enrollees had health insurance at the time that they applied to WIC. Most WIC enrollees receive health insurance from the government's Medicaid program (58 percent); about one-fourth have employer-provided insurance.

Figure 13. Health Insurance Coverage



Because Medicaid eligibility varies across states, all WIC enrollees are not eligible for Medicaid. At the time NSWP was fielded, Medicaid income-eligibility was at or above the WIC income limit in 29 of the 50 states.[5] NSWP found that even in states where all WIC participants are eligible for Medicaid, 14 percent of WIC participants have no health insurance.

[5] Thirty-eight percent of the NSWP sample lived in states with a Medicaid income limit equal to or greater than the WIC income limit.

The potential impact of WIC referrals on health insurance coverage can be seen in the different rates of health insurance for NSWP respondents enrolling in WIC for the first time, compared to those re-certifying in WIC. In states where all WIC participants are Medicaid-eligible, prior WIC experience is associated with a statistically significant ten-percentage point increase in the Medicaid enrollment rate; 57 percent of first-time WIC participants were enrolled in Medicaid, compared to 67 percent of WIC re-enrollees.

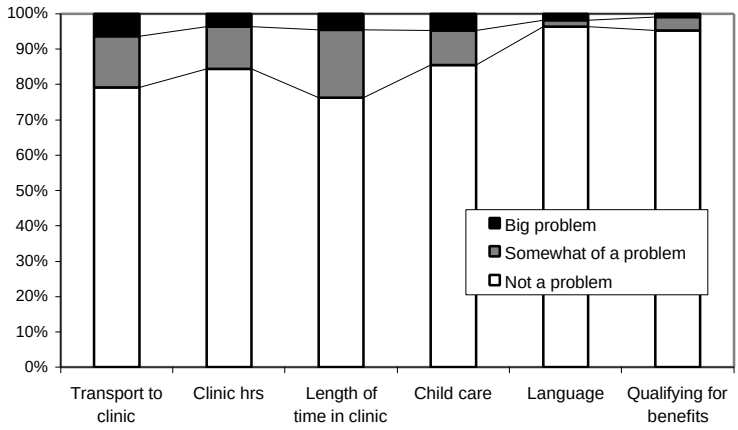
Factors Affecting Enrollment and Continued Participation

NSWP included a "customer satisfaction" module to ask respondents how they learned about the WIC program and whether they perceived barriers to WIC participation. Respondents with prior WIC experience were also asked about their satisfaction with WIC food benefits, their rating of the value of WIC services, whether they ever missed WIC appointments, and their experience shopping for WIC foods.[6]

Most WIC enrollees learn about WIC from friends, family members, and doctors (each was cited by about one-third of respondents). Relatively few WIC participants cited program advertisements as a source of information referring them to the WIC program.

Few NSWP respondents perceived "big problems" or barriers to WIC participation. Respondents were asked about several categories of potential problems, shown in Figure 14. Only "transportation to the clinic" was perceived as a big problem by more than 5 percent of respondents. Between 10 and 15 percent of respondents reported "somewhat of a problem" with factors affecting access to WIC clinics, but overall, the majority of respondents did not perceive barriers to WIC participation.

Figure 14. Perceived Barriers to WIC Participation

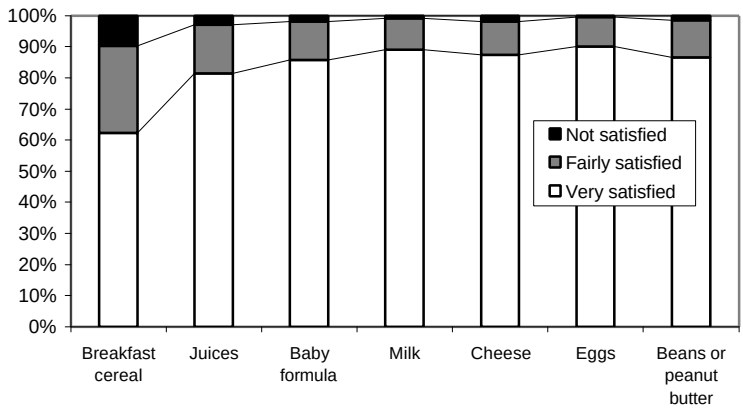


NSWP respondents who had prior WIC experience were asked about satisfaction with WIC foods. Figure 15 shows the distribution of satisfaction with brands of foods. Except for breakfast cereals, more than 80 percent reported being "very satisfied" with brands, and less than 15 percent reported they were only "fairly satisfied." Breakfast cereals received the greatest dissatisfaction response, with 10 percent of respondents "not satisfied" with brands of cereals, and 28 percent only "fairly satisfied."

[6] Questions about WIC food satisfaction were not administered to a random sample of all WIC participants. Because of the sample design, these questions were administered to a random sample of WIC participants who recertified in the program. These participants may be expected to have higher levels of satisfaction than participants who voluntarily withdraw from the program or fail to apply for recertification.

The distribution of satisfaction with food quantities was consistent across all food categories. More than 80 percent of respondents were "very satisfied" with quantities of food, including breakfast cereal.

Figure 15. Satisfaction with Brands of WIC Foods



These high levels of satisfaction with brands and quantities of food correlate well with respondents' answers to questions of whether they usually purchased all food items listed on the food voucher. Nearly 93 percent of respondents said they usually purchased all items. No single WIC food category was identified as being particularly prone to being not purchased.

With respect to prior use of food vouchers at the store, 83.9 percent of respondents said it was "easy" to use the vouchers, 14.2 percent said "sometimes confusing," and 1.9 percent said shopping with vouchers was "often confusing."

The WIC program may yield many intangible benefits for participants in addition to the tangible benefits of supplemental foods, nutrition education, and referrals to other health and social service agencies. NSWP asked those respondents with prior WIC experience to rate the value of potential WIC benefits on a scale of 0 to 5. Of the 12 potential benefits presented to respondents, only 2 received an average rating below 4: "time to talk with other mothers" and "taught me about breastfeeding." The highest rated benefits are "vouchers for foods I know are nutritious" (4.7), "money saved on grocery bills" (4.5), "nutrition information"(4.4), and "checking blood, height, and weight" (4.4).

In an effort to operate efficiently, most WIC service sites schedule appointments with participants for measurement of health and nutrition status, nutrition education, and voucher pickup. Nearly one-half (45.6 percent) of prior WIC participants said they had missed one or more appointments at the WIC clinic, although 19.3 percent said that they had missed only one appointment. The most common reasons given for missing an appointment were "forgot to go" (42.5 percent) and "trouble finding transportation" (29.9 percent).

WIC Income-Eligibility Determination and Errors in Income Certification

The NSWP provided data for estimating the national case error rate in WIC certification. Incidence of errors in income eligibility were determined by collecting information about participants' family income and comparing income to WIC income-eligibility guidelines. The report reviews WIC income-eligibility guidelines for the 26 states and 79 local WIC agencies represented in the NSWP sample, and presents estimates of certification error.

WIC Income Eligibility Guidelines

In 1988, the WIC Income Verification Study reviewed policies and procedures for WIC income-eligibility determination in 25 states. That study found policies and procedures for determining WIC countable income showed near complete agreement across states, but policies and procedures for determining an applicant's economic unit (family size) indicated significant state-to-state variation, sometimes due to contradictory guidelines.

In 1998, the NSWP found that policies for determining WIC countable income remained nearly unchanged since 1988, still showing near complete agreement across states. Policies for determining an applicant's economic unit (family size) again showed state-to-state variation. In contrast to 1988, however, most of the variation across states stems from rules regarding households with separate economic units and applicants who are minors, and remaining variation is due to differences in the comprehensiveness of guidelines and **not** from contradictory guidelines.

In 1998, state WIC agency policies did not reveal contrary guidelines, as they had in 1988. Most of the uniformity in guidelines that developed during the ten-year period between studies appears to be due to FNS instructions and written guidelines, which are evident in state WIC manuals.

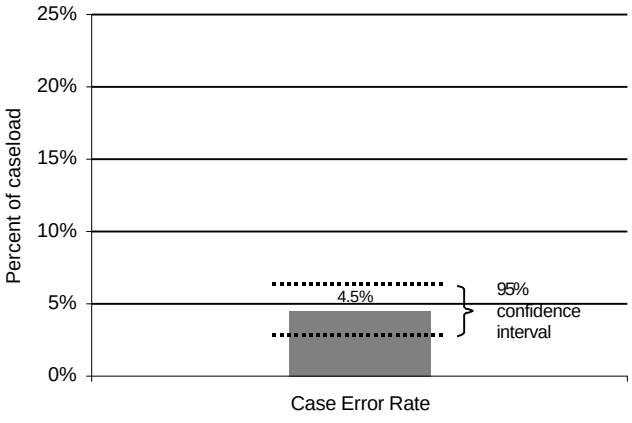
Estimates of WIC Income Certification Error for the Contiguous United States

The WIC case error rate is the percentage of enrollees certified to receive, but not eligible for, WIC benefits; the dollar error is the amount of total WIC food funds spent on ineligible participants. Estimates of certification error are based on in-home interviews with a national sample of WIC participants in the contiguous United States in spring 1998. In FY98, the contiguous United States accounted for 96 percent of WIC participants and 95 percent of federal WIC food expenditures.

NSWP in-home interviews were designed to verify income information through review of income documents, when available. This survey preceded implementation of provisions requiring WIC participants to document income at WIC certification as provided in the William F. Goodling Child Nutrition Reauthorization Act of 1998.

Analysis of WIC certification case error yielded an estimate of the error rate for the contiguous United States of 4.5 percent. This estimate is associated with a 95 percent confidence interval, as shown in Figure 16. The confidence interval indicates that we are 95 percent confident that the national WIC income-eligibility error rate falls between 2.8 and 6.2 percent, with the most likely value at 4.5 percent.

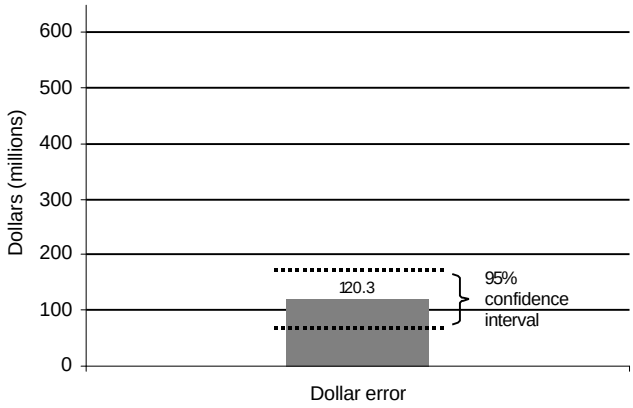
Figure 16. Estimate of WIC Case Error Rate



The estimate of the case error rate yields a corresponding estimate of annual dollar error for the contiguous

U.S. of $120 million, out of a total of $2.6 billion in WIC food benefits disbursed in FY98. This estimate, together with the 95 percent confidence interval, is displayed in Figure 17. (The scale of this exhibit represents one-fourth of annual WIC food expenditures.) The 95 percent confidence interval extends from $68.9 to $171.9 million dollars, or from 2.3 to 5.7 percent of annual WIC food costs.

Figure 17. Estimate of Annual WIC Dollar Error



NSWP findings show that most applicants certified for WIC are correctly determined to be income-eligible. For those found ineligible, it is not possible to make statements about sources of error because the sample size of ineligible participants is not large enough to yield statistical precision.

An important finding of this study is that the WIC certification error rate estimate for FY98 is not statistically different from the error rate estimate for FY88. During this ten-year period the WIC program experienced enormous growth. For FY88—the last time that WIC certification error was analyzed—findings revealed a case error rate of 5.7 percent and dollar error of $84 million out of total WIC food costs of $1.5 billion. For FY98, we estimate a case error rate of 4.5 percent for the contiguous United States and dollar error of $120 million out of total WIC food costs of $2.6 billion.

In addition, this study found a statistically significant relationship between the case error rate and the income documentation policy of WIC agencies. The error rate among cases enrolled at agencies requiring income documentation was 2.9%, compared to 6.4% for those enrolled at agencies that did not require income documentation. The provisions of the William F. Goodling Child Nutrition Reauthorization Act of 1998, requiring income documentation at all WIC agencies, became effective in 2000.

Chapter 1
Introduction

1.1 Overview of the WIC Program

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) is administered by the Food and Nutrition Service of the US Department of Agriculture (USDA). WIC was established in 1972 to counteract the negative effects of poverty on prenatal and pediatric health, and it provides a combination of direct nutritional supplementation, nutrition education and counseling, and increased access to health care and social service providers for pregnant, breastfeeding, and postpartum women; infants; and children up to the age of five years. By intervening during the prenatal period, WIC seeks to improve fetal development and reduce the incidence of low birthweight, short gestation, and anemia. Infants and children who are at nutritional or health risk can receive food supplements, nutrition education, and access to health care to maintain and improve their health and development.

An amendment to the Child Nutrition Act of 1966 established the WIC Program in 1972. WIC has vastly expanded since its inception; in April 1998, WIC had approximately eight million enrolled participants and dispersed 2.8 billion dollars of food benefits.

At the federal level, the WIC Program is administered by USDA's Food and Nutrition Service (FNS). FNS headquarters staff establish program policy, write program regulations, and provide program information to the Secretary of USDA and the Congress. FNS has seven regional offices, whose staff have responsibility for direct communication with 88 state WIC agencies. These WIC agencies are located in each of the 50 states and in American Samoa, the District of Columbia, Guam, Puerto Rico, and the American Virgin Islands. In addition, 33 Indian Tribal Organizations (ITOs) serve as state WIC agencies. Approximately 2,200 local WIC agencies provide services to participants at about 9,000 service sites.[1]

Program Eligibility

To be eligible for WIC benefits, applicants must meet three types of eligibility criteria: categorical, nutritional, and income.

Categorical eligibility is limited to five groups of applicants:

- pregnant women up to six weeks postpartum
- breastfeeding women up to one year after childbirth
- non-breastfeeding women up to six months after delivery
- infants up to one year old
- children aged one through four years (i.e., until their fifth birthday)

1 Bartlett, Susan, Melanie Brown-Lyons, Douglas Moore, and Angela Estacion, *WIC Participant and Program Characteristics 1998,* WIC-00-PC, Alexandria, VA: USDA/ FNS/Office of Analysis, Nutrition and Evaluation, 2000, Julie Kresge, Project Officer.

To be nutritionally eligible, each applicant must be determined to be at nutritional risk. The determination must be based on a medical or nutritional assessment conducted by a competent professional authority, such as a physician, nutritionist, registered nurse, dietitian, or other health professional. In 1998, at the time data were collected for this study, individual state WIC agencies established their own nutritional risk criteria, following broad guidelines published in federal regulations. Since 1998, the WIC Program has identified a set of specific nutrition risk criteria that may be employed uniformly by state WIC agencies in determining nutrition risks of WIC applicants.[2] At the time this study was fielded, however, nutrition risk included the following broad categories of risk, as specified in the implementing legislation:[3]

- detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements
- other documented nutritionally related medical conditions
- dietary deficiencies that impair or endanger health
- conditions that directly affect the nutritional health of a person, such as alcoholism or drug abuse
- conditions that predispose persons to inadequate nutritional patterns or nutritionally related medical conditions, including, but not limited to, homelessness and migrancy.

As with nutritional risk criteria, income-eligibility criteria are set by each state agency. Per federal regulations, a state WIC agency may adopt federal income guidelines for reduced-price school meals under the National School Lunch Act (currently legislated at 185 percent of the Federal Poverty Income Guidelines), or establish income guidelines identical to state or local guidelines for free or reduce-price health care. The income limit may not exceed 185 percent or be less than 100 percent of the Federal Poverty Income Guidelines.

Benefits

WIC participants receive supplemental food, nutrition education, and referral to health and social services.

Supplemental food is provided in the form of food, food vouchers or food checks and is designed to provide specific nutrients known to be lacking in the diets of low-income and nutritionally at-risk populations. Seven different food packages are defined by federal WIC regulations: two for infants who are age-dependent; one for children or women with special dietary needs; one for children aged one through four years; one for pregnant and breastfeeding women; one for non-breastfeeding postpartum women; and an enhanced package for breastfeeding women. FNS regulations specify the maximum

2 The National Academy of Sciences Institute of Medicine examined the scientific basis for nutritional risk criteria and made recommendations to the WIC Program. Together, FNS and representatives of the National Association of WIC Directors identified a set of uniformly defined criteria that may be employed by state WIC agencies.

3 42 USC Sec. 1786 (b)(8).

amount of food allowed in each food package. Tailoring of food packages is allowed to improve administrative efficiency or to meet the nutritional needs of individual WIC participants.

Nutrition education is provided to participants when they come to the local service site to pick up their food vouchers or checks. Nutrition education may be provided in individual or group sessions; it is designed to improve the health status of participants by promoting a positive change in dietary habits and by emphasizing the relationships between good nutrition and good health. When applicable, breastfeeding practices are explained and promoted.

Referrals to health and social services also occur when participants come to service sites to pick up their food vouchers or checks. Program staff provide participants with information about the Medicaid program and other assistance programs for which the participant may be eligible. Information about local resources for substance abuse counseling and treatment is provided as needed.

1.2 The National Survey of WIC Participants

The National Survey of WIC Participants and Their Local Agencies (NSWP) has two main goals. The first goal is to provide, for a nationally-representative sample of WIC participants, supplemental data about WIC household composition, income, and other information that allow FNS to understand better characteristics of WIC participants that are not typically part of WIC information management systems. The second goal is to provide a nationally-representative estimate of case error rates and dollar error rates within the WIC Program.

The entire NSWP, which is described in more detail in Chapter 2, includes four separate surveys conducted in 1998: an in-person interview with 3,114 participants as they were being certified for WIC benefits; a mail-out survey of the 79 local WIC agencies serving these participants; an in-home survey of a sample of about one-third of the participants who responded to the in-person survey; and follow-up telephone interviews of a sample of in-home survey respondents who reported earnings or an earnings history. Together, responses to these four surveys address the study's two main goals.

Provision of Supplemental Data

FNS compiles biennial reports on WIC participant and program characteristics based on information contained in state WIC management information systems. The data, referred to as WIC's Minimum Data Set, are used for general program monitoring as well as for managing the information needs of the program. FNS uses this regularly-updated WIC Program information to estimate budgets, identify needs for research, and review current and proposed WIC policies and procedures.

Collectively, these WIC participant and program characteristics reports are referred to as the "PC reports." For instance, "PC98" refers to the report, based on 1998 data, which was released in 2000.[4]

4 The full citation is Bartlett, Susan, Melanie Brown-Lyons, Douglas Moore, and Angela Estacion, *WIC Participant and Program Characteristics 1998*, WIC-00-PC, Alexandria, VA: USDA/ FNS/Office of Analysis, Nutrition and Evaluation, 2000, Julie Kresge, Project Officer.

Recent PC reports are based on administrative data files provided by state WIC agencies.[5] These data files provide information on nearly all WIC participants in April of each data collection year. Their strength lies in the uniformity and near-census attributes of the data collected. With data from the PCs, FNS can report, with virtually no estimation error, age, gender (for infants and children), size of economic unit, race/ethnicity, up to three nutrition risks, blood measures (for women and children), height, weight, trimester of enrollment (for pregnant women), and participation in other programs for the universe of WIC participants.

As powerful a reporting tool as the PCs have become, they still have limitations:

- PC information on nutrition risks may underestimate the incidence of risk for two reasons: a maximum of three risks is reported, even if the participant has more than three nutrition risks; and some WIC service sites may not assess all relevant risks after a single risk is identified and eligibility thus confirmed.

- The PCs include no information on the composition of the WIC economic unit; only the size of the economic unit is reported.

- The PCs report total income of the WIC economic unit and participation in government assistance programs, but they provide no information on specific sources of income or the amount received from each source. Furthermore, income amounts are typically not reported for approximately 10 to 15 percent of all WIC participants, in part because WIC applicants participating in the Food Stamp Program (FSP), the Temporary Assistance for Needy Families (TANF) program, or Medicaid are adjunctively income-eligible for WIC participation and are not required to provide income information to WIC.

To enhance FNS' ability to monitor the WIC Program and respond to information requests, the agency sponsored the NSWP. The information collected by the NSWP's in-person survey is broader and more detailed than the data available in the PC reports. The in-person survey was conducted in WIC clinics and collected information about:

- All persons living with the WIC participant, including age, gender, relationship to participant, financial support provided or received, and WIC participation status.

- Each child living with the WIC participant, including date of birth, mother's receipt of WIC during pregnancy, each child's breastfeeding history, each child's history of enrollment in WIC, and each child's attendance of Head Start.

- Each adult living with the WIC participant, including marital status, employment status, reason for not working (if not employed), enrollment in the Armed Forces, educational level, and the amounts and sources of earned income and unearned income.

5 The earlier PC reports—those in 1984, 1988, and 1990—were based on field interviews with nationally-representative samples of WIC participants. FNS did not conduct a study in 1986.

- For the entire WIC household, the amounts and sources of investment income and income from alimony, child support, lump sum payments, public assistance, and the value of benefits from the FSP.

- Food spending for the WIC family, participation in food assistance programs other than the FSP, and food security.

- Health insurance for the WIC participant; services provided by the health plan; for those with no health insurance, reason(s) for not having insurance; and household enrollment in Medicaid.

- How the participant learned about WIC, the degree to which certain factors make WIC participation difficult, satisfaction with the WIC food prescription (brands and quantities), perceived benefits of WIC participation, problems with missed WIC appointments, and description of WIC shopping patterns.

In addition, service site staff completed forms indicating all nutrition risks that were assessed and identified for each sampled participant.

Estimates of Case and Dollar Error Rates

The second goal of the NSWP is to provide new estimates of case error and dollar error rates within the WIC Program. In 1990 FNS released findings from its WIC income verification (WIV) study.[6] That study estimated a national certification error rate of 5.7 percent; the estimated dollar error rate was 5.8 percent.[7] The estimates were based on in-home audits of a national sample of WIC participants. This dollar error rate translated into $84 million spent on ineligible participants out of a total food expenditure of about $1.4 billion in FY88. The audits found income misreporting at certification to be high—over 43 percent of participants under-reported their income, and 22 percent over-reported their income. Due to the actual low level of participant incomes, however, most misreporting did not translate directly into errors of eligibility.

The WIC Program and caseload have changed greatly since the last income verification study, so there is an increasing need for current information about case and dollar error rates. In 1988, the WIC Program spent about $1.4 billion for food supplementation and served an average monthly enrollment of about 3.4 million. Ten years later, the average monthly enrollment had more than doubled to over 8.0 million, and total food expenditures had increased to $2.8 billion. With this growth, there have been major changes in the composition of the caseload, reflecting changes in the overall population. For instance, a disproportionate amount of WIC caseload growth occurred in the Western states, which accounted for 13 percent of total WIC participants in 1988, and 24 percent of WIC participants in 1998.[8] This regional

6 USDA/FNS, WIC Income Verification Study: Final Report, undated.

7 The dollar error rate is defined as the estimated value of food packages issued to ineligible participants divided by the total value of all issued food packages.

8 The Western region, as defined by FNS for program administration, includes Alaska, Arizona, California, Hawaii, Idaho, Nevada, Oregon, Washington, the territories of American Samoa and Guam, and three Indian Tribal Organizations.

shift is reflected in the racial/ethnic distribution of WIC participants, with Hispanics becoming a larger proportion of the caseload (Hispanics were 21 percent of the caseload in 1988 and 32 percent in 1998).

Other changes also are evident from the PC reports. As a percentage of all WIC participants, pregnant women and infants decreased slightly, whereas postpartum women more than doubled; children rose as a percentage of all WIC participants, from 47 percent in 1988 to 51 percent in 1998.[9] Other factors, such as the distribution of income among WIC participants measured relative to the federal poverty guidelines, showed only slight changes over the ten-year period.

1.3 Organization of the Report

The remainder of this report is divided into three chapters. Chapter 2 addresses methodological issues, providing a general description of the NSWP sample design, survey operations, and sample representativeness. Chapter 2 is supplemented by three appendices that deal with survey and analysis methods. Appendix A provides detailed information about sample design and weighting procedures for survey data. Appendix B describes procedures followed for the imputation of unreported data items, and Appendix C describes the study's procedures for calculating the food security index.

Chapter 3 of the report addresses the study's first goal, that of providing supplemental information about WIC participants and their households. Chapter 3 provides over 60 tables of information about participant characteristics; the size and composition of the WIC economic unit; income sources and amounts; participants' nutritional risks; food assistance, food spending, and food security; health insurance coverage; participants' history with the WIC Program; and participants' view of the program. The data are based on the in-person survey of 3,114 WIC participants as they applied for WIC certification or recertification. In addition, the stability of WIC economic units' employment status and participation in adjunct programs (TANF and food stamps) is examined based on a follow-up telephone survey of a sample of 558 respondents to the in-person survey. A copy of the in-person survey instrument is included in Appendix D. Appendix E provides supplementary information (standard errors of the estimates) about the tables presented in Chapter 3.

Chapter 4 of the report addresses the NSWP's second goal of estimating case and dollar error rates within WIC. Chapter 4 includes a review of WIC income eligibility criteria and the results of in-home interviews with a random sample of 931 respondents to the in-person survey. In-home interviews provided an opportunity to verify respondents' income reports through review of income documents. The major sections of this chapter address derivation of the size and composition of the WIC economic unit, calculation of total income for the economic unit, and derivation of case and dollar error rates.

9 The distributions of WIC participants by certification category in 1988 and 1998 are shown in Exhibit 3-1 of Chapter 3.

Chapter 2
NSWP Sample Design, Survey Operations, and Sample Representativeness

The NSWP was designed to provide information on the characteristics of a representative sample of WIC participants certified for WIC benefits during spring 1998. The NSWP sample of participants was selected through a multi-stage sample design with coverage in the contiguous United States. Approximately 4,000 WIC participants were selected for the main NSWP sample; interviewers were able to obtain interviews with 3,114 sampled participants or their parents/guardians.

The NSWP consists of three surveys of WIC participants and a survey of the local WIC agencies certifying those WIC participants:

- **In-person survey.** In-person interviews were conducted with 3,114 WIC participants, certified in 79 local WIC agencies, at 178 WIC service sites throughout the contiguous United States. WIC participants were randomly sampled for interviews at the time of their WIC certification. In-person interviews collected information about household composition, demographics, individual and household income, nutrition risks, participation in public assistance programs, history of family participation in WIC, food security, health insurance status, and satisfaction with WIC benefits.

- **In-home survey.** Approximately one out of every three persons selected for in-person interviews was also selected for follow-up interviews in their homes. The in-home survey was designed to verify income information through review of household income documents. In-home interviews were completed with 931 respondents.

- **Telephone follow-up.** Approximately two-thirds of respondents to both the in-person and in-home surveys were chosen for telephone follow-up interviews, conducted approximately four months after their initial in-person interview. The telephone follow-up survey collected information about employment status and participation in adjunct programs four months into the WIC certification period. Telephone follow-up interviews were completed with 558 respondents.

- **Local agency survey.** The local agency survey was conducted with the 79 agencies certifying WIC participants selected for the in-person survey. This mail survey collected information about local WIC agency organization and operations.

In addition, WIC administrative data were collected for WIC participants responding to the surveys.

This chapter contains a description of the sample design for the NSWP, a description of data collection activities, and an examination of the representativeness of the NSWP sample.

The NSWP sample is a survey of WIC "participants" in the strictest sense of the word. Interview data were weighted so that the counts of certifications matched the population caseload counts reported in the 1998 Study of WIC Participants and Program Characteristics (PC98), based on state submission of administrative data for all WIC enrollees (despite its title).

Throughout this report, the NSWP sample is referred to as a sample of WIC participants. In fact, the NSWP sample frame included all WIC applicants who were certified during the sample period in spring 1998. It is therefore a sample of WIC enrollees. WIC regulations strictly define program participants as those individuals "who are receiving supplemental foods or food instruments under the Program, and the breastfed infants of participant breastfeeding women."[1] Under this definition, WIC participants are a subset of WIC enrollees. Enrollees include all individuals who have applied and been certified for program benefits, but enrollees who fail to pick up their current food instruments are not considered participants.

At the time of certification, all enrollees are participants because WIC clinic staff issue food instruments at certification.

2.1 Sample Design

The NSWP used hierarchical cluster sampling to obtain a national probability sample of WIC participants. The present section sketches the design of that sample. Appendix A describes the sample design in detail.

Sampling proceeded in four stages:

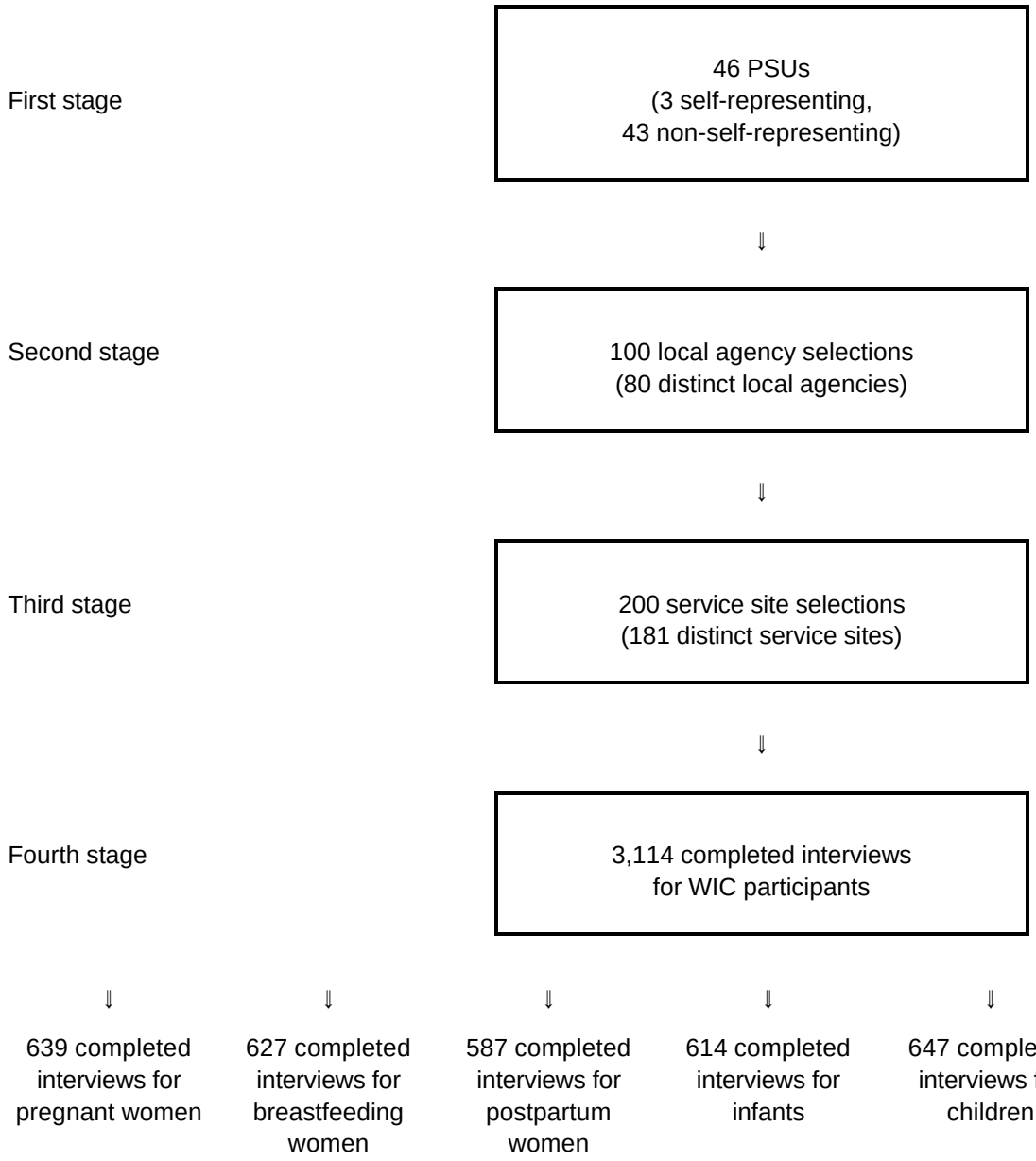
Primary sampling units
⇓
Local agencies
⇓
Service sites
⇓
WIC participants

At the first stage the sampling frame consisted of primary sampling units (PSUs), defined as metropolitan statistical areas (MSA) or non-MSA clusters of counties. Local agencies were sampled within PSUs; an average of two service sites were sampled for each local agency; finally, random samples of WIC certifications and recertifications were drawn (by participant category) at each chosen service site. At the first three stages of sampling, units were selected with probability proportional to a measure of size. The goal was to interview 3,000 WIC participants overall, with 600 from each of the five WIC participant categories (pregnant women, breastfeeding women, postpartum women, infants, and children). Exhibit 2-1 summarizes the overall structure of the sample design.

1 7CFR246.2.

Exhibit 2-1

Summary of the Final Sample Design for NSWP



Data from the 1996 Study of WIC Participant and Program Characteristics (PC96) were used to construct the sampling frame. The PC96 census counted the number of participants in each of the five certification categories in each local agency in April 1996. PC96 provided estimates of current numbers of WIC participants, and these estimates served as the measure of size for the first two stages of

sampling. For the third stage, the numbers of participants came from information on service-site caseloads provided by the local agencies selected at the second stage.

First Stage

Construction of the sampling frame of PSUs began by determining the county location of each local WIC agency. County location determined the agency's inclusion in an MSA PSU, or in a predefined non-MSA cluster of counties. The PC96 data on local agency caseloads were then aggregated to the PSU level.

The original design called for selection of 50 PSUs. Against this target, however, three PSUs (New York City, Chicago, and Los Angeles) had large enough numbers of participants to be selected with certainty. Indeed, New York City and Los Angeles were so large that, if only two local agencies had been selected from each city, their participants would have been seriously under-represented. We made the three certainty PSUs self-representing by allocating local-agency selections to them in proportion to their combined size, accounting for 14 of the 100 local agencies to be selected at the second stage of sampling. In preparation for obtaining the remaining 86 local agencies (a target of two per PSU), we completed the first-stage sample by selecting 43 non-self-representing PSUs. Thus, the number of PSUs totaled 46.

Second Stage

The design called for 100 local-agency selections. As mentioned above, we allocated 14 of these selections among the three self-representing PSUs and two selections to each of the 43 non-self- representing PSUs selected at the first stage. The sampling process assigned five selections to New York City, two to Chicago, and seven to Los Angeles. In Los Angeles one local agency was so large that it received five of the seven selections. Thus, we actually selected ten local agencies from the three self-representing PSUs.

In 16 of the 43 non-self-representing PSUs a single local agency received both of the selections, either because it accounted for more than half of the participants in the PSU or because it was the only local agency in that PSU. In these situations (parallel to the allocation of local agencies among the self-representing PSUs) we doubled the numbers of service sites and participants to be selected from that local agency (at the third and fourth stages). A total of 70 distinct local agencies were selected from the non-self-representing PSUs.

The total number of local agencies selected was 80.

Third Stage

To construct the sample frame for the third stage, we contacted each local agency selected at the second stage and obtained a list of its service sites and the expected number of monthly certifications. (Some local agencies provided average monthly caseloads, which we divided by 6 to obtain expected certifications—using 6 months as the typical certification period.) We then used the expected number of monthly certifications as the measure of size in selecting two service sites for each local-agency selection. If a local agency had only a single service site, or if a site was sufficiently large, the sampling process selected only one site for that local agency.

Exhibit 2-2 summarizes the sampling results in the first through third stages of selection. Where the actual number of local agencies or sites selected is smaller than the target number of selections, the

difference is accounted for by agencies or sites that received more than one selection in the sampling process.

Exhibit 2-2

Summary of Sampling Results through the Third Stage

	Self-Representing PSUs	Non-Self-Representing PSUs	Total
First-stage selections	3 PSUs	43 PSUs	46 PSUs
Second-stage selections	14 local agency hits (10 local agencies)	86 local agency hits (70 local agencies)	100 hits (80 agencies)
Third-stage selections	28 site hits (27 sites)	172 site hits (154 sites)	200 hits (181 sites)

We completed selection of the first-stage and second-stage sampling units in November 1997 and collected data for the site-level measures of size during December 1997 and January 1998, just prior to the field period beginning in March 1998.

Three of the 181 selected sites did not participate in the study. Two sites closed just prior to the start of the field period, and one site declined to take part in the study. Because of time constraints we could not replace these sites. The lost sites accounted for approximately 5 percent of the expected sample of participants at the fourth stage.

One of the three lost sites was the only selected site within its local agency, so the final number of selected local agencies is 79. The final number of selected sites is 178.

Fourth Stage

For the final stage of sampling in a selected local agency, we randomly assigned the two selected service sites to the planned March and April 1998 data collection periods. For those sites selected twice, we planned to collect data during both months.

During each site's assigned data collection period, we drew five random samples of participants (one sample per certification category) as they arrived for WIC certification or recertification. The number of participants sampled in each category at each site was a function of the site's caseload information, as previously reported by the local agencies. The overall target number of sampled participants was 800 per certification category, or 4,000 in total. With an expected survey response rate of 75 percent, the goal was 600 completed interviews per certification category for the in-person survey, or 3,000 total interviews. We completed interviews for 3,114 participants.

The samples of WIC participants were drawn at the selected service sites concurrent with field interviewing. The sampling frames of certifications in the five categories were constructed from sign-in

sheets maintained at each sample site. Systematic random sampling was used to draw the sample of certifications in each category, with the total number sampled in each category being proportional to the site's average monthly caseload within that category.

2.2 Response Rates

At the fourth stage of sampling, the numbers of persons selected allowed for non-response. For the five certification categories, Exhibit 2-3 shows total number of persons in the sample, the number of respondents, and the response rate. Response rates were reasonably uniform across certification categories, varying from 73.6 percent for infants to 79.0 percent for pregnant women. The overall average was 76.5 percent.

Exhibit 2-3

Summary of Sampling Results at the Fourth Stage of Sampling

Certification Category	Sample Persons	Respondents	Response Rate
Pregnant women	809	639	79.0%
Breastfeeding women	814	627	77.0
Postpartum women	787	587	74.6
Infants	834	614	73.6
Children	825	647	78.4
Total	4,069	3,114	76.5%

The response rates in Exhibit 2-3 reflect the loss of sampled persons for two reasons: non-response to the survey and ineligibility for the survey. Of the 955 persons sampled but not interviewed, 241 (25.2 percent) were ineligible for the survey for one of three reasons: (1) they were put on the sign-in sheets in error (they were not at the WIC service site for certification); (2) they were at the service site for certification but were ineligible; or (3) they were put on the wrong sign-in sheet. After accounting for these ineligible persons, the overall survey response rate (defined as completed interviews as a proportion of eligible persons) was 81.3 percent.

2.3 Weighting

For each participant who had a completed interview, the base sampling weight equaled the reciprocal of the probability of selection, taking into account the four stages of sampling. (Appendix A gives the

details of these weights.) We made a multiplicative adjustment to these base weights to compensate for non-response among the sampled certifications within cells defined by site and certification category.[2]

A further adjustment, using the iterative procedure known as raking, then brought the weighted counts of certifications into agreement with the population caseload counts for the contiguous United States, as reported in the 1998 Study of WIC Participant and Program Characteristics (PC98). Raking was done on three variables: certification category, FNS region, and MSA location. That is, for each of these three variables separately, the weighted sample total in each category equals the corresponding PC98 caseload count.

No weights have been calculated for the local agency survey. Data from this survey have been merged with the responses to the in-person survey to allow additional analysis of the in-person data. For any proposed studies in which local agencies are the unit of analysis, we recommend accessing the larger database of local agency data collected as part of PC98.

2.4 Calculation of Variances

The variances (and standard errors) of estimates calculated from the NSWP data are determined by the sample design and by the sampling weights of the individual participants. Appendix A discusses the relation of variances to the details of the sample design.

For all tables in this report, we used the STATA statistical software package to obtain point estimates and standard errors that took into account the sample design and the final sampling weights.[3] The survey estimation procedures in STATA account for stratification and clustering of the sample. The presence of certainty PSUs at the first stage of sampling led us to specify two strata for STATA: one contained the certainty PSUs, and the other contained the non-certainty PSUs. These two strata involve different levels of clustering, according to the stage at which the first random selection occurred. For STATA, in the stratum of certainty PSUs the primary sampling unit is the local agency; in the stratum of non-certainty PSUs it is the PSU. For a multistage cluster sample the variance-estimation procedures in STATA allow arbitrary clustering within the primary sampling units, but they do not distinguish among possible degrees of clustering (or lack of clustering) at lower levels. For the NSWP these lower-level clusters are the service sites in the stratum of certainty PSUs and the local agencies in the stratum of non-certainty PSUs. The inability to account for the effects of lower-level clustering on variance estimates is a limitation of the STATA software. The software's documentation says that these limitations produce variance estimates that generally will be approximately unbiased or, if biased, will be biased toward more conservative estimates. That is, the estimated standard errors will be larger than the true standard errors.

We cannot estimate the size of the possible bias in the estimated variances, but we expect any bias to be small because the first-stage selections sampled a small portion of all PSUs (on the order of 6 percent).

---

2 A few cells defined by site and certification category (4.7 percent) had no respondents. These cells were combined with cells from the other site for their local agency to calculate a non-response adjustment at the local agency level. For the 1.8 percent of cells that still had no respondents, we made the non-response adjustment at the PSU level. Although it may seem surprising that a cell would contain no respondents, the average number of completed interviews per cell was only 3.4 (i.e., 3,114 interviews divided by five certification categories divided by 181 service sites).

3 STATA Statistical Software, Release 6.0, College Station, TX: STATA Corporation, 1999.

Further, we note that this conservative approach reduces the chance of reporting a statistically significant effect or difference when none actually exists.

2.5 Data Collection

This section describes data collection procedures for each component of the NSWP. All data collection activities occurred between March and August 1998; the separate components of data collected are listed in Exhibit 2-4. The main sample of respondents for NSWP was the sample drawn for in-person interviews; the in-home and telephone follow-up samples were subsamples of the main sample.

Exhibit 2-4

NSWP Data Collection Activities in 1998

Data Collection Component	Location / Method of Data Collection	Dates[a]
In-person interviews	WIC service sites or scheduled telephone interviews / Paper-and-pencil survey	Mar 9 – Apr 11 Apr 13 – May 9
In-home interviews	WIC participants' homes / Paper-and-pencil survey	Mar 19 – Jun 17
Telephone follow-up	Computer-assisted telephone interviewing (CATI)	Aug – Sep
Nutritional risk checklist	WIC service sites / Form completed by nutritionist	Concurrent with in-person interviews
Certification forms	WIC service sites / Photocopying of certification forms	Concurrent with in-person interviews
Local agency survey	Mail survey to local WIC agencies selected at Stage 2 of sampling	Apr – May

a Dates listed for in-person interviews are the dates during which sampling was conducted in WIC service sites. When sampled persons were unable to complete an interview in WIC clinics on the day of sampling, in-person interviews were schedule to occur during a subsequent clinic visit or by telephone. Some of the telephone interviews fell outside the period of data collection listed.

In-Person Interviews

The in-person interviews collected detailed demographic information about WIC participants and their families, and these interviews are the source of the tabulations presented in Chapter 3 of this report.

In-person interviews were conducted at WIC service sites. The WIC service sites selected during the third stage of sampling were randomly divided into two groups, with each group assigned a survey period

of 4 or 5 weeks.[4] The sample was divided within local WIC agency (the second stage of sampling) so that each local agency contributed sample during the entire survey period. As previously mentioned, when only one site was selected within a local agency, that site contributed sample for the full survey period.

Sampling

Sampling of WIC participants for in-person interviews occurred on a rolling basis as persons appeared in WIC clinics for certification. Interviewers, with the help of clinic staff, maintained sign-in sheets on which persons appearing for certification entered their names and checked-off certification category (pregnant, breastfeeding, postpartum, infants, children). Interviewers transcribed names from the sign-in sheets to a sampling book, maintaining the order of persons from the sign-in sheet but entering names onto separate sampling pages for each certification category.[5] The sampling books were pre-marked with sample selections for both the in-person interview and the in-home interview. Approximately one-third of persons sampled for the in-person interview were also simultaneously sampled for the in-home interview.

Interview

For the most part, in-person interviews were conducted at WIC service sites following sampling. When sampled persons were unable to complete an interview in WIC clinics on the day of sampling, because of time constraints, in-person interviews were scheduled to occur during a subsequent clinic visit or by telephone. Seventy percent of sampled persons were interviewed on the day of sampling, and 87 percent were interviewed within one week of sampling. Nine percent of in-person interviews were conducted by telephone, 8 percent were conducted in Spanish, and three interviews were conducted in Chinese. The average completed length of the in-person interview was 39 minutes.[6]

The in-person interview was administered as a paper-and-pencil survey consisting of nine sections, shown in Exhibit 2-5. The household enumeration was the backbone of the survey, collecting information about each member of the sampled person's household, including financial support arrangements. Household members sharing financial support with the sampled person were the focus of subsequent questions regarding income, food security, and food spending.

The response rate for the in-person interview was 81.3 percent: 4,069 persons were sampled, 241 were found ineligible for the survey, and 3,114 completed the interview.[7] Respondents completing in-person interviews received T-shirts for their children to acknowledge their cooperation.

---

4 The original survey design included a total field period of eight weeks. After the first four weeks in the field, we extended the initial survey period by one week to meet required sample size. For the second survey period (beginning April 13), sampling rates were revised to ensure sufficient sample from a four-week field period.

5 Sampling rates varied among sites and among certification categories within site.

6 This number is a slight overestimate because some interviews began while respondents waited to see clinic personnel, and the NSWP interview was stopped and restarted to accommodate clinic functions. The length of the interview is calculated as the difference between the start and stop times.

7 Sampled persons were ineligible for the survey if they were sampled under the wrong certification category, were at the service site for services unrelated to certification when sampled, or were not subsequently certified for WIC.

Exhibit 2-5

Main Sections of the In-Person and In-Home Interviews

Sections of the In-Person Interview		Sections of the In-Home Interview	
Introduction and WIC history		Introduction	
A.	Household enumeration	A.	Household enumeration
B.	Child roster	B.	Employment history
C.	Adult roster	C.	Income review form: Individual income
D.	Individual income and earnings	D.	Household income review form
E.	Household income and food spending	E.	Immunizations
F.	Food security	F.	Contact information
G.	Health insurance		
H.	Customer satisfaction		
I.	Contact information		

In-Home Interviews

The in-home interview was designed to collect income information through review of source documentation such as pay stubs, check stubs, income tax returns, and other financial records. The data from these interviews provide the basis for determining WIC-income-eligibility error rates presented in Chapter 4 of this report.

As noted above, approximately one-third of persons sampled for in-person interviews were also simultaneously sampled for an in-home interview. Notification of this dual selection was withheld until completion of the in-person interview to eliminate possible effects of the dual selection on response to the in-person interview. Following completion of in-person interviews, persons sampled for the in-home interview were asked to participate in follow-up interviews in their homes, and interview dates were scheduled. At the time of scheduling respondents received brochures advising them that they would receive $20 certificates for completing in-home interviews, and listing the types of documents they should have on hand for in-home sessions.

The study design called for scheduling the in-home interview within three weeks of the in-person interview to maximize recall. The reference period was the same for both interviews: during the in-person interview, the respondent was asked about income received last month; during the in-home interview, the respondent was asked about the reference period that was the calendar month prior to the in-person interview. Forty percent of in-home interviews were completed within three weeks of in-person interviews, and a total of 87 percent were completed within six weeks of in-person interviews. The largest lag between in-person and in-home interviews was 89 days.

The in-home interview was administered as a paper-and-pencil survey consisting of six sections, shown in Exhibit 2-5. Responses from the in-person interview were pre-printed on the survey instrument to facilitate probing by interviewers when reviewing income documents, although these pre-printed amounts were not incorporated in the questions administered by interviewers. The average length of a completed in-home interview was 29 minutes.

Telephone Follow-up Survey

The telephone follow-up survey was designed to collect information about employment status and participation in adjunct programs, for WIC participants' families, four months into their WIC certification period. Approximately two-thirds of respondents to both the in-person and in-home interviews were selected for a telephone follow-up interview (593 out of 931 in-home respondents were randomly selected).

Interviews were conducted using computer-assisted-telephone-interviewing (CATI), and the response rate for the telephone follow-up survey was 94 percent. Information from the telephone follow-up survey is used to estimate rates of change in employment status and adjunct program participation four months into the WIC certification period. This information is presented in Chapter 3.

Nutritional Risk Checklist

NSWP interviewers, working in WIC service sites, asked WIC clinic staff to complete a nutritional risk checklist for each person sampled for NSWP. The nutritional risk checklist was developed for this study to provide a standard format for collecting nutritional risk information across all WIC service sites. The goal of the nutritional risk checklist was to collect information about both the total number of risks assessed and found for each sampled person. Completed forms were returned for 3,508 out of 4,069 sampled persons (86 percent response). Among sampled persons with a completed in-person interview, nutritional risk checklists were returned for 3,004 out of 3,114 persons (96.5 percent).

Certification Forms

WIC certification forms contain information collected by WIC clinic staff during the certification process. The design of the NSWP called for collection of WIC certification forms for all sampled persons in order to reduce interview burden and eliminate from the in-person interview all items that could be collected from the certification forms.

Information collected on WIC certification forms includes basic demographic information and information used to determine eligibility for the program, including the applicant's name, address, date of birth, age, race, sex, family size, family income, participation in adjunct programs, height and weight measurements, blood iron measurement, nutritional risks present at certification, and migrant status. Additional information pertaining to WIC participation is recorded on certification forms of certified applicants: date of certification, certification category, WIC priority status, food package codes, trimester of enrollment for pregnant women.

Collection of certification forms proved difficult. Each state WIC agency has a unique certification form; some are a single page, some are multiple pages, and some do not exist in paper form because

certification is processed through computer programs. NSWP interviewers collected WIC certification forms by photocopying them at WIC service sites or by requesting computer printouts from clinic staff.

Although the study attempted to obtain WIC certification forms for all 4,000 persons sampled for an in-person interview, WIC certification forms were obtained for only 2,955 sampled persons; forms were obtained for 2,716 of the 3,114 persons with completed in-person interviews. The rate of successful retrieval of certification forms was 77 percent for all sampled persons (excluding those found ineligible for the survey) and 87 percent for completed interviews. Because of the difficulties retrieving certification forms in 25 different formats, some forms were incomplete. In addition, the certification forms are complex and costly to convert to an electronic format. To minimize costs, certification data for persons with completed in-person interviews were retrieved from PC98, when available.[8] Among sampled persons with completed in-person interviews, 61 percent have certification data retrieved from PC98, 26 percent have complete or partial certification data entered from hard-copy forms, and 13 percent have no certification data from any source.

Local Agency Survey

The local agency survey was a mail survey of all local WIC agencies selected at the second stage of sampling for NSWP. The survey instrument was nearly identical to the instrument administered to local WIC agencies as part of the biennial 1996 and 1998 studies of WIC participant and program characteristics, conducted by USDA FNS.

The survey collected information about service delivery sites, income determination, nutritional education, food instrument issuance, health services, and staffing. Only two of the 79 local WIC agencies in the NSWP sample failed to respond to the survey. Information collected from local agencies is used in this report to tabulate participant characteristics by type of local agency, and to examine income-eligibility error rates by local agency characteristics.

2.6 Sample Representativeness

At the point in time of the in-person interview, each individual was enrolled in WIC and had received the first month's vouchers for WIC food items, thereby meeting the regulatory definition of being a participant in WIC. The NSWP was designed to represent WIC participants certified for WIC benefits during spring 1998. We expect, however, that the NSWP findings will often be interpreted as representing the entire WIC caseload at a point in time. Is this interpretation reasonable? Can NSWP be used in this way? Does the NSWP sample of 3,114 participants at certification resemble the overall WIC caseload, as measured by PC98? Does it resemble only all WIC certifications in March and April 1998?

The above questions are difficult to answer, for the reasons described below. Available evidence does suggest that some population groups within WIC are under- or over-represented in the NSWP. Most

8 PC98 collected electronic data from all state WIC agencies comprising certification records for all persons enrolled in WIC as of April 1998. Persons sampled for NSWP prior to May 1 had a high probability of being found in the PC98 data, although some were not found in PC98 because of variations in the timing of state WIC agency data delivery to PC98 and the timeliness with which certifications at local WIC sites are uploaded to state data systems. PC98 does not include individual identifiers; to identify NSWP respondents in the PC98 data, we entered a limited number of data items from hardcopy certification forms and performed a match on local agency, certification category, date of birth, family size, income, and certification date.

importantly, households with income greater than 185 percent of the poverty level appear to be over-represented in the NSWP, as do households receiving Medicaid. These findings are related, however, because households receiving Medicaid are adjunctively income-eligible for WIC, and some states use a higher income threshold than 185 percent of poverty to determine Medicaid eligibility. In 1998, eight states had a Medicaid income limit that exceeded 185 percent of poverty, and five of these states are in the NSWP sample.[9]

Conceptually, the following four factors could cause the NSWP sample to differ from the overall WIC caseload:

- The sample of WIC service sites selected for the survey could differ systematically from the universe of WIC service sites in the contiguous United States.

- Some WIC participants coming to the sampled service sites for certification might have been missed in the sampling logs, and these participants could differ systematically from the participants who did sign in on the sampling logs.

- Among individuals sampled, the persons who refused to be interviewed could differ systematically from individuals who were interviewed.

- For infants, a sample of certificants at a point in time does not represent all enrollees at a point in time because all infants are not certified for identical time periods. Infants are certified for either a six-month period (and then recertified) or for one year. A sample of certificants taken at a point in time under-represents infants with longer certification periods relative to infants with shorter certification periods.

Any differences between the NSWP sample and the overall caseload must come from the contributions of these four factors. It is possible, of course, that the effect of one factor could be fully or partially offset by the contribution of another factor.

Representativeness of Sampled WIC Service Sites

As discussed earlier in this chapter, WIC service sites were selected at the third stage of sampling. We have no reason to suspect that the first-, second-, and third-stage sampling procedures produced a non-representative sample. The sampling process itself went smoothly. (Ordinarily, proper operation of the probability sampling mechanism ensures the absence of sampling bias.)[10] By chance, no Indian Tribal Organizations (ITOs) were selected during the second stage of sampling, even though they were in the sample frame.

---

9 In 1998, states had the option to extend Medicaid eligibility to pregnant women and children up to age 5 with incomes above 185 percent of poverty. In spring 1998, the Medicaid limit for these groups exceeded 185 percent of poverty in Arkansas, California, Hawaii, Minnesota, Rhode Island, Tennessee, Vermont, and Washington. Source: National Governors Association, Health Policy Studies Division, NGA Reports Online: State Medicaid Coverage of Pregnant Women and Children.

10 Only one inconsistency arose in applying sampling procedures. After the second stage of sampling, some sampled WIC agencies provided WIC caseload data, rather than the number of monthly WIC certifications, as the measure of size of their sites. This approach did not affect procedures for sampling service sites within the sampled agencies because both caseload size and the number of certifications are reasonable measures of size.

Of the 181 individual sites sampled, two sites closed before the survey began, and one refused to participate once the survey began. These three WIC service sites, which together represented about 5 percent of the expected weighted sample of participants, were not replaced. Rather, all sampled participants from the remaining 178 service sites received larger sampling weights to compensate for the loss of sample from the three sites.

Representativeness of Sampled Participants/Enrollees

Every applicant for WIC certification coming to a sampled WIC office in either March or April 1998 (depending on office) was supposed to sign a sheet maintained by NSWP interviewers at each site. The sign-in sheet included space for date and name, and it asked that the person's certification category be checked. Interviewers transcribed names from the sign-in sheets to sampling logs specific to each of the five certification categories. To the extent that some applicants who were subsequently certified failed to sign in, bias could have been introduced into the NSWP sample.

It is difficult to obtain a precise estimate of the total number of people actually certified in the sampled WIC offices during the period of survey operations, which extended from March 9 to April 11 in one set of offices and from April 13 to May 9 in the second group of offices. The certification data provided by the states as part of PC98 include local agency identifiers rather than service site identifiers, so the certification dates in the PC98 data could not be used to count the number of certifications in the selected offices during the sample period.

The only readily available source of data on the number of certifications in specific WIC service sites is the data collected by NSWP to conduct the third-stage sampling. In December 1997, current caseload information was collected for each service site operated by local agencies selected at the second stage of sampling. We requested that local agencies provide information on the average number of certifications, by certification category, for each local office or clinic within the agency. Some agencies provided the requested information, but others provided caseload data. In many instances we were told that the data were estimates because many local agencies did not have information systems that could provide a count of monthly certifications; data systems were designed to provide total caseload counts.

Using the data provided by the local agencies, we estimate that 77,450 people were certified in the NSWP service sites during the period of survey operations.[11] The loss of the three sites reduced the estimate to about 74,700 for the remaining sites.[12]

The total number of persons who signed in at the NSWP sites during the survey period was about 66,900. Thus, we estimate that approximately 10 percent of all WIC participants in the sampled sites failed to sign in. The reasons for missing these individuals are unclear. NSWP interviewers asked WIC staff in the local sites to sign in all persons requesting certification. The interviewers themselves monitored the sign-in process. When the interviewers were on break or were interviewing other participants

11 For agencies that provided caseload data, we divided the caseload figures by a factor to account for the difference in average length of certification period within separate certification categories. For instance, because children, breastfeeding women, and post-partum women are all certified for six-month periods, we divided their caseload figures by 6 to estimate the number of monthly certifications. We assumed an average certification period of 9 months for infants and 7.4 months for pregnant women.

12 The lost sites represent 3.6 percent of the unweighted sample and 4.9 percent of the weighted sample.

they could not monitor the sign-in process. If the missed sign-ins occurred during these breaks, then there is little reason to suspect bias in the sample, as the break periods would have been uncorrelated with the characteristics of people arriving at the WIC service site. That is, the missed applicants would be randomly distributed among all applicants.

Representativeness of Survey Respondents

As noted previously, 4,069 people were sampled for in-person interviews. Of this number, 241 were later found to be ineligible for the sample, either because they were at the service site for services unrelated to certification, they were not certified, or they were sampled in the wrong certification category; this left 3,828 people eligible for interviews. With 3,114 completed interviews, the response rate was 81.3 percent.

To examine the representativeness of respondents relative to sampled participants, we attempted to use certification data collected from the offices to compare the characteristics of those who were interviewed with the 714 participants who were sampled but refused to be interviewed. The frequency of missing certification data among the 714 non-respondents was so high (74 percent) that this comparison could not be pursued.

Overall Sample Representativeness

Despite the limitations on examining each possible component of sample bias, we are able to examine the overall representativeness of the NSWP sample of 3,114 WIC participants by comparing the NSWP to the PC98 census of WIC enrollees. Because the NSWP was not designed to be representative of WIC enrollees in Alaska, Hawaii, or the U.S. territories, enrollees in these areas were dropped from the PC98 data before comparisons were made.

Exhibit 2-6 shows the distribution of selected characteristics for three groups of WIC participants: respondents to the NSWP in-person interviews; all WIC enrollees included in PC98, except those persons in Alaska, Hawaii, and the U.S. territories; and those PC98 enrollees who were certified in either March or April 1998. For comparisons between the NSWP and PC98, we focus primarily on the full PC98 data, as opposed to just those enrollees certified in March or April. For age of infant at certification, however, it is more appropriate to compare the NSWP only to those PC98 infants certified in March or April.[13] The NSWP data reflect the weighting procedure described in Section 2.3.

It is difficult to say with certainty whether the NSWP is representative of the WIC population with respect to race and ethnicity. The data in Exhibit 2-6 suggest that the NSWP over-represents white WIC participants and under-represents minority groups; only the difference for American Indians, however, is statistically significant. The under-representation of American Indians is not surprising, because of the absence of any Indian Tribal Organizations (ITOs) in the sample of local WIC agencies. The overall

13 Because PC98 captures active participants in April 1998, the distribution of infants' age-at-certification is subject to what statisticians call length bias: longer spells of certification are over-represented and the age distribution is biased downward relative to the age distribution that would be observed from certifications occurring in a typical month. This happens because PC98 captures certification information about all currently certified infants who were certified during the previous 12 months. (Infants may be certified immediately after birth, and the certification period is 6 months or up to their first birthday, at the discretion of local WIC agencies.) Most infants certified during the prior year at age 6 months or older, however, will end their certification as infants and be captured in PC98 as children.

comparison of the racial distribution in NSWP and PC98 is hampered, however, because information on race and ethnicity is missing for 17.2 percent of the NSWP sample. It is likely that the true percentage of whites in the NSWP sample is overstated because a large percentage (24 percent) of cases with missing race information are cases in California, and the WIC caseload in California is heavily Hispanic.

The NSWP appears to under-represent WIC families receiving Temporary Assistance for Needy Families (TANF), whereas it over-represents WIC families receiving Medicaid. This lack of representativeness may indeed be true, but there is some uncertainty about the accuracy of the PC98 data in this regard. WIC applicants receiving TANF, food stamps, or Medicaid are adjunctively income-eligible for WIC. It is possible that some WIC agencies, once they ascertain that an applicant participates in one of these three programs, do not ask about participation in the other two programs. This information would not explain why PC98 shows a higher percentage of TANF participants than NSWP, so we conclude that WIC families receiving TANF are indeed under-represented in the NSWP.

Turning to the size of the WIC economic unit, two-person families are under-represented in the NSWP. As discussed in Chapter 4, WIC agencies have some discretion in determining which household members are part of the WIC economic unit. Thus, this particular difference is not strong evidence of sample bias.[14]

The NSWP appears to under-represent the very poorest WIC families and over-represent families with incomes above the 185 percent of poverty threshold. This situation would be consistent with the finding that WIC families receiving TANF are under-represented in the NSWP. It is also consistent with the possible over-representation of families receiving Medicaid. Rather than sample bias, however, these differences may reflect differences in how income is measured, particularly if the NSWP was more successful in capturing income data than are WIC staff during the certification process. Furthermore, 14.7 percent of the PC98 records have missing income data, making comparisons more difficult. This rate of missing income data in the PCs has persisted throughout their history, and as a result, one of the goals of the NSWP was to provide more complete measurement of the income distribution of WIC participants. Thus, income is not an appropriate measure on which to judge the representativeness of the NSWP sample.

Examination of the participant's age at certification shows the two datasets to be virtually identical on this factor. The only significant differences in Exhibit 2-6 are for infants, and these differences disappear when the NSWP is compared to PC98 participants certified in March or April of 1998.

On the one variable (age) that is neither difficult to measure nor missing from a sizable percentage of either dataset, the NSWP closely matches the PC98 data. The apparent over-representation of higher-income families may be an artifact of differences in income measurement, or it may reflect an underlying difference between the NSWP sample and the overall WIC caseload. The over-representation of higher-income families is consistent with the under-representation of families receiving TANF and the apparent over-representation of families receiving Medicaid.

14 For pregnant women in the NSWP sample, the size of the economic unit does not include the fetus. The WIC program counts the fetus in the size of the economic unit only if an income-ineligible pregnant woman would be income-eligible after adding the fetus to family size. PC98 data do not identify whether or not the fetus is counted in the family size of individual pregnant women.

Before turning to the next chapter, it is useful to refer again to Exhibit 2-6 and to compare the full PC98 caseload to the PC98 families certified in March and April of 1998. With the exception of age of infant at certification, none of the differences is statistically significant. This lack of significant differences suggests that the WIC caseload was relatively stable in April 1998, with the characteristics of new participants being similar to those already certified. In turn, this buttresses the NSWP's use of a sample of WIC families at **certification** to represent **all** WIC families in March and April of 1998.

Exhibit 2-6

Percent Distributions of Participant Characteristics in NSWP In-Person Interviews and PC98

	NSWP	PC98 (All Months)	PC98 (Mar–Apr)
Race or ethnic characteristics			
American Indian	0.51	1.47[a]	1.50
	(0.27)		
Asian	2.37	2.84	2.78
	(0.72)		
Black	19.47	23.87	23.37
	(3.24)		
Hispanic	25.96	30.97	31.29
	(4.03)		
White	51.68	40.85	41.05
	(5.05)		
Adjunctive income eligibility			
TANF	13.35	19.03[a]	18.95
	(1.59)		
Food Stamps	32.67	29.67	29.84
	(1.76)		
Medicaid	61.63	53.79[a]	53.55
	(2.54)		
Economic unit size			
1	2.65	2.27	2.41
	(0.47)		
2	10.95	14.45[a]	14.29
	(0.94)		
3	25.99	26.92	26.37
	(1.10)		
4	28.22	26.85	26.97
	(1.21)		
5	17.37	16.17	16.42
	(1.11)		
6 or more	14.82	13.34	13.54
	(1.16)		
Percent of poverty level			
0-50	27.35	34.75[a]	33.70
	(1.63)		
51-100	36.33	34.29	34.30
	(1.47)		
101-130	14.82	14.88	15.03
	(0.98)		
131-150	7.77	7.30	7.53
	(0.81)		
151-185	7.34	7.95	8.48
	(0.82)		
186-200	1.94	0.34[a]	0.43
	(0.36)		
201-225	1.90	0.20[a]	0.21
	(0.32)		
226-250	0.94	0.11	0.12
	(0.31)		
Over 250	1.61	0.19[a]	0.19
	(0.33)		

NOTES: PC98 data exclude Alaska, Hawaii, and U.S. territories (American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands). "All months" includes the full PC98 file of certifications: May 1997 to April 1998. "Mar – Apr 1998" includes PC98 records of certifications occurring in March and April 1998. Standard errors are shown in parentheses.

a The difference between NSWP and PC98 values is statistically significant.

Exhibit 2-6 (cont.)

Percent Distributions of Participant Characteristics in NSWP In-Person Interviews and PC98

	NSWP	PC98 (All Months)	PC98 (Mar–Apr)
Pregnant women			
0 - 17 years	9.22 (1.12)	10.91	10.74
18 - 34 years	84.29 (1.34)	83.33	83.26
35 or more years	6.49 (1.24)	5.76	6.00
Breastfeeding women			
0 - 17 years	3.78 (0.78)	4.19	4.48
18 - 34 years	84.68 (1.84)	85.05	85.17
35 or more years	11.53 (1.63)	10.76	10.35
Postpartum women			
0 - 17 years	10.93 (2.62)	9.46	9.59
18 - 34 years	82.55 (2.61)	84.49	84.41
35 or more years	6.53 (1.10)	6.05	5.99
Total women			
0 - 17 years	8.63 (0.88)	9.06	9.00
18 - 34 years	83.82 (1.25)	84.05	84.03
35 or more years	7.54 (0.76)	6.89	6.97
Infants			
0 - 3 months	75.51 (2.98)	88.50[a]	79.08
4 - 5 months	8.67 (2.05)	2.70[a]	4.23
6 - 8 months	11.49 (1.88)	6.43[a]	12.45
9 - 11 months	4.33 (1.26)	2.37	4.24
Children			
1 year	33.99 (1.91)	34.77	33.72
2 years	23.84 (1.47)	25.68	25.25
3 years	25.81 (1.97)	22.84	22.59
4 years	16.37 (1.56)	16.70	18.44

NOTES: PC98 data exclude Alaska, Hawaii, and U.S. territories (American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands). "All months" includes the full PC98 file of certifications: May 1997 to April 1998. "Mar – Apr 1998" includes PC98 records of certifications occurring in March and April 1998. Standard errors are shown in parentheses.

a The difference between NSWP and PC98 values is statistically significant.

Chapter 3
Characteristics of WIC Participants and Households

The in-person survey component of the NSWP interviewed 3,114 program participants or their parents/ guardians as they applied for WIC certification. One of the primary goals of the survey was to supplement the basic demographic information about WIC participants assembled biennially in reporting of WIC participant and program characteristics (the PCs). The NSWP covered a large number of topics for which current information is unavailable from other sources. This wealth of information allows us to characterize more fully the social and economic circumstances of WIC participants and their families.

The topics included in the in-person survey are:

- The participant's prior experience with WIC.
- An enumeration of all persons living with the WIC participant, with information collected about age, gender, relationship to participant, and financial support provided or received.
- For each child living with the WIC participant, their date of birth, whether the child's mother received WIC while pregnant, whether the child was breast-fed and for how long, the child's history of enrollment in WIC, and whether the child attends Head Start.
- For each adult living with the participant, their marital status, their employment status, their reason for not working (if not employed), whether they are in the Armed Forces, and their educational level.
- For every adult in the WIC economic unit, information about the amounts and sources of earned income and unearned income.
- For the entire WIC household, information about the amounts and sources of investment income and income from alimony, child support, lump sum payments, public assistance, and the value of benefits from the FSP.
- For the WIC economic unit, information about food spending, participation in food assistance programs other than the FSP, and food security.
- For the sampled person, information about health insurance and services provided by their health plan; for those with no health insurance, reason(s) for not having insurance and whether anybody in the household is currently enrolled in Medicaid.
- For the participant, information about how they learned about WIC, the degree to which certain factors make WIC participation difficult, satisfaction with the WIC food prescription (brands and quantities), the perceived benefits of WIC participation, problems with missed WIC appointments, and description of WIC shopping patterns.

A copy of the NSWP in-person survey instrument is presented in Appendix D.

This chapter includes over 60 exhibits presenting information about the topics listed above. Although these provide extensive information, the exhibits only begin to plumb the wealth of new information provided by the NSWP. Each topic covered by the exhibits could easily be the subject of a separate monograph or report, with detailed examination of interrelationships among survey variables and testing of hypotheses. Such analyses cannot be conducted within the scope of this study. Rather, the intent of this report is to provide descriptive statistics that can help program officials understand the characteristics of WIC participants and their families. These descriptors, it is hoped, will also engender further use of the NSWP for research purposes.

For the above reasons, this chapter offers few significance tests of differences between groups of participants. There are simply too many possible comparisons for this to be meaningful, especially because the likelihood of erroneously concluding that a statistically significant difference exists increases as the number of tests conducted increases. Nevertheless, it is recognized that readers may be interested in determining whether certain values within a given exhibit are significantly different from other values within the exhibit. For these readers, hypothesis tests may be conducted using the exhibits in Appendix E. The exhibits in Appendix E mirror those in this chapter, but the appendix exhibits include the standard error for each value presented in the exhibits. The introduction to Appendix E indicates how these values and standard errors may be used to test for significant differences between pairs of values. Patterns noted in the text have taken into account the relevant standard errors.

A convention used throughout this chapter is to show rates of item non-response at the bottom of each exhibit. The rates of item non-response show the percentage of respondents who failed to answer individual survey questions. The percentage distributions in the body of each exhibit have been "normalized" to account for item non-response. That is, the percentage distributions indicate the percentage of respondents with a particular characteristic, based on respondents who answered the survey question. Respondents who did not answer the question are excluded from the distributions. By normalizing, we implicitly assume that those who failed to respond are randomly distributed across response categories. This is a reasonable assumption, especially given the low rates of item non-response. This practice of presenting normalized distributions and rates of item non-response is used throughout all exhibits within the chapter.

3.1 Caseload Composition and Growth

The WIC caseload has grown considerably during the 1990s. Exhibit 3-1 shows total WIC caseload, by participant category, as reported in the biennial PC studies.[1] Over the ten years covered by the exhibit, total caseload grew by nearly 134 percent, with the largest growth (316 percent) occurring for breastfeeding women. Although the caseload more than doubled, however, the rate of growth of the caseload has steadily declined. From 1988 to 1990, caseload growth was 32 percent; in each of the subsequent two-year time periods, rates of growth were 27 percent, 20 percent, 12 percent, and 4 percent.

1 The biennial reporting of WIC Participant and Program Characteristics (the PCs) has been conducted since 1988. In 1988 and 1990, the PCs drew nationally representative samples of WIC participants; the 1988 study sampled persons as they were certified, whereas the 1990 study drew a sample of all persons currently participating. Since 1992, the biennial PC studies have collected data on the universe of WIC participants at a point in time, thus providing a snapshot of the caseload.

Exhibit 3-1

Distribution of WIC Certifications by Participant Category, Census of WIC Participants, 1988 to 1998

	1988[a]	1990[a]	1992	1994	1996	1998
Percent by participant category						
Pregnant women	13.1	13.5	13.6	12.0	11.3	11.1
Breastfeeding women	2.7	10.4	3.6	4.0	4.3	4.8
Postpartum women	5.5	b	5.2	7.2	7.3	7.3
Total Women	21.3	23.9	22.4	23.1	22.9	23.3
Infants	31.2	29.8	30.1	26.9	25.7	25.5
Children	47.4	46.3	47.5	50.2	51.4	51.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total WIC	3,440,089	4,538,112	5,754,003	6,907,849	7,747,441	8,042,758

Source: Study of WIC Participant and Program Characteristics, 1988-1998.

a Data for 1988 and 1990 reflect the contiguous United States and exclude Alaska, Hawaii, and outlying territories.

b In 1990, breastfeeding and postpartum women were combined into one reporting category because of small sample size of participants in 1990 study.

The declining rates of growth reflect a stabilization of the WIC caseload as WIC appropriations have increased to near full-funding.

WIC caseload growth is most often measured from the biennial PC studies. The methodology for the PC studies has changed over time, however, from a nationally representative survey of the contiguous United States in 1988 to the full census of WIC participants conducted since 1992. As a result, caseload growth measured from these numbers is slightly overstated. Exhibit 3-2 therefore compares the WIC caseload in 1988 and 1998, with Alaska, Hawaii, and the U.S. Territories excluded from the 1998 data for comparability.

The total WIC caseload in the contiguous United States, shown in Exhibit 3-2, increased 125 percent between 1988 and 1998. By certification category, growth rates were:

- Pregnant women 91%
- Breastfeeding women 304%
- Postpartum women 202%
- Infants 84%
- Children 142%

Within the group of all children, a disproportionate share of the growth was for 3- and 4-year-old children (173 and 188 percent growth rates, respectively).

The age distributions in Exhibit 3-2 also show that women served by the WIC program in 1998 were somewhat older, on average, than women served by the program in 1988. In addition, it appears that the program was more successful in enrolling infants at a younger age in 1998 than in 1988; this difference, however, may be due to data differences in the two years.[2]

The above information on caseload size and the age distribution of WIC participants is available from the biennial PC studies. The rest of this chapter examines NSWP information about WIC participants that is generally **not** available from the PC studies.

2 The PC data report age at certification, not age at first certification. Infants certified at 6 to 8 months of age are likely to be infants who are being recertified after an initial six-month certification period. State WIC agencies have discretion in determining whether infants are to be certified for six-month periods or for a period up until their first birthday. Because PC98 takes a snapshot of the caseload at a point in time, infants with longer certification periods (certified at 0 to 3 months for a period up until their first birthday) are over-represented. In contrast, PC88 (like NSWP) sampled participants as they were certified and recertified, thus avoiding the over-representation of infants with long certification periods.

Exhibit 3-2

Distribution of Age of WIC Participants at Certification, by WIC Participant Category

	-- 1988 --		-- 1998 --	
	Number	Percent	Number	Percent
Pregnant women				
0 - 17 years	51,919	11.52	93,610	10.91
18 - 34 years	381,076	84.57	714,773	83.33
35 or more years	17,605	3.91	49,387	5.76
Total	450,600	100.00	859,381	100.00
Breastfeeding women				
0 - 17 years	2,798	3.00	15,687	4.19
18 - 34 years	79,423	85.27	318,508	85.05
35 or more years	10,921	11.73	40,307	10.76
Total	93,142	100.00	376,463	100.00
Postpartum women				
0 - 17 years	20,803	10.94	53,929	9.46
18 - 34 years	160,469	84.38	481,779	84.49
35 or more years	8,898	4.68	34,486	6.05
Total	190,170	100.00	573,899	100.00
Total women				
0 - 17 years	75,520	10.29	163,226	9.06
18 - 34 years	620,968	84.60	1,515,060	84.05
35 or more years	37,424	5.10	124,180	6.89
Total	733,964	100.00	1,809,743	100.00
Infants				
0 - 3 months	629,696	59.81	1,744,930	88.81
4 - 5 months	83,226	7.90	53,241	2.71
6 - 8 months	221,170	21.01	126,803	6.45
9 - 11 months	118,791	11.28	46,629	2.37
Total	1,075,010	100.00	1,978,410	100.35
Age not reported	22,126	2.06	6,806	0.34
Children				
1 year	654,781	40.25	1,347,308	34.77
2 years	423,419	26.03	995,146	25.68
3 years	323,973	19.92	885,201	22.84
4 years	224,480	13.80	647,344	16.71
Total	1,631,115	100.00	3,952,924	100.00
Age not reported	4,462	0.27	77,925	1.97
Total WIC	3,440,089		7,741,078	

Age is missing for less than 2% of women in each year and each certification category.

Source: Study of WIC Participant and Program Characteristics, 1988 (sample frame included contiguous United States, including ITOs).

Study of WIC Participant and Program Characteristics, 1998 (excluding Alaska, Hawaii, and territories, to be comparable to PC88).

3.2 Characteristics of WIC Participants

The WIC program serves five categories of WIC participants: pregnant women, breastfeeding women, postpartum women, infants, and children. These five categories are not independent. As presented in later sections of this chapter, a large percentage of breastfeeding and postpartum women previously participated in WIC as pregnant women, a large percentage of WIC infants are born to women participating in WIC when pregnant and continuing in WIC postpartum, and a large number of WIC children participate first as WIC infants.

Because WIC provides continuity of care for women and their children, this section begins by examining the demographic characteristics of WIC women and the mothers of WIC infants and children. Exhibits 3-3 and 3-4 present demographic characteristics of WIC women and WIC mothers, respectively. Throughout this chapter we distinguish between these two groups of women. "WIC women" refer to WIC participants who are either pregnant, breastfeeding, or postpartum. "WIC mothers," in contrast, are the mothers of infants or children who are WIC participants. Many WIC mothers, of course, are also WIC participants themselves. When both mother and infant (or child) were sampled for the survey, the characteristics of the mother appear under **both** the WIC women and WIC mothers columns throughout the exhibits in this chapter.[3]

Within Exhibits 3-3 and 3-4, the following information is provided about the survey respondent (participant or mother/guardian): marital status; whether an adult male resides in the household; education level; whether the respondent attends college; employment status; if respondent not currently working, whether employed in last year and reason for not working currently; and number of biological children. This information is presented separately for each participant category and for the group of women as a whole. Then, at the right side of each exhibit, the same demographic information is presented, only this time broken out by age of respondent (less than 18 years, 18-34 years, greater than 34 years).

Note that, for "reason not working," the base for the presented distributions is those participants not currently employed. Among WIC women, 75.1 percent were not currently employed at the time of the survey, representing a WIC population of 1,359,117 participants. For WIC mothers, 72.5 percent were not employed. The reason given most often by both WIC women and WIC mothers for not being employed is that they are taking care of the house. Of those not currently employed, 52.4 percent of WIC women and 50.2 percent of WIC mothers had been employed within the last 12 months.

3 Of the 2,956 families represented in the NSWP, 154 contain multiple sampled persons. In 142 of these 154 families, the mother and at least one infant or child was sampled for the survey. In the remaining 12 families, more than one participant in the infant and child categories was sampled. When multiple family members were sampled for the survey, the survey was conducted once and the record was duplicated for the other sampled members of the family. The rate at which NSWP sampled multiple persons in the same family does not reflect the rate of WIC participation by multiple family members because multiple family members were eligible for sampling only if they applied to WIC during the survey period. Survey results, presented later in the chapter, provide estimates of WIC participation by multiple family members.

Exhibit 3-3

Demographic Characteristics of WIC Women by Participant Category: Percent Distribution

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Age of Women < 18 years	Age of Women 18-34 years	Age of Women > 34 years
Marital status							
Married	40.1	60.8	38.9	44.1	8.5	46.1	56.4
Widowed, separated, or divorced	10.2	9.5	12.2	10.7	0.4	10.3	24.1
Never married	49.6	29.7	48.9	45.2	91.1	43.6	19.4
Adult male present	69.5	79.0	60.1	68.5	57.0	70.1	70.6
Highest grade of education							
Less than 8 years	5.8	9.5	3.9	6.0	0.0	5.9	14.0
8 - 11 years	26.2	19.9	25.1	24.5	0.0	28.0	16.8
12 years	38.5	31.2	40.1	37.5	0.0	42.0	35.5
13 or more years	19.9	33.9	18.3	22.3	0.0	24.0	32.5
Schooling incomplete, age <18	9.6	5.0	12.2	9.4	100.0	0.0	0.0
Attending college							
Full time	3.6	4.1	1.8	3.1	0.0	3.7	0.0
Part time	2.4	3.2	1.3	2.2	0.0	2.2	4.6
Employment status							
Currently employed	31.9	19.5	17.7	24.9	12.1	25.8	27.0
Not currently employed	68.1	80.5	82.3	75.1	87.9	74.2	73.0
If not currently employed							
Employed in last 12 months[a]	58.9	48.5	45.2	52.4	29.6	54.5	51.8
Reasons not working[a]							
Unemployed	21.7	9.3	11.6	15.4	7.9	16.3	16.0
Keeping house	44.2	71.5	62.1	56.5	21.8	59.7	58.0
Going to school	16.7	7.9	10.9	12.7	65.7	7.9	4.7
Unable to work	12.8	7.6	9.8	10.6	4.7	10.8	16.2
On temporary layoff	4.6	3.6	5.5	4.7	0.0	5.2	5.1
Retired	0.0	0.0	0.1	0.1	0.0	0.1	0.0
Number of biological children							
None	48.5	0.0	1.3	23.5	46.2	22.7	7.4
One	31.9	39.4	47.4	38.4	50.0	38.4	25.8
Two	11.9	32.1	27.9	21.1	3.1	22.6	25.4
Three	5.8	18.3	14.3	11.1	0.6	11.6	16.7
Four or more	1.9	10.2	9.1	5.9	0.0	4.7	24.7
Rates of item non-response							
Marital status	2.9	0.5	4.5	2.9	14.8	1.8	1.7
Highest grade of education	1.2	0.6	0.4	0.8	0.0	0.9	1.2
Employment status	1.0	0.4	3.6	1.7	14.3	0.4	0.8
Reasons not working[a]	6.3	6.8	3.7	5.5	4.8	5.7	4.5
Sample size	639	627	587	1,853	140	1,548	149
Population	859,381	376,463	573,899	1,809,743	154,982	1,504,823	135,430

Respondents with missing data are excluded from percent distributions. Rates of item non-response are shown separately.
a Percent of those not currently employed.

Exhibit 3-4

Demographic Characteristics of Mothers of WIC Infants and Children: Percent Distribution

	Mothers of Infants	Mothers of Children	Total WIC Mothers	Age of Mothers < 18 years	Age of Mothers 18-34 years	Age of Mothers > 34 years
Marital status						
Married	49.4	51.9	51.1	22.8	52.6	51.7
Widowed, separated, or divorced	11.3	17.9	15.7	2.7	13.2	32.1
Never married	39.3	30.2	33.2	74.5	34.3	16.2
Adult male present	69.4	69.8	69.7	60.3	71.4	66.6
Highest grade of education						
Less than 8 years	6.0	5.1	5.4	0.0	5.1	8.7
8 - 11 years	25.3	26.7	26.2	0.0	28.7	22.6
12 years	35.2	41.3	39.2	0.0	41.7	40.3
13 or more years	24.5	23.3	23.7	0.0	24.4	28.3
Schooling incomplete, age <18	8.8	3.5	5.3	100.0	0.0	0.0
Attending college						
Full time	1.5	4.9	3.7	3.4	4.6	0.0
Part time	2.0	3.1	2.7	0.0	2.9	2.4
Employment status						
Currently employed	18.0	32.2	27.5	14.9	26.8	34.4
Not currently employed	82.0	67.8	72.5	85.1	73.2	65.6
If not currently employed						
Employed in last 12 months[a]	52.3	49.2	50.2	32.4	51.9	46.5
Reasons not working[a]						
Unemployed	13.0	11.6	12.1	4.2	11.4	18.8
Keeping house	63.9	68.8	66.9	56.8	68.4	63.1
Going to school	6.5	8.4	7.7	28.9	7.2	2.5
Unable to work	12.0	7.9	9.4	7.0	9.3	11.7
On temporary layoff	4.2	2.8	3.3	3.2	3.6	1.9
Retired	0.4	0.5	0.5	0.0	0.2	2.1
Number of biological children						
One	43.0	26.9	32.3	87.7	32.8	15.1
Two	28.8	36.6	34.0	11.2	37.6	22.7
Three	14.4	18.4	17.0	1.1	17.1	20.2
Four or more	12.0	13.9	13.3	0.0	12.1	23.6

a Percent of those not currently employed.

Exhibit 3-4 (cont.)

Demographic Characteristics of Mothers of WIC Infants and Children: Percent Distribution

	Mothers of Infants	Mothers of Children	Total WIC Mothers	Age of Mothers < 18 years	18-34 years	> 34 years
Rates of item non-response						
Marital status	1.5	1.8	1.7	4.2	1.7	0.0
Highest grade of education	0.7	0.6	0.7	0.0	0.8	0.0
Employment status	0.8	0.9	0.8	4.2	0.6	0.0
Reasons not working[a]	4.1	4.8	4.6	2.2	5.0	3.3
Sample size	614	647	1,261	64	1,015	169
Population	1,978,411	3,952,924	5,931,335	257,585	4,685,675	934,750

Exhibit reports demographic characteristics of mothers of sampled infants and children. Percents of infants and children with no mother in household are 2.1% and 4.6%, respectively. If no mother is in household, characteristics of father or guardian are used for exhibit.

Respondents with missing data are excluded from percent distributions. Rates of item-nonresponse are shown separately.

a Percent of those not currently employed.

Exhibit 3-5 repeats the demographic information presented in the previous two exhibits, but this time divides WIC women and WIC mothers into those living within and outside of "metropolitan areas."[4] Based on the population counts at the bottom of the exhibit, just over 79 percent of all WIC participants represented by the NSWP live in a metropolitan area. Compared to WIC participants living outside of metropolitan areas, those living in metropolitan areas are somewhat less likely to be married, are less likely to have an adult male present in the household, have completed fewer years of education, and are about equally likely to be employed. The average number of biological children (not shown in the exhibit) is virtually identical for the two groups—1.97 for participants in metropolitan areas and 2.03 for participants in non-metropolitan areas.

Exhibit 3-6 presents a number of characteristics of WIC infants and children, including gender, birth order, whether or not the biological mother and father are present in the household, whether this was the infant or child's first WIC certification, the mother's WIC experience, whether the infant or child is in a household receiving TANF or food stamps, and whether the WIC child also participates in Head Start.[5] Interesting findings from this exhibit include:

- For both WIC infants and children, the biological father is present in approximately 58 percent of the households.

- Approximately 78 percent of mothers of WIC infants and 80 percent of mothers of WIC children participated in WIC while pregnant. Similarly, 79 percent of WIC children's mothers participated postpartum, as did 91 percent of infants' mothers. Approximately 5.7 percent of the mothers of WIC infants never participated in WIC in conjunction with the sampled infant, compared to 8.7 percent of the mothers of WIC children.

4 As described in Chapter 2, the NSWP stratified its primary sampling units into metropolitan statistical areas (MSAs) and non-MSA clusters of counties. Throughout this chapter, "metropolitan" refers to the participant being served by a local agency located in an MSA.

5 The traditional Head Start program serves children ages three to five, and the NSWP asked about Head Start participation only for children in this age group. Early Head Start is a new program begun in 1995 and serving low-income children from birth to age three, but this program is only available in a limited number of communities.

Exhibit 3-5

Demographic Characteristics of WIC Women and WIC Mothers by Metro-Nonmetro Location

	Metropolitan	Nonmetropolitan
Age		
<18 years	5.1	6.2
18-34 years	80.0	79.7
>34 years	13.8	14.0
Marital status		
Married	48.6	52.6
Widowed, separated, or divorced	14.7	14.0
Never married	36.7	33.4
Adult male present	67.8	75.8
Highest grade of education		
Less than 8 years	6.7	1.3
8 - 11 years	26.7	22.6
12 years	37.3	44.9
13 or more years	23.0	24.9
Schooling incomplete, age <18	6.2	6.3
Attending college		
Full time	3.5	3.8
Part time	2.9	1.3
Employment status		
Currently employed	26.1	29.6
Not currently employed	73.9	70.4
If not currently employed		
Employed in last 12 months[a]	49.2	56.6
Reasons not working[a]		
Unemployed	12.0	16.6
Keeping house	65.5	60.1
Going to school	8.9	8.8
Unable to work	9.2	11.9
On temporary layoff	3.9	2.5
Retired	0.5	0.0
Number of biological children		
None	5.3	6.1
One	32.9	36.9
Two	31.9	27.2
Three	14.8	18.8
Four or more	12.1	9.6
Rates of item non-response		
Age	1.1	0.1
Marital status	2.2	1.3
Highest grade of education	0.9	0.1
College attendance	3.9	2.2
Employment status	1.2	0.3
Reasons not working, if not employed	4.3	6.9
Sample size	2,387	727
Population	6,143,639	1,597,439

WIC women include pregnant, breastfeeding, and postpartum WIC certifications sampled for NSWP; WIC mothers include mothers of those infants and children sampled for NSWP at certification.

a Percent of those not currently employed.

Exhibit 3-6

Demographic Characteristics of WIC Infants and Children at Certification: Percent Distribution

	WIC Infants	WIC Children
Gender		
Male	49.9	47.9
Female	50.1	52.1
Birth order		
First	43.8	46.8
Second	29.5	27.4
Third or more	26.7	25.8
Household characteristics		
Biological mother present	97.9	95.2
Biological father present	58.3	57.9
Foster child	1.3	2.7
WIC experience		
First WIC certification	86.5	0.9
WIC recertification	13.5	99.1
Mother's WIC experience with sampled child		
Mother in WIC when pregnant only	3.2	12.4
Mother in WIC when pregnant & postpartum	74.5	67.7
Mother in WIC postpartum only	16.6	11.3
Mother not in WIC with sampled child	5.7	8.7
Other public assistance		
Receiving TANF	12.5	14.1
Receiving Food Stamps	31.4	35.5
Attending Head Start	NA	6.6
Rates of item non-response		
Gender	1.7	0.9
Birth order indeterminant	1.8	4.1
WIC experience	3.1	7.6
Mother's WIC experience	2.2	5.6
Receiving TANF	1.6	1.9
Receiving Food Stamps	1.0	1.6
Attending Head Start	0.0	0.0
Sample size	614	647
Population	1,978,411	3,952,924

Birth order is indeterminant for foster children (*n*=22) and children residing with guardians (*n*=11). These children are not counted among respondents to 'mother's WIC experience.'

3.3 Characteristics of the WIC Economic Unit

When participants apply for WIC, the local WIC office collects information about family size and family income in order to determine program eligibility. The WIC program uses the terms "family" and "economic unit" interchangeably and defines the economic unit as "a person or group of persons, related or non-related, who usually (although not necessarily) live together, and whose production of income and consumption of goods or services are related."[6]

In most cases, the "family" consists of everyone living with the WIC participant—in other words, the family contains everyone in the household. In some circumstances, however, a household may contain more than one family unit, and WIC regulations define the WIC economic unit as an individual family unit in these cases.[7] Local WIC agencies have some discretion in determining the size of the economic unit, depending on the composition of the household and the particular circumstances of the applicant (see Chapter 4). In the PC studies, only the size and income of the economic unit are reported because this is the information contained in state WIC information systems. For this study, we report on both the size and composition of the WIC economic unit.[8]

Exhibit 3-7 presents summary statistics for the size of the economic unit, the number of adults in the unit, and the number of WIC participants in the unit, by participant category.[9] The average size of a WIC economic unit is just over four persons, with an average of 1.77 adults and 1.81 WIC participants in the unit. Exhibit 3-8 provides further information about the characteristics of WIC economic units by giving the percentage distributions of values for the variables contained in Exhibit 3-7.

Exhibit 3-8 shows that the majority (59 percent) of WIC economic units contain more than one WIC participant. This is not surprising because, by definition, breastfeeding and postpartum women are mothers to WIC infants.[10] Exhibit 3-8 shows, however, that more than 30 percent of breastfeeding and postpartum women have one or more WIC participants in the family in addition to themselves and their infant. Furthermore, about 30 percent of WIC pregnant women have one or more other WIC participants in the family in addition to themselves.

6 FNS Guidance to States: Instruction 803-3, revised 1988.

7 See Chapter 4 for specific FNS guidance regarding the definition of family units.

8 The size and composition of the WIC economic unit are determined on the basis of responses to questions about financial support arrangements within the household (see Section A of the in-person interview instrument in Appendix D). Use of survey responses to determine economic unit size imposes consistent criteria across all survey sites.

9 Adults are defined as individuals aged greater than 18. For pregnant women, the size of the economic unit does not include the fetus. WIC regulations stipulate that the economic unit be increased to reflect the fetus when a woman is found income-ineligible but would be eligible with the fetus included in the measure of family size. We make this adjustment when measuring poverty levels later in the chapter.

10 Exhibit 3-8 shows a small percentage (3.9 percent) of postpartum women in units with only themselves as participants. Approximately one-third of these women miscarried. The remaining two-thirds did not indicate WIC receipt for their children.

Exhibit 3-7

WIC Economic Unit Composition by Participant Category: Mean, Median, Mode, and Standard Deviation for Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Economic unit size							
Mean	3.12	4.17	3.94	3.60	4.14	4.16	4.02
Standard deviation	1.43	1.37	1.38	1.47	1.59	1.56	1.56
Median	3	4	4	3	4	4	4
Adults in unit							
Mean	1.86	1.94	1.71	1.83	1.76	1.75	1.77
Standard deviation	0.77	0.67	0.70	0.74	0.73	0.71	0.72
Median	2	2	2	2	2	2	2
WIC participants in unit							
Mean	1.35	2.45	2.35	1.90	2.14	1.60	1.81
Standard deviation	0.58	0.65	0.66	0.81	0.74	0.81	0.82
Median	1	2	2	2	2	1	2
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Size of WIC economic unit is determined by number of persons who share financial support with WIC participant, as reported in survey, except WIC participants who are foster children are assigned an economic unit size of one. There is no item non-response for variables used to construct size of economic unit.

Exhibit 3-8

WIC Economic Unit Composition by Participant Category: Distribution of Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Economic unit size							
1	7.7	0.0	0.4	3.8	1.3	2.7	2.6
2	30.9	7.5	9.4	19.2	9.2	8.1	11.0
3	30.3	25.7	32.9	30.2	26.8	23.7	26.0
4	14.3	32.3	29.2	22.8	29.6	30.0	28.2
5	10.3	21.1	17.4	14.8	16.6	18.9	17.4
6 or more	6.4	13.5	10.7	9.2	16.5	16.5	14.8
Adults in unit[a]							
None	1.2	0.6	1.7	1.2	3.9	3.3	3.0
1	29.3	20.1	36.6	29.7	27.1	27.8	28.1
2	56.0	67.4	52.2	57.2	59.9	61.2	59.9
3	9.9	9.0	8.0	9.1	7.2	6.2	7.1
4	2.9	2.4	1.4	2.3	1.5	1.0	1.5
5	0.7	0.5	0.0	0.4	0.2	0.5	0.4
6 or more	0.0	0.0	0.0	0.0	0.1	0.0	0.0
WIC participants in unit							
1	69.5	0.0	3.9	34.2	16.0	56.6	41.0
2	26.1	62.7	64.0	45.7	58.1	30.1	40.9
3	3.9	30.3	26.1	16.4	21.8	10.6	14.8
4 or more	0.5	7.0	6.1	3.6	4.1	2.7	3.3
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Size of WIC economic unit is determined by number of persons who share financial support with WIC participant, as reported in survey. The only exception is for WIC participants who are foster children: foster children who are WIC pregnant women, infants, or children are assigned an economic unit size of one; foster children who are WIC breastfeeding or postpartum women are assigned an economic unit size of two if they reside with their infant.

Approximately one-third of postpartum women with only one WIC participant in the family are women who miscarried; remaining two-thirds did not indicate WIC receipt for their infant. There is no item non-response for variables used to construct size of economic unit.

a Adults are identified as persons over age 18 years. Of the WIC economic units with no adults, 60% contain a WIC participant who is a foster child, and the remainder contain a WIC mother age 18 years or younger.

Exhibit 3-9 shows the same basic information as Exhibit 3-8, again by participant category, but broken out as well by whether or not the respondent's local WIC office is located in a metropolitan area. For the entire WIC caseload ("Total WIC" column), the distributions of the size of the WIC economic unit, the number of adults in the family, and the number of WIC participants per family are about the same in metropolitan and non-metropolitan areas.

The previous three exhibits reported on the incidence of WIC participation by multiple members of the WIC economic unit. It is not surprising that multiple members of a family participate in WIC: if an individual meets the WIC income-eligibility criteria, then all members of the individual's family also meet those criteria. Additional members of the family may be enrolled in WIC as long as they are categorically eligible and are at nutritional risk. The next exhibits in this section examine the rates of participation among age-eligible siblings of sampled WIC infants and children.[11]

The top portion of Exhibit 3-10 shows the percentage of sampled WIC infants and children with siblings who are age-eligible for WIC. Approximately 42 percent of WIC infants and 47 percent of WIC children have siblings younger than 5. The mean number of age-eligible siblings is about 0.55. Many WIC infants and children also have siblings too old for WIC. As shown in the bottom of the exhibit, about 28 percent of WIC infants and 44 percent of WIC children have siblings older than 5.

Exhibits 3-11 and 3-12 focus on those sampled WIC infants and children with age-eligible siblings. These exhibits show that most age-eligible siblings also participate in WIC. For instance, Exhibit 3-11 shows that, for WIC infants and children with one age-eligible sibling, 80.8 percent of these siblings participate in WIC. For those with two age-eligible siblings, in 66.7 percent of the families both age-eligible siblings also participate, and in 20.7 percent of the families one of the two age-eligible siblings participates in WIC.

Within the group of age-eligible siblings, however, older siblings are less likely to participate in WIC than young siblings. As shown in Exhibit 3-12, 92.8 percent of infant siblings of sampled WIC infants and children participate in WIC, whereas 90.6 percent of one-year-old siblings participate. For four-year-olds, the participation rate drops to 69.9 percent. Because all of these siblings are income-eligible, the decline in WIC participation with age may indicate a decline in nutritional need among older children.

The final exhibit on WIC families (Exhibit 3-13) looks at the relationship between the economic unit and the entire household, and the extent to which WIC households are multi-generational. The WIC economic unit is defined as a "group of related or non-related individuals who usually, although not necessarily, live together, and whose production of income and use of goods and services are related.[12] For nearly 85 percent of the NSWP's sampled participants, the economic unit comprises the entire household. In the remaining 15 percent of cases, the household contains related or unrelated individuals who are not part of the economic unit. Overall, about 4 percent of households contain individuals unrelated to the

11 Data collected for the biennial PC reports do not include the family identifiers needed to identify multiple WIC participants within a family. Furthermore, WIC administrative data do not include information on non-participating family members, and could not be used to examine rates of participation among categorically-eligible family members.

12 USDA FNS, Instruction 803-3 (1988). See Chapter 4 for more information about the definition of the economic unit.

Exhibit 3-9

WIC Economic Unit Composition by Metro-Nonmetro Location: Distribution of Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Pregnant Women		Breastfeeding Women		Postpartum Women		Total Women	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Economic unit size								
1	7.4	8.8	0.0	0.0	0.3	0.8	3.5	4.7
2	33.0	23.9	7.9	4.9	9.9	7.6	20.2	15.4
3	30.3	30.3	25.3	27.5	32.4	34.7	29.9	31.3
4	13.7	16.5	32.6	31.2	30.7	23.8	23.2	21.3
5	10.1	11.1	20.9	21.8	15.0	25.9	14.0	17.8
6 or more	5.5	9.4	13.3	14.6	11.7	7.1	9.2	9.5
Adults in unit								
None	1.0	2.1	0.7	0.0	1.3	3.1	1.0	2.1
1	29.4	29.0	20.4	18.5	39.4	26.9	30.5	26.6
2	56.5	54.3	66.5	72.2	49.8	60.9	56.6	59.4
3	8.7	14.1	9.8	4.5	8.4	6.6	8.8	10.0
4	3.6	0.5	2.3	2.6	1.2	2.5	2.6	1.5
5	0.9	0.0	0.2	2.1	0.0	0.0	0.5	0.3
6 or more	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WIC participants in unit								
1	69.8	68.7	0.0	0.0	4.3	2.4	33.9	35.4
2	26.2	25.6	60.9	72.4	62.1	70.6	45.0	48.2
3	3.4	5.7	31.8	22.2	27.4	21.6	17.2	13.7
4 or more	0.6	0.0	7.3	5.4	6.3	5.4	3.9	2.7
Sample size	481	158	514	113	442	145	1,437	416
Population	668,251	191,130	315,918	60,545	446,008	127,891	1,430,17	379,566

Size of WIC economic unit is determined by number of persons who share financial support with WIC participant, as reported in survey. The only exception is for WIC participants who are foster children: foster children who are WIC pregnant women, infants, or children are assigned an economic unit size of one; foster children who are WIC breastfeeding or postpartum women are assigned an economic unit size of two if they reside with their infant. There is no item non-response for variables used to construct size of economic unit.

Exhibit 3-9 (cont.)

WIC Economic Unit Composition by Metro-Nonmetro Location: Distribution of Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Infants		Children		Total WIC	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Economic unit size						
1	1.5	0.6	3.0	1.7	2.7	2.2
2	8.7	11.2	8.1	7.9	11.1	10.5
3	27.8	22.7	24.8	19.6	26.7	23.1
4	29.5	30.1	29.8	30.8	28.2	28.4
5	15.9	19.4	18.4	20.8	16.8	19.7
6 or more	16.6	16.0	15.8	19.1	14.5	16.1
Adults in unit						
None	4.4	2.1	3.9	1.7	3.3	1.9
1	27.9	23.9	29.2	22.5	29.2	23.8
3	6.8	8.8	6.4	5.5	7.1	7.4
4	1.8	0.4	0.9	1.6	1.5	1.3
6 or more	0.1	0.0	0.0	0.0	0.0	0.0
WIC participants in unit						
1	16.2	15.3	55.0	62.5	40.0	44.7
3	22.4	19.6	11.6	6.8	15.7	11.5
4 or more	4.6	2.1	2.6	2.9	3.4	2.7
Population	1,593,475	384,936	3,119,987	832,937	6,143,639	1,597,439

The only exception is for WIC participants who are foster children: foster children who are WIC pregnant women, infants, or children are assigned an economic unit size of one; foster children who are WIC breastfeeding or postpartum women are assigned an economic unit

Exhibit 3-10

Distribution of WIC Infants and Children, by Number of Siblings Age-Eligible for WIC

	Infants	Children	Total
Percent with any siblings age-eligible for WIC	42.2	46.6	45.1
Number siblings **age-eligible** for WIC			
None	57.8	53.4	54.9
One	32.8	39.3	37.1
Two	7.4	6.5	6.8
Three	1.9	0.6	1.0
Four or more	0.1	0.2	0.2
Mean number siblings **age-eligible** for WIC	0.54	0.55	0.55
Percent with any siblings age 5 years or older	28.4	43.9	38.7
Number siblings age 5 years or older			
None	71.6	56.1	61.3
One	14.9	25.1	21.7
Two	9.0	12.4	11.3
Three	2.4	4.2	3.6
Four or more	2.0	2.2	2.1
Mean number siblings age 5 years or older	0.52	0.72	0.66
Sample size	614	647	1,261
Population	1,978,411	3,952,924	5,931,335

Exhibit 3-11

Percent of WIC Infants and Children, by Number of Siblings Age-Eligible for WIC and Number of Siblings Receiving WIC

	Number of Siblings Currently Receiving WIC				
	None	One	Two	Sample Size	Population
Number siblings age-eligible for WIC					
One	19.2	80.8	--	474	2,298,070
Two	12.6	20.7	66.7	111	503,105

The number of WIC infants and children with age-eligible siblings is 600 (44% of infants and 51% of children). Thirteen sampled persons have three age-eligible siblings and two sampled persons have four age-eligible siblings; they are not shown in the exhibit due to the small cell sizes.

Exhibit 3-12

Percent of Siblings of WIC Infants and Children Who Are Also Certified in WIC, by Age of Siblings

	Percent Currently in WIC	Percent Not in WIC	Number Siblings in Age Group
Age of siblings			
Less than 1 year	92.8	7.1	182
1 year old	90.6	9.4	139
2 years old	82.6	17.4	144
3 years old	78.6	21.4	140
4 years old	69.9	30.1	123
Total	83.8	16.2	728

There are 728 age-eligible siblings among the 600 sampled WIC infants and children with age-eligible siblings. Population counts are not provided on this exhibit because the unit of analysis is not the sampled WIC participant.

Exhibit 3-13

Characteristics of WIC Households, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Household relationship to economic unit							
Percent of WIC economic units residing by themselves	83.5	86.1	81.1	83.3	84.1	85.7	84.7
Percent of WIC economic units residing in larger households	16.5	13.9	18.9	16.7	15.9	14.3	15.3
Percent of households containing unrelated individuals[a]	6.6	5.4	3.7	5.4	4.4	3.5	4.2
WIC economic units by number of household members not counted in unit							
None	83.5%	86.1%	81.1%	83.3%	84.1%	85.7%	84.7%
One	6.5	5.2	8.9	7.0	4.1	6.1	5.8
Two	3.6	3.5	5.0	4.0	4.8	1.9	3.1
Three	3.6	3.2	1.7	2.9	3.0	3.1	3.0
Four or more	2.8	2.0	3.4	2.8	4.0	3.3	3.3
Multigenerational households							
Percent of households that are multigenerational	25.7	16.4	29.3	24.9	23.1	15.3	19.5
Percent of multigenerational households in which all household members are in WIC economic unit	63.4	45.6	51.3	56.4	59.5	51.6	55.4
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Household, by definition, is equal to or larger than WIC economic unit. WIC economic unit consists of all individuals residing with and sharing income with WIC participant. Household, however, consists of individuals residing with WIC participant, regardless of financial support arrangements.

Multigenerational households are indicated by presence of more than one generation of adults in household. These are predominantly WIC women and WIC mothers residing with their parents.

a Unrelated individuals are persons reported to be "roomer/boarder" or "other non-relative." Persons reported as "partner" (e.g., boyfriends) are not considered unrelated individuals.

WIC participant. The middle portion of the exhibit indicates the distribution of the number of individuals who are in the household, but who are not counted in the WIC economic unit.

The bottom portion of Exhibit 3-13 shows that 19.5 percent of WIC households are multi-generational, in the sense that the adults in the households represent more than one generation (e.g., a WIC mother and her parents or grandparents). Multi-generational households are more common for young mothers: the percentage of WIC women/mothers in multi-generational households is 56 percent for teens, 21 percent for 20- to 24-year-olds, and 9 percent for all others (not shown in exhibit). In 86 percent of multi-generational households, the WIC woman/mother resides with her parents, step-parents, or in-laws; an additional 6 percent live with grandparents, and the remainder live with other relatives. Exhibit 3-13 indicates that 55.2 percent of all respondents in multi-generational households report that financial support is shared across generations, and that all household members are part of the WIC economic unit.

3.4 Income of WIC Participants

Federal regulations require WIC participants to meet income-eligibility criteria specified by state WIC agencies. According to state income eligibility standards in place at the time of this survey, all applicants to WIC must have family income at or below 185 percent of the federal poverty guidelines, or be adjunct eligible by demonstrating certification for food stamps, TANF, or Medicaid. Information about WIC income eligibility is captured in WIC information systems and reported in the biennial PC reports.

The NSWP supplements existing information about WIC family income in two important ways. First, whereas the PCs report on total family income, the NSWP collected data on the components of family income to gain a better understanding of the economic circumstances of WIC families. Second, the income data presented in the PC reports may be incomplete for families determined to be WIC-eligible due to participation in other means-tested programs. PC reporting guidelines instruct states to record the self-declared income of these families for general estimation purposes; the 1998 PC data files, however, are missing family income data for 21 percent of adjunct-eligible participants (income was missing for 14.6 percent of all participants).

This section of the report presents detailed information about the income of WIC participants, including those who were certified as adjunct eligible. In the tables that follow, we report rates of adjunctive and automatic income-eligibility, sources of family income and amounts by source, and total family income by participant characteristics. Income information is based on the full NSWP sample of 3,114 WIC participants. In addition, we show rates of change in employment status and adjunct program participation, as measured approximately four months after WIC certification by a telephone follow-up survey. (Chapter 4 of the report presents findings from the in-home income verification portion of this study, based on a one-third sample of respondents to the NSWP in-person survey.)

Measuring Family Income

The NSWP collected data on all sources of income within each WIC family and determined total family income using a uniform procedure across all survey sites.[13] Each respondent was asked a series of questions that identified members of the WIC participant's economic unit (see Section A of the in-person interview instrument in Appendix D). The economic unit was determined to be all persons who shared financial support with the WIC participant. The respondent was then asked to report on the income received by each member of this economic unit during the month prior to certification. For each family member, the interviewer presented a list of potential income sources to elicit a yes/no response about receipt of income from each source. If receipt of income was indicated, respondents were asked the amount of income received.

13 This is consistent with the methodology used by the Study of WIC Participant and Program Characteristics, 1988, which was based on a national survey of WIC participants.

Total family income was calculated to be the sum of income received by all adult members of the WIC economic unit, reported for the month prior to WIC certification.[14] Annual income was calculated by multiplying monthly income by twelve.[15]

Family income as measured by the NSWP may differ from family income determined at WIC certification. This is because WIC staff may exercise some discretion in defining the WIC economic unit (which determines whose income to count), and WIC staff may measure income over a different time period than that used by NSWP. For example, federal guidelines state that "agencies should exercise flexibility in deciding whether to use an applicant's current or annual rate of income."[16] Furthermore, agencies are encouraged to define current income as income received during the month prior to application, but measurement differences could result if applicants report income in weekly, biweekly, or annual figures to the WIC clinic, which then converts it to a monthly amount.

The goal of NSWP was to measure income in a consistent manner for all sampled WIC participants, and to describe the income characteristics of WIC participants based on that consistent measure. Chapter 4 considers income verification, and compares income measured by NSWP to certification income for the one-third sample for which income was verified during an in-home follow-up interview.

Adjunctive and Automatic Income Eligibility

Federal regulations require state WIC agencies to accept applicants as **adjunctively** income eligible if they are certified eligible to receive food stamps, or certified as fully eligible or presumptively eligible to receive TANF or Medicaid. The adjunct eligibility provisions are designed to speed the application process for both participants and WIC staff; applicants who are adjunctively income eligible are not required to provide information about family income and are "not subject to the income limitations" of the program (7CFR246). In addition, states have the option to accept applicants as **automatically** income eligible if they participate in state-administered programs that routinely document income and have income-eligibility guidelines at or below WIC income guidelines.[17]

Exhibit 3-14 shows the percentage of WIC participants, by certification category, who participate in programs that confer adjunctive or automatic income eligibility.[18] Nearly 65 percent of all WIC participants are adjunctive or automatically income eligible, as shown by the right-most column indicating that 35.7 percent of participants do not participate in adjunct or automatic programs. In descending

14 Adults are generally identified by age greater than 18 (school attendance information was not collected, so we could not implement a more precise definition of adults as age 18 or older and not attending high school). WIC participants and their spouse/partner who are age 18 were classified as adults as well.

15 Respondents were asked to report the amounts of income received "last month." If respondents reported amounts as received on a weekly or bi-weekly basis, interviewers were instructed to multiply these amounts by 4.3 and 2.15, respectively.

16 FNS Instruction 803-3, WIC Program Certification: Income Eligibility.

17 A more complete description of income-eligibility regulations and procedures may be found in Chapter 4.

18 If a WIC applicant participates in more than one of the programs listed in Exhibit 3-14, he or she is represented in the exhibit under each program.

order, the most common adjunct programs are Medicaid (61.6 percent), food stamps (32.7 percent), and TANF (15.0 percent).[19]

The percentage of WIC participants certified as automatically income-eligible depends on local agency use of automatic income eligibility and the rate of participation in the relevant programs. Thirty-four percent of WIC participants are enrolled at local agencies using one or more programs to determine automatic eligibility.[20] Exhibit 3-14 shows the percentage of WIC participants who are enrolled in programs used by their local agency to determine automatic income eligibility. For example, although 6.6 percent of WIC children participate in Head Start (see Exhibit 3-6), none of them are enrolled in WIC through agencies using Head Start enrollment to determine automatic income eligibility (see Exhibit 3-14).

Sources of Income and Reporting of Income Data

Exhibits 3-15 through 3-18 present information regarding sources of income received by WIC families/ economic units and mean values of reported income by source. The most common sources of income for WIC families, shown in Exhibit 3-15, are wages and salary (received by 73.7 percent of families), TANF (15 percent), and alimony and child support (11.2 percent). These three sources of income were also the most common in 1988, the last time detailed income information was collected for WIC participants on a national basis.[21] In 1988, however, WIC families were more reliant on welfare income and less likely to receive wages: wages and salary were received by 58 percent of WIC families, AFDC was received by 32 percent, and alimony or child support were received by 8.7 percent.

Exhibit 3-15 also shows the success of NSWP in collecting income information from respondents. As discussed above, the NSWP survey separately recorded whether or not income was received from a source and, conditional upon receipt, the amount of income received.[22] For all sources of income, rates of missing data for income receipt are low, ranging from 0.4 to 3.3 percent (third column of Exhibit 3-15). Rates of missing data for amounts of income, however, vary considerably by source of income (fifth column). For the three most common sources of income the percent of respondents providing dollar amounts was high (86 percent for wages and salaries, 90 percent for TANF benefits, and 94 percent for alimony or child support). For less-common sources of income, however, respondents were often unable to recall dollar amounts, and the percentage of participants providing dollar amounts was low (about 18 percent for veteran's benefits; 31 percent for dividends, royalties, and trusts; 43 percent for worker's compensation). Each of these latter income sources was reported as received by less than 2.6 percent of WIC families. Thus, the NSWP income data appear to be fairly complete for the most common sources of income for WIC families.

---

19 There has been general decline in TANF and food stamp caseloads since Congress passed the Personal Responsibility and Work Opportunity Reconciliation Act (PL104-193) in 1996, so the stability of the findings in Exhibit 3-14 is uncertain. That is, the percentage of WIC participants participating in these three programs today may be quite different from the percentage in 1998.

20 Use of automatic eligibility was determined from the NSWP local agency survey.

21 Study of WIC Participant and Program Characteristics, 1988.

22 Data were collected for each adult family member and aggregated to the family level. When aggregating information to the family level, we consider information about receipt of a source to be missing only when information is missing for **all** family members; we consider information about amounts of income to be missing if receipt was indicated and amount is missing for **any** family member.

Exhibit 3-14

Percent of WIC Participants with Reported Participation in Adjunct Programs at Certification

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Adjunctive income eligibility							
TANF	9.3	13.8	21.7	14.2	14.0	16.0	15.0
Food Stamp Program	23.3	22.4	38.4	27.8	31.4	35.5	32.7
Medicaid	51.1	57.2	69.3	58.2	65.3	61.4	61.6
Automatic income eligibility							
Food Distribution Program on Indian Reservations[a]	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Supplemental Security Income	4.3	4.1	4.0	4.2	3.6	7.2	5.6
Free or reduced-price NSLP meals	0.0	0.0	0.0	0.0	0.0	0.7	0.3
Head Start	0.0	0.0	0.0	0.0	0.0	0.0	0.0
General Assistance	1.5	0.2	1.0	1.0	1.4	0.3	0.8
Home Energy Assistance	0.6	0.4	0.2	0.4	0.0	0.0	0.1
Overall							
No participation in adjunct or automatic programs	45.2	40.1	28.2	38.8	31.3	36.6	35.7
Adjunct/automatic eligibility status could not be determined	4.4	2.7	6.6	4.7	4.1	4.1	4.2
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Responses are not mutually exclusive, so percents add up to more than 100.

Adjunct income eligibility is provided by TANF, food stamps, and Medicaid, according to federal WIC regulations. State and local WIC agencies determine programs conferring automatic income-eligibility, within federal guidelines. For this table, participation in each program conferring automatic income eligibility is counted only among participants enrolled through local WIC agencies using that program to determine eligibility.

Information about programs used for automatic income eligibility comes from the NSWP Local Agency Survey.

a The Food Distribution Program on Indian Reservations is a USDA program operated as an alternative to the FSP and serving Native Americans residing on or near Indian lands.

Exhibit 3-15

Sources of Monthly Income, All WIC Economic Units

				Among Those with Source	
	Percent with **Source**	Percent without **Source**	Percent not **Reported**	Percent with **Amount Reported**	Percent with **Amount not Reported**
Source of income					
Unemployment insurance	4.9	95.1	2.2	87.4	12.6
Worker's compensation	1.6	98.4	2.3	43.0	57.0
SSI	5.4	94.6	2.4	87.3	12.7
Other welfare program	5.8	94.2	2.4	87.0	13.0
Veteran's benefits	0.8	99.2	2.5	17.6	82.4
Pensions or annuities	1.3	98.7	2.5	63.7	36.3
Interest on savings	9.5	90.5	1.7	62.5	37.5
Dividends, royalties, trusts	1.1	98.9	2.0	31.1	68.9
Other	5.7	94.3	3.3	92.2	7.8
Sample size	3,114	3,114	3,114		

Percent with source is based on receipt during the month prior to certification for all income sources except wages and salary.

Percent with amount reported is calculated prior to imputation of missing income amounts.

First eight items (wages or salary ... veteran’s benefits) were collected for each adult member of the family. For these income

Appendix B for person-level incidence of missing and imputed data.

"Other" income includes regular contributions from other sources, and lump sum income.

Temporary Disability Insurance.

It should be noted that this chapter presents information about total income of the WIC economic unit, aggregated over all members of the WIC economic unit. To gain a full understanding of the patterns of income reporting in the NSWP, Appendix B presents information about income reported for individual family members. As with other household surveys, the incidence of missing income data in the NSWP follows a predictable pattern: the amounts of respondents' own income and spousal income have low rates of item non-response; the amounts of income received by other family members have higher rates of non-response.[23] In addition, for all family members, amounts of unearned income have higher rates of non-response than amounts of earned income. The dollar amount of a reported income source has been imputed when missing due to item non-response. In addition, a small number of wage observations were imputed for those persons "currently employed' but reporting no wage income last month. Appendix B describes the imputation procedures; imputation had only a small effect on estimated means.

Exhibit 3-16 takes the overall "percentage with source" information from Exhibit 3-15 and breaks it out by WIC certification category. Similarly, Exhibit 3-17 presents the mean amount received by source of income and certification category. The same three sources of income—wages and salary, TANF, and alimony and child support—are the most common sources across all certification categories. Overall, wages and salary account for the largest portion of WIC family income, with an average monthly amount of $1,369 received by 73.7 percent of WIC families. TANF has a mean amount of $386 received by 15.0 percent of families; alimony and child support has a mean amount of $289 received by 11.2 percent of families. The mean amounts reported for pensions/annuities ($747) and Social Security ($635) are also relatively high. Only 1.3 percent of WIC participants report receipt of pension or annuity income. Nearly 6 percent of WIC families report receipt of Social Security benefits (based on the age of recipients, it appears that 2 percent of families receive old age retirement benefits and 4 percent receive death or disability benefits).

The bottom of Exhibit 3-16 shows the percentage of WIC families receiving any of the income sources shown in the table, and the percentage of families with no source of income. Overall, 6.6 percent of families reported no income from any source. Among families reporting no income, one-third have a family member who became unemployed during the month of WIC certification, and an additional 45 percent are adjunct-eligible through participation in food stamps and/or Medicaid. Thus, less than 2 percent of families reported having no income, nor did they provide any indication of adjunct eligibility.[24]

The distributions of income sources for WIC families in metropolitan and non-metropolitan areas are presented in Exhibit 3-18, a two-page exhibit that also breaks out income sources by certification category. Overall, WIC families in non-metropolitan areas are somewhat more likely (95.6 percent compared to 92.4 percent) to have an income source than WIC families in metropolitan areas.[25] For each individual source of income, however, there is no statistically significant difference in rates of receipt by area of residence.

23 Moore, Jeffrey, Linda Stinson, and Edward Welniak, "Income Measurement Error in Surveys: A Review," U.S. Bureau of Census, December 1997, submitted for publication.

24 All families reporting no income sources are shown in subsequent exhibits as having zero income.

25 The difference is statistically significant at the 5 percent level.

Exhibit 3-16

Sources of Monthly Income for WIC Economic Units, by Participant Category: Percent with Source

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Source of income							
Wages or salary	77.1	77.2	67.4	74.0	74.6	73.0	73.7
Unemployment insurance	3.9	5.6	4.5	4.5	4.9	5.2	4.9
Worker's compensation	1.6	1.2	2.1	1.7	2.2	1.3	1.6
TANF	9.3	13.8	21.7	14.2	14.0	16.0	15.0
SSI	5.1	3.9	4.0	4.5	4.6	6.2	5.4
Other welfare program	5.2	3.8	5.3	4.9	5.5	6.4	5.8
Social Security	5.9	3.0	6.1	5.3	6.6	5.8	5.9
Veteran's benefits	1.5	0.4	1.0	1.1	0.4	0.9	0.8
Pensions or annuities	1.0	0.3	0.6	0.7	1.0	1.7	1.3
Rental income	1.6	2.3	0.5	1.4	0.2	0.7	0.8
Interest on savings	8.8	8.2	7.5	8.3	9.0	10.4	9.5
Dividends, royalties, trusts	1.2	0.9	1.4	1.2	0.4	1.4	1.1
Alimony or child support	10.5	7.4	11.7	10.2	9.8	12.3	11.2
Other	6.7	7.3	4.9	6.2	8.3	4.2	5.7
Total							
Percent receiving any source	92.9	93.1	93.4	93.1	93.2	93.6	93.4
Percent with no source of income	7.0	6.9	6.6	6.9	6.8	6.4	6.6
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Based on income received for the month prior to certification for all income sources except wages and salary. Percent with wages and salary income is based on reported current employment status. Percent with source is calculated among respondents responding to each item. Item non-response ranged from 0.4% non-response for wage income to 3.3% non-response for "other" income.

"Other" income includes regular contributions from other sources, and lump sum income.

"Other welfare programs" include General Public Assistance, Black Lung Benefits, foster care, Section 8 housing assistance, and Temporary Disability Insurance.

Exhibit 3-17

Mean Amount of Monthly Income for WIC Economic Units, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Source of income							
Wages or salary	$1,400	$1,425	$1,324	$1,383	$1,372	$1,360	$1,369
Unemployment insurance	348	529	563	463	579	459	490
Worker's compensation	333	298	297	313	374	281	324
TANF	354	384	345	356	368	408	386
SSI	444	472	397	435	450	601	529
Other welfare program	327	443	388	366	350	409	385
Social Security	662	751	584	645	553	679	635
Veteran's benefits	293	272	272	286	201	288	276
Pensions or annuities	1,285	381	611	1026	683	706	747
Rental income	312	241	121	265	330	326	286
Interest on savings	17	35	24	23	27	26	26
Dividends, royalties, trusts	55	88	106	79	44	128	110
Alimony or child support	206	264	247	230	278	317	289
Other	341	352	205	310	207	349	287
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Mean amount is calculated among households with reported income source after imputation of missing amounts. Sample size and population reflect the entire sample; the percent of the population with each income source is shown in Exhibit 3-16.

Amounts were reported based on income received for month prior to certification. Wages are imputed for those persons "currently employed" but having no wage income "last month." See Appendix B for information about imputation of missing income amounts.

"Other income" includes regular contributions from other sources and lump sum income.

"Other welfare programs" include General Public Assistance, Black Lung Benefits, foster care, Section 8 housing assistance, and Temporary Disability Insurance.

Exhibit 3-18

Sources of Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location: Percent with Source

	Pregnant Women		Breastfeeding Women		Postpartum Women		Total Women	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of income								
Wages or salary	76.9	77.6	76.2	82.4	64.8	76.3	73.0	77.9
Unemployment insurance	3.9	4.1	4.8	10.0	3.6	7.7	4.0	6.3
Worker's compensation	1.4	2.4	1.0	2.4	2.6	0.4	1.7	1.7
TANF	10.0	6.7	13.8	13.8	22.8	18.0	14.8	11.7
SSI	5.3	4.3	4.1	3.3	4.8	1.4	4.9	3.1
Other welfare program	5.7	3.2	4.3	1.3	4.9	6.6	5.1	4.1
Social Security	5.3	8.0	3.2	1.9	5.6	7.8	4.9	7.0
Veteran's benefits	1.7	0.5	0.4	0.6	1.3	0.0	1.3	0.4
Pensions or annuities	1.3	0.0	0.4	0.0	0.6	0.5	0.9	0.2
Rental income	1.6	1.6	2.8	0.0	0.7	0.0	1.6	0.8
Interest on savings	7.7	12.4	7.4	12.6	7.6	7.1	7.6	10.6
Dividends, royalties, trusts	1.2	1.2	0.9	1.3	1.4	1.1	1.2	1.2
Alimony or child support	8.0	19.1	7.1	9.2	13.3	6.4	9.5	13.1
Other	7.0	5.6	7.1	8.5	5.3	3.6	6.5	5.4
Percent receiving any source	92.5	94.4	92.7	95.3	92.1	97.7	92.4	95.6
Percent with no source of income	7.5	5.6	7.3	4.7	7.9	2.3	7.6	4.4
Sample size	481	158	514	113	442	145	1,437	416
Population	668,251	191,130	315,918	60,545	446,008	127,891	1,430,177	379,566

Based on income received for the month prior to certification for all income sources except wages and salary. Percent with wages and salary income is based on reported current employment status. Percent with source is calculated among respondents responding to each item. Item non-response ranged from 0.4% non-response for wage income to 3.3% non-response for "other" income.

"Other" income includes regular contributions from other sources, and lump sum income.

"Other welfare programs" include General Public Assistance, Black Lung Benefits, foster care, Section 8 housing assistance, and Temporary Disability Insurance.

Exhibit 3-18 (cont.)

Sources of Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location: Percent with Source

	Infants		Children		Total WIC	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of income						
Wages or salary	75.2	72.3	72.1	76.5	73.1	75.8
Unemployment insurance	4.3	7.1	5.7	3.3	4.9	4.9
Worker's compensation	2.2	2.1	1.4	0.9	1.7	1.4
TANF	14.4	12.4	16.6	13.7	15.6	12.9
SSI	5.2	2.2	6.8	3.7	5.9	3.2
Other welfare program	4.1	11.3	6.2	7.2	5.4	7.4
Social Security	6.0	9.2	5.5	6.7	5.5	7.4
Veteran's benefits	0.3	0.8	0.9	0.8	0.8	0.7
Pensions or annuities	0.8	1.8	1.9	0.8	1.4	0.9
Rental income	0.3	0.0	0.8	0.4	0.9	0.4
Interest on savings	8.5	11.0	10.6	9.5	9.3	10.1
Dividends, royalties, trusts	0.3	0.7	1.4	1.3	1.1	1.1
Alimony or child support	9.9	9.2	11.0	17.2	10.4	14.3
Other	8.8	6.1	3.1	8.3	5.3	7.1
Percent receiving any source	92.5	95.9	92.5	97.7	92.5	96.8
Percent with no source of income	7.5	4.1	7.5	2.3	7.5	3.2
Sample size	474	140	476	171	2,387	727
Population	1,593,475	384,936	3,119,987	832,937	6,143,639	1,597,439

Based on income received for the month prior to certification for all income sources except wages and salary. Percent with wages and salary income is based on reported current employment status. Percent with source is calculated among respondents responding to each item. Item non-response ranged from 0.4% non-response for wage income to 3.3% non-response for "other" income.

"Other" income includes regular contributions from other sources, and lump sum income.

"Other welfare programs" include General Public Assistance, Black Lung Benefits, foster care, Section 8 housing assistance, and Temporary Disability Insurance.

Exhibit 3-19 displays the mean amount received, broken out by source of income, certification category, and location. At this level of disaggregation, some cells contain fewer than ten WIC participants, and cell values are not reported. Over the entire caseload (the Total WIC columns) the mean income received from most income sources, conditional on receipt, is approximately the same in metropolitan areas and non-metropolitan areas. The mean amounts of income differ by location for only two income sources: unemployment insurance income (greater in non-metropolitan areas) and alimony and child support (greater in metropolitan areas).

Total Family Income and Income as a Percent of Poverty Guidelines

Exhibit 3-20 presents summary statistics (average income, median income, and per capita income) for total annualized income for WIC families, by certification category. Across all WIC families, the mean annual income is $14,739, with a median income of $13,212. Average per capita income is $3,774. In some instances we have imputed income amounts in order to develop income figures at the family level.[26] As indicated in the exhibit, we were not able to impute missing data for 2.5 percent of the sample.

The middle and lower portions of Exhibit 3-20 present summary income statistics broken out by the economic unit's adjunct-eligibility status. The average income of adjunctively-eligible families is considerably lower ($12,924) than that for units not adjunctively-eligible ($17,769). The difference in median income levels is slightly lower, with adjunctively-eligible families having a median income of $11,936 and non-adjunctively-eligible families having a median income of $16,200. Exhibit 3-21 repeats these statistics, but breaks them out between participants in metropolitan and non-metropolitan areas. The difference in mean income between metropolitan and non-metropolitan areas is small ($14,603 versus $15,259), and is not statistically significant.

Exhibit 3-22 presents median annual income for demographic subgroups within each certification category. (For WIC infants and children, the characteristics of the mother are used for classification.) It is difficult to make comparisons of total family income between different subgroups, however, because family size may not be distributed equally across subgroups. Therefore, using the same demographic subgroups, Exhibit 3-23 presents per capita annual income figures. Within the entire caseload (Total WIC column), per capita income does not vary significantly with age of the WIC woman/mother. Per capita income, however, varies significantly with all other demographic characteristics shown in the exhibit (marital status, adult male present, education level, size of the economic unit, and employment status).

26 Imputation procedures are described in Appendix B.

Exhibit 3-19

Mean Amount of Monthly Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location

	Pregnant Women		Breastfeeding Women		Postpartum Women		Total Women	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of income								
Wages or salary	$1,381	$1,468	$1,398	$1,555	$1,335	$1,291	$1,372	$1,424
Unemployment insurance	389	*	566	437	681	350	517	324
TANF	365	294	381	399	361	278	366	305
SSI	453	*	418	*	391	*	428	482
Other welfare program	350	*	434	*	396	362	379	297
Social Security	690	596	714	*	547	675	643	648
Interest on savings	23	5	44	6	30	*	30	5
Alimony or child support	221	183	281	196	253	*	245	188
Other	360	253	399	151	228	*	336	189
Sample size	481	158	514	113	442	145	1,437	416
Population	668,251	191,130	315,918	60,545	446,008	127,891	1,430,177	379,566

Mean amount is calculated among households with reported income source after imputation of missing amounts. Sample size and population reflect the entire sample; the percent of the population with each income source is shown in Exhibit 3-16.

Amounts were reported based on income received for month prior to certification. Wages are imputed for those persons "currently employed" but having no wage income "last month." See Appendix B for information about imputation of missing income amounts.

"Other income" includes regular contributions from other sources and lump sum income.

"Other welfare programs" include General Public Assistance, Black Lung Benefits, foster care, Section 8 housing assistance, and Temporary Disability Insurance.

* Denotes cells with fewer than 10 WIC participants.

Exhibit 3-19 (continued)

Mean Amount of Monthly Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location

	Infants		Children		Total WIC	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of income						
Wages or salary	$1,364	$1,410	$1,365	$1,346	$1,366	$1,379
Unemployment insurance	527	*	409	*	457	621
TANF	371	354	416	372	394	353
SSI	436	*	634	*	542	429
Other welfare program	413	*	411	399	404	329
Social Security	563	*	703	615	649	597
Interest on savings	33	8	27	22	29	14
Alimony or child support	280	272	350	235	310	230
Other	205	225	150	*	226	465
Sample size	474	140	476	171	2,387	727
Population	1,593,475	384,936	3,119,987	832,937	6,143,639	1,597,439

Mean amount is calculated among households with reported income source after imputation of missing amounts. Sample size and population reflect the entire sample; the percent of the population with each income source is shown in Exhibit 3-16.

Amounts were reported based on income received for month prior to certification. Wages are imputed for those persons "currently employed" but having no wage income "last month." See Appendix B for information about imputation of missing income amounts.

"Other income" includes regular contributions from other sources and lump sum income.

"Other welfare programs" include General Public Assistance, Black Lung Benefits, foster care, Section 8 housing assistance, and Temporary Disability Insurance.

* Denotes cells with fewer than 10 WIC participants.

Exhibit 3-20

Mean and Median Annualized Family or Economic Unit Income of WIC Participants, by Participant Category and Adjunct Eligibility Status

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
All economic units							
Average (mean) income	15,100	15,483	13,254	14,594	14,708	14,822	14,739
Per capita income[a]	5,184	3,737	3,372	4,308	3,671	3,575	3,774
Median income	12,171	13,980	12,000	12,171	13,500	13,423	13,212
Percent with income not reported	0.6	0.6	0.6	0.6	2.2	3.5	2.5
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Adjunctively-eligible							
Average (mean) income	12,362	13,483	12,116	12,495	13,430	12,839	12,924
Per capita income[a]	4,341	3,286	3,072	3,650	3,395	3,119	3,317
Median income	10,150	12,000	10,428	10,680	12,000	12,000	11,936
Percent with income not reported	0.8	0.3	0.7	0.6	2.4	5.2	3.4
Sample size	342	374	426	1,142	405	414	1,961
Population	458,522	217,868	410,318	1,086,708	1,341,504	2,460,773	4,888,984
Not adjunctively-eligible							
Average (mean) income	18,218	18,249	16,097	17,744	17,385	17,943	17,769
Per capita income[a]	6,144	4,360	4,120	5,296	4,249	4,294	4,539
Median income	14,400	16,800	15,300	15,456	16,200	16,800	16,200
Percent with income not reported	0.4	1.0	0.3	0.5	1.9	0.6	0.9
Sample size	297	253	161	711	209	233	1,153
Population	400,859	158,595	163,581	723,035	636,907	1,492,151	2,852,094

Mean, median, and per capita income are calculated over households with non-missing income, after imputation. Number and percent with missing income are excluded from previous percents. See Appendix B for information about imputation of missing income amounts.

a Per capita income is calculated as total income of the WIC economic unit divided by the size of the WIC economic unit. For pregnant women, the unborn child is not counted in the size of the WIC economic unit for this calculation.

Exhibit 3-21

Mean and Median Annualized Family or Economic Unit Income of WIC Participants, by Participant Category and Metro-Nonmetro Location

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
All economic units							
Average (mean) income	15,100	15,483	13,254	14,594	14,708	14,822	14,739
Per capita income[a]	5,184	3,737	3,372	4,308	3,671	3,575	3,774
Median income	12,171	13,980	12,000	12,171	13,500	13,423	13,212
Percent with income not reported	0.6	0.6	0.6	0.6	2.2	3.5	2.5
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Metro areas							
Average (mean) income	15,135	15,100	13,093	14,490	14,661	14,626	14,603
Per capita income[a]	5,296	3,647	3,342	4,323	3,657	3,542	3,758
Median income	12,171	13,980	12,000	12,171	13,500	13,423	13,212
Percent with income not reported	0.4	0.7	0.4	0.5	2.5	3.6	2.6
Sample size	481	514	442	1,437	474	476	2,387
Population	668,251	315,918	446,008	1,430,177	1,593,475	3,119,987	6,143,639
Nonmetro areas							
Average (mean) income	14,975	17,468	13,818	14,988	14,900	15,553	15,259
Per capita income[a]	4,787	4,205	3,477	4,252	3,726	3,699	3,838
Median income	12,600	17,352	12,000	13,792	14,400	14,400	14,400
Percent with income not reported	1.2	0.0	1.2	1.0	1.0	2.9	2.0
Sample size	158	113	145	416	140	171	727
Population	191,130	60,545	127,891	379,566	384,936	832,937	1,597,439

Mean, median, and per capita income are calculated over households with non-missing income, after imputation. Number and percent with missing income are excluded from previous percents. See Appendix B for information about imputation of missing income amounts.

a Per capita income is calculated as total income of the WIC economic unit divided by the size of the WIC economic unit. For pregnant women, the unborn child is not counted in the size of the WIC economic unit for this calculation.

Exhibit 3-22

Median Annualized Economic Unit Income of WIC Participants, by Category and Selected Maternal Characteristics

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Age							
Less than 18	11,760	16,623	12,654	12,000	13,210	13,200	13,200
18-34	12,420	14,400	11,670	12,171	13,500	13,200	13,200
35 or older	12,000	15,515	18,000	14,400	14,400	15,168	14,460
Marital status							
Married	14,990	15,600	14,400	15,028	15,168	16,174	15,600
Widowed, divorced, or separated	9,828	8,256	7,734	9,264	9,600	8,808	9,600
Never married	11,712	9,933	9,600	10,428	11,047	12,000	11,520
Not reported	13,440	23,569	14,400	14,400	14,400	4,887	12,285
Adult male present							
Yes	14,400	15,600	14,400	14,415	14,472	15,325	15,072
No	8,543	7,320	6,521	7,536	8,424	8,520	8,364
Highest grade of education							
Less than 8 years	11,048	12,000	10,906	11,048	11,754	13,189	12,000
8-11 years	10,200	12,000	11,897	11,280	10,800	12,000	11,664
12 years	12,600	15,600	10,860	12,600	13,759	13,356	13,500
13 or more years	16,500	15,600	14,580	15,941	16,707	17,988	16,800
Schooling incomplete, age <18	12,000	16,623	12,396	12,000	12,880	12,000	12,396
Size of economic unit							
1 person	6,000	--	--	6,000	--	--	6,000
2 persons	9,600	2,400	4,704	8,543	5,760	6,060	7,056
3-5 persons	14,400	14,400	12,000	14,056	14,400	13,800	14,070
5 or more persons	19,824	19,200	17,520	19,200	15,120	16,800	16,800
Currently employed							
Yes	16,200	19,200	16,800	16,500	18,000	17,948	17,520
No, employed in last 12 mos.	10,200	14,784	10,800	11,404	14,016	12,000	12,168
No, not employed in last 12 mos.	12,000	12,000	10,680	12,000	12,000	12,000	12,000
Overall	12,360	14,400	12,000	12,396	13,500	13,440	13,432

Maternal characteristics are the characteristics of WIC women or the characteristics of the mothers of WIC infants and children. Median annualized income is measured over economic units with non-missing reported income.

Exhibit 3-23

Per Capita Economic Unit Income of WIC Participants, by Category and Selected Maternal Characteristics

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Age							
Less than 18	4,327	4,075	3,319	3,905	3,737	4,324	3,945
18-34	5,286	3,748	3,350	4,364	3,734	3,593	3,819
35 or older	5,048	3,685	3,994	4,323	3,082	3,545	3,587
Marital status							
Married	5,185	4,131	3,776	4,490	3,963	3,840	4,010
Widowed, divorced, or separated	5,248	2,901	2,510	3,826	2,712	2,858	3,003
Never married	5,199	3,207	3,211	4,248	3,528	3,612	3,772
Not reported	4,896	3,414	4,176	4,480	5,776	3,571	4,371
Adult male present							
Yes	5,450	4,013	4,042	4,715	4,161	3,814	4,116
No	4,594	2,695	2,392	3,443	2,578	3,097	3,050
Highest grade of education							
Less than 8 years	3,397	2,626	2,635	2,983	2,558	2,765	2,764
8-11 years	4,183	3,160	2,938	3,604	3,171	2,807	3,077
12 years	5,294	4,218	3,522	4,503	3,748	3,548	3,816
13 or more years	7,256	3,978	3,988	5,370	4,439	4,694	4,780
Schooling incomplete, age <18	4,406	3,670	3,255	3,854	3,652	3,973	3,812
Not reported	3,948	4,613	1,189	3,934	2,095	8,090	4,763
Size of economic unit							
1 person	6,512	--	6,897	6,520	--	--	6,520
2 persons	5,633	2,247	2,348	4,874	2,734	3,495	3,897
3-5 persons	4,974	3,985	3,504	4,185	4,023	3,720	3,902
6 or more persons	3,289	3,098	3,243	3,213	2,685	3,102	2,998
Currently employed							
Yes	7,570	5,080	5,192	6,630	5,083	4,948	5,346
No, employed in last 12 mos.	4,036	3,898	2,907	3,653	3,617	2,930	3,384
No, not employed in last 12 mos.	4,173	3,143	2,997	3,518	3,248	2,979	3,169
Overall	5,190	3,737	3,381	4,314	3,679	3,597	3,790

Maternal characteristics are the characteristics of WIC women or the characteristics of the mothers of WIC infants and children. Per capita income is measured over economic units with non-missing reported income.

The next set of exhibits examine the poverty level of WIC economic units. These exhibits take size of economic unit into consideration as well as annual income. In April 1998, the poverty level and 185-percent poverty thresholds for families of different size were as follows:[27]

	Poverty Income		185 Percent Poverty Income	
Family Size	**Monthly**	**Annual**	**Monthly**	**Annual**
1	658	7,890	1,216	14,597
2	884	10,610	1,636	19,629
3	1,111	13,330	2,055	24,661
4	1,338	16,050	2,474	29,693
5	1,564	18,770	2,894	34,725
6	1,791	21,490	3,313	39,757

Source: U.S. Department of Health and Human Services, 1997 HHS Poverty Guidelines.

Exhibit 3-24 presents the distribution of WIC participants across poverty level ranges. Overall, 27.3 percent of WIC economic units have income at or below 50 percent of the poverty level, and another 36.5 percent have income between 51 and 100 percent of poverty. There are differences by certification category, with pregnant women most broadly distributed across poverty categories, and all other certification categories (families with infants and children) more heavily concentrated at the lowest levels of the poverty distribution.

The distribution of WIC participants by cumulative percent of poverty is shown in Exhibit 3-25 (by certification category) and Exhibit 3-26 (by adjunct-eligibility status). Exhibit 3-25 shows that 94.2 percent of WIC participants are in economic units with reported income at or below 185 percent of the poverty level. Exhibit 3-26 shows the corresponding percentages for those adjunctively income-eligible (95.4 percent have income at or below the 185 percent threshold) and non-adjunctively eligible (92.2 percent have income at or below the 185 percent threshold). With 185 percent of poverty being the income limit for WIC participation, one might expect this figure to be closer to 100 percent. The only WIC participants who may legitimately have income above 185 percent of poverty are adjunctively-eligible WIC participants enrolled in Medicaid.[28] For non-adjunctively eligible participants with income above 185 percent of poverty, income measured by the survey may differ from income measured at WIC certification due to discretion exercised by WIC staff, slight differences in measurement methodology, or measurement error, as previously discussed. The income verification analysis presented in Chapter 4 looks more closely at WIC families whose reported income exceeds the income eligibility thresholds.

27 Updates of the poverty guidelines are published each March by the US Department of Health and Human Services. WIC agencies adopt the new guidelines each year between April and July, with adoption schedules varying by site.

28 In 1998, eight states had Medicaid income-eligibility limits above 185 percent of poverty for pregnant women and children under five years old; the NSWP sample included WIC participants from five of these eight states. In addition, several Medicaid eligibility rules and practices enable enrollment of persons with incomes above 185 percent of poverty. These practices include the flexible definition of the family unit; relatively long certification periods; eligibility redetermination practices; Medicaid waiver programs; presumptive eligibility for pregnant women; transitional coverage for working poor families; and guaranteed enrollment periods (Kimball Lewis and Marilyn Ellwood, *Medicaid Policies and Eligibility for WIC*, Alexandria, VA: USDA/FNS/OANE, 1998.

Exhibit 3-24

Distribution of Percent of Poverty Level of WIC Participants, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent of poverty level							
0-50	24.8	26.4	34.8	28.3	26.0	27.6	27.3
51-100	28.4	35.1	33.0	31.3	39.0	37.7	36.5
101-130	14.6	17.4	15.6	15.5	16.4	13.9	14.9
131-150	11.2	7.5	6.5	8.9	5.7	8.4	7.8
151-185	14.0	7.7	6.1	10.2	6.8	6.8	7.6
186-200	1.4	1.8	0.6	1.2	1.1	2.6	1.9
201-225	1.5	1.8	1.3	1.5	2.4	1.5	1.7
226-250	1.2	1.1	0.5	1.0	1.2	0.8	0.9
Over 250	3.0	1.2	1.5	2.2	1.4	0.8	1.3
Not reported[a]	0.7	0.6	0.6	0.7	2.4	4.1	2.9
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

a Number respondents with poverty status "not reported" are excluded from previous percents.

Exhibit 3-25

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent of poverty level							
0-50	24.8	26.4	34.8	28.3	26.0	27.6	27.3
51-100	53.2	61.5	67.8	59.6	65.0	65.3	63.9
101-130	67.8	78.9	83.4	75.0	81.5	79.2	78.8
131-150	79.0	86.4	89.9	84.0	87.1	87.6	86.6
151-185	93.0	94.1	96.0	94.2	93.9	94.3	94.2
186-200	94.4	95.9	96.6	95.4	95.0	96.9	96.1
201-225	95.8	97.7	97.9	96.9	97.4	98.4	97.8
226-250	97.0	98.8	98.5	97.8	98.6	99.2	98.7
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported[a]	0.7	0.6	0.6	0.7	2.4	4.1	2.9
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

a Number respondents with poverty status "not reported" are excluded from previous percents.

Exhibit 3-26

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Adjunctive Income Eligibility

Percent of Poverty Level	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Adjunctively income eligible							
0-50	33.3	33.0	40.6	36.0	29.9	36.2	34.4
51-100	62.1	71.7	74.1	68.6	73.5	74.9	73.1
101-130	77.2	87.7	88.6	83.6	86.2	87.3	86.1
131-150	85.6	91.0	92.7	89.4	89.4	91.8	90.6
151-185	95.4	95.9	97.2	96.2	94.9	95.3	95.4
186-200	96.4	97.1	97.2	96.8	95.9	97.2	96.8
201-225	97.4	98.6	98.0	97.9	97.6	98.7	98.2
226-250	98.7	99.1	98.4	98.7	98.6	98.8	98.7
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported[a]	0.8	0.3	0.7	0.6	2.4	5.2	3.4
Sample size	342	374	426	1,142	405	414	1,961
Population	458,522	217,868	410,318	1,086,708	1,341,504	2,460,773	4,888,984
Not adjunctively income eligible							
0-50	15.2	17.4	20.2	16.8	17.7	13.9	15.5
51-100	43.0	47.4	52.0	46.0	47.2	49.9	48.3
101-130	57.0	66.8	70.3	62.2	71.3	66.2	66.3
131-150	71.4	80.0	82.7	75.8	82.4	80.7	79.9
151-185	90.2	91.7	92.8	91.1	92.0	92.8	92.2
186-200	92.1	94.3	95.1	93.2	93.1	96.5	94.9
201-225	94.0	96.4	97.7	95.4	97.2	98.0	97.2
226-250	95.0	98.3	98.6	96.5	98.6	99.8	98.7
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported[a]	0.6	1.0	1.2	0.8	2.6	2.2	1.9
Sample size	297	253	161	711	209	233	1,153
Population	400,859	158,595	163,581	723,035	636,907	1,492,151	2,852,094

a Number respondents with poverty status "not reported" are excluded from previous percents. Applicants to WIC are adjunctively income eligible if they participate in AFDC/TANF, FSP, or Medicaid.

Exhibit 3-27 presents the cumulative percentage-of-poverty distributions for participants living within and outside of metropolitan areas. The distributions are generally similar to one another, with 64.4 percent of metropolitan participants at or below the 100 percent poverty level, compared to 61.8 percent of non-metropolitan participants.

Changes in Employment Status and Adjunct Program Participation Four Months after Certification

In 1988, the WIC Income Verification Study reported changes in WIC economic unit income four to five months after certification. In 1988 it was found that 37 percent of WIC economic units experienced increases in monthly income during the certification period, whereas 63 percent experienced decreases in income.

Unlike other public assistance programs, WIC does not require reporting of changes in income or adjunct program participation during the WIC certification period. Income reporting after certification is not mandated because WIC benefits are not dependent on income level. Although WIC uses income to determine WIC program eligibility at certification, after certification, all participants receive benefit packages with specific foods in quantities meant to address their nutritional risks, which are also established at certification.[29] Nonetheless, changes in WIC family resources are important in determining re-certification rates.

Although there was interest in having NSWP report changes in WIC family income four months after certification, comparable to the 1988 study, the different study design for the NSWP put this task outside the scope of the study. (In 1988, in-home interviews were conducted four months after certification, and both the in-home audit and the four-month follow-up data were collected concurrently. In contrast, NSWP completed most in-home interviews within six weeks of certification.) To allow some indication of the change in WIC family circumstances during the certification period, NSWP added a brief telephone follow-up component to the survey.

The telephone follow-up was conducted with a random sample of 593 persons who had previously completed both the in-person and in-home surveys (558 persons completed the telephone follow-up interview). Respondents were contacted approximately four months after WIC certification and asked to report current participation in adjunct programs and current employment status and earnings for each member of the WIC economic unit.

Exhibit 3-28 shows the change in adjunct program participation and employment status for WIC economic units.[30] Over the four-month period following WIC certification the overall percentage of WIC families receiving TANF declined, the overall percent receiving food stamps increased slightly, and the percentage of families with employed family members remained at about 75 percent.

29 In contrast, the FSP disburses benefits that vary by income level, and FSP requires monthly reporting (of at least some portion of the caseload) to allow for adjustment of benefits.

30 Earning data suffered high rates of non-response on this survey and are not reported.

Exhibit 3-27

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Metro-Nonmetro Location

Percent of Poverty Level	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Metropolitan location							
0-50	23.6	27.9	35.9	28.4	26.1	27.9	27.5
51-100	52.8	64.5	67.5	60.0	65.4	66.0	64.4
101-130	67.7	80.4	83.7	75.5	81.8	79.3	79.0
131-150	78.0	86.7	89.6	83.5	87.3	86.9	86.2
151-185	92.6	94.4	96.1	94.1	94.0	93.9	94.0
186-200	94.0	95.7	96.7	95.2	95.0	96.6	95.9
201-225	95.7	97.3	97.8	96.7	97.2	98.4	97.7
226-250	97.0	98.6	98.5	97.8	98.4	99.3	98.7
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported[a]	0.5	0.7	0.7	0.6	2.8	4.4	3.1
Sample size	481	514	442	1,437	474	476	2,387
Population	668,251	315,918	446,008	1,430,177	1,593,475	3,119,987	6,143,639
Non-metropolitan location							
0-50	29.0	18.8	30.8	28.0	25.5	26.5	26.6
51-100	54.5	46.2	68.9	58.0	63.6	62.6	61.8
101-130	68.2	70.9	82.3	73.4	80.2	78.9	77.9
131-150	82.2	85.1	90.9	85.6	86.5	89.9	88.0
151-185	94.1	92.7	95.3	94.3	93.8	95.8	95.0
186-200	95.7	97.0	96.1	96.1	94.9	98.2	96.9
201-225	96.4	99.4	98.5	97.6	98.5	98.6	98.3
226-250	96.9	99.4	98.5	97.8	99.4	98.6	98.6
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported[a]	1.2	0.0	1.2	1.0	1.0	2.9	2.0
Sample size	158	113	145	416	140	171	727
Population	191,130	60,545	127,891	379,566	384,936	832,937	1,597,439

a Number respondents with poverty status "not reported" are excluded from previous percents. Applicants to WIC are adjunctively income eligible if they participate in AFDC/TANF, FSP, or Medicaid.

Exhibit 3-28

Status of WIC Economic Units in Adjunct Programs and Employment, at Certification and Four Months Later

	TANF	FSP	Employment
Sample size	433	436	441
Percent of WIC economic units			
Partipating at WIC certification	12.0	30.7	75.1
Exited	7.6	7.1	10.7
Entered	3.5	8.7	9.8
Participating four months later	7.9	32.3	74.2

Source: NSWP In-Person Survey, March-May 1998; NSWP Telephone Follow-up Survey, July-August 1998. Unweighted data.

Sample size includes respondents with non-missing program participation status on both surveys. The total number of respondents to the Telephone Follow-up Survey was 558.

The net changes in adjunct participation and employment status over the four-month period mask significant changes within the population. The percentage of families changing participation status was 11.1 percent for TANF and 15.8 percent for food stamps. Entries and exits were approximately offsetting for food stamps, whereas twice as many WIC families exited TANF as entered during the four-month period. Twenty percent of WIC families experienced a change in employment status, with about 10 percent both entering and 10 percent exiting employment status over the four-month period.

3.5 Nutritional Risk Factors

In addition to meeting income-eligibility guidelines, a WIC applicant must be found to be at nutritional risk. For each WIC applicant, nutritional risk is determined through a medical and/or nutritional assessment by a competent professional authority on staff at the local WIC agency.[31]

Federal regulations define four broad categories of nutritional risks:

(1) Detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements;

(2) Other documented nutritionally related medical conditions;

(3) Dietary deficiencies that impair or endanger health; and

(4) Conditions that predispose persons to inadequate nutritional patterns or nutritionally-related medical conditions (CFR 246.2).

In 1998, when the NSWP was fielded, the WIC Program did not have a uniform set of nutrition risk criteria in use by all state WIC agencies.[32] For reporting purposes, state WIC agencies map their nutrition risks into a standard categorization scheme used for the biennial WIC Participant and Program Characteristics reports.[33] This categorization scheme captures information about risks in 23 categories: 18 specific risks plus five categories of "other" risk in broad categories (other anthropometric, other biochemical, other health, other dietary, and other nutritional risk).[34]

Since 1998, the WIC Program has adopted a standard list of nutrition risk criteria to be used by all states. The list of risk criteria now in use is based on the recommendations of the Committee on Scientific Evaluation of WIC Nutrition Risk Criteria, formed by the Institute of Medicine (IOM).[35]

The NSWP had three goals in collecting nutrition risk information for sampled WIC participants: (1) to collect comparable data on the incidence of specific nutrition risks for all sampled persons, spread across 25 states; (2) to report on the incidence of specific risks that are aggregated within the broad reporting

31 Federal regulations also allow nutritional risk to be established based on referral data from a competent professional authority not on the staff of the local WIC agency.

32 Nutrition risk assessment in the WIC program uses a risk criterion consisting of a risk indicator and a cutoff point. This chapter presents information about risk indicators only.

33 Beginning April 1, 1999, state agencies use WIC nutrition risk criteria from a list established for the WIC program, developed by FNS in conjunction with state and local WIC agency experts. WIC state agencies are not required to use all of the nutritional risk criteria on the new list.

34 Most state WIC agencies map their risk codes into standard codes before submitting data to the PC studies. Less aggregated codes are therefore not available for study.

35 This committee was formed in 1993 by the IOM under the sponsorship of USDA FNS. The Committee conducted a comprehensive review of the scientific basis for the nutrition risk criteria used by state WIC agencies. Their findings were published in *WIC Nutrition Risk Criteria: A Scientific Assessment*, IOM, 1996.

categories of the PC reports; and (3) to collect information about whether the risks recommended by the IOM (and subsequently adopted by WIC) were being assessed in practice.

The NSWP collected nutrition risk information for sampled WIC participants using a structured checklist containing up to 47 risks recommended for use in the WIC Program by the IOM Committee. (The exact number of risks varied by certification category.) NSWP interviewers, working in WIC clinics, asked clinic staff to complete a checklist for each WIC participant sampled for the NSWP survey. The checklist was structured so that, for each risk listed, WIC staff indicated whether a risk was present, not present, or not assessed. It is important to note, however, that the indication of a "risk present" depended on state-specific criteria for WIC eligibility in place in 1998.[36]

The specific risk criteria listed on the NSWP checklist, in the four broad categories of risk, are shown in Exhibit 3-29. Because this list was taken from the recommendations of the IOM Committee, the list does not necessarily correspond to risk criteria used by each state in 1998 when NSWP was fielded. As a result, some WIC clinic staff entered risks in response to an open-ended "other" question; these responses were post-coded and categorized as "other risks" to distinguish them from the risks recommended by the IOM committee.

In addition to the four categories of risk, federal regulations specify two other means of satisfying the nutritional risk requirement for WIC certification—"conferred" risk and "regression." These risks were not included on the NSWP checklist.

Conferred risk may apply in either of two situations. First, for breastfeeding mothers and their infants, only one individual needs to demonstrate risk in order for both to be certified as WIC eligible. Second, infants under six months of age need not demonstrate risk if either their mother participated in WIC when pregnant or medical records document that their mother was at nutritional risk when pregnant for one or more specified reasons.[37] The category of conferred risk was not included on the NSWP checklist; conferred risk was post-coded for infants in the NSWP sample based on their mothers' reported participation in WIC.

Regression refers to a situation in which a competent professional authority determines that a previously-certified applicant may be at risk of regression in nutritional status without the supplemental foods offered by WIC. Regression was not included on the NSWP checklist. According to the PC98 report, 3 percent of children had a risk of regression, and less than 1 percent of women and infants had this risk. Only 2.3 percent of all WIC participants in 1998 were certified with a risk of regression and no other risk, according to PC98 data.

36 The specific criteria for determining anemia and some anthropometric risks (underweight, overweight, and short stature) varied by state prior to adoption of standard crtieria in 1999.

37 The reasons include being at risk due to detrimental or abnormal nutritional conditions detectable by biochemical or anthropometric measurements or other documented nutritionally-related medical conditions.

Exhibit 3-29

Nutritional Risk Criteria Recommended by the Committee on Scientific Evaluation of WIC Nutrition Risk Criteria, Institute of Medicine, 1996

	Pregnant Women	Breastfeeding Women	Postpartum Women	Infants	Children
Anthropometric risk criteria					
Prepregnancy underweight	✓	✓	✓		
Low maternal weight gain	✓				
Maternal weight loss during pregnancy	✓				
Prepregnancy overweight	✓				
High gestational weight gain	✓	✓	✓		
Postpartum underweight		✓	✓		
Postpartum overweight		✓	✓		
Low birth weight				✓	✓
Small for gestational age				✓	
Short stature				✓	✓
Underweight				✓	✓
Low head circumference				✓	
Overweight				✓	✓
Slow growth				✓	✓
Biochemical and other medical risk criteria					
Criteria Related to Nutrient Deficiencies					
Anemia (by state criteria)	✓	✓	✓	✓	✓
Failure to thrive				✓	✓
Nutrient deficiency diseases	✓	✓	✓	✓	✓
Medical Conditions Applicable to Entire WIC Population					
Gastrointestinal disorders	✓	✓	✓	✓	✓
Nausea and vomiting during pregnancy	✓	✓	✓	✓	✓
Diabetes mellitus	✓	✓	✓	✓	✓
Gestational diabetes	✓				
Thyroid disorders	✓	✓	✓	✓	✓
Chronic hypertension	✓	✓	✓	✓	✓
Renal disease	✓	✓	✓	✓	✓
Cancer	✓	✓	✓	✓	✓
Central nervous system disorders	✓	✓	✓	✓	✓
Genetic and congenital disorders	✓	✓	✓	✓	✓
Inborn errors of metabolism (for women, history of errors)	✓	✓	✓	✓	✓
Chronic or recurrent infections	✓	✓	✓	✓	✓
HIV infections and AIDS	✓	✓	✓	✓	✓
Recent major surgery, trauma, burns, or severe acute infections	✓	✓	✓	✓	✓
Other medical conditions	✓	✓	✓	✓	✓
Conditions Related to the Intake of Specific Foods					
Food allergies	✓	✓	✓	✓	✓
Celiac disease	✓	✓	✓	✓	✓
Lactose intolerance	✓	✓	✓	✓	✓
Conditions Specific to Pregnancy					
Pregnancy at a young age	✓				
Closely spaced pregnancies	✓				
History of preterm delivery	✓				
History of low birth weight	✓				

Exhibit 3-29 (cont.)

Nutritional Risk Criteria Recommended by the Committee on Scientific Evaluation of WIC Nutrition Risk Criteria, Institute of Medicine, 1996

	Pregnant Women	Breastfeeding Women	Postpartum Women	Infants	Children
History of birth with congenital or birth defect	✓				
Lack of prenatal care	✓				
Multifetal gestation	✓	✓	✓		
Fetal growth restriction	✓				
Conditions Specific to Infants and/or Children					
Prematurity				✓	
Hypoglycemia				✓	✓
Potentially Toxic Substances					
Long-term drug-nutrient interactions	✓	✓			
Maternal smoking	✓	✓			
Alcohol and illegal drug use	✓	✓			
Lead poisoning	✓	✓	✓	✓	✓
Dietary risk criteria					
Failure to meet Dietary Guidelines	✓	✓	✓	✓	✓
Vegan diets	✓	✓	✓		✓
Highly restrictive diets	✓	✓	✓	✓	✓
Pica	✓				✓
Food insecurity	✓	✓	✓	✓	✓
Inappropriate infant feeding				✓	
Early introduction of solid foods				✓	
Feeding cow milk during first ✓2 months				✓	
No dependable source of iron after 4-6 months				✓	
Improper dilution of formula				✓	
Feeding other foods low in essential nutrients				✓	
Lack of sanitation in preparation of nursing bottles				✓	
Infrequent breastfeeding as sole source of nutrients				✓	
Inappropriate use of nursing bottle				✓	
Predisposing risk criteria					
Homelessness	✓	✓	✓	✓	✓
Migrancy	✓	✓	✓	✓	✓
Low level of maternal education or illiteracy	✓	✓	✓	✓	✓
Maternal depression	✓	✓	✓	✓	✓
Battering	✓	✓	✓		
Child abuse or neglect				✓	✓
Child of a young caregiver				✓	✓
Child of a mentally retarded parent				✓	✓

✓ indicates subgroup to which the recommendation applies.

Source: Institute of Medicine, Committee on Scientific Evaluation of WIC Nutrition Risk Criteria. WIC Nutrition Risk Criteria: A Scientific Assessment, 1996.

Response Rate to Nutritional Risk Checklists

Nutritional risk checklists were completed by WIC clinic staff for 96 percent of NSWP sampled persons. For 15 percent of sampled persons, however, the checklists were incomplete. The incomplete checklists indicated that some risks were not present or not assessed, but did not indicate any risks as present. Two-thirds of incomplete checklists were for infants who were post-coded as having conferred risk (which was not included on the checklist).[38] After assigning conferred risk, nutrition risk data were missing or incomplete for 9 percent of the sample. It is important to note, however, that the 9 percent of participants with missing or incomplete data had nutrition risks present at certification. The risks determined at certification were recorded on certification forms (which were collected as part of NSWP), but were not comparable to the NSWP checklist and were not used for analysis.

The nutrition risk information presented in this section is based on the 91 percent of the sample with completed nutrition risk checklists or conferred risk. The 9 percent of the sample with missing checklists are excluded from all exhibits in this section. We did not use nutrition risk information recorded on certification forms to fill in missing checklists because the data were not comparable. Most certification forms indicate only up to three risks present, and for risks not indicated there is no way to determine whether the risks were "not present" or "not assessed." In addition, in most states, the risk codes used on certification forms correspond to broad categories that do not map to the specific risks on the NSWP checklist.

Number and Types of Nutrition Risks Prevalent Among WIC Participants

Exhibit 3-30 shows the distribution of the number of nutrition risks, for participants in each certification category, overall and in each broad category of risk.[39] As shown under "total risks" near the bottom of the exhibit, 37.1 percent of participants have only one nutrition risk, 26.4 percent have two risks, 16.7 percent have three risks, and 19.8 percent have four or more risks. The distribution of the number of risks varies by certification category. Over 40 percent of infants and children have a single nutrition risk, but less than 15 percent of women have just one risk. Nearly one-fourth of all WIC women enroll in WIC with three nutrition risks, and nearly one-half of pregnant women and over one-third of breastfeeding and postpartum women have four or more risks.

The distribution of the number of risks in each broad category shows that the most common type of risk for infants is conferred risk (94 percent), which shows up in the "other risk" category. The most common types of risk for children are dietary risks (78 percent). Dietary risks are also most common among women (73 percent), but in addition, more than half of women have anthropometric and biochemical/ medical risks, and 46 percent of pregnant women have risks specific to pregnancy. The co-occurrence of multiple risks within a single risk category happens most often with anthropometric risks (33.6 percent of women, 9.6 percent of infants, and 10.3 percent of children have two or more anthropometric risks). Although women and children rarely have more than one dietary risk, 12 percent of infants have two or more dietary risks due to the complexities of infant feeding.

38 According to the PC98 data, two-thirds of infants with conferred risk have no other risk.

39 "Other risks" are added to the four main categories; biochemical risks are broken up into three categories.

Exhibit 3-30

Distribution of Number of Nutritional Risk Factors, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Anthropometric risks							
None	25.7	37.5	42.1	33.1	75.2	61.5	58.4
One	39.7	32.4	23.6	33.3	15.2	28.2	26.0
Two or more	34.6	30.1	34.3	33.6	9.6	10.3	15.6
Conditions specific to pregnancy							
None	53.8	NA	NA	77.3	NA	NA	94.7
One	34.0	NA	NA	16.7	NA	NA	3.9
Two or more	12.3	NA	NA	6.0	NA	NA	1.4
Potentially toxic substances							
None	76.1	89.7	77.8	79.3	99.9	99.5	94.9
One	21.2	9.6	19.9	18.5	0.1	0.5	4.6
Two or more	2.7	0.7	2.3	2.2	0.0	0.0	0.5
Biochemical and other medical risks							
None	45.9	52.6	42.2	46.1	79.1	64.6	64.0
One	39.2	32.5	40.3	38.2	16.1	28.5	27.6
Two or more	14.9	14.9	17.5	15.7	4.8	7.0	8.4
Dietary risks							
None	25.5	23.0	32.2	27.1	73.3	22.3	36.5
One	71.8	75.4	67.0	71.0	14.8	75.7	58.9
Two or more	2.6	1.6	0.9	1.9	12.0	2.0	4.5
Predisposing risks							
None	90.0	91.7	87.8	89.7	82.4	88.7	87.3
One	8.5	7.4	9.6	8.6	14.7	9.1	10.4
Two or more	1.5	0.9	2.5	1.7	2.9	2.3	2.3
Other risks							
None	95.8	83.6	86.6	90.5	6.1	97.5	72.4
One	3.9	7.3	11.3	6.9	91.5	2.3	26.3
Two or more	0.3	9.1	2.0	2.6	2.4	0.2	1.3
Total risks							
One	10.9	16.9	17.7	14.2	43.2	44.6	37.1
Two	16.2	23.9	21.2	19.3	24.2	30.8	26.4
Three	24.1	24.6	23.8	24.1	13.4	15.0	16.7
Four or more	48.8	34.6	37.3	42.4	19.2	9.6	19.8
Sample size	613	569	541	1,723	571	586	2,880
Population	815,949	332,539	514,259	1,662,748	1,819,440	3,605,613	7,087,801

Within each category of risk, column percents sum to 100%. "Other risks" were not listed as categories on the checklist, but include conferred risks and risks provided in response to open-ended question about presence of other risks. Persons with missing or incomplete checklists are excluded from the exhibit.

Exhibits 3-31 through 3-35 present detailed information about the specific nutritional risk factors indicated for participants in each certification category. By far the most common risk factor for pregnant women is failure to meet dietary guidelines (74.2 percent). After that, the most common risk factors, in descending order, are being overweight prior to pregnancy (39.6 percent), nausea and vomiting during pregnancy (30.5 percent), high gestational weight gain (28.4 percent), risk of anemia (25.1 percent), pregnancy at a young age (22.6 percent), and maternal smoking (20.5 percent).

For breastfeeding women (Exhibit 3-32), failure to meet dietary guidelines, at 76.6 percent, is again the most common risk factor noted, except for the definitional risk of having a breastfeeding infant. Thereafter, the most common risk factors, in descending order, are being overweight postpartum (46.4 percent), risk of anemia (29.7 percent), and being overweight prior to pregnancy (26.0 percent). The distribution is somewhat similar for postpartum women (Exhibit 3-33). Failure to meet dietary guidelines is indicated for 67.8 percent of all postpartum women, followed by being overweight postpartum (46.1 percent), risk of anemia (36.8 percent), and being overweight prior to pregnancy (31.6 percent).

Turning to infants (Exhibit 3-34), 14.8 percent are listed as failing to meet dietary guidelines. The next most common nutritional risk factors are inappropriate infant feeding (13.8 percent), short stature (11.0 percent), and low birth weight (10.8 percent). Ninety-four percent of infants have conferred risk because their mothers are currently enrolled in WIC or received WIC when pregnant; 45 percent of infants with conferred risk have no other risk reported. (Overall, conferred risk is the only risk reported for 42 percent of WIC infants.) For WIC children (Exhibit 3-35), failure to meet dietary guidelines is the most common risk (77.6 percent), followed by risk of anemia (24.1 percent), being overweight (17.2 percent), and being of short stature (13.8 percent).

Assessment of Nutrition Risks

One of the reasons for collecting detailed information about nutrition risks as part of NSWP was to help evaluate concerns that existing data about nutrition risks may underestimate risk prevalence. One concern is that, because presence of one nutrition risk is sufficient for WIC certification, additional risks might not be assessed. A second concern is that underestimation of nutrition risks may occur because of the particular guidelines used for the data collection that underlies the PC reports—the main source of information on nutrition risk prevalence.

To evaluate these concerns, NSWP collected information about the number and types of risks assessed at certification.[40] In Exhibits 3-30 to 3-35, the second and third columns show the percentage of participants for whom each risk was not present, and the percentage for whom the risk was not assessed (together with the first column, "risk present," the three columns sum to 100 percent). Comparison of the second and third columns shows that when a risk is not indicated, the risk is more likely to be "not present" than "not assessed."[41]

40 WIC clinic staff assess nutritional risks through administration of diet and health history questionnaires (whereby applicants self-report conditions diagnosed by physicians), and 24 hour dietary recalls or food frequency checklists.

41 Item non-response is not reflected in the exhibits. Item non-response occurs when a checklist for a participant indicates risks that are present but data are missing with respect to whether other individual risks are not present or not assessed. The percent of cases with no item non-response is 86.7; an additional 8.5 percent of cases were missing data for only one or two risks. Only 4.8 percent of cases were

Exhibit 3-31

Percent of WIC Pregnant Women with Specific Nutritional Risk Factors

	Risk Present	Risk not Present	Risk not Assessed
Anthropometric risk criteria			
Prepregnancy underweight	14.3	79.1	6.6
Low maternal weight gain	18.5	70.0	11.5
Maternal weight loss during preg.	12.9	75.4	11.7
Prepregnancy overweight	39.6	55.1	5.4
High gestational weight gain	28.4	61.9	9.6
Biochemical and other medical risk criteria			
Anemia (by state criteria)	25.1	63.7	11.3
Nutrient deficiency diseases	2.8	75.5	21.6
Gastrointestinal disorders	3.3	73.9	22.8
Nausea and vomiting during pregnancy	30.5	58.8	10.7
Diabetes mellitus	1.3	80.3	18.3
Gestational diabetes	2.4	78.4	19.1
Thyroid disorders	0.6	73.5	25.9
Chronic hypertension	2.1	76.4	21.5
Renal disease	0.5	73.3	26.2
Cancer	0.6	72.3	27.2
Central nervous system disorders	1.1	71.8	27.1
Genetic and congenital disorders	0.9	72.0	27.1
Inborn errors of metabolism	0.7	73.3	26.0
Chronic or recurrent infections	0.8	73.1	26.1
HIV infections and AIDS	0.6	68.9	30.5
Recent major surgery/trauma/etc.	1.0	73.9	25.2
Other nutritionally-related cond.	2.5	75.3	22.2
Food allergies	1.7	81.2	17.1
Celiac disease	0.4	73.6	26.0
Lactose intolerance	1.8	79.7	18.5
Conditions specific to pregnancy			
Pregnancy at a young age	22.6	70.4	6.9
Closely spaced pregnancies	19.7	74.6	5.6
History of preterm delivery	7.9	80.6	11.5
History of low birth weight	4.1	84.5	11.4
History of birth with congenital or birth defect	1.0	86.0	13.0
Lack of prenatal care	7.9	84.5	7.7
Multifetal gestation	1.9	86.4	11.7
Fetal growth restriction	0.7	81.2	18.1
Potentially toxic substances			
Long-term drug-nutrient interactions	0.9	79.6	19.4
Maternal smoking	20.5	73.8	5.7
Alcohol and illegal drug use	5.5	87.5	7.1
Lead poisoning	0.5	68.0	31.6
Dietary risk criteria			
Failure to meet Dietary Guidelines	74.2	20.6	5.2
Vegan diets	1.1	86.8	12.1
Highly restrictive diets	1.5	87.0	11.5
Pica	0.9	88.1	11.1
Predisposing risk criteria			
Homelessness	0.6	89.4	10.0
Migrancy	0.6	88.4	11.0
Low level of maternal education	8.4	72.2	19.4
Maternal depression	1.9	67.6	30.5
Battering	0.7	65.7	33.6
Other risks			
Pregnancy at age >=34	1.2	NA	NA
Sample size	613	613	613
Population	815,949	815,949	815,949

5.1% of pregnant women have incomplete or missing Nutritional Risk Checklists and are not reflected in table. See note about "other risks" in Exhibit 3-29.

Exhibit 3-32

Percent of WIC Breastfeeding Women with Specific Nutritional Risk Factors

	Risk Present	Risk not Present	Risk not Assessed
Anthropometric risk criteria			
Prepregnancy overweight	26.0	55.5	18.5
High gestational weight gain	21.5	63.3	15.2
Postpartum underweight	6.1	82.6	11.4
Postpartum overweight	46.4	46.6	7.0
Biochemical and other medical risk criteria			
Anemia (by state criteria)	29.7	60.0	10.3
Nutrient deficiency diseases	5.1	75.3	19.6
Gastrointestinal disorders	0.7	75.8	23.5
Nausea and vomiting during pregnancy	15.2	58.4	26.4
Diabetes mellitus	1.8	78.5	19.7
Thyroid disorders	0.5	70.9	28.5
Chronic hypertension	1.4	75.5	23.1
Renal disease	0.1	71.0	28.9
Cancer	0.1	70.8	29.1
Central nervous system disorders	0.3	69.2	30.6
Genetic and congenital disorders	0.1	69.2	30.6
Inborn errors of metabolism	0.0	69.9	30.1
Chronic or recurrent infections	0.9	70.5	28.6
HIV infections and AIDS	0.0	68.9	31.1
Recent major surgery/trauma/etc.	3.4	69.9	26.6
Other nutritionally-related cond.	1.5	78.6	19.9
Food allergies	1.9	84.5	13.6
Celiac disease	0.0	72.9	27.1
Lactose intolerance	1.9	82.3	15.8
Multifetal gestation	1.0	79.4	19.5
Potentially toxic substances			
Long-term drug-nutrient interaction	0.1	76.5	23.3
Maternal smoking	9.3	81.4	9.3
Alcohol and illegal drug use	1.5	88.8	9.7
Lead poisoning	0.0	66.8	33.2
Dietary risk criteria			
Failure to meet Dietary Guidelines	76.6	16.9	6.5
Vegan diets	1.0	83.4	15.6
Highly restrictive diets	1.3	83.9	14.8
Predisposing risk criteria			
Homelessness	0.7	88.8	10.5
Migrancy	0.8	87.2	12.0
Low level of maternal education	5.8	72.6	21.6
Maternal depression	2.0	65.5	32.6
Battering	0.0	63.3	36.7
Other risks			
Pregnancy at young age	3.1	NA	NA
Pregnancy at age >=34	1.5	NA	NA
Breastfeeding infant	100.0	NA	NA
Miscarriage	0.7	NA	NA
Closely spaced pregnancies	5.1	NA	NA
Sample size	569	569	569
Population	332,539	332,539	332,539

11.7% of breastfeeding women have incomplete or missing Nutritional Risk Checklists and are not reflected in table. See note about "other risks" in Exhibit 3-29. NA = not applicable.

Exhibit 3-33

Percent of WIC Postpartum Women with Specific Nutritional Risk Factors

	Risk Present	Risk not Present	Risk not Assessed
Anthropometric risk criteria			
Prepregnancy overweight	31.6	54.5	13.9
High gestational weight gain	18.3	66.2	15.6
Postpartum underweight	4.6	84.7	10.7
Postpartum overweight	46.1	47.2	6.7
Biochemical and other medical risk criteria			
Anemia (by state criteria)	36.8	56.4	6.8
Nutrient deficiency diseases	3.0	75.7	21.2
Gastrointestinal disorders	1.5	72.3	26.2
Nausea and vomiting during pregnancy	17.9	55.6	26.6
Diabetes mellitus	3.2	75.3	21.6
Thyroid disorders	1.3	71.0	27.7
Chronic hypertension	4.3	72.4	23.3
Renal disease	0.5	71.2	28.3
Cancer	0.5	69.8	29.6
Central nervous system disorders	1.1	69.4	29.6
Genetic and congenital disorders	0.9	68.7	30.4
Inborn errors of metabolism	0.5	68.9	30.6
Chronic or recurrent infections	1.4	69.0	29.6
HIV infections and AIDS	0.5	68.6	30.9
Recent major surgery/trauma/etc.	4.0	68.2	27.8
Other nutritionally-related cond.	4.3	71.3	24.3
Food allergies	2.4	76.6	21.0
Celiac disease	0.0	71.8	28.2
Lactose intolerance	1.7	78.1	20.2
Multifetal gestation	1.9	76.9	21.2
Potentially toxic substances			
Long-term drug-nutrient interaction	0.9	73.0	26.1
Maternal smoking	20.2	72.3	7.5
Alcohol and illegal drug use	3.5	85.9	10.6
Lead poisoning	0.2	61.4	38.4
Dietary risk criteria			
Failure to meet Dietary Guidelines	67.8	25.0	7.2
Vegan diets	0.4	84.9	14.7
Highly restrictive diets	0.7	84.9	14.4
Predisposing risk criteria			
Homelessness	1.7	87.9	10.4
Migrancy	0.9	84.5	14.6
Low level of maternal education	8.4	70.2	21.4
Maternal depression	4.2	61.5	34.3
Battering	0.9	61.4	37.6
Other risks			
Pregnancy at young age	5.5	NA	NA
Pregnancy at age >=34	1.6	NA	NA
Miscarriage	0.9	NA	NA
Closely spaced pregnancies	5.7	NA	NA
Sample size	541	541	541
Population	514,259	514,259	514,259

10.4% of postpartum women have incomplete or missing Nutritional Risk Check-lists and are not reflected in table. See note about "other risks" in Exhibit 3-29. NA = not applicable.

Exhibit 3-34

Percent of WIC Infants with Specific Nutritional Risk Factors

	Risk Present	Risk not Present	Risk not Assessed
Anthropometric risk criteria			
Low birth weight	10.8	83.5	5.8
Small for gestational age	3.6	86.4	10.0
Short stature	11.0	81.2	7.8
Underweight	5.9	87.0	7.1
Low head circumference	1.2	55.8	43.1
Overweight	6.2	85.7	8.1
Slow growth	2.8	83.1	14.1
Biochemical and other medical risk criteria			
Anemia (by state criteria)[a]	3.6	49.1	47.3
Failure to thrive	0.5	80.7	18.9
Nutrient deficiency diseases	0.6	74.8	24.6
Gastrointestinal disorders	3.5	69.2	27.3
Diabetes mellitus	0.4	69.0	30.6
Thyroid disorders	0.1	67.3	32.5
Chronic hypertension	0.2	67.2	32.5
Renal disease	0.0	67.4	32.6
Cancer	0.0	66.8	33.2
Central nervous system disorders	0.3	67.9	31.8
Genetic and congenital disorders	0.7	68.9	30.4
Inborn errors of metabolism	0.3	69.1	30.7
Chronic or recurrent infections	1.4	69.1	29.5
HIV infections and AIDS	0.0	66.3	33.7
Recent major surgery/trauma/etc.	1.2	72.1	26.7
Other nutritionally-related cond.	1.2	75.1	23.8
Food allergies	2.0	73.0	25.0
Celiac disease	0.0	70.0	30.0
Lactose intolerance	3.8	72.9	23.3
Prematurity	8.5	74.8	16.7
Hypoglycemia	0.1	63.3	36.6
Potentially toxic substances			
Lead poisoning	0.1	54.9	45.0
Dietary risk criteria			
Failure to meet Dietary Guidelines	14.8	72.9	12.3
Highly restrictive diets	0.8	82.9	16.3
Inappropriate infant feeding	13.8	75.8	10.4
Early introduction of solid foods	5.9	81.9	12.2
Feeding cow milk during first yr	2.3	85.2	12.5
No dependable source of iron after 4-6 months	1.3	79.0	19.7
Improper dilution of formula	1.9	85.7	12.4
Feeding other foods low in nutrients	1.2	85.6	13.2
Lack of sanitation prep of bottles	0.9	78.7	20.4
Infreq breastfeeding as sole source of nutrients	1.7	82.7	15.6
Inappropriate use of nursing bottle	4.3	79.9	15.9
Predisposing risk criteria			
Homelessness	0.7	89.1	10.1
Migrancy	0.9	87.6	11.5
Low level of maternal education	6.7	74.0	19.3
Maternal depression	2.5	66.3	31.2
Child abuse or neglect	1.9	67.9	30.1
Child of a young caregiver	9.4	75.2	15.4
Child of a mentally retarded parent	0.3	82.8	16.8

Exhibit 3-34 (cont.)

Percent of WIC Infants with Specific Nutritional Risk Factors

	Risk Present	Risk not Present	Risk not Assessed
Other risks (response to open-ended question)			
Second-hand smoke	2.3	NA	NA
Drug exposure	0.5	NA	NA
Conferred risk			
Breastfeeding infant	31.0	NA	NA
Not breastfeeding; Mom on WIC	58.9	NA	NA
Not breastfeeding; Mom on WIC preg	3.8	NA	NA
Sample size	571	571	571
Population	1,819,440	1,819,440	1,819,440

8.0% of infants have incomplete or missing Nutritional Risk Checklists and are not reflected in table. See note about "other risks" in Exhibit 3-29. NA = not applicable.

a Hematological tests are not required for infants under 6 months of age (7CFR246(e)(1)).

Exhibit 3-35

Percent of WIC Children with Specific Nutritional Risk Factors

	Risk Present	Risk not Present	Risk not Assessed
Anthropometric risk criteria			
Low birth weight	6.2	71.8	22.1
Short stature	13.8	78.7	7.5
Underweight	8.9	84.2	6.9
Overweight	17.2	76.4	6.4
Slow growth	8.3	80.8	10.9
Biochemical and other medical risk criteria			
Anemia (by state criteria)[a]	24.1	65.8	10.0
Failure to thrive	1.1	85.8	13.1
Nutrient deficiency diseases	1.6	78.9	19.4
Gastrointestinal disorders	0.7	75.4	23.9
Diabetes mellitus	0.2	74.9	24.9
Thyroid disorders	0.4	71.7	27.9
Chronic hypertension	0.0	71.8	28.2
Renal disease	0.0	71.5	28.5
Cancer	0.0	70.4	29.6
Central nervous system disorders	0.0	71.0	29.0
Genetic and congenital disorders	1.1	72.0	26.9
Inborn errors of metabolism	0.1	72.9	27.0
Chronic or recurrent infections	7.6	68.3	24.1
HIV infections and AIDS	0.0	68.0	32.0
Recent major surgery/trauma/etc.	1.8	74.2	24.0
Other nutritionally-related cond.	2.0	76.9	21.2
Food allergies	1.7	82.2	16.1
Celiac disease	0.0	72.5	27.5
Lactose intolerance	1.1	81.1	17.8
Hypoglycemia	0.0	72.9	27.1
Potentially toxic substances			
Lead poisoning	0.5	69.4	30.1
Dietary risk criteria			
Failure to meet Dietary Guidelines	77.6	17.7	4.7
Vegan diets	0.2	86.8	13.0
Highly restrictive diets	0.5	87.9	11.6
Pica	1.4	82.4	16.2
Predisposing risk criteria			
Homelessness	0.6	88.3	11.1
Migrancy	1.0	87.1	11.9
Low level of maternal education	7.5	70.9	21.7
Maternal depression	0.2	65.7	34.0
Child abuse or neglect	0.9	68.6	30.5
Child of a young caregiver	3.6	74.6	21.8
Child of a mentally retarded parent	0.3	79.6	20.2
Sample size	586	586	586
Population	3,605,613	3,605,613	3,605,613

8.8% of children have incomplete or missing Nutritional Risk Checklists and are not reflected in table. See note about "other risks" in Exhibit 3-29.

a At the state or local agency's discretion, hematological tests are not required for children who were determined to be within the normal range at their last WIC certification (7CFR246.7).

The rates of non-assessment for individual risks vary considerably. The risk with the lowest assessment rate is low head circumference for infants (not assessed for 43 percent of infants). Among risks common to all certification categories, lead poisoning and the predisposing condition of maternal depression have low assessment rates (over 30 percent of participants in each category are not assessed for these risks), and infants and children have low assessment rates for child abuse and neglect.

Overall, 41 percent of WIC participants with completed Nutrition Risk Checklists had all risks assessed (this percentage varies from 28 percent for infants to 46 percent for children); an additional 9.3 percent of participants were assessed for all but one risk. On the other hand, 15 percent of participants' checklists indicated that they were not assessed for more than half of the risks listed on the checklist. Although these data indicate incomplete risk assessment for some participants, they also show that a large percentage of WIC participants received comprehensive risk assessment prior to the time that the IOM risk recommendations were formalized in WIC guidelines in April 1999.

The second concern regarding measurement of risk prevalence among WIC participants is that the PC reports may underestimate risks. Underestimation in the PC reports may be due to two factors. First, the PCs collect information on up to three risks per WIC participant, rather than all risks per WIC participant. Second, the categorization scheme used by the PCs results in loss of information whenever more than one specific risk is mapped into the same reporting category.[42] For example, an individual with several health problems will be counted by the PC reports as having one "other health risk," rather than several health risks. The number and types of health problems are not fully reflected in the final reporting.

Results from the NSWP indicate that the PC reports underestimate the number of nutrition risks that participants have at certification. This underestimation is partly due to the limit on the number of risks reported to the PCs; NSWP found that 20 percent of all participants have four or more risks. It is apparent, however, that underestimation in the PCs also comes from the practice of combining multiple risks into the same reporting category because NSWP found fewer participants with only one or two risks than was found in PC98. (The percentage with one risk is 44.7 in PC98 and 37.1 in NSWP; the percentage with two risks is 33.0 in PC98 and 26.4 in NSWP.)

42 The PC reports state that "whenever multiple risks within the same classification are reported for one person, these risks are combined and counted one time in order to accurately calculate the number and percent of WIC participants with a specific type (or category) of risk" (PC98, p. 83).

3.6 Food Assistance, Food Spending, and Food Security

The primary benefit of the WIC program is the provision of supplemental food to low-income participants at nutritional risk. WIC provides nutrient-dense foods in five food categories: milk/cheese, eggs, fortified breakfast cereal, 100 percent fruit juice, and legumes (peanut butter or beans). WIC also provides support for breastfeeding, and a special food package for breastfeeding mothers that includes tuna, carrots, and infant formula. The WIC program and its forerunner, the Commodity Supplemental Food Program, are unique among government food assistance programs in targeting food benefits to specific nutritional needs.

It is important to remember, however, that WIC is designed to supplement the diet and not to provide for all dietary needs. Other food assistance programs are available to low-income families, and the FSP in particular is designed to provide a safety net against hunger. Nonetheless, as discussed in the last section, the majority of individuals who enroll in WIC demonstrate a failure to meet dietary guidelines. It is therefore of interest to examine the extent to which WIC families use other forms of food assistance, the amount of money they spend on food, and their reported food security at the time of their current WIC certification.

NSWP collected information about participation in other food and nutrition assistance programs, weekly food spending, and the food security status of the WIC participant's family. The survey questions for each of these topics were designed to reference only members of the WIC participant's economic unit.

Participation in Other Food and Nutrition Assistance Programs

Exhibit 3-36 shows that nearly one-half (46.8 percent) of families with WIC participants receive some form of non-WIC food assistance at the time of their current application for WIC certification. Nearly one-third (32.7 percent) of WIC families receive food stamps (FSP), 26.6 percent of families include older children participating in the National School Lunch Program (NSLP), and 21.0 percent include older children participating in the School Breakfast Program (SBP). Receipt of other food assistance is more common outside of metropolitan areas (55.8 percent) than in metropolitan areas (44.5 percent), as shown in Exhibit 3-37.[43]

Average Weekly Food Spending of WIC Families

Food spending information was collected by NSWP through a series of questions about the amount of money spent by the WIC family on food for use at home in an average week, and the amount of money spent on food consumed away from home in an average week. (Spending with food stamp benefits was included in food-at-home spending.) Together, spending at home and away from home yield the average weekly total food spending.

43 The difference is statistically significant at the 1 percent level.

Exhibit 3-36

Percent of WIC Participants in Families Receiving Non-WIC Food Assistance, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Receiving any non-WIC food assistance	36.5	36.9	46.2	39.7	41.8	52.6	46.8
Receipt by program:							
Food Distribution Program on Indian Reservations[a]	0.5	0.1	0.1	0.3	0.4	0.0	0.2
Food Stamp Program	23.3	22.4	38.4	27.8	31.4	35.5	32.7
School Breakfast Program	16.5	15.1	15.5	15.9	15.2	26.3	21.0
National School Lunch Program	18.9	19.2	19.9	19.3	20.3	33.2	26.6
Temporary Emergency Food Assistance Program	0.5	0.3	0.2	0.4	1.0	0.5	0.6
Commodity Supplemental Food Program[b]	0.8	0.7	0.9	0.8	0.8	1.2	1.0
Local food pantries	4.3	3.2	4.1	4.0	3.1	3.3	3.4
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Column percents do not sum to 100 due to participation in multiple programs. Percents are calculated among respondents with non-missing data. Rates of item non-response among all WIC participants range from 1.5% non-response for participation in the FSP to 2.4% non-response for participation in TEFAP.

a The Food Distribution Program on Indian Reservations is a USDA program operated as an alternative to the FSP and serving Native Americans residing on or near Indian lands.

b The Commodity Supplemental Food Program (CSFP) distributes food to low-income women, infants, and children. The CSFP and WIC may operate in the same geographic area, but simultaneous participation in CSFP and WIC is prohibited.

Exhibit 3-37

Percent of WIC Participants in Families Receiving Non-WIC Food Assistance, by Location

	Metropolitan	Nonmetropolitan
Receiving any non-WIC food assistance	44.5	55.8
Receipt by program:		
Food Distribution Program on Indian Reservations[a]	0.2	0.0
Food Stamp Program	30.6	40.6
School Breakfast Program	19.5	26.7
National School Lunch Program	25.4	31.1
Temporary Emergency Food Assistance Program	0.5	0.7
Commodity Supplemental Food Program	0.7	2.3
Local food pantries	2.3	7.8
Sample size	2,387	727
Population	6,143,639	1,597,439

Column percents do not sum to 100 due to participation in multiple programs. Number in metropolitan and nonmetropolitan areas sum to total WIC participants. Percents are calculated among respondents with non-missing data. Rates of item non-response among nonmetropolitan WIC participants were less than 2% for all items; rates of non-response among metropolitan WIC participants were less than 3% for all items.

a The Food Distribution Program on Indian Reservations is a USDA program operated as an alternative to the FSP and serving Native Americans residing on or near Indian lands.

b The Commodity Supplemental Food Program (CSFP) distributes food to low-income women, infants, and children. The CSFP and WIC may operate in the same geographic area, but simultaneous participation in CSFP and WIC is prohibited.

In 1998, average weekly food spending for all U.S. households was approximately $37 per capita (including food at home and food away from home), with 57 percent of total food spending for food at home.[44] In contrast, NSWP respondents reported an average weekly food spending of $25 per capita, with 85 percent of total food spending for food at home.[45]

Lower food spending by WIC families is not surprising, in light of the fact that WIC provides benefits to low-income individuals. Aside from having lower income, however, WIC families may also have lower food expenditures due to the age and composition of WIC families.

To account for the age and composition of WIC families, and allow for comparisons of food spending among subgroups of NSWP respondents, total weekly food spending for each family was converted to an amount of spending per adult male equivalent (AME).[46] Average weekly food spending per AME is presented in Exhibit 3-38, for each WIC participant category. Across all WIC families, food spending per AME averages $37.02 per week; average spending per AME for food eaten at home is $31.32 per week.[47]

Within the WIC population there is significant variation in food spending across WIC participant categories; families with breastfeeding women and families with children, on average, spend less money on food than other WIC families. This difference, however, is entirely due to differences in spending within the group of families not receiving food stamps. For WIC families receiving food stamps, there is no significant difference in average food spending per AME across WIC participant categories.

Although food stamp benefits are associated with reduced variability in food spending across WIC families, there is little difference in the levels of food spending by WIC families receiving food stamp benefits and those not receiving food stamp benefits. Food stamp families spend an average of $36.18 per AME per week compared to $37.43 per AME in non-food stamp families, but this difference is not statistically significant.[48]

---

44 Source: Bureau of Labor Statistics, Consumer Expenditures in 1998. Average annual expenditures on food were $4,810 for households with an average size of 2.5 persons.

45 For comparison, USDA's Thrifty Food Plan provides an estimate of the actual cost of providing a household with nutritious but inexpensive meals. The 1998 Thrifty Food Plan amount for one month was $122 for a one-person household ($28 per week); $224 for a two-person household ($26 per person per week); and $408 for a four-person household ($24 per person per week).

46 One AME is equal to an adult male's recommended daily energy allowance, measured in kilocalories. To calculate food spending per AME, each family member is assigned a recommended daily energy allowance based on age and gender (and adjusted for pregnancy and lactation). The total energy allowance of the family is added, and that total is then divided by the energy allowance of an adult male to yield the family's number of AMEs. See Appendix C for details.

Weekly food spending at home and weekly food spending away from home were imputed for 4.2 and 6.4 percent of WIC families, respectively. See Appendix B for imputation procedures.

47 There are no comparable data on food spending per AME for all U.S. households.

48 This broad comparison of food stamp and non-food stamp households cannot be used to estimate an effect of food stamp receipt on spending in WIC families. Such a study would require a multivariate analysis that also considered income level and the size of the food stamp allotment, which is beyond the scope of the current study.

Exhibit 3-38

Average Weekly Food Spending of WIC Economic Units per Adult Male Equivalent, by Participant Category and Participation in the Food Stamp Program

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
All economic units							
Average weekly food spending							
Food at home	$30.75	$26.08	$33.68	$30.71	$33.03	$30.75	$31.32
Total	38.11	30.50	39.48	36.96	39.39	35.87	37.02
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Food Stamp Program recipients							
Average weekly food spending							
Food at home	30.93	28.45	33.14	31.46	32.41	32.13	32.07
Total	35.43	31.36	37.33	35.55	36.33	36.34	36.18
Sample size	159	153	227	539	178	239	956
Population	197,219	83,597	212,182	492,999	614,875	1,382,731	2,490,604
Non-Food Stamp Program recipients							
Average weekly food spending							
Food at home	30.70	25.40	34.00	30.43	33.32	30.01	30.97
Total	38.92	30.25	40.73	37.48	40.78	35.62	37.43
Sample size	480	474	360	1,314	436	408	2,158
Population	662,162	292,866	361,717	1,316,744	1,363,536	2,570,193	5,250,474
Rates of nonresponse before imputation							
Average weekly food spending, food at home							
All WIC economic units	8.0	6.0	9.0	7.9	5.7	4.3	5.5
Food Stamp Program recipients	3.5	0.0	2.2	2.3	1.9	0.0	0.9
Non-Food Stamp Program recipients	9.3	7.7	13.1	10.0	7.4	6.7	7.7
Average weekly food spending, total							
All WIC economic units	12.2	9.8	14.3	12.4	9.4	9.0	9.9
Food Stamp Program recipients	8.0	4.6	7.2	7.1	6.2	6.2	6.4
Non-Food Stamp Program recipients	13.4	11.3	18.5	14.3	10.8	10.4	11.5

Average weekly food spending is measured per adult male equivalent and includes redemptions of food stamp program benefits. Rates of item non-response are shown prior to imputation of missing food spending amounts; average weekly food spending is calculated after imputation of missing data. After imputation, fewer than 2% of cases are missing data in any table cell. See Appendix B for information about imputation of missing food spending amounts.

Reported Food Security of WIC Families

The next set of exhibits looks at a relatively new composite measure called "food security." This measure is a composite scale based on responses to 18 survey questions identifying specific conditions of household food insufficiency, reduced quality and variety of foods, patterns of reduced food intake, and direct hunger indicators for adults and children. The literature reports on two food security scales: one based on experiences over the past month and the other on experiences over the past year.[49] The NSWP used questions about experiences over the past 12 months, which is reported to be the more stable of the two scales. Food security questions were administered by NSWP with the WIC economic unit as the referenced "household."

The four levels of the food security scale, in order of decreasing food security, are:

- food secure
- food insecure without hunger
- food insecure with hunger, moderate
- food insecure with hunger, severe.

The food security scale measures the condition of household members as a group, and not necessarily the condition of any particular household member. Thus, a household identified as food insecure with hunger is a household with at least one member experiencing hunger.

There is some concern that the current food security scale does not "optimally identify households in which there are hungry children."[50] Originally, the scale's severe hunger category was intended to serve as a proxy for households in which children are hungry because, in most households, "adults undergo comparatively severe levels of hunger for themselves before the first indications of hunger appear among the children."[51] On the other hand, because the food security scale measures the condition of the household as a group, in households with very young children (who are likely to be protected from hunger) the scale may understate hunger among other household members.[52]

---

49 William L. Hamilton *et al*., Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project, Washington, DC: USDA, September 1997.

50 Mark Nord, "Problems with Estimating the Prevalence of Child Hunger," *Second Food Security Measurement and Research Conference, Volume I: Proceedings*, USDA,/ERS/FANRR-11-1, February 2001.

51 Gary Bickel *et al., Guide to Measuring Household Food Security, Revised 2000,* Alexandria, VA: USDA/FNS/OANE, March 2000.

52 Analysis conducted by USDA ERS of CPS Food Security Supplement data (which includes WIC and non-WIC households) shows that the food security scale substantially understates the prevalence of hunger in households in which the oldest child is two years or younger. In these households the ten-item scale (excluding the child items—the same scale used for households without children) finds about 45 percent more households with hunger than does the 18-item scale. This is not true of households that include older children. Overall, for households with children, the two scales find exactly the same prevalence of hunger. (Per Mark Nord, USDA ERS.)

Approximately 30 percent of WIC households contain children with the oldest child two years or younger. Appendix C presents analysis suggested by Mark Nord (USDA ERS), which shows that the current food security scale may understate hunger among WIC households.

The food security measurements presented in this section are based on the current food security scale.[53] The construction of the food security scale is described in Appendix C.

Exhibit 3-39 shows that about three-quarters (76.4 percent) of all WIC participants are "food secure" at the time of WIC certification, with another 15.3 percent "food insecure without hunger." Slightly less than 7 percent are "food insecure with moderate hunger," and 1.7 percent are "food insecure with severe hunger." Among all WIC participants, pregnant women are most likely to be food insecure with moderate or severe hunger at the time of WIC certification. Roughly 8 percent of WIC infants and WIC children also fall within one of these two categories of food insecurity.

Food security status is, not surprisingly, related to the poverty status of the WIC economic unit. As shown in Exhibit 3-40, 10.5 percent of WIC participants at or below the poverty level are food insecure with moderate or severe hunger. In contrast, only 5.2 percent of WIC economic units above the poverty level are food insecure with moderate or severe hunger.

The distribution of food security status is shown in Exhibit 3-41 for groups of WIC economic units categorized by their participation in other food assistance programs. A family's receipt of other food assistance—such as food stamps, the NSLP, SBP, and assistance from local food pantries—is an indication of the food available to the family. Participation in other food assistance programs, however, is also an indication of the income level of the families, because other food assistance programs have lower income eligibility limits than WIC. It appears that these forces are offsetting, because participation in non-WIC food assistance programs is not significantly related to food security.

The distribution of food security is also not significantly related to whether the sampled person had prior WIC experience (not shown in exhibit). It is not possible, however, to determine whether problems with food security (which may have occurred any time in the last 12 months) preceded WIC experience (which might have extended back only six to nine months prior to the interview).[54]

Exhibit 3-42 displays the variation in food security by selected characteristics of WIC participants. Neither household type nor age of the WIC participant/mother are correlated with food security; young women (less than 18 years old) appear more likely to be food secure, but the sample size is too small for this relationship to be statistically significant. There is a statistically significant relationship between maternal education and food security, but this is entirely due to the difference in food security for those with less than eight years of education. Among those with eight or more years of education, food security is not significantly related to the level of education.

Exhibit 3-43 examines the distribution of food security by geographic location. WIC participants in non-metropolitan areas appear somewhat more likely to be food secure than participants in metropolitan areas, but this difference is not statistically significant; neither are there statistically significant differences in the distribution of food security across the seven FNS regions.

53 Bickel *et al.*, 2000.

54 WIC certification periods are 6 months for breastfeeding and postpartum women and for children. Pregnant women are certified up until 6 weeks after delivery (yielding an average certification period of 9 months). Infants are certified for 6 months, or up until their first birthdays; infants so certified, by definition, can have had no prior WIC experience. Most, however, had mothers in WIC during pregnancy.

Exhibit 3-39

Distribution of Food Security Status, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Food security status							
Food secure	73.1	71.6	75.4	73.5	77.5	77.1	76.4
Food insecure without hunger	15.0	19.6	18.5	17.0	13.9	15.2	15.3
Food insecure with hunger, moderate	8.9	8.1	4.0	7.2	6.9	6.3	6.7
Food insecure with hunger, severe	3.0	0.7	2.1	2.2	1.6	1.4	1.7
Not reported	0.6	0.5	3.2	1.4	1.2	0.9	1.1
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Food security measure is composite scale based on responses to 18 survey questions identifying specific conditions of household food insufficiency, reduced quality and variety of foods, patterns of reduced food intake, and direct hunger indicators for adults and children. See Appendix C for information on construction of food security status, and potential bias in the current food security scale for households in which the oldest child is two years of age or younger.

Number and percent with food security status not reported is excluded from previous percents.

Exhibit 3-40

Distribution of Food Security Status by Participant Category and Poverty Level

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Food security status of WIC units with income ≤ 100% of poverty level							
Food secure	68.0	69.7	74.8	70.8	76.4	72.5	73.1
Food insecure without hunger	15.5	19.4	19.0	17.6	12.9	17.7	16.4
Food insecure with hunger, moderate	13.2	9.7	3.9	9.1	8.8	8.2	8.6
Food insecure with hunger, severe	3.3	1.2	2.2	2.5	1.9	1.6	1.9
Not reported	0.6	0.9	0.6	0.7	0.4	0.4	0.5
Sample size	338	381	398	1,117	370	398	1,885
Population	454,001	230,301	385,903	1,070,204	1,254,949	2,476,422	4,801,575
Food security status of WIC units with income > 100% of poverty level							
Food secure	79.0	74.2	76.2	77.3	79.0	84.0	81.0
Food insecure without hunger	14.1	20.0	17.8	16.2	16.3	11.3	13.8
Food insecure with hunger, moderate	4.1	5.8	4.3	4.5	3.7	3.4	3.8
Food insecure with hunger, severe	2.8	0.0	1.7	2.0	1.1	1.3	1.4
Not reported	0.0	0.0	8.0	2.0	2.0	0.0	1.0
Sample size	296	243	182	721	230	225	1,176
Population	399,373	143,999	183,175	726,547	675,158	1,316,167	2,717,872

The food security measure is a composite scale based on responses to 18 survey questions identifying specific conditions of household food insufficiency, reduced quality and variety of foods, patterns of reduced food intake, and direct hunger indicators for adults and children. See Appendix C for information on construction of food security status, and potential bias in the current food security scale for households in which the oldest child is two years of age or younger.

Number and percent with food security status not reported is excluded from previous percents.

Exhibit 3-41

Distribution of Food Security Status, by Reported Food Program Participation

	WIC Only	WIC and Food Stamps	WIC and Other Food Benefits (No Food Stamps)	WIC, FSP, and Other
Food security status				
Food secure	77.8	77.7	76.2	69.9
Food insecure without hunger	15.6	12.7	15.0	17.3
Food insecure with hunger, moderate	5.9	7.0	6.1	9.8
Food insecure with hunger, severe	0.7	2.6	2.7	3.0
Not reported	1.9	0.2	0.0	0.1
Sample size	1,740	572	418	384
Population	4,116,283	1,320,800	1,134,191	1,169,804

Food security measure is composite scale based on responses to 18 survey questions identifying specific conditions of household food insufficiency, reduced quality and variety of foods, patterns of reduced food intake, and direct hunger indicators for adults and children. See Appendix C for information on construction of food security status, and potential bias in the current food security scale for households in which the oldest child is two years of age or younger.

Number and percent with food security status not reported is excluded from previous percents.

Other food benefits include: SBP, NSLP, TEFAP, CSFP, and local food pantries.

For this exhibit, if information about participation in a food program is not reported, no participation is assumed. Rates of non-response are less than 3% for all food program participation items.

Exhibit 3-42

Food Security Status of WIC Families, by Selected Characteristics

	Food Secure	Food Insecure without Hunger	Food Insecure with Hunger, Moderate	Food Insecure with Hunger, Severe	Sample Size	Population
Household type						
Single family unit, single parent	76.1	16.7	4.8	2.4	602	1,533,53
Single family unit, dual parent	75.5	16.9	6.6	1.0	1,554	3,952,15
Multi-family unit, single parent	79.1	9.4	8.9	2.6	654	1,512,18
Multi-family unit, dual parent	75.7	16.0	6.8	1.5	279	659,877
Maternal age						
Less than 18 years	85.5	10.0	1.8	2.6	201	388,509
18 - 34 years	76.0	15.1	7.2	1.7	2,546	6,146,60
More than 43 years	75.3	17.7	5.6	1.3	316	1,064,47
Maternal education						
Less than 8 years	57.9	18.1	21.4	2.7	158	423,776
8-11 years	74.9	15.1	7.9	2.1	764	1,968,44
12 years	78.2	14.7	5.9	1.2	1,149	2,984,09
13 or more years	77.5	16.5	4.4	1.6	767	1,791,24
Schooling incomplete, age<18	83.3	11.6	2.8	2.3	227	446,667
Not reported	87.1	11.0	0.0	1.9	16	31,221

Single-family unit is defined as households containing only respondent, spouse, partner, and biological or step-children; all other households are categorized as "multi-family." Maternal education is the education of WIC pregnant, breastfeeding, or postpartum women, or mothers of WIC infants or children. Exhibit does not include the 1.1% of WIC families with food security status not determined.

Exhibit 3-43

Food Security Status of WIC Families, by Geographic Area

	Food Secure	Food Insecure without Hunger	Food Insecure with Hunger, Moderate	Food Insecure with Hunger, Severe	Sample Size	Population
Location						
Non-metropolitan area	80.4	14.4	4.5	0.6	725	1,585,93
Metropolitan area	75.3	15.5	7.3	1.9	2,364	6,071,81
FNS region						
Northeast	78.3	13.5	7.4	0.8	395	803,845
Mid-Atlantic	84.1	10.0	5.2	0.6	340	749,863
Southeast	76.4	13.5	7.5	2.6	446	1,485,98
Midwest	77.3	14.6	7.3	0.8	457	1,140,85
Mountain Plains	72.4	21.2	5.2	1.2	233	514,709
Southwest	77.6	14.4	4.5	3.5	602	1,149,66
Western	72.0	18.9	7.8	1.3	616	1,812,83
Total WIC	76.4	15.3	6.7	1.7	3,114	7,741,078

Residence in metropolitan areas is determined by location of local WIC agency at which participant is certified. Local WIC agencies located within MSAs are coded as metro. Exhibit does not include the 1.1% of WIC families with food security status not determined.

The next five exhibits (Exhibits 3-44 through 3-48) complete the examination of food security status. There is one exhibit for each WIC certification category. Each exhibit looks at the relationship between food security status and the number and type of nutritional risks present at certification.

Among pregnant women, three categories of nutritional risk are significantly related to food security status: women with conditions specific to pregnancy, risks due to potentially toxic substances, and predisposing risks are less likely to be food secure than women without those risks.[55] Among breast-feeding women, postpartum women, and infants there are no risk categories in which the number of risks is statistically associated with food security status. Among children, those with predisposing risks are statistically more likely to have moderate or severe hunger.[56]

The overall number of nutrition risks has a statistically significant correlation with food security status only for breastfeeding women and children, with a greater number of risks related to a greater likelihood of food insecurity.

55 See Exhibit 3-31 for the specific risks that are prevalent within these broad categories.

56 The most prevalent predisposing risk among children is low maternal education (see Exhibit 3-35).

Exhibit 3-44

Distribution of Food Security Status by Number of Nutritional Risk Factors: Pregnant Women

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Anthropometric risks						
None	68.4	15.2	12.9	3.6	145	204,527
One	76.6	13.6	5.9	3.9	254	322,363
Two or more	71.9	15.7	10.1	2.2	208	281,373
Conditions specific to pregnancy						
None	75.2	15.6	8.5	0.8	331	428,657
One	66.8	16.0	10.6	6.6	197	274,697
Two or more	78.6	8.5	8.5	4.4	75	100,065
Potentially toxic substances						
None	74.0	13.5	10.5	2.0	452	606,511
One	68.9	20.3	5.1	5.7	136	173,355
Two or more	71.8	5.5	6.5	16.2	14	21,975
Other biochemical and medical risks						
None	70.7	16.9	10.1	2.3	272	363,465
One	73.7	15.2	8.6	2.5	237	318,646
Two or more	76.3	7.8	8.0	7.9	94	120,685
Dietary risks						
None	64.5	21.8	12.3	1.3	144	202,336
One	75.9	12.5	8.1	3.5	447	582,238
Two or more	62.0	16.3	7.3	14.4	15	21,583
Predisposing risks						
None	73.6	15.4	8.7	2.3	539	712,074
One	67.3	10.9	11.8	10.0	49	69,226
Two or more	66.0	15.3	0.0	18.6	9	11,997
Total risks						
One	61.4	13.5	25.1	0.0	62	87,491
Two	74.5	19.3	6.1	0.0	99	132,322
Three	75.5	15.2	6.6	2.7	146	196,370
Four or more	73.6	13.4	7.8	5.2	303	395,880
Overall						
Total pregnant	72.9	14.8	9.1	3.2	610	812,063

Table excludes pregnant women with food security status not determined (0.6%) and pregnant women with incomplete or missing Nutritional Risk Checklists (5.1%).

Exhibit 3-45

Distribution of Food Security Status by Number of Nutritional Risk Factors: Breastfeeding Women

	Food Secure	Food Insecure without Hunger	Food Insecure with Hunger, Moderate	Food Insecure with Hunger, Severe	Sample Size	Population
Anthropometric risks						
None	74.5	14.0	10.9	0.5	221	120,990
One	71.6	20.5	7.0	0.9	174	106,617
Two or more	74.4	19.3	5.8	0.5	164	99,254
Potentially toxic substances						
None	74.3	17.6	7.4	0.7	497	294,494
One	66.8	18.5	14.6	0.0	58	31,080
Two or more	78.0	22.0	0.0	0.0	5	2,179
Other biochemical and medical risks						
None	75.4	15.7	8.3	0.6	284	170,171
One	69.8	19.9	9.9	0.5	192	107,260
Two or more	75.1	20.2	3.4	1.3	84	49,450
Dietary risks						
None	75.7	16.6	7.7	0.0	134	74,386
One	73.4	17.6	8.2	0.8	419	249,175
Two or more	53.4	40.1	6.5	0.0	9	4,793
Predisposing risks						
None	73.1	18.5	8.0	0.4	513	298,197
One	75.8	10.4	9.9	3.9	39	24,456
Two or more	83.4	16.6	0.0	0.0	6	3,050
Total risks						
One	81.1	13.4	5.5	0.0	107	56,193
Two	71.5	12.1	16.4	0.0	133	79,524
Three	72.9	17.7	7.3	2.0	128	80,441
Four or more	72.4	23.3	3.8	0.4	197	114,340
Overall						
Total breastfeeding	73.8	17.6	8.0	0.6	565	330,499

Table excludes breastfeeding women with food security status not determined (0.5%) and breastfeeding women with incomplete or missing Nutritional Risk Checklists (11.7%).

Exhibit 3-46

Distribution of Food Security Status by Number of Nutritional Risk Factors: Postpartum Women

	Food Secure	Food Insecure without Hunger	Food Insecure with Hunger, Moderate	Food Insecure with Hunger, Severe	Sample Size	Population
Anthropometric risks						
None	77.5	16.2	5.2	1.1	212	197,408
One	74.6	20.2	3.7	1.5	131	120,587
Two or more	76.7	15.6	3.4	4.3	190	175,032
Potentially toxic substances						
None	77.0	15.8	4.6	2.6	412	378,225
One	74.7	22.6	2.1	0.6	105	101,558
Two or more	62.4	25.0	5.6	7.0	13	11,635
Other biochemical and medical risks						
None	77.8	17.0	2.8	2.4	224	214,405
One	75.2	17.2	6.7	0.8	211	191,211
Two or more	73.1	19.6	2.1	5.2	98	89,004
Dietary risks						
None	77.0	20.1	2.5	0.4	143	145,940
One	75.9	16.2	5.0	2.9	384	343,624
Two or more	40.1	37.8	0.0	22.0	5	3,803
Predisposing risks						
None	75.7	17.5	4.6	2.2	471	426,940
One	74.8	21.6	1.1	2.4	47	49,578
Two or more	93.5	0.0	0.0	6.5	9	12,915
Total risks						
One	80.2	11.2	7.3	1.4	76	75,876
Two	76.4	16.7	4.7	2.1	129	109,048
Three	70.1	23.7	4.2	1.9	127	121,476
Four or more	77.7	16.7	2.6	3.0	204	190,230
Overall						
Total postpartum	75.9	17.6	4.2	2.3	536	496,629

Table excludes postpartum women with food security status not determined (3.2%) and postpartum women with incomplete or missing Nutritional Risk Checklists (10.4%).

Exhibit 3-47

Distribution of Food Security Status by Number of Nutritional Risk Factors: Infants

	Food Secure	Food Insecure without Hunger	Food Insecure with Hunger, Moderate	Food Insecure with Hunger, Severe	Sample Size	Population
Anthropometric risks						
None	78.6	13.6	6.2	1.6	429	1,344,97
One	70.8	16.3	11.5	1.4	79	268,869
Two or more	70.6	20.4	7.3	1.7	54	174,645
Potentially toxic substances						
None	76.8	14.5	7.1	1.6	557	1,770,16
One	100.0	0.0	0.0	0.0	1	1,688
Other biochemical and medical risks						
None	76.7	14.2	7.4	1.8	442	1,416,88
One	73.3	18.9	6.5	1.3	93	293,542
Two or more	85.6	11.7	2.7	0.0	30	87,194
Dietary risks						
None	77.9	14.4	6.4	1.3	408	1,300,48
One	74.7	14.7	6.3	4.3	93	268,832
Two or more	72.2	15.7	12.1	0.0	61	217,650
Predisposing risks						
None	76.7	14.3	7.2	1.8	469	1,471,76
One	77.5	16.3	6.3	0.0	75	259,660
Two or more	72.6	14.4	8.9	4.0	17	52,008
Total risks						
One	77.7	15.4	5.5	1.4	245	779,770
Two	79.4	14.3	4.3	2.0	138	428,994
Three	76.6	7.5	13.5	2.4	79	243,483
Four or more	70.8	19.1	9.2	0.8	105	349,417
Overall						
Total infants	76.6	14.8	7.0	1.6	567	1,801,66

Table excludes infants with food security status not determined (1.2%) and infants with incomplete or missing Nutritional Risk Checklists (8.0%).

Exhibit 3-48

Distribution of Food Security Status by Number of Nutritional Risk Factors: Children

	Food Secure	Food Insecure without Hunger	Food Insecure with Hunger, Moderate	Food Insecure with Hunger, Severe	Sample Size	Population
Anthropometric risks						
None	80.7	12.3	5.2	1.8	356	2,165,80
One	73.4	19.9	5.0	1.7	165	1,007,67
Two or more	66.8	14.6	18.7	0.0	54	362,264
Potentially toxic substances						
None	76.9	14.8	6.7	1.6	564	3,450,84
One	100.0	0.0	0.0	0.0	3	18,160
Other biochemical and medical risks						
None	79.2	14.2	5.1	1.5	380	2,275,84
One	71.6	16.7	10.1	1.6	159	1,001,75
Two or more	82.1	10.1	5.2	2.5	37	250,688
Dietary risks						
None	72.0	15.8	9.8	2.4	108	731,480
One	78.1	14.6	5.9	1.4	461	2,727,92
Predisposing risks						
One	77.1	10.0	12.8	0.0	50	326,866
Two or more	80.3	3.7	4.3	11.7	11	82,210
Total risks						
One	80.6	14.8	3.2	1.4	273	1,603,13
Two	75.6	15.4	7.3	1.8	181	1,100,77
Three	82.7	9.1	5.7	2.6	81	531,024
Four or more	60.9	18.9	20.2	0.0	48	345,395
Overall						
Total children	77.5	14.5	6.5	1.6	583	3,580,32

Checklists (8.8%).

3.7 Health Insurance Coverage

The WIC program is concerned with the health and nutrition of women, infants, and children, but WIC is not a health care provider. To ensure that WIC participants receive health care and other needed services, WIC provides screening and referrals to other health, welfare and social service agencies.

NSWP respondents were asked about health insurance coverage at the time of their current certification for WIC. Because many had previous personal or family experience with WIC, patterns of health insurance incorporate an unknown degree of response to previous WIC referrals. Exhibit 3-49 shows that 83.1 percent of WIC participants had health insurance coverage at the time of their current WIC certification. Pregnant women had the lowest rate of health insurance coverage (70.6 percent) and infants had the highest coverage (86.1 percent); these differences across certification categories are statistically significant.

Overall, 58.1 percent of WIC participants had health insurance from the government's Medicaid program.[57] Among those with some form of health insurance coverage, 70 percent had Medicaid and 30 percent had employer-provided coverage. Across certification categories, the differences in the distributions of source of health insurance, among those with health insurance, are not statistically significant.

NSWP respondents who reported no health insurance were asked the reasons for lack of insurance. These responses are shown in Exhibit 3-49. Multiple reasons were given by 44 percent of those with no health insurance, so that the sum of responses exceeds 100 percent. Across all certification categories, the most common reason for lack of health insurance was Medicaid ineligibility or a belief that they could not get Medicaid (57.4 percent). Unemployment status was cited as a reason for lack of health insurance by 43.9 percent of respondents; 41.8 percent of respondents said they were employed, but their employer did not offer insurance or they could not afford it. Nearly all respondents stating "Don't think I can get private health insurance" or "Been refused insurance due to poor health" also cited one of the three main reasons (Medicaid, unemployment, employed but can't afford it). About 3 percent of respondents said they had no health insurance because they had not needed it.

Medicaid

Persons enrolled in Medicaid are automatically income-eligible for WIC, so it is easy to forget that the reverse is not true—all WIC participants are not eligible for Medicaid. Applicants to WIC are income - eligible for WIC if their income is at or below 185 percent of the federal poverty level (FPL). At the time of the NSWP survey (spring 1998), federal law required states to provide Medicaid to all pregnant women, and children below age six, living in families with incomes at or below 133 percent of FPL.[58]

57 Previously we cited that 61.6 percent of WIC participants were adjunct eligible for WIC due to participation in Medicaid. The percentage adjunct eligible due to Medicaid is higher than the percentage of WIC participants enrolled in Medicaid because adjunct eligibility is conferred by Medicaid enrollment of either the WIC applicant or a pregnant woman or infant in the applicant's family.

58 Omnibus Reconciliation Act, 1989.

Exhibit 3-49

Percentage of WIC Participants by Health Insurance Coverage and Reasons for Lack of Health Insurance

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent covered by health insurance							
Yes	70.6	76.7	85.5	76.7	86.1	84.5	83.1
No	29.4	23.3	14.5	23.3	13.9	15.5	16.9
Percent by source of insurance							
Employer	18.3	30.1	22.9	22.2	24.6	26.0	24.8
Medicaid	49.9	47.7	62.0	53.3	61.3	58.8	58.1
Other	3.8	3.1	2.2	3.2	1.8	2.9	2.7
Source not reported	0.3	0.6	0.5	0.4	0.5	0.4	0.4
No health insurance	29.1	23.1	14.5	23.2	13.9	15.5	16.9
Reasons for no health insurance, if none[a]							
Not eligible for or don't think I can get Medicaid	42.2	69.1	65.0	52.7	56.7	60.8	57.4
Not employed, coverage discontinued or can't afford it	55.4	52.8	58.4	55.5	50.4	33.2	43.9
Employed, insurance not offerred or can't afford it	40.8	34.9	21.0	35.3	47.8	43.7	41.8
Don't think I can get private insur.	13.0	22.7	24.1	17.4	21.0	10.1	14.7
Haven't needed health insurance	5.2	4.3	3.8	4.7	2.7	1.7	2.9
Been refused insurance due to health	3.4	0.9	1.0	2.4	1.1	0.0	1.0
Item nonresponse							
Health insurance coverage	2.0	0.5	0.5	1.2	0.6	1.0	0.9
Reasons for no health insurance	10.8	7.4	0.6	8.0	13.6	7.5	9.0
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

NOTE: Percent by source does not sum to 100 due to multiple sources of health insurance for 3.5 percent of respondents with health insurance.

a The sum of responses to "reasons for no health insurance" exceeds 100 percent because 44 percent of respondents with no health insurance cited multiple reasons.

States could expand eligibility for Medicaid beyond federal requirements using a variety of mechanisms available under federal law.[59] As a result of state expansions of Medicaid, 37.6 percent of the NSWP sample lived in states with a Medicaid income limit equal to or greater than the WIC income limit.[60]

Exhibit 3-50 shows that health insurance coverage and Medicaid enrollment for WIC participants is slightly higher in states with a Medicaid income-limit at or above the WIC income limit. These differences, however, are not statistically significant. This exhibit also shows that, even in states where all WIC participants are likely to be eligible for Medicaid, 13.8 percent of WIC participants have no health insurance, and one-half of those with no health insurance believe that they are ineligible for Medicaid.[61]

The NSWP interviewed WIC participants at the time that they were certified in WIC, and before they had an opportunity to follow-up on referrals to Medicaid that they may have received at the current WIC certification. As a result, the impact of WIC referrals may be seen in the different rates of Medicaid enrollment for respondents with prior WIC experience versus those without prior WIC experience.[62]

Exhibit 3-51 shows that prior WIC experience (compared to no prior WIC experience) is associated with slightly higher rates of Medicaid enrollment (59.4 versus 55.0 percent) and slightly higher rates of health insurance (84.3 versus 80.1 percent), but the difference is not statistically significant. These differences are also shown separately for WIC participants in states with a Medicaid income limit below the WIC income limit (less than 185 percent FPL) and for those in states with a Medicaid income limit equal to or greater than the WIC income limit (at or above 185 percent FPL). In states with a Medicaid income limit at or above the WIC income limit, the difference in Medicaid enrollment and health insurance coverage for those with and without prior WIC experience is statistically significant. Prior WIC experience is associated with a ten-percentage point increase in the Medicaid enrollment rate (67.4 versus 57.6 percent).

59 Section 1902(2)(2) option of the Social Security Act. As of October 1997, the Medicaid income-eligibility standard for pregnant women and infants was 185 percent of FPL in 21 states, and exceeded 185 percent of FPL in eight states. At the same time, the Medicaid income-eligibility standard for children below age six was 185 percent of FPL in five states, and exceeded 185 percent of FPL in seven states. (Source: National Governors Association, *State Medicaid Coverage of Pregnant Women and Children*, September 1997.)

60 Based on PC98, 42.8 percent of women, infants, and children enrolled in WIC lived in states with a Medicaid income limit equal to or greater than the WIC income limit. The estimate of 37.6 percent from NSWP has a standard error of 4.96 and a 95 percent confidence interval from 27.7-47.5 percent.

61 In states with an income limit for Medicaid at or above 185 percent FPL, WIC and Medicaid may nonetheless apply different definitions of family or family income, so the eligibility standards of the two programs may not be exactly the same.

62 "WIC experience" is determined by the prior WIC enrollment by any member of the sampled person's family.

Exhibit 3-50

Health Insurance Coverage and Reasons for Lack of Health Insurance, by Medicaid Income Eligibility Limit of State of Residence

	Medicaid Income Limit Less than 185% FPL	Medicaid Income Limit 185% FPL or higher
Percent covered by health insurance		
Yes	81.2	86.2
No	18.8	13.8
Percent by source of insurance		
Employer	25.0	24.3
Medicaid	55.5	62.6
Other	3.0	2.2
Source not reported	0.4	0.5
No health insurance	18.7	13.8
Reasons for no health insurance, if none		
Not eligible for or don't think I can get Medicaid	60.4	49.9
Not employed, coverage discontinued or can't afford it	39.6	54.6
Employed, insurance not offerred or can't afford it	46.1	31.1
Don't think I can get private health insurance	14.7	14.5
Haven't needed health insurance	1.6	6.0
Been refused insurance due to health	0.3	2.7
Item nonresponse		
Health insurance coverage	0.9	1.0
Reasons for no health insurance	6.5	14.7
Sample size	1,469	1,645
Population	4,833,931	2,907,147

NOTE: Percent by source does not sum to 100 due to multiple sources of health insurance cited by 3.5 percent of respondents with health insurance.

In 1998, federal law mandated Medicaid coverage for pregnant women, infants, and children up to age six with incomes up to 133% of poverty level. States had the option to provide Medicaid coverage to persons with incomes above the mandated level. In the NSWP sample, 37 percent of sampled persons resided in states with Medicaid income limits at or above 185% of poverty level.

Exhibit 3-51

Health Insurance Coverage by WIC Experience and Medicaid Income Eligibility Limit of State of Residence

	First WIC experience for family	Family has WIC experience
Wic Participants in All States		
Percent covered by health insurance		
Yes	80.1	84.3
No	19.9	15.7
Percent by source of insurance		
Employer	23.7	25.1
Medicaid	55.0	59.4
Other	2.7	2.9
Source not reported	0.6	0.4
No health insurance	19.9	15.7
Sample size	1,075	1,979
Population	2,355,274	5,024,068
State Medicaid Income Limit < 185% FPL		
Percent covered by health insurance		
Yes	76.6	82.2
No	23.4	17.8
Percent by source of insurance		
Employer	25.5	24.7
Medicaid	50.5	56.6
Other	2.0	3.4
Source not reported	0.1	0.5
No health insurance	23.4	17.8
Sample size	403	1,024
Population	867,085	3,687,451
State Medicaid Income Limit >= 185% FPL		
Percent covered by health insurance		
Yes	82.2	90.2
No	17.8	9.8
Percent by source of insurance		
Employer	22.7	26.3
Medicaid	57.6	67.4
Other	3.0	1.5
Source not reported	0.9	0.1
No health insurance	17.8	9.8
Sample size	672	955
Population	1,488,189	1,336,616

NOTE: Percent by source does not sum to 100 due to multiple sources of health insurance cited by 3.5 percent of respondents with health insurance.

In 1998, federal law mandated Medicaid coverage for pregnant women, infants, and children up to age six with incomes up to 133% of poverty level. States had the option to provide Medicaid coverage to persons with incomes above the mandated level. In the NSWP sample, 37 percent of sampled persons resided in States with Medicaid income limits at or above 185% of poverty level.

Health Insurance Services

NSWP respondents who reported health insurance coverage at the time of their WIC certification were asked about the health care services available under their health plan. Exhibit 3-52 shows the distributions of responses for Medicaid recipients and for WIC enrollees with private health insurance plans.[63]

Most Medicaid recipients reported that immunizations, well baby care, and well child care were services available under Medicaid at no charge; only 8 to 15 percent of Medicaid recipients did not know about the availability of these services, and few reported these services as unavailable or requiring a fee. In contrast, only about one-half of Medicaid recipients reported that breastfeeding nutrition support and nutrition education were available from Medicaid, and more than one-third reported that they did not know whether or not these services were available.

About 30 percent of those with private health insurance reported that immunizations, well baby care, and well child care were available from their health plan for a fee; a slightly higher percent reported these services to be free of charge. Persons with private health insurance were similar to Medicaid recipients in their lack of knowledge about the availability of nutrition services from their health plans (about 40 percent did not know). Persons with private health insurance were less likely than Medicaid recipients to report that nutrition services were available for free, and they were more likely to report that the services were not available from their health plan.

For all health services that we asked about, persons with private health insurance were more likely than Medicaid recipients to report that they did not know about the availability of the service under their health plan. This differential knowledge could be cause for concern if it reflects a differential utilization of health care services.

63 Although Medicaid is a jointly funded federal-state program, states determine the types of services available and service-availability may vary across states.

Exhibit 3-52

Distribution of Reported Service Availability from WIC Participants' Health Insurance Plans

	Medicaid	Other insurance	Total with insurance
Breastfeeding nutrition support			
Available for free	50.8	22.3	42.3
Available at extra charge	0.9	7.5	2.9
Not available	11.5	27.4	16.2
Don't know	36.8	42.8	38.6
Nutrition education			
Available for free	54.0	23.3	44.8
Available at extra charge	0.7	9.2	3.2
Not available	13.1	26.5	17.1
Don't know	32.2	41.0	34.8
Immunizations			
Available for free	86.2	47.6	74.6
Available at extra charge	3.0	31.0	11.4
Not available	2.3	10.9	4.9
Don't know	8.5	10.4	9.1
Well baby care			
Available for free	79.5	37.6	66.9
Available at extra charge	2.9	32.8	11.9
Not available	3.0	11.8	5.6
Don't know	14.6	17.8	15.5
Well child care			
Available for free	78.2	35.8	65.5
Available at extra charge	2.9	31.2	11.4
Not available	3.7	13.3	6.5
Don't know	15.3	19.7	16.6
Item nonresponse			
Breastfeeding nutrition support	1.4	1.9	1.5
Nutrition education	1.4	1.6	1.5
Immunizations	1.1	1.7	1.3
Well baby care	1.5	1.5	1.5
Well child care	1.5	2.1	1.7
Sample size	1,731	789	2,520
Population	4,457,630	1,915,470	6,373,100

NOTE: Table excludes WIC participants with no health insurance.

3.8 Participants' History with the WIC Program

Little information exists about the duration of WIC participation for individuals over multiple certification periods, or the extent to which WIC provides continuity of service to families from the prenatal period through early childhood. Just as it is difficult to use WIC administrative records to examine the extent to which multiple persons in a family participate (or have participated) in WIC, it is difficult to examine the longitudinal participation behavior of WIC participants.[64] This section uses the NSWP to examine the timing and continuity of WIC participation.

Earlier in this chapter, Exhibit 3-6 showed that most mothers of WIC infants and children were enrolled in WIC when pregnant with their children and during the postpartum period. Exhibit 3-53 consolidates information from Exhibit 3-6, and presents information about prenatal WIC participation for mothers of infants and children alongside the same information for breastfeeding and postpartum women. As shown in this exhibit, across all certification categories (breastfeeding, postpartum, infants, and children) a high percentage of WIC participants are continuing WIC participation that began in the prenatal period. The rate of prenatal participation ranges from 77.6 to 84.1 percent across WIC women and WIC mothers, depending on certification category (the differences across certification category are not statistically significant).

For those women who do enroll in WIC while pregnant, when do they enroll? Exhibit 3-54 shows that 41.5 percent of pregnant WIC participants enroll during their first trimester, another 39.5 percent enroll during their second trimester, and 19.0 percent enroll during the third trimester. There is an unusually high rate of missing information on trimester of enrollment (19.0 percent) because this variable is taken from the certification forms collected at local service sites, not from the NSWP survey itself.[65] Despite high rates of missing data, the comparable rates of missing data across groups of women with and without WIC experience suggests that comparison across these groups is valid. Somewhat surprisingly, pregnant women with prior WIC experience enroll in WIC **later** during pregnancy than those without prior experience (e.g., 21.1 percent of women with prior WIC experience wait until the third trimester to enroll, versus 17.8 percent of women without prior WIC experience).[66]

Another question regarding timing of enrollment is when do infants get certified? The cumulative distributions in Exhibit 3-55 show that 25.9 percent of WIC infants are certified when less than one week old. Slightly more than one half (50.6 percent) are certified within two weeks of birth, and 71.3 percent are certified during their first month. Here, however, the prior WIC experience of the mother does affect when infants are certified; that is, infants are more likely to be certified at a younger age if the mother participates in WIC. For instance, 79.5 percent of infants of mothers in WIC while pregnant are enrolled in the first month, compared to only 43.1 percent of WIC infants whose mothers were not on WIC during pregnancy.

64 State data systems vary with respect to whether they maintain identifiers to link family members and whether they maintain the date of first WIC enrollment.

65 It is possible that data about gestation and expected date of delivery are entered into the certification records after NSWP collected those records from WIC sites. The overall distribution by trimester is similar to that shown in census data in WIC Participant and Program Characteristics, 1998, Exhibit 3-1.

66 This difference is statistically significant at the 10 percent level. All other tests of significance have been done at the 5 percent level.

Exhibit 3-53

Percent of WIC Women and WIC Mothers in WIC When Their Children Were Born

	Breastfeeding Women	Postpartum Women	Mothers of Infants	Mothers of Children
On WIC as pregnant woman				
Yes	84.1	82.1	77.6	80.1
No	15.9	17.9	22.4	19.9
Not reported	0.8	3.3	3.1	7.9
Sample size	627	587	614	647
Population	376,463	573,899	1,978,411	3,952,924

WIC mothers include mothers of infants and children sampled for NSWP at certification.

Exhibit 3-54

Distribution of Pregnant Women WIC Participants, by Trimester of Current Enrollment

	No Prior WIC Experience	Prior WIC Experience	Total Pregnant Women
Trimester of enrollment			
First trimester	44.0	37.2	41.5
Second trimester	38.2	41.7	39.5
Third trimester	17.8	21.1	19.0
Trimester not reported[a]	18.5	19.7	19.0
Sample size	394	245	639
Population	532,798	326,583	859,381

Number of respondents with information "not reported" are excluded from previous percents. Information on prior WIC experience is missing for 1.3% of pregnant women.

a Information about trimester of enrollment was taken from certification forms. Certification forms are missing for 13% of pregnant women, and an additional 6% had incomplete certification forms that did not indicate trimester of enrollment.

Exhibit 3-55

Distribution of Age at First WIC Certification, by Whether Mother Participated in WIC When Pregnant: Infants

	Mother in WIC When Pregnant		Mother not in WIC When Pregnant		Total Infants	
	Percent	Cum Pct	Percent	Cum Pct	Percent	Cum Pct
Age at first certification						
Less than 1 week	30.6	30.6	6.5	6.5	25.9	25.9
1-2 weeks	28.4	59.0	14.3	20.7	24.7	50.6
2-4 weeks	20.5	79.5	22.4	43.1	20.7	71.3
5-8 weeks	11.8	91.3	18.2	61.3	13.5	84.7
9-12 weeks	2.4	93.6	8.5	69.8	3.6	88.4
13-25 weeks	4.6	98.2	21.3	91.2	8.2	96.6
26-40 weeks	1.6	99.8	8.1	99.2	3.1	99.7
> 10 months	0.2	100.0	0.8	100.0	0.3	100.0
Sample size	465	465	132	132	614	614
Population	1,488,706	1,488,706	429,321	429,321	1,978,411	1,978,411

Information on mother's prior WIC experience is missing for 3.1% of infants. As a result, the sample size in first two columns does not sum to the total column.

Exhibit 3-56 offers parallel information for the age at which WIC children are first enrolled in WIC (including enrollment as an infant). Overall, 36.1 percent of WIC children first enrolled when less than one week old, and 95.5 percent enrolled before their first birthday. Again, as with WIC infants, this exhibit shows that WIC children are enrolled much sooner if their mother participated in WIC when pregnant.

Exhibit 3-57 examines the prior WIC experience of WIC women. For most pregnant women (62.0 percent), this is their first enrollment in WIC. In contrast, 91.6 of breastfeeding women have prior experience with WIC, as do 82.5 percent of postpartum women (based on the 8.4 and 17.5 percent of these women, respectively, having their first WIC certification). For a large majority of these breastfeeding and postpartum women, their prior experience with WIC was while pregnant, as evidenced by the large percentages who received WIC last month (i.e., just prior to being certified as breastfeeding or postpartum).

Information about the prior WIC experience of infants and children is presented in Exhibit 3-58. In this exhibit, WIC infants and children are characterized by whether they are new to WIC (being certified for the first time) or receiving recertification. WIC certification periods vary by participant category, with children certified for six-month periods and infants certified for six months or, at the discretion of local agencies, for a period up to their first birthday.[67]

As seen in Exhibit 3-58, less than 1 percent of children are new to WIC; nearly all children had participated in WIC prior to the current certification. This high rate of recertification is not surprising, because children may be continuing certification as a child, or being newly-certified as a child after prior enrollment as an infant. On the other hand, because we do not count prenatal enrollment of infants as "prior WIC enrollment," we expect a high percentage of infants to be receiving their first WIC certification. For infants, 86.5 percent were receiving their first WIC certification and 13.5 percent of those sampled were being recertified.

67 Federal WIC regulations specify that "infants shall be certified at intervals of approximately six months, except that the State agency may permit local agencies under its jurisdiction to certify infants under six months of age for a period extending up to the first birthday."

Exhibit 3-56

Distribution of Age at First WIC Certification, by Whether Mother Participated in WIC When Pregnant: Children

	Mother in WIC When Pregnant		Mother Not in WIC When Pregnant		Total Children	
	Percent	Cum Pct	Percent	Cum Pct	Percent	Cum Pct
Age at first certification						
Less than 1 week	39.7	39.7	21.2	21.2	36.1	36.1
1-2 weeks	34.1	73.7	12.1	33.2	28.3	64.4
2-4 weeks	3.3	77.1	4.9	38.1	3.7	68.1
5-8 weeks	11.9	88.9	18.1	56.2	12.8	80.9
9-12 weeks	4.3	93.3	10.4	66.6	5.3	86.1
13-25 weeks	3.6	96.9	11.4	78.0	5.6	91.7
26-40 weeks	1.9	98.7	5.4	83.4	2.7	94.4
41-52 weeks	0.5	99.3	1.2	84.6	1.1	95.5
More than one year:						
13-18 months	0.9	99.7	4.9	89.1	2.3	96.9
19-24 months	0.3	100.0	5.9	94.9	1.3	98.2
25-36 months	0.0	100.0	4.3	99.2	1.1	99.2
37-48 months	0.0	100.0	0.8	100.0	0.8	100.0
49-51 months	0.0	100.0	0.0	100.0	0.0	100.0
Sample size	481	481	114	114	647	647
Population	2,915,040	2,915,040	726,029	726,029	3,952,924	3,952,924

WIC children may have received first WIC certification as infants. Information on mother's prior WIC experience is missing for 7.9% of children; as a result, sample size in the first two columns does not sum to the total column.

Exhibit 3-57

Prior WIC Experience of WIC Women

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women
Certification history				
First WIC certification	62.0	8.4	17.5	36.8
Received WIC last month	1.1	89.2	75.5	43.0
Received WIC at earlier time	36.9	2.4	7.0	20.2
Sample Size	639	627	587	1,853
Population	859,381	376,463	573,899	1,809,743

Certification history is based on mothers' responses about WIC participation when pregnant or postpartum, for each of her children.

Exhibit 3-58

Prior WIC Experience of WIC Infants and Children

	WIC Infants	WIC Children
Certification history		
First WIC certification	86.5	0.9
Recertification	13.5	99.1
Indeterminant	3.1	7.6
Ever leave and reenter the WIC program?		
Yes	NA	24.6
No	NA	75.4
Not reported		12.5
Sample size	614	647
Population	1,978,411	3,952,924

Number and percent with information indeterminant or not reported are excluded from previous percents. Certification history is indeterminant in cases for which "age when WIC began" was not reported.

Some WIC agencies choose to certify infants at 6-month intervals, whereas most choose to certify infants for a period up until their first birthday.

3.9 Incidence and Duration of Breastfeeding

This section examines the frequency and duration of breastfeeding among WIC infants. Breastfeeding is defined as exclusive use of human breast milk, or use of human milk with bottle supplements of formula or cow's milk. Breast milk has been shown to provide nutritional, immunologic, and developmental benefits for infants; in addition, breastfeeding is associated with improved maternal health.[68]

The importance of breastfeeding places it among the objectives in the U.S. Department of Health and Human Services (HHS) Healthy People 2000 and Healthy People 2010. The Healthy People 2010 goals for mothers in the general U.S. population are 75 percent breastfeeding in early postpartum, 50 percent at six months, and 25 percent at one year.[69]

As part of its strategic plan, FNS has set an ongoing objective to increase the rate of breastfeeding among WIC mothers. The current goal for FNS is to raise the percent of WIC mothers initiating breastfeeding from a 1997-1998 baseline of 41.5 percent (estimated from WIC management information system data for infants 7 to 11 months of age) to 50 percent by 2003-2004.

NSWP provides estimates of breastfeeding incidence and duration, as well as information about breastfeeding patterns within families. NSWP estimates are based on a sample of WIC participants from the continental U.S. who were surveyed at the time of WIC certification. This methodology, however, differs from that used to obtain the baseline for the FNS strategic plan.[70] Because differences in the point estimate may be due to its differing methodology, the NSWP estimate of breastfeeding incidence should not be interpreted as a change from the FNS strategic plan baseline, nor as a move toward achievement of FNS breastfeeding goals.

Exhibit 3-59 shows that 31.0 percent of WIC infants were breastfeeding at the time of WIC certification, and another 25.1 percent had been breastfed previously. In total, 56.1 percent of WIC infants had ever been breastfed. This finding is consistent with that of the WIC Infant Feeding Practices Study (WIC-IFPS, data from 1994-95), which found that 56 percent of WIC infants with mothers in WIC prenatally were ever breastfed.[71] Among NSWP infants ever breastfed, the median duration of breastfeeding was 21 days, and at least 18.9 percent had been breastfed for at least three months.

---

68 American Academy of Pediatrics, "Policy Statement: Breastfeeding and the Use of Human Milk (RE9729)," *Pediatrics* 100(6): 1035-1039, 1977.

69 U.S. Department of Health and Human Services, *Healthy People 2010*, 2nd ed., Vol. II, Chapter 16, Washington, DC: U.S. Government Printing Office, November 2000.

70 The baseline for the FNS strategic plan is from PC98. The methodologies differ in sample definition. NSWP represents only the continental U.S.; data were collected from all infants at the time of WIC certification via interviews with WIC mothers. PC98 data are from WIC information management systems. PC98 contains the entire WIC population, but the breastfeeding estimate excludes those states failing to report breastfeeding data for at least 75 percent of all 7- to 11-month-old infants. As a result, "the national estimates are based on 81 percent of all WIC infants aged seven-to-eleven months" (PC98, p.140). By measuring breastfeeding initiation among infants aged 7 to 11 months, this estimate excludes infants who enrolled in WIC but did not remain in WIC through age 7 months.

71 WIC-IFPS was a one-year longitudinal survey of the infant feeding practices of mothers who participated in WIC while pregnant. WIC-IFPS found that by the time of hospital discharge the percentage of infants breastfeeding dropped to 45 percent. Among breastfed infants, the median duration of breastfeeding was 57 days; 75 percent breastfed 2 or more weeks; and 14 percent breastfed for at least 6 months.

Exhibit 3-59

Breastfeeding Status Reported at WIC Certification Among WIC Infants and Children

	Infants	Children
Breastfeeding experience		
Currently breastfeeding	31.0	0.4
Previously breastfed	25.1	50.0
Never breastfed	43.9	49.6
Not reported[a]	1.2	4.2
Sample size	614	647
Population	1,978,411	3,952,924
Cumulative distribution of breastfeeding duration among those ever breastfed		
26 or more weeks	7.3	42.7
21 or more weeks	10.1	46.4
13 or more weeks	18.6	62.8
8 or more weeks	24.4	70.4
4 or more weeks	44.1	84.7
3 or more weeks	52.1	87.2
2 or more weeks	71.6	92.8
1 or more weeks	89.1	94.6
1 or more days	100.0	100.0
Not reported[a]	5.7	10.3
Median duration (days)	21	121
Sample size	340	306
Population	1,095,895	1,906,828

a Number and percent with data not reported are excluded from previous percents.

Because NSWP measured breastfeeding incidence and duration at the time of WIC certification, the information about breastfeeding duration for infants is not particularly useful. For those currently breast-feeding, the data are truncated because one does not know how long they will be breastfed ultimately. For those no longer breastfeeding, the sample is skewed towards those infants with short breastfeeding histories.

NSWP data also allow analyses of breastfeeding patterns for WIC children, but this too has limitations. Breastfeeding information was collected retrospectively and, compared to infants, data for children may suffer more recall error because their breastfeeding history is further in the past. In addition, WIC children sampled at ages one through four are not necessarily representative of their cohort due to attrition of children who were in WIC at an earlier point and who have now left the WIC Program.

NSWP shows that just over one-half of all WIC children (50.4 percent) were reported as ever breastfed. Among children ever breastfed, the median duration of breastfeeding was 121 days, or about four months. The cumulative distribution shows that 84.7 percent were breastfed for longer than one month, 62.8 percent were breastfed at least three months, and 42.7 percent were reported to have been breastfed six months or more.

One can take the product of the cumulative percentages and the percent ever breastfed (e.g., 15.3 percent times 50.4 percent ever breastfed) to learn that 7.7 percent of all WIC children were breastfed for a least one day but less than one month. Similarly, we learn that 21.5 percent of all WIC children were breastfed for six months or longer (e.g., 42.7 percent times 50.4 percent ever breastfed). Among WIC children, only 0.4 percent were described as currently breastfeeding, i.e., potentially breastfeeding for one year or longer.

Exhibit 3-60 examines NSWP breastfeeding patterns within families. As might be expected, the survey results indicate that the decision to breastfeed carries over multiple children. WIC infants who were ever breastfed and those not breastfed were equally likely to have siblings (53.6 vs. 52.7 percent), but infants who were breastfed were more likely to have siblings who were breastfed. Among WIC infants with siblings, 78 percent of breastfed infants had siblings who were breastfed, whereas only 17.3 percent of non-breastfed infants had siblings who were breastfed.

The results are similar for WIC children. WIC children who were ever breastfed and those not breastfed were equally likely to have siblings (64.7 vs. 63.0 percent). Among WIC children with siblings, 86.4 percent of breastfed children had siblings who were breastfed, whereas only 18.3 percent of non-breastfed children had siblings who were breastfed.

The NSWP findings reveal a pattern within WIC families: the decision to breastfeed carries over multiple children. Breastfeeding only one child in a house with siblings is uncommon. These NSWP findings are consistent with earlier findings from the WIC Infant Feeding Practices Study (WIC-IFPS).[72] WIC-IFPS found that, "One of the most important predictors of breastfeeding is the previous breastfeeding history. Mothers who breastfed previous children have predicted odds of initiation of breastfeeding that are over eight times larger than those for mothers who did not breastfeed previous children."[73]

72 Baydar, N., M. McCam, R. Williams, and E. Vesper, "The WIC Infant Feeding Practices Study," Alexandria, VA: USDA/FNS, November 1997.

73 Baydar *et al*., p. 62.

Exhibit 3-60

Distribution of WIC Infants and Children by Own Breastfeeding Status and Presence of Siblings Ever Breastfed

	Infants	Children
WIC participants who breastfed		
Percent with siblings	53.6	64.7
Among those with siblings:		
No siblings ever breastfed	21.8	13.5
One sibling ever breastfed	62.0	61.9
Two siblings ever breastfed	15.2	19.3
More than two siblings ever breastfed	1.0	5.2
Sample size	340	306
Population	1,095,895	1,906,828
WIC participants who did not breastfeed		
Percent with siblings	52.7	63.0
Among those with siblings:		
No siblings ever breastfed	82.7	81.7
One sibling ever breastfed	14.2	17.1
Two siblings ever breastfed	3.1	1.2
More than two siblings ever breastfed	0.0	0.0
Sample size	265	311
Population	858,278	1,879,370

3.10 Factors Affecting Enrollment and Continued Participation

How do women learn about the WIC program? What are the barriers to WIC participation? How satisfied are participants with WIC food benefits? The NSWP addressed each of these questions by including a brief "customer satisfaction" module as part of the survey.

Questions about referrals to WIC are straightforward to administer and to interpret. In contrast, questions about barriers to participation and satisfaction with food benefits are complicated by the fact that respondents' knowledge on these topics depends on having participated in WIC. To collect information about barriers to participation, the NSWP included two sets of questions. The first set of questions was about perceived barriers ("things that might make it difficult to participate in the WIC program"), and these questions were administered to all respondents. A second set of questions about barriers, or difficulties, actually encountered during WIC participation was administered only when the sampled person's family had prior WIC experience. In the latter case, when the family had prior WIC experience, respondents were also asked about the value of WIC benefits, frequency of missed WIC appointments, food shopping experience, and benefit redemption.

Two caveats are necessary before presenting the results of the customer satisfaction questions. First, the data presented on perceived barriers to WIC participation are a mix of responses based on perceptions (from those new to the program) and experiences (from those with WIC experience). Moreover, the responses are representative only of persons who enrolled in WIC, and do not reflect the perceptions of individuals who may have been deterred from applying. Nonetheless, it was believed that data on perceived barriers to participation were sufficiently important to collect and present, despite limitations on the representative nature of the data.

The second caveat is that the questions administered to respondents with prior WIC experience were not administered to a random sample of all WIC participants; these questions were administered to a random sample of WIC participants who recertified in the program. These participants can be expected to have higher levels of satisfaction, and fewer difficulties with participation, than participants who voluntarily withdraw from the program or fail to apply for recertification. The results of these questions are therefore valuable mainly insofar as they may point out problems; high levels of satisfaction must be discounted and should be reexamined through survey methods designed specifically to address these issues.

Administration of customer satisfaction questions to respondents with prior WIC experience relied on identification of prior WIC experience within the flow of the interview. Respondents with prior WIC experience represented 90.3 percent of the total sample; of these, 90.7 percent were administered the second portion of the customer satisfaction module.[74]

74 Exhibits 3-65 through 3-69 show the percentage of families with prior WIC experience (eligible for the customer satisfaction "experience" questions), the percentage administered the questions, and the non-response rates among those administered the questions.

Referrals to WIC

The top portion of Exhibit 3-61 shows the distribution of referral sources for the categories of WIC participants. The middle and bottom portions of the exhibit provide separate distributions for participants living in and outside of metropolitan areas, respectively. Friends, family members, and doctors or other health professionals are by far the most common sources of referral to the WIC program. Relatively few participants mentioned program advertisements as a source of information.[75] Within the advertising categories, however, printed materials (e.g., billboards and posters, and pamphlets) seem to be somewhat more effective at reaching participants than electronic media (e.g., television and radio). These findings generally hold true in both metropolitan and non-metropolitan areas, with no statistically significant differences in the rates of referrals, by source, in metro and non-metro areas.

Exhibit 3-62 breaks out source of WIC referral by local agency sponsorship. As before, friends, family members, and doctors or other health professionals are the most common sources of referrals, regardless of local agency sponsorship. The rate of referrals from each source varies somewhat according to local agency sponsorship, but the differences across local agency sponsorship are statistically significant only for referrals from HMO doctors.

Perceived Barriers to WIC Participation

To examine potential barriers to participation, the NSWP asked respondents whether a number of different potential barriers were **perceived** to be a problem. The potential barriers under consideration include lack of transportation, inconvenient clinic hours, time-consuming services, limited waiting space at the clinic, lack of child care, language barriers, and problems qualifying for benefits.

The responses, broken out by certification category, are presented in Exhibit 3-63. By far the most common response to each potential barrier is that it is "not a problem." It is evident, however, that some respondents perceive some problems. Lack of transportation to the WIC clinic was cited by 6.4 percent of all participants as "a big problem," with another 14.5 percent saying that lack of transportation is "somewhat of a problem." Thus, nearly 21 percent of the WIC caseload cites transportation as a perceived barrier to WIC participation. A larger percentage (23.7 percent) perceives that services taking too much time will be a problem. Of all the potential barriers referenced by the NSWP, language barriers and problems qualifying for benefits were perceived least often as creating problems, affecting 3.7 and 4.7 percent of the caseload, respectively. Across certification categories, the rates of perceived barriers do not differ significantly, with the exception of "lack of child care."

Exhibit 3-64 presents the responses about perceived barriers tabulated by type of local agency sponsorship. Inconvenient hours, services taking too long, lack of child care and language barriers are cited as perceived problems relatively more often when the local agency is sponsored by a state agency or a municipal agency than otherwise (these differences across local agency sponsorship are statistically significant). Except for transportation problems, community agency sponsorship is associated with some of the lowest frequencies of perceived problems. Based on the population sizes shown at the bottom of the exhibit, 10.8 percent of all WIC participants are served at local agencies with community agency sponsorship.

75 Respondents answering "other" as the source of referral were not asked for more specific information.

Exhibit 3-61

Distribution of Referrals to WIC Program, by Participant Category and Metro-Nonmetro Location

Source of Referral	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Total							
Friend	35.0	40.1	33.4	35.5	37.7	33.3	34.9
Family member	32.2	34.2	38.4	34.6	32.4	33.6	33.5
Doctor/Health professional	37.8	35.0	32.8	35.6	33.3	35.7	35.1
Television advertisement	4.9	4.8	4.5	4.8	6.0	5.5	5.4
Radio advertisement	1.7	2.4	2.3	2.0	2.2	2.6	2.4
Newspaper advertisement	2.1	2.3	1.8	2.1	2.5	2.6	2.4
Billboard/Poster advertisement	6.6	7.5	9.0	7.6	7.2	8.3	7.8
Pamphlet	8.4	13.1	10.7	10.1	10.4	10.5	10.4
Other	9.5	10.5	9.8	9.8	10.9	9.3	9.8
No referral received	5.9	4.3	7.4	6.0	6.9	7.4	7.0
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Metro residents							
Friend	35.9	39.6	35.6	36.6	38.7	32.6	35.1
Family member	31.9	34.2	34.8	33.3	30.8	33.4	32.7
Doctor/Health professional	37.7	36.5	35.9	36.9	34.4	36.2	35.9
Television advertisement	5.4	5.0	4.5	5.0	7.0	5.3	5.7
Radio advertisement	2.2	2.7	2.8	2.5	2.7	2.6	2.6
Newspaper advertisement	2.6	2.1	1.5	2.1	2.5	2.2	2.3
Billboard/Poster advertisement	7.4	8.5	9.5	8.3	8.5	8.8	8.6
Pamphlet	9.1	13.8	12.5	11.2	11.7	11.2	11.4
Other	9.2	8.8	9.8	9.3	11.1	9.9	10.1
No referral received	5.7	3.6	7.1	5.7	6.9	6.4	6.3
Sample size	481	514	442	1,437	474	476	2,387
Population	668,251	315,918	446,008	1,430,177	1,593,475	3,119,987	6,143,639
Nonmetro residents							
Friend	31.8	42.8	25.7	31.5	33.6	35.8	34.2
Family member	33.3	34.3	51.1	39.5	39.3	34.4	36.8
Doctor/Health professional	38.0	27.1	21.9	30.9	28.7	33.7	31.8
Television advertisement	3.1	3.9	4.4	3.7	2.0	6.0	4.5
Radio advertisement	0.0	0.9	0.5	0.3	0.0	2.5	1.4
Newspaper advertisement	0.6	3.3	2.6	1.7	2.2	4.1	3.1
Billboard/Poster advertisement	4.0	2.2	7.4	4.9	1.5	6.4	4.9
Pamphlet	6.1	9.5	4.2	6.0	4.8	7.8	6.7
Other	10.5	19.2	9.5	11.6	10.0	6.9	8.7
No referral received	6.6	8.4	8.2	7.4	7.2	11.4	9.4
Sample size	158	113	145	416	140	171	727
Population	191,130	60,545	127,891	379,566	384,936	832,937	1,597,439

Responses are not mutually exclusive, so percents may add up to more than 100%. Less than 2% of respondents failed to respond to questions about referrals. Respondents answering "other" were not asked for more specific information.

Exhibit 3-62

Distribution of Referrals to WIC Program, by Local Agency Sponsorship

	State Agency	District Agency	County Agency	Municipal Agency	Community Agency	Hospital	Total WIC
Source of Referral							
Friend	32.1	35.3	36.3	40.3	26.6	36.7	34.9
Family member	26.3	31.2	34.6	32.6	46.0	30.7	33.5
Doctor/Health professional	31.5	30.6	36.0	34.0	33.0	38.0	35.1
Doctor from Medicaid	11.5	7.4	16.2	15.0	9.6	16.6	14.2
Doctor from HMO	0.3	6.1	3.9	0.9	3.0	4.5	3.6
Private doctor	8.8	9.1	9.8	4.9	9.6	12.3	9.9
Not specified	10.9	8.0	6.1	13.2	10.8	4.6	7.4
Television advertisement	5.1	3.9	4.6	7.2	7.6	6.4	5.4
Radio advertisement	1.3	1.3	2.3	3.6	2.0	3.4	2.4
Newspaper advertisement	2.3	2.0	1.7	1.5	4.7	3.1	2.4
Billboard/Poster advertisement	8.4	9.5	4.9	6.2	12.0	10.5	7.8
Pamphlet	8.9	9.3	7.5	9.9	19.7	12.4	10.4
Other	12.2	14.5	8.1	4.9	11.1	10.0	9.8
No referral received	11.8	5.9	6.0	0.9	7.5	7.6	7.0
Sample size	375	276	1,227	147	376	713	3,114
Population	918,183	708,232	3,152,368	323,414	825,792	1,813,088	7,741,078

The following types of sponsorship were combined for tabulation: (1) County agencies and multi-county agencies are combined as "county agencies"; (2) community action agencies and community health agencies are combined as "community agencies"; (3) public and private non-profit hospitals are combined as hospitals (97% of participants enrolled through hospitals were enrolled at public hospitals).

Eleven agencies indicated state sponsorship in addition to other sponsorship, and state sponsorship is ignored for purposes of categorizing the agency to avoid double-counting in the table: one agency reported county and municipal sponsorship and is categorized as a municipal agency; one agency reported multi-county sponsorship and hospital sponsorship and is categorized as a hospital.

Exhibit 3-63

Distribution of Perceived Barriers to WIC Participation, by Participant Category

Perceived Barrier	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Lack of transportation to clinic							
A big problem	5.3	7.1	7.2	6.3	4.3	7.5	6.4
Somewhat of a problem	16.0	16.8	18.4	16.9	15.7	12.8	14.5
Not a problem	78.7	76.2	74.3	76.8	80.0	79.7	79.1
Inconvenient hours/days clinic is open							
A big problem	3.2	1.8	5.0	3.5	2.6	4.3	3.7
Somewhat of a problem	12.9	12.5	10.9	12.2	14.0	10.7	11.9
Not a problem	83.9	85.7	84.1	84.4	83.4	85.0	84.5
Services take too much time							
A big problem	3.6	6.0	7.9	5.4	4.3	4.4	4.6
Somewhat of a problem	15.2	22.2	18.0	17.6	17.7	20.4	19.1
Not a problem	81.2	71.8	74.2	77.0	78.0	75.2	76.3
Waiting space at clinic is limited							
A big problem	3.8	3.8	2.7	3.4	3.7	3.8	3.7
Somewhat of a problem	6.3	11.2	11.7	9.0	9.6	11.2	10.3
Not a problem	90.0	85.0	85.6	87.5	86.7	85.0	86.0
Lack of child care							
A big problem	2.6	5.0	3.4	3.4	3.7	6.0	4.8
Somewhat of a problem	7.3	8.0	9.3	8.1	8.2	11.1	9.7
Not a problem	90.1	87.0	87.2	88.6	88.1	82.9	85.5
Language barriers							
A big problem	1.7	3.5	0.7	1.8	1.5	2.1	1.9
Somewhat of a problem	3.1	2.9	1.8	2.6	1.8	1.4	1.8
Not a problem	95.3	93.6	97.4	95.6	96.7	96.5	96.3
Problems qualifying for benefits							
A big problem	0.7	1.8	0.5	0.9	1.5	0.9	1.0
Somewhat of a problem	3.3	3.8	3.7	3.5	2.7	4.3	3.7
Not a problem	96.0	94.4	95.8	95.6	95.8	94.9	95.3
Rates of item non-response							
Lack of transportation to clinic	2.0	2.1	4.2	2.7	2.7	2.4	2.6
Inconvenient hours/days clinic open	2.1	2.3	4.1	2.8	2.7	2.6	2.7
Services take too much time	2.3	2.4	4.1	2.9	2.9	2.4	2.6
Waiting space at clinic is limited	2.3	2.3	4.2	2.9	3.1	2.8	2.9
Lack of child care	4.8	3.5	4.3	4.4	3.3	2.7	3.2
Language barriers	2.3	2.1	4.1	2.8	3.0	2.6	2.7
Problems qualifying for benefits	2.5	2.3	4.1	3.0	3.1	2.6	2.8
Sample size	375	276	1,227	147	376	713	3,114
Population	918,183	708,232	3,152,368	323,414	825,792	1,813,088	7,741,078

Distribution of response to each item is calculated over respondents to item; item non-response is shown separately.

Exhibit 3-64

Distribution of Perceived Barriers to WIC Participation, by Local Agency Sponsorship

Perceived Barrier	State Agency	District Agency	County Agency	Municipal Agency	Community Agency	Hospital	Total WIC
Lack of transportation to clinic							
A big problem	6.0	2.5	6.0	9.6	6.3	8.2	6.4
Somewhat of a problem	10.7	16.3	14.6	21.7	15.2	13.8	14.5
Not a problem	83.3	81.2	79.4	68.7	78.5	78.0	79.1
Inconvenient hours/days clinic is open							
A big problem	7.7	0.9	4.5	1.6	1.5	2.5	3.7
Somewhat of a problem	11.1	17.7	13.4	17.2	5.9	9.3	11.9
Not a problem	81.2	81.4	82.1	81.2	92.6	88.2	84.5
Services take too much time							
A big problem	7.5	4.2	4.6	3.1	0.8	5.4	4.6
Somewhat of a problem	25.0	17.5	21.5	39.9	4.4	15.4	19.1
Not a problem	67.6	78.3	73.9	57.0	94.8	79.2	76.3
Waiting space at clinic is limited							
A big problem	2.7	2.3	3.7	1.5	1.9	6.0	3.7
Somewhat of a problem	7.6	13.4	11.9	12.9	4.1	9.8	10.3
Not a problem	89.7	84.3	84.4	85.6	94.0	84.2	86.0
Lack of child care							
A big problem	9.3	4.0	5.5	2.1	0.9	4.0	4.8
Somewhat of a problem	11.3	9.0	11.1	18.2	2.5	8.5	9.7
Not a problem	79.3	87.0	83.5	79.7	96.6	87.5	85.5
Language barriers							
A big problem	5.8	0.4	1.1	0.3	0.4	2.8	1.9
Somewhat of a problem	0.7	1.6	2.8	3.6	0.6	1.0	1.8
Not a problem	93.5	98.0	96.1	96.0	99.0	96.3	96.3
Problems qualifying for benefits							
A big problem	1.4	1.9	1.1	1.8	0.6	0.5	1.0
Somewhat of a problem	3.2	2.9	3.6	2.8	3.5	4.7	3.7
Not a problem	95.4	95.2	95.3	95.5	95.9	94.8	95.3
Rates of item non-response							
Lack of transportation to clinic	4.8	1.8	2.8	0.0	1.6	2.1	2.6
Inconvenient hours/days clinic open	4.8	1.8	3.1	0.0	1.6	2.2	2.7
Services take too much time	4.8	1.8	2.9	0.1	1.6	2.4	2.6
Waiting space at clinic is limited	5.4	1.8	3.1	0.2	1.9	2.5	2.9
Lack of child care	6.1	1.8	3.2	0.4	2.3	3.3	3.2
Language barriers	4.8	1.8	3.0	0.0	1.6	2.4	2.7
Problems qualifying for benefits	4.8	1.8	3.0	0.3	2.3	2.6	2.8
Sample size	375	276	1,227	147	376	713	3,114
Population	918,183	708,232	3,152,368	323,414	825,792	1,813,088	7,741,078

Distribution of response to each item is calculated over respondents to item; item non-response is shown separately.

The NSWP then asked those participants with prior WIC experience about actual areas of difficulty during program participation.[76] Questions were asked about transportation to do shopping, problems using WIC vouchers or checks, being treated negatively by WIC staff members, and being treated negatively in grocery stores. As shown in Exhibit 3-65, in all cases and for all certification categories, the most common response was that the identified factor was "not a problem." Obtaining transportation to do shopping was cited as a problem less often (14.6 percent) than the perceived barrier of obtaining transportation to the WIC clinic (20.9 percent, as reported in Exhibit 3-63). Problems using WIC vouchers or checks were reported by 6.4 percent of the participants, with negative treatment in WIC offices and in grocery stores being reported by 4.0 percent and 15.1 percent of participants, respectively.

Satisfaction with Prescribed Foods

The NSWP asked those respondents with prior WIC experience about their level of satisfaction with the brands and quantities of prescribed foods. Their responses are reported in Exhibit 3-66. In all food categories the majority of respondents expressed satisfaction with the brands and quantities of foods prescribed by WIC. Lowest levels of satisfaction were recorded for brands of breakfast cereal; only 62.3 percent of respondents were "very satisfied" with the brands of breakfast cereal offered, and 9.7 percent were "not satisfied."

In categories other than breakfast cereal, satisfaction with food brands exceeded satisfaction with food quantities. Those "very satisfied" with quantities of foods ranged from 79.6 to 83.9 percent of respondents, and those "not satisfied" with quantities of foods ranged from 3.3 to 6.4 percent. Only 0.5 to 2.9 percent were "not satisfied" with food brands, whereas 81.4 to 90.0 percent of respondents were "very satisfied" with food brands.

WIC Benefits Ratings

The WIC program provides three main benefits: supplemental foods, nutrition education (including breastfeeding promotion and support), and referrals to other health and social service agencies. These benefits are tangible and their cost can be measured—for example, in dollars of food or hours of education. The value of WIC benefits to participants, however, is more difficult to measure and may vary over participants. In addition, the experience of WIC participation may include many intangible benefits.

NSWP asked those respondents with prior WIC experience to rate the value of potential WIC benefits on a scale of 0 to 5, with 5 being extremely valuable and 0 being not valuable at all. The responses are shown in Exhibit 3-67. Of the 12 potential benefits presented to respondents, only two received an average rating below 4: "time to talk with other mothers" and "taught me about breastfeeding." (Even breastfeeding mothers gave "taught me about breastfeeding" an average rating of less than 4.) The highest rated benefits are "vouchers for foods I know are nutritious" (4.7), "money saved on grocery bills" (4.5), "nutrition information"(4.4), and "checking blood, height, and weight" (4.4).

76 We identified participants with prior WIC experience as: (a) sampled persons who had previously been certified for WIC; (b) sampled infants and children with mothers who had participated in WIC while pregnant or postpartum; and (c) sampled person with a family member (sibling or child) who had prior WIC experience.

Exhibit 3-65

Distribution of Reported Difficulties with WIC Program Among Respondents with Prior WIC Experience

Reported Difficulty	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Lack of transportation to get groceries							
A big problem	4.1	3.1	4.5	4.0	2.8	3.9	3.7
Somewhat of a problem	11.4	11.9	15.3	13.2	13.4	9.3	10.9
Not a problem	84.5	85.0	80.2	82.9	83.8	86.8	85.4
Problems using WIC vouchers/checks							
A big problem	0.8	0.4	0.3	0.5	1.5	1.7	1.4
Somewhat of a problem	6.4	6.4	3.5	5.2	3.2	5.6	5.0
Not a problem	92.8	93.1	96.1	94.3	95.3	92.7	93.6
Treated negatively by staff member							
A big problem	0.0	0.2	0.0	0.0	0.2	1.2	0.8
Somewhat of a problem	2.3	1.8	1.8	2.0	2.2	3.9	3.2
Not a problem	97.7	98.0	98.2	98.0	97.7	94.9	96.1
Treated negatively in grocery store							
A big problem	2.1	2.3	1.6	2.0	2.8	2.6	2.5
Somewhat of a problem	11.3	13.9	12.1	12.4	11.1	13.3	12.6
Not a problem	86.5	83.8	86.3	85.7	86.1	84.1	84.9
Rates of item non-response							
Lack of transportation to get groceries	0.9	1.0	1.8	1.3	2.0	1.4	1.5
Problems using WIC vouchers/check	1.9	1.1	5.4	3.2	2.7	1.7	2.2
Treated negatively by staff membe	1.2	0.4	4.1	2.2	2.2	0.8	1.4
Treated negatively in grocery sto	1.9	1.5	5.3	3.2	2.6	2.0	2.3
Sample							
Percent of families with prior WIC experience	42.9	94.8	93.4	69.7	95.3	97.3	90.3
Of families with WIC experience, percent administered customer satisfaction section	79.1	77.6	78.2	78.3	84.6	97.7	90.7
Sample size	277	593	547	1,417	587	628	2,632
Population	368,670	356,805	535,811	1,261,286	1,884,471	3,846,741	6,992,499

Sample includes families with prior WIC experience, by any family member, at time of NSWP survey. Prior WIC experience is defined by a completed certification period. 90% of sampled WIC participants were in families having prior WIC experience at time of survey.

Distribution of satisfaction within each category is calculated over those responding to the item; extent of non-response is shown separately. See text for discussion of sample definition and response rates.

Exhibit 3-66

Distribution of Reported Overall Satisfaction with WIC Foods Among Respondents with Prior WIC Experience

	Satisfied with Food Brands	Satisfied with Food Quantities
Breakfast cereals		
Very satisfied	62.3	79.0
Fairly satisfied	28.1	16.0
Not satisfied	9.7	5.0
Juices		
Very satisfied	81.4	79.9
Fairly satisfied	15.7	13.9
Not satisfied	2.9	6.2
Baby formula		
Very satisfied	85.7	79.6
Fairly satisfied	12.4	14.5
Not satisfied	1.9	5.9
Milk		
Very satisfied	89.1	80.9
Fairly satisfied	10.0	12.7
Not satisfied	0.9	6.4
Cheese		
Very satisfied	87.5	80.9
Fairly satisfied	10.6	13.7
Not satisfied	1.9	5.5
Eggs		
Very satisfied	90.0	82.8
Fairly satisfied	9.5	13.0
Not satisfied	0.5	4.2
Beans or peanut butter		
Very satisfied	86.6	83.9
Fairly satisfied	11.9	12.8
Not satisfied	1.5	3.3
Percent nonresponse to each item		
Breakfast cereal	1.4	1.4
Juices	1.3	1.5
Baby formula	12.9	13.3
Milk	1.6	2.0
Cheese	1.7	1.9
Eggs	1.8	2.0
Beans or peanut butter	2.2	2.4
Sample		
Percent of families with WIC experience	90.3	90.3
Of families with WIC experience, percent administered customer satisfaction section	90.7	90.7
Sample size	2,632	2,632
Population	6,992,499	6,992,499

Sample includes families with prior WIC experience, by any family member, at time of NSWP survey. Prior WIC experience is defined by a completed certification period. 90% of sampled WIC participants were in families having prior WIC experience at time of survey.

Satisfaction with baby formula was asked only if sampled person was WIC infant receiving recertification.

Distribution of satisfaction with each food group is calculated over those responding to item; extent of non-response is shown separately. See text for discussion of sample definition and response rates.

Exhibit 3-67

Mean Ratings of the Value of WIC Benefits Among Respondents with Prior WIC Experience

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Mean rating on a scale of 0 to 5							
Time to talk with other mothers	2.0	2.2	2.2	2.2	2.3	2.4	2.3
Money saved on grocery bills	4.4	4.8	4.6	4.6	4.6	4.5	4.5
Health information	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Nutrition information	4.3	4.4	4.4	4.4	4.4	4.5	4.4
Checking blood, height, and weigh	4.1	4.2	4.4	4.2	4.4	4.5	4.4
Advice from WIC staff	4.1	4.3	4.2	4.2	4.3	4.2	4.2
Vouchers for foods I know are nutritious	4.8	4.7	4.7	4.8	4.7	4.7	4.7
Helps me stay on time with shots for my child	3.9	3.9	4.2	4.0	4.1	4.0	4.0
Taught me about breastfeeding	3.0	3.8	2.8	3.1	3.0	2.9	3.0
Taught me about the foods babies need	4.1	4.1	4.2	4.2	4.2	4.1	4.2
Taught me about the foods children need	4.0	4.0	4.1	4.1	4.1	4.2	4.2
Taught me about foods I need	4.1	4.3	4.3	4.3	4.3	3.9	4.1
Rates of item nonresponse							
Time to talk with other mothers	1.7	1.3	5.3	3.1	2.2	3.2	2.9
Money saved on grocery bills	1.7	1.2	4.6	2.8	1.7	2.1	2.1
Health information	1.7	0.9	5.3	3.0	1.7	2.0	2.1
Nutrition information	1.7	0.9	5.1	2.9	2.0	2.0	2.1
Checking blood, height, and weight	1.7	1.3	4.6	2.8	1.9	2.6	2.4
Advice from WIC staff	1.7	0.9	4.8	2.8	2.3	2.0	2.2
Vouchers for foods I know are nutritious	1.7	1.4	6.0	3.4	2.6	2.7	2.8
Helps me stay on time with shots for my child	4.1	3.7	7.4	5.4	5.3	2.1	3.4
Taught me about breastfeeding	2.8	1.2	7.5	4.3	4.0	4.8	4.5
Taught me about foods babies need	1.7	1.8	6.4	3.7	2.4	2.4	2.6
Taught me about foods children need	1.7	3.3	7.6	4.6	3.5	2.1	2.9
Taught me about foods I need	2.0	1.5	6.2	3.6	2.0	2.8	2.7
Of families with WIC experience, percent administered customer satisfaction section	79.1	77.6	78.2	78.3	84.6	97.7	90.7
Sample size	277	593	547	1,417	587	628	2,632
Population	368,670	356,805	535,811	1,261,286	1,884,471	3,846,741	6,992,499

Respondents were read the list of potential WIC benefits and asked to indicate the value of the benefit on a scale of 0 to 5, with 5 meaning extremely valuable and 0 being not valuable at all.

WIC Appointments

WIC service sites perform many functions for participants: certification of eligibility, measurement of health and nutrition status, referrals to other agencies, nutrition education and breastfeeding support, and voucher issuance. To operate efficiently, most service sites schedule appointments with participants. Exhibit 3-68 shows responses to questions about the incidence and frequency of missed WIC appointments. Nearly one-half (45.6 percent) of WIC participants said they missed at least one appointment at the WIC clinic; 19.3 percent missed "just once," 22.9 percent missed "sometimes," and 3.1 percent missed "often." WIC participants responding to these questions had "prior WIC experience" but no attempt was made to standardize the rate of missed appointments according to the length of prior experience because of the qualitative nature of responses on frequency of missed appointments.

The most common reasons for missed appointments were "forgot to go" (42.5 percent) and "trouble finding transportation" (29.9 percent). In addition, 20.4 percent of respondents missed appointments because they could not get off work and 12.8 percent could not find childcare. Less than 10 percent of respondents who missed appointments said that it was because the "clinic is too far from home" or because "it takes too long at the clinic." (Respondents could give multiple responses.)

Shopping and Benefit Redemption

The final set of questions in the customer satisfaction module concerns WIC participation, shopping for WIC foods, and redemption of vouchers. All of the estimates must be interpreted carefully. Questions were asked only of respondents with prior WIC experience, and questions addressed experiences during any time during prior participation. Because the duration of prior participation varies among respondents, it is not possible to generalize these responses as average rates within the caseload. This data is shown in Exhibit 3-69.

Approximately one-fourth (25.7 percent) of respondents with prior WIC experience said that they had, in the past, stopped using WIC while still eligible for benefits.[77] Respondents were not asked about the ways in which they "stopped using WIC," and their responses may reflect a combination of behaviors, including failure to redeem all WIC checks or vouchers and failure to attend nutrition education classes.

The percentage of participants who experience breaks in WIC participation is significantly higher for pregnant women (39.6 percent) than for other participant categories. It is important to remember that a break in participation may have occurred during any prior certification—for example, pregnant respondents may be reporting breaks in participation during prior WIC experience as a breastfeeding or postpartum woman, or during prior experience as a pregnant woman.[78]

Respondents with prior WIC experience were asked if they found it "easy," "sometimes confusing," or "often confusing" to use WIC vouchers. In each participant category, over 80 percent of respondents found it easy to use vouchers, and less than 4 percent found it "often confusing." Overall, 83.9 percent found it easy, 14.2 percent found it sometimes confusing, and 1.9 percent found it often confusing.

77 Respondents were not asked about the ways in which they "stopped using WIC," and their responses may reflect a combination of behaviors, including failure to redeem all WIC checks or vouchers and failure to attend nutrition education classes.

78 The survey asked, "Have you ever stopped using WIC even though you (or any of your children) were still qualified for WIC?"

Exhibit 3-68

Incidence of Missed WIC Appointments Among Respondents with Prior WIC Experience

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent ever missed appointment at WIC clinic	38.0	39.1	42.2	40.1	37.0	50.6	45.6
Distribution of frequency of missed appointments							
Sometimes	21.7	16.3	15.4	17.5	16.5	27.0	22.9
Often	3.5	1.7	3.8	3.1	3.4	2.9	3.1
Just once	12.7	21.1	22.5	19.2	16.7	20.4	19.3
Never	62.2	60.9	58.3	60.2	63.4	49.7	54.7
Distribution of reasons for missed appointments							
Forget to go	44.7	35.2	43.0	41.4	38.3	44.0	42.5
Trouble finding transportation	39.8	34.7	38.3	37.7	29.3	28.6	29.9
Cannot get off work	21.9	13.4	12.0	15.1	17.8	22.3	20.4
Cannot find child care	12.0	13.3	14.9	13.6	12.7	12.7	12.8
Clinic is too far from home	11.9	10.8	8.9	10.2	11.8	8.2	9.2
It takes too long at the WIC clin	10.2	10.4	11.3	10.7	8.1	8.2	8.5
Rates of item nonresponse							
Ever missed appoinment	0.6	0.7	3.5	1.9	0.8	0.1	0.6
Frequency of missed appointments	0.9	0.8	4.3	2.3	1.6	0.5	1.1
Reasons for missed appointments	3.0	3.6	6.0	4.5	4.0	4.5	4.4
Of families with WIC experience, percent administered customer satisfaction section	79.1	77.6	78.2	78.3	84.6	97.7	90.7
Sample size	277	593	547	1,417	587	628	2,632
Population	368,670	356,805	535,811	1,261,286	1,884,471	3,846,741	6,992,499

The distribution of reasons for missed appointments is measured among respondents who missed appointments; the distribution sums to more than 100 due to multiple responses.

Exhibit 3-69

Distribution of Shopping Experiences and Food Benefit Redemption Among Respondents with Prior WIC Experience

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Overall WIC participation							
Percent who ever stopped using WIC while still eligible[a]	39.6	23.0	24.0	28.4	24.1	25.7	25.7
Experience shopping with WIC vouchers							
Easy	81.5	80.2	89.3	84.3	81.9	84.6	83.9
Sometimes confusing	15.2	18.8	9.7	14.0	17.1	13.0	14.2
Often confusing	3.3	1.0	1.0	1.7	1.0	2.4	1.9
Percent of respondents who usually purchase all WIC food items							
Overall	91.7	88.6	91.0	90.5	90.9	94.3	92.8
Breakfast cereals	96.5	97.1	96.9	96.8	96.0	97.1	96.8
Juices	97.0	98.3	98.1	97.9	98.8	98.9	98.7
Baby formula	95.6	91.2	99.4	96.2	96.4	92.0	93.8
Milk	96.3	95.6	95.6	95.8	96.0	96.5	96.3
Cheese	98.5	97.4	98.1	98.0	98.0	99.2	98.7
Eggs	97.1	94.8	97.4	96.6	95.9	97.8	97.1
Beans or peanut butter	94.2	94.9	94.2	94.4	93.0	95.6	94.8
Rates of item nonresponse							
Ever stopped using WIC	1.4	1.5	4.7	2.8	1.2	1.0	1.4
Experience using WIC vouchers	1.5	2.0	5.8	3.5	2.4	2.3	2.5
Item nonresponse to "Usually purchase all WIC foods"							
Overall	6.5	5.9	8.9	7.4	7.0	8.3	7.8
Breakfast cereals	1.3	1.4	4.5	2.7	3.8	2.9	3.1
Juices	1.7	2.3	4.5	3.1	3.7	3.1	3.2
Baby formula	0.0	0.0	0.0	0.0	12.7	0.0	3.2
Milk	2.1	2.9	4.5	3.4	4.3	3.1	3.4
Cheese	1.7	2.6	4.5	3.2	4.4	3.0	3.4
Eggs	2.2	2.5	4.7	3.4	4.3	3.1	3.4
Beans or peanut butter	2.6	3.0	4.7	3.6	5.0	3.0	3.6
Sample size	277	593	547	1,417	587	628	2,632
Population	368,670	356,805	535,811	1,261,286	1,884,471	3,846,741	6,992,499

a The survey asked, "Have you ever stopped using WIC even though you (or any of your children) were still qualified for WIC?"

With respect to actual voucher use, 92.8 percent of respondents with prior WIC experience said that they usually purchased all WIC foods on their vouchers. Rates of redemption vary by participant category, from a low of 88.6 percent purchasing all foods in the breastfeeding category to a high of 94.3 percent purchasing all foods in the children category. There is some variation in voucher redemption across food categories.

Chapter 4
WIC Income-Eligibility Determination and Errors in Income Certification

This chapter examines WIC income-eligibility determination and errors in income certification based on data collected in spring 1998. Changes in WIC operations have occurred since that time. The field work for the study occurred prior to implementation of provisions requiring WIC participants to document income at WIC certification as provided in the William F. Goodling Child Nutrition Reauthorization Act of 1998. Effective January 2000, the FNS issued an interim rule requiring all participants who were not adjunctively income eligible for WIC through participation in the Temporary Emergency Food Program, the FSP, or Medicaid to provide income documentation for WIC records as part of all WIC certifications.

Income-eligibility is one of three primary factors determining eligibility for WIC Program benefits: applicants to WIC must be categorically eligible, income eligible, and at nutritional risk.[1] This chapter examines WIC income eligibility criteria and estimates the incidence and magnitude of error in WIC income certification as WIC was operated in spring 1998. Topics and sections presented in this chapter are:

- **4.1 WIC Income Eligibility**
  - A summary of WIC income eligibility guidelines drawn from federal regulations and USDA guidance to states.

- **4.2 Review of State WIC Agency Income Eligibility Guidelines**
  - A review of state WIC policies and procedures for WIC income eligibility determination.
  - A discussion of the areas in which local WIC staff may exercise discretion in determining WIC income eligibility.

- **4.3 Methodology for the NSWP In-Home Survey**
  - The methodology for the NSWP in-home survey, which provides data for estimating WIC income certification error rates.

- **4.4 Estimates of WIC Income-Certification Error**
  - The estimated WIC income certification case error rate and dollar error rate.
  - The estimated variability of WIC family income during the certification period.

A review of state WIC agency income eligibility guidelines and an analysis of errors in WIC income certification was last performed in 1988. The WIC Income Verification Study (WIV, 1988) found that:

1 In all state agencies except Indian Tribal Organizations (ITOs), applicants must also meet residency requirements. An applicant must live within the jurisdiction of the state.

- State policies and procedures for determining an applicant's economic unit (family size) indicated significant state-to-state variation, sometimes reflecting contradictory guidelines.

- State policies and procedures for determining WIC countable income revealed nearly complete agreement across states.

- The 1988 national WIC income certification error rate (defined as the percentage of enrollees certified to receive, but not eligible for WIC benefits) was 5.7 percent. The 1988 national WIC certification dollar error (defined as the amount of total WIC food funds spent on ineligibles) was $84 million.

The 1998 review of state WIC agency income eligibility guidelines and analysis of errors in WIC income certification shows that:

- As was found in 1988, state policies and procedures for determining the applicant's economic unit (family size) indicated significant state-to-state variation. In contrast to 1988, however, most of the variation stems from rules regarding households with separate economic units and applicants who are minors, and remaining variation is due to differences in the comprehensiveness of guidelines and **not** from contradictory guidelines.

- As WIV reported in 1988, state policies and procedures for determining WIC countable income revealed nearly complete agreement.

- Analysis of the national WIC certification error rate in 1998 (defined as the percentage of enrollees certified to receive, but ineligible for, WIC benefits) yielded an estimate of 4.5 percent. The 1998 national WIC certification dollar error (defined as the amount of annual WIC food funds spent on ineligibles) was $120 million.

4.1 WIC Income Eligibility

Federal regulations and guidance provide the framework for determining income eligibility for the WIC Program. Within the federally prescribed framework, state WIC agencies establish policies and procedures for determining an individual applicant's eligibility.[2] These procedures are applied during the certification process at local WIC service sites.

Federal Regulations

Federal regulations require state WIC agencies to establish income guidelines, definitions, and procedures to be used in determining an applicant's income eligibility for the program (7CFR 246.7(d)).

2 In most cases, WIC applicants must meet the income-eligibility standards set by state WIC agencies, although in some cases, within states, "different guidelines may be prescribed for different local agencies" (7 CFR §246.7(d)(1)(i)).

- Income guidelines establish maximum income limits according to family size, such that families with income below the limits are income-eligible for WIC.

- Definitions and procedures provide methods for measuring family size and family income.

Federal regulations provide precise guidelines for some aspects of WIC income-eligibility determination, whereas state agencies have discretion over other aspects. The primary components of the federal regulations are described below.

Income Guidelines

Federal regulations stipulate two options available to states in establishing income guidelines for the WIC Program: state agencies may use the income guidelines of the National School Lunch Act for reduced-price meals, or the state or local guidelines for free or reduced-price health care. The National School Lunch Program (NSLP) certifies participants with income at or below 185 percent of the federal poverty guidelines; if a state chooses to use the reduced-price health care guidelines for WIC, the income guidelines must fall between 100 and 185 percent of the federal poverty guidelines. In 1998, all state WIC agencies used the income guidelines of the NSLP.

Definition of Family Size

To determine total countable WIC income for applicants to the program, the certification process must identify the members of the applicant's family and sum the income of each family member. Federal WIC regulations define a family as:

> A group of related or non-related individuals who are living together as one economic unit, except that residents of a homeless facility or an institution shall not all be considered as members of a single family (7 CFR § 246.2).

Federal regulations offer no further definition of family membership, but FNS provides guidance to the states (discussed later in this section).

Definition of Income

States opting to use the NSLP income guidelines for WIC income eligibility must use the following definition of income specified in federal WIC regulations: "gross cash income before deductions for income taxes, employee's social security taxes, insurance premiums, bonds, etc." The definition of income goes on to enumerate 12 categories of countable sources of income and three broad categories of income exclusions (see Exhibit 4-1). States choosing to use state or local guidelines for free or reduced-price health care in determining WIC income-eligibility must use the state or local health care definition of income.

Exhibit 4-1

WIC Definition of Income—Federal

Countable sources of income

Monetary compensation for services, including wages, salary, commissions, or fees
Net income from farm and non-farm self-employment
Social Security benefits
Dividends or interest on savings or bonds, income from estates or trusts, or net rental income
Public assistance or welfare payments
Unemployment compensation
Government civilian employee or military retirement or pensions or veterans' payments
Private pensions or annuities
Alimony or child support payments
Regular contributions from persons not living in the household
Net royalties
Other cash income. Other cash income includes, but is not limited to, cash amounts received or withdrawn from any source including savings, investments, trust accounts, and other resources that are readily available to the family.

Income exclusions

1. State agencies may choose to exclude from consideration as income any basic allowance for quarters received by military services personnel residing off military installations
2. The value of in-kind housing and other in-kind benefits
3. By law, payments or benefits provided under certain federal programs or acts are excluded from consideration as income. Some examples of these excluded payments are:[a]
    - Reimbursements from the Uniform Relocation Assistance and Real Property Acquisition Act
    - Payments to volunteers under Title I (VISTA and others) and Title II (RSVP, foster grandparents, and others)
    - Payments to volunteers under the Small Business Act (SCORE and ACE)
    - Income derived from certain submarginal land of the United States that is held in trust for certain Indian tribes
    - Payments received under the Job Training Partnership Act

a The regulations list an additional 27 federal programs.

Source: 7 CFR § 246.7 (d) (2) (ii)-(iv)

Federal regulations provide flexibility in terms of the timeframe for determining income. Regulations allow (but do not require) state agencies to:

> . . . instruct local agencies to consider the income of the family during the past 12 months and the family's current rate of income to determine which indicator more accurately reflects the family's status. However, persons from families with adult members who are unemployed shall be eligible based on income during the period of unemployment.

Verification of Information

Federal regulations in 1988 did not require verification of information for determining an applicant's income eligibility for WIC, but gave state and local agencies the option to require verification.[3] In 1998, state WIC agencies could be categorized in one of four income verification groups. Fifty percent of state agencies (enrolling 47 percent of WIC participants) required income documentation; 28 percent of agencies (16 percent of participants) allowed applicants to self-declare income; 14 percent of agencies (34 percent of participants) gave local agencies discretion with respect to income verification; and 8 percent of agencies (3 percent of participants) **preferred** documentation but did not require it.[4]

Adjunct or Automatic Income Eligibility

Federal regulations provide for adjunct or automatic income eligibility. Adjunct or automatic income eligibility is conferred on applicants on the basis of participation in other public assistance programs. Adjunct income-eligibility was adopted by the WIC Program to streamline the certification process and ease the burden of determining eligibility.

- **Adjunct eligibility.** State WIC agencies are **required** to accept as **adjunctively** income-eligible any applicant who is certified eligible for food stamps, or certified as fully eligible or presumptively eligible to receive Temporary Assistance for Needy Families (TANF) or Medicaid.[5] In addition, an applicant must be accepted as income-eligible for WIC if s/he is a member of a family certified eligible for TANF, or a member of a family in which a pregnant woman or an infant is certified eligible for Medicaid.

- **Automatic income eligibility.** States have the **option** to accept as **automatically** income-eligible applicants participating in state-administered programs that routinely document income and have income-eligibility guidelines at or below WIC income guidelines. Programs used for automatic income eligibility in some states include the NSLP, Head Start, Home Energy Assistance Act, and General Relief.

Special Cases

Special procedures for determining WIC income eligibility are specified in federal regulations for three types of applicants:

---

3 The NSWP sample frame for selecting local agencies was stratified by income documentation policy, as discussed in Chapter 2.

4 The William F. Goodling Child Nutrition Reauthorization Act of 1998 was designed to strengthen the integrity of the WIC certification process and required that all WIC applicants document family income at certification unless individual eligibility is based on adjunctive income eligibility. This legislation was passed after the field period for the NSWP. An interim rule regarding the legislative change in verification policy was issued by FNS in January 2000.

5 The Food Stamp Program income-eligibility limit is 130 percent of federal poverty guidelines. Income-eligibility for TANF varies by state; in 1998 the earnings eligibility limit for TANF was below the poverty level in all states except Hawaii.

Federal law mandates Medicaid eligibility for all pregnant women and children below age six, living in families with incomes at or below 133 percent of the federal poverty level (FPL) (Omnibus Reconciliation Act, 1989). Forty-one states, however, have expanded eligibility for Medicaid beyond federal requirements, using a variety of mechanisms available under federal law (e.g., Section 1902(2)(2) option of the Social Security Act). As of October 1997, the Medicaid income-eligibility standard for pregnant women and infants was 185 percent of FPL in 21 states, and exceeded 185 percent of FPL in eight states. At the same time, the Medicaid income-eligibility standard for children below age six was 185 percent of FPL in five states, and exceeded 185 percent of FPL in seven states. (Source: National Governors Association, *State Medicaid Coverage of Pregnant Women and Children*, September 1997.)

- **Pregnant women.** A pregnant woman who is not income eligible shall have her family size increased by the number of embryos or fetuses *in utero*, and her income-eligibility shall be reevaluated with the increased family size. The same increased family size may also be used for any of the pregnant woman's categorically eligible family members.[6]

- **Indian applicants.** State WIC agencies may use an abbreviated certification procedure to establish income-eligibility for Indian applicants at local agencies serving areas in which at least 51 percent of Indian households have income at or below the state agency's income eligibility criterion. This abbreviated certification procedure allows Indian applicants to self-declare family income to be below the maximum allowable criterion, without stating their level of household income or providing documentation. To use this abbreviated procedure, state agencies must apply to FNS regional offices with documentation, such as census data, confirming the income distribution of the Indian population.

- **Instream migrant farm workers.**[7] Although WIC participants are generally required to satisfy income-eligibility criterion at each certification and re-certification, migrant farm workers and their families are considered WIC income-eligible for 12 months following a WIC income-eligibility determination. When migrant farm workers and their families transfer between WIC service sites (when they move to new job locations), WIC Verification of Certification (VOC) cards are used to confirm eligibility at new sites.

Adjunct and automatic eligibility determination streamlines the income-eligibility determination process. When these methods do not apply, income-eligibility determination can sometimes be a complex process. Two main factors complicate income-eligibility determination: (1) complex household circumstances may make it difficult to define the "family," and (2) recent changes in household circumstances (which often lead families to seek help from the WIC Program) may make it difficult to determine household income. To assist states in determining income-eligibility in the face of complex circumstances, USDA has supplemented federal regulations with guidance and instructions.

USDA Guidance to State WIC Agencies

FNS has clarified the definition of WIC income and provided guidance to states in defining the"WIC family" in instructions and consolidation of WIC regulations.[8]

---

6 Special treatment of family size for pregnant women was codified in federal regulations in 1999; these provisions were part of FNS guidance prior to that date and were found in state policies and procedures, as discussed below. This provision, however, was specifically prohibited in 1988 at the time of the WIV.

Throughout this report, exhibits showing economic unit size do **not** reflect addition of the unborn child. In calculating income as a percentage of poverty level, however, the size of the economic unit was increased by one if income exceeded 185 percent of poverty and the family contained a pregnant woman.

7 WIC regulations define a migrant farmworker as an individual "whose principal employment is in agriculture on a seasonal basis, who has been so employed within the last 24 months, and who establishes, for the purposes of such employment, a temporary abode" (7 CFR 246(2)). An instream migrant farmworker is a worker who has left his home base and entered the stream for a particular agricultural season.

8 Some of the changes in state WIC agencies' policies and procedures over the past ten years—reflected in a comparison of the results of the 1988 WIV and this study—are due to the 1988 revisions of FNS 803-3. Those revisions were not incorporated in state WIC agencies' policies and procedures prior to data collection for the WIV.

Between 1988 and 1998, FNS issued the following instructions and policy memoranda clarifying WIC income eligibility:

FNS Instructions
803-3 (rev. 1988), *WIC Program Certification: Income Eligibility*
803-14 (1988), *WIC Program Certification: Eligibility of Special Populations*
803-13 (1988), *WIC Program Certification: Eligibility of Persons Affiliated with Institutions*

WIC Policy Memoranda
Family Size and Income Determinations for Military Families (un-numbered, March 1991)
Lump Sum Payments as Income (WIC Policy Memorandum 92-14)
WIC Income Eligibility and Natural Disasters (WIC Policy Memorandum 93-1)
Documentation of Food Stamp Program Participation in an Electronic Benefit Transfer (EBT) Environment (WIC Policy Memorandum 98-4)

FNS Instruction 803-3, first issued in 1982 and revised in 1988, includes a general definition of the WIC economic unit and specific guidance for handling complex household situations. Instruction 803-14 addresses WIC income eligibility for Indian populations and instream migrant farm workers; this instruction is now codified in federal regulations (discussed in the previous section). Each of the remaining instructions clarifies WIC income eligibility in specific circumstances. During the past ten years, the guidance provided through these memoranda has increased uniformity in state WIC agency policies and procedures.

Definition of Family Size
FNS Instruction 803-3 provides the following general definition of the WIC economic unit:

> For the purposes of the WIC Program, the terms "economic unit" and "family" can be used interchangeably. We perceive a family to be a household or an economic unit composed of a person or group of persons who usually (although not necessarily) live together, and whose production of income and consumption of goods or services are related.

The specific complex household situations for which FNS has provided guidance are:

- Two separate economic units residing under the same roof (FNS Instruction 803-3)
- Child of divorced parents (FNS Instruction 803-3)
- Child residing in a school or institution (FNS Instruction 803-3)
- Foster child under legal responsibility of the state (FNS Instruction 803-3)
- Adopted child (FNS Instruction 803-3)
- Persons affiliated with institutions (FNS Instruction 803-3)
- Members of armed forces serving overseas (WIC Policy Memorandum, March 1991)

Most FNS instructions for special circumstances are straightforward and consistent with the general definition of the WIC economic unit. A child of divorced parents should be counted in the family size of the parent with whom he or she lives. A child in a school or institution should not be excluded from family size if the parents provide financial support to the child. A foster child under the legal

responsibility of the state should be considered a family of one (and countable income includes only foster child payments from the state). Adopted children are counted in the family adopting them. Persons or families residing in an institution (e.g., homeless shelter) are considered separate economic units from other residents of the institution. Military personnel who are not living with their families are nonetheless included in the determination of family size.

The most complex family situation is that of two separate economic units living under the same roof. For example, when a young mother lives with her parents, she and her child may be considered an economic unit separate from her parents. In Chapter 3 we reported that 19.5 percent of all WIC participants reside in households that are multigenerational (Exhibit 3-13), in that the "WIC mom" resides with her parents or other adults of a different generation.

When two economic units reside under the same roof, FNS instructs WIC staff to use two rules in determining the economic unit of the WIC applicant. First, the economic unit must have its own source of income, and second, the income must be adequate to sustain the economic unit. In other words, a young mother and her child who reside with her parents can be considered an economic unit separate from her parents only if the young mother demonstrates a source of income adequate to support herself and her child. The determination of income adequacy, however, is subject to judgement. According to FNS Instruction 803-3:

> State agencies may wish to establish guidelines to determine the "adequacy of income" or delegate this responsibility to their local agencies. In any event, this definition should consider the actual living costs for the economic unit in that environment. . . . The State may require a determination that the purported family unit does, in fact, pay all of its living expenses. However, this process may be prohibitively time-consuming, and the result is almost inevitably inconclusive.

FNS instructions specifically state that it is not the intent of FNS to make the income determination process a complicated or lengthy procedure. Furthermore, "there will be times when State and local agency workers will need to use their discretion in determining income eligibility within the general framework of regulatory requirements and basic program policy." Clearly, one of the times when discretion may be needed is when multiple families reside within the same household—as is the case when a young mother who is no longer legally dependent on her parents resides with them. In Section 4.2 we discuss state policies and guidelines for exercising discretion in these cases.

Definition of Family Income

With respect to determination of WIC family income, FNS has provided clarification on the following issues:

- Calculation of income from farm and non-farm self-employment (FNS Instruction 803-3)
- Counting cash allowances received by military personnel (FNS Instruction 803-3)
- Determination of gross income for military personnel not living with their families (WIC Policy Memorandum, March 1991)
- Lump sum payments (WIC Policy Memorandum 92-14)
- Income exclusions (FNS Instruction 803-3)
- Use of current versus annual rates of income (FNS Instruction 803-3)

- Determination of "current" income (FNS Instruction 803-3).
- Documenting adjunct income eligibility based on FSP participation in an EBT transfer environment (WIC Policy Memorandum 98-4)

The income of self-employed persons is calculated as the net of operating expenses. Income of military personnel is counted only when received as **cash** income—in-kind benefits, such as on-base housing, are not counted as income, but housing allowances received as cash are counted as income. FNS gives state agencies the option to exclude military off-base housing allowances from income. Furthermore, FNS has specified that when military personnel are temporarily absent from their homes their total gross incomes are counted in family incomes, not just the portion of income allotted to the family.

FNS guidance on the treatment of lump sum income recognizes that some lump sum payments may be reimbursements for lost assets or for injuries, whereas other lump sum payments may be "new" money intended as income (lottery winnings, severance pay, inheritance). Lump sum payments that are reimbursements are not to be counted as income for WIC eligibility purposes, whereas lump sum payments that are "new" money should be considered "other cash income" for WIC eligibility purposes, and should be considered annual income or divided by 12 to estimate monthly income.

Income exclusions, although enumerated in the federal regulations, are further clarified in FNS guidance as "all non-cash income," including in-kind benefits, income from federal programs, and loans ("since these funds are only temporarily available and must be repaid").

FNS guidance (Instruction 803-3) addresses the fact that "The WIC regulations do not define 'current income.' Therefore, state agencies have the flexibility to establish what is to be considered current income." FNS encourages state agencies to define current income as income received during the month prior to application, and to apply consistent multipliers when income is reported as other than a monthly figure. Suggested multipliers for determining monthly income are weekly income × 4.3, bi-weekly income × 2.15, and semi-monthly income × 2.

Summary of Federal Regulations and Guidance

The review of federal WIC regulations and FNS guidance shows that state WIC agencies have no discretion over the following aspects of WIC income eligibility determination:

- Use of adjunct eligibility
- Definition of the family in circumstances addressed by federal guidance
- Definition of countable income

States do have discretion over:

- Use of automatic eligibility
- Definition of the family in circumstances not addressed by federal guidance
- Definition of the family when separate economic units may be present

- Timeframes for determining income (except for unemployed persons and instream migrant farm workers)

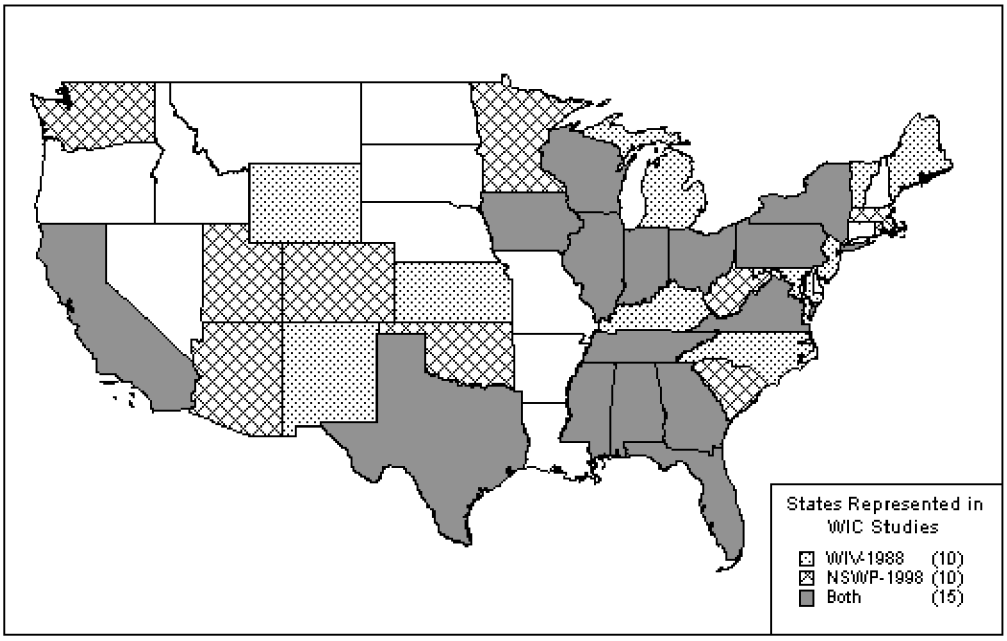
- Definition of current income and multipliers for converting reported income to monthly or annual values

4.2 Review of State WIC Agency Income Eligibility Guidelines

This section summarizes findings from a review of state agency guidelines from the 25 states represented in the NSWP sample, and compares this information with 1988 findings. The findings from 1988 and 1998 are based on two different but overlapping groups of states. The states represented in the 1988 WIV sample and the 1998 NSWP sample are shown in Exhibit 4-2. The 15 states common to both samples account for 64 percent of the total WIC caseload in 1998.

Exhibit 4-2

States Represented in the 1988 WIV and the 1998 National Survey of WIC Participants and Their Local Agencies



Between 1988 and 1998, FNS issued instructions to clarify many aspects of WIC income-eligibility. Our review of 1998 state WIC agency guidelines shows almost complete agreement among states on definitions of WIC countable income and more uniformity among states in their definition of the WIC economic unit than that found in 1988. In addition, compared with 1988, more states now include precise guidelines for handling special cases, giving less discretion to local staff.

WIC Policies and Procedures Manuals

Our review of WIC income-eligibility guidelines is based on information abstracted from WIC manuals. Each state WIC agency (25) and local WIC agency (79) in the NSWP sample provided copies of sections of their WIC manuals containing guidelines for determining the income eligibility of WIC applicants. Local WIC agencies in 22 of 25 states use the state agency policies without revision or supplementation.[9] Local agencies in three states (Arizona, California and Illinois) provided manual extracts consisting of state policy plus local supplements, with the supplements providing only additional clarification of state rules.

State WIC agency guidelines generally include most federal regulations and FNS instructions verbatim. We found, however, that every state manual does not include the federal instructions for every topic. In reviewing state WIC agency manuals, it was apparent that differences between state manuals were not due to the presence of contradictory information; state manuals differ because they vary in the comprehensiveness of instruction. For example, the FNS instruction on determining the economic unit for military families was included in the guidelines of 10 out of 25 states.

Adjunct and Automatic Income Eligibility

Exhibit 4-3 shows that, in 1998, **all** states, in accordance with federal regulations, confer adjunct eligibility on applicants participating in food stamps, TANF, and Medicaid. In addition, five of the 25 states accept applicants as automatically income eligible for WIC on the basis of participation in either the NSLP (three states) or General Public Assistance (two states). In contrast, only 21 of 25 states surveyed in1988 used adjunct eligibility to streamline the WIC application process.[10]

Income Guidelines

In 1998, **all** state WIC agencies used the income guidelines of the NSLP for applicants not adjunct or automatically income-eligible. Participants were certified for WIC if family income was at or below 185 percent of the federal poverty guidelines.[11] In contrast, the 1988 WIV found that 21 of 25 states used the income guidelines of the NSLP; the four remaining states defined their income limits at levels below 185 percent of poverty. The uniform use of NSLP income guidelines in 1998 indicates less-restrictive income guidelines in WIC than were present ten years earlier.

The federal poverty guidelines are updated on an annual basis and issued each year in the *Federal Register* by the U.S. Department of Health and Human Services (DHHS). The timing of release varies but is generally in February or March. WIC regulations require that revised guidelines be implemented by July 1 of each year. Among the 25 states in the NSWP sample, 13 states implement revised

---

9 Federal regulations allow for different guidelines to be used in different local agencies within a state only when agencies adopt income eligibility guidelines used for free or reduced-price health care (7 CFR §246.7(d)(1)(i)). In 1998, however, all states used the income guidelines from NSLP, and none authorized use of income guidelines used for free or reduced-price health care.

10 In 1988, adjunct eligibility was not yet codified in federal regulations, and the practice of adjunct eligibility was known as "presumptive eligibility."

11 This statement is true for all 88 state agencies, not just the 25 states represented in the NSWP sample. (Source: WIC Participant and Program Characteristics, 1998.)

guidelines on July 1, and 12 states implement revised guidelines on dates that range between mid-March and May 1.[12]

Exhibit 4-3

Means-Tested Programs Used to Determine WIC Income-Eligibility by State Agencies, 1988 and 1998

	NSWP Sample, 1998		PC88 Sample, 1988	
	Number States	Percent States	Number States	Percent States
Adjunctive income-eligibility				
AFDC/TANF	25	100%	12	48%
Food Stamps	25	100	10	40
Medicaid	25	100	16	64
Automatic income-eligibility				
Supplemental Security Income	0	0	2	8
NSLP	3	12	5	20
Head Start	1	4	0	–
Food Distribution Program on Indian Reservations	5	25	0	–
Home Energy Assistance	1	4	0	–
General Public Assistance	3	12	0	–
Refugee Resettlement Program	1	4	0	–
Total state WIC agencies	25	100	25	100

Source: State WIC Agencies' policies and procedures manuals, 1998; WIV, Final Report, 1990.

The WIC Economic Unit

All state WIC agency manuals include a **general definition** of the WIC economic unit and procedures for determining the economic unit in special cases. There is some variation in the general definition of the WIC economic unit, but most of the across-state variation in WIC guidelines is in special case definitions.

Among the 25 state WIC agencies, five general definitions of the "WIC economic unit" are specified in state agency manuals. These definitions are listed in Exhibit 4-4. Four of the five definitions are consistent in meaning and vary only in terminology, defining the WIC economic unit as a group of related or unrelated individuals who generally live together and share income. Most state agencies use definitions taken verbatim from federal regulations or federal guidance (definitions 1 or 2). Only one state, among the 25 in our sample, used a more restrictive general definition of the WIC economic unit than the

12 Because states do not implement revised poverty guidelines concurrently, the timing of implementing revised guidelines had to be taken into account when evaluating the income-eligibility of respondents to the NSWP (which was fielded from March to May 1998).

definition specified in federal regulations, restricting the economic unit to consist of persons "related by blood, marriage, adoption, or guardianship."

Exhibit 4-4

General Definitions of the WIC Economic Unit in Use by State WIC Agencies, 1998

Definition	Number States	Source
Main definitions		
Group of related or non-related individuals who usually, although not necessarily, live together, and whose production of income and use of goods and services are related.	13	FNS Instruction 803-3 (1988)
Group of related or non-related individuals who are living together as one economic unit.	8	7 CFR245, Determining Eligibility for Free and Reduced-Price Meals and Free Milk in Schools
Variations		
All related or non-related persons who share income as the economic unit.	2	
All persons, related and/or unrelated, living together in the same dwelling, with the exception of the following special situations: pregnant women, foster child, and individuals who qualify as a separate economic unit.	1	
State-specific definition		
Must be related by blood, marriage, adoption, or guardianship.	1	

All state WIC manuals discuss special cases—that is, household circumstances that require special consideration when determining the WIC economic unit. The number of states providing guidance for each type of special case is shown in Exhibit 4-5. In both 1988 and 1998, three types of special cases were discussed in a majority of state manuals: minors, foster children, and students living apart. In 1998, additional special cases were specified by most states: adopted children, institutionalized persons, children of divorce/joint custody arrangements, military families, and separate economic units within households. All of these special cases had been addressed by FNS guidance to states, as discussed in the previous section. The one exception is minors; the special case of emancipated minors was addressed in the 1982 version of FNS Instruction 803-3, but does not appear in the 1988 version of 803-3, perhaps because this case falls within the realm of "two separate economic units within a household."[13]

13 An emancipated minor is an adolescent, under 18 years of age, who is legally married or divorced.

Exhibit 4-5

Special Case Procedures for Determining Economic Unit Membership, 1988 and 1998

	NSWP Sample, 1998		PC88 Sample, 1988	
	Number States	Percent States	Number States	Percent States
Has special case procedures[a]	25	100%	25	100%
Absent parent	2	8	0	0
Adopted children	16	64	0	0
Emancipated or non-emancipated minors	15	60	16	64
Foster child	24	96	23	92
Infant breastfed by woman other than birth mother	1	4	0	0
Institutionalized persons	19	76	9	36
Joint custody arrangements	13	52	2	8
Military persons serving overseas	10	40	0	0
Pregnant woman (unborn child)[b]	24	96	1	4
Separate economic unit	19	76	4	16
Student living apart	13	52	15	60
Temporary living arrangements	4	16	4	16
Unmarried couples	2	8	0	0
Total state WIC agencies	25	100	25	100

a States having special case procedures do not necessarily have the same procedures.

b Including the unborn child in the economic unit of pregnant women was specifically prohibited by FNS guidance issued in 1988 (FNS Instruction 803-3). The policy changed in 19?? with FNS Policy Memorandum ?? and was codified in federal regulations in 1999.

Source: State WIC agencies' policies and procedures manuals, 1998; WIV, Final Report, 1990.

Other special cases are addressed in only a few state WIC manuals: absent parent due to job-related assignment (2); infant breastfed by woman other than the birth mother (1); temporary living arrangements (4); and unmarried couples (2). In addition, one state WIC manual explicitly says that persons in prison should not be counted in the WIC economic unit.

Special cases addressed by FNS guidance are found in all state manuals in a manner consistent with FNS guidance, and often in language taken verbatim from FNS guidance. Special cases addressed by state policy but not addressed by FNS guidance are, for the most part, consistent with the general definition of the WIC economic unit as a group of persons who usually live together and who share financial resources. For example, the policy on unmarried couples (two states) is that an unmarried couple living together should be considered a single economic unit.[14] Two special cases receive inconsistent treatment across states: policies regarding separate economic units and policies regarding applicants who are minors.

14 It is unclear why this special instruction is needed, because the general definition of the WIC economic unit encompasses cases of unmarried couples living together.

As discussed in the previous section, FNS guidance defines separate economic units within households as economic units with separate sources of income adequate to sustain the unit. Some states specify exact resource requirements to define "adequacy" in establishing separate economic units ("must pay room and board," "must pay all their own expenses," "usually purchase and prepare their food separately"). On the other hand, one state simply reiterates the vague guidance to "treat two economic units that reside under the same roof as separate units," thereby giving local agencies full discretion. Different state policies regarding separate economic units are shown in Exhibit 4-6.

Exhibit 4-6

Examples of State WIC Agency Policies for Identifying Separate Economic Units within Households

- Groups of persons living in same house may declare themselves "separate economic units" provided they can demonstrate that their income is sufficient to provide for the majority of their living expenses.
- Subfamilies are considered separate economic units if they have their own source of income and if the members of each subfamily usually and separately purchase and prepare their own food (or intend to after certification). (Minor children and spouses cannot be in separate economic units.)
- The key is sharing a "common income." If each household has its own source of adequate income (rent, food, utilities, and other), that entity is considered and evaluated as a separate household/ economic unit.
- Subfamilies are considered separate households only if they pay room and board.
- If applicant is currently eligible for TANF/FSP/Medicaid, then family size should match the determination of the adjunct program.
- Subfamilies must pay ALL of their own expenses.
- Related individuals who live together but have no legal responsibility (grandparents, adult sister/ brother, parents and adult children) are separate economic units unless applicant states that they all live together as one unit.
- Non-related individuals are a separate economic unit unless applicant states that they are all part of the same economic unit. Unmarried couples who live together and are expecting a child, however, are considered to be a single economic unit, along with anyone else living with the unmarried couple for whom either or both have legal responsibility.
- "If the applicant is living without economic support from other persons in the same residence, the applicant is a separate economic unit. However, if the applicant receives from other persons of the residence any support for which s/he does not pay, the applicant must be counted in the family size of the residence."
- "Anyone who doesn't share income and expenses with others, regardless of living situation."
- Separate economic unit status requires: (a) must pay min of $68.17 per month for room and board for adult, $95.33 for child under 12, $117 for child over 12; (b) applicant's production of income and consumption of goods and services are not related to anyone else in household; (c) applicant is not a spouse of a member of household or a child under 18 or a financial dependent of anyone in household; (d) supplemental foods are purchased and consumed separate and apart from others in household.
- Treat two economic units that reside under the same roof as separate units.
- If applicant exchanges work for room and board, then that individual is in a separate household.

Examples of state policies regarding WIC applicants who are minors are shown in Exhibit 4-7. Of the 25 states in the sample, eight states have no explicit policy on the treatment of minors, and the remaining 17 states have one or more of the following policies: treat minors who reside with their parents as part of their parents' household (8); treat pregnant teens as separate economic units when they are in need of confidential services or self-declare emancipation (3); determine whether the minor is a separate economic unit based on a resource test (9); or determine the eligibility of pregnant teens on a case-by-case basis (1). In the case of minors, there are clearly different policies across states.

Exhibit 4-7

Examples of State WIC Agency Policies for Treating Applicants Who Are Minors

- Court-declared emancipated minor is separate economic unit (MUST show court declaration).
- Eligibility of pregnant teen is to be determined on a case-by-case basis.
- Pregnant adolescent (conception prior to 18th birthday) is counted as separate family unit.
- A minor (and children), not emancipated, residing with parents/guardian is considered part of parents' household.
- A non-emancipated minor may be considered a separate economic unit when living as a separate household without any economic support from other persons in household (when living separate from parents and not supported by parents).
- A minor (and children), that resides separately from parents, and living within another economic unit, should be counted in the family size of the non-parental unit.
- If a pregnant minor or minor mother lives with her parents, she is in her parent's economic unit regardless of statements of self-sufficiency.
- Single teenager or college student through age 22, male or female, living with parents and in need of confidential services, may be considered a family unit of one when seeking WIC and when family income cannot be obtained without breaching patient confidentiality.
- A pregnant minor or minor mother who receives public assistance is treated according to the policy in the section headed Income Eligibility for Public Assistance Recipients (that is, she is adjunct eligible).
- When minor mother lives with her parents, infant/child of minor mother may be considered an economic unit of one if grandparents say they are not providing support for infant/child and if infant/child has a verifiable source of financial support such as child support payments, public assistance, or minor mother's earned income.
- An emancipated minor, supported by the parent or guardian, is considered a part of that family or economic unit.
- Minors who pay all expenses for their support may be considered a separate household even though they reside under the same roof with the parent, guardian, caretaker.
- Teen is not part of her parent's household when: (a) lives with parents but is working and paying room/board; (b) lives with parents and does chores or child care in exchange for room/board; (c) receives TANF, Medicaid, food stamps; (d) lives apart from her parents and is working.
- "If the applicant is at least 15 years old and lives outside the home of her parents or legal guardian and is self-supporting then she is an 'emancipated minor' and considered to be her own household."
- "For a minor who considers herself emancipated but has no Court declaration, document why she is considered emancipated on the financial eligibility form."

Exhibit 4-7

Examples of State WIC Agency Policies for Treating Applicants Who Are Minors

- A minor may be considered a separate economic unit when living as a separate household without any economic support from other persons in the household. If residing with parents and not claimed as a tax deduction, then applicant may be considered a separate economic unit. (She may receive TANF, or have earnings to support herself and contribute toward payment of expenses.)
- Pregnant teen living with friend or family—If teen has her own income (TANF, work, . . .) and supports herself, the teen is counted as a family of two and only her income is used to determine income eligibility.

WIC Countable Income

All state WIC agency manuals include an enumeration of countable sources of income and income exclusions. These enumerations mostly agree with Exhibit 4-1, which contains the 12 countable sources of income and three broad categories of income exclusions specified in federal regulations. Exhibit 4-8 shows that 25 states specify seven of the 12 main categories of income, and the remaining five categories of income are specified by 21 or more states.[15]

The main source of variation in state WIC guidelines for countable income is the degree to which states define "other cash income." Federal regulations specify that "other cash income" includes all sources of income not specifically excluded. Some states specifically enumerate sources of income that would be included in the category of "other cash income," as shown in Exhibit 4-8, resulting in state-to-state variation in the specificity of guidelines. This variation in the specificity of guidelines, however, does not constitute different definitions of income.

Compared to countable income sources, there is greater variation among states in enumeration of income exclusions, as shown in Exhibit 4-9. The regulations include three main categories of income exclusions: states may choose to exclude military housing allowances (24); states must exclude the value of in-kind housing and in-kind benefits (18 explicitly specify this exclusion); and payments or benefits under certain federal programs are to be excluded. (32 federal programs or acts are listed in the regulations). There is great variation among states in the number of exclusions enumerated in their state guidelines. Seventeen states refer to the federal regulations instead of including a full enumeration of exclusions in their state WIC manuals.

In addition to the three categories of exclusions specified in regulations, three states exclude tax refunds and the Earned Income Tax Credit, two states explicitly exclude income earned by family members under age 18, and one state excludes capital gains. These additional exclusions are categories of income that are unlikely to be reported in response to typical questions about income and earnings.

15 Although only 21 of 25 states enumerate "public assistance or welfare payments" as countable income, for the most part, recipients of public assistance are adjunct eligible (when the public assistance is TANF). They are not subject to the income limits based on countable income.

Exhibit 4-8

Sources of Countable Income Specified by State WIC Agencies

		1988	1998	
Source of Income		**Number**	**Number**	**Percent**
Components of income specified in regulations				
1	Wages, salary, tips, commissions or fees	25	25	100%
2	Net income from farm and non-farm self-employment	25	23	92
3	Social Security benefits	25	25	100
4a	Dividends; interest on savings or bonds; income from estates or trusts	25	25	100
4b	Net rental income	24	23	92
5	Public assistance or welfare payments	25	21	84
6	Unemployment compensation	25	25	100
7a	Government, civilian employee, or military pensions	25	25	100
7b	Veteran's payments	24	22	88
8	Private pensions or annuities	25	25	100
9	Alimony and child support payments	25	24	96
10	Regular contributions from persons not living in household	25	24	96
11	Net royalties	NA	23	92
12	Other cash income	25	25	100
Specified components of other cash income				
Worker's compensation for lost income		24	16	64
Lump sum payments			14	56
Severance pay			14	56
Portion of student aid used for room and board		2	12	48
Strike benefits			6	24
Disability benefits		23	4	16
Military cash allowances, such as food allowances			4	16
Military allotments			3	12
Sick pay			2	8
Stipend for foster care			2	8
All other sources of cash income except those specifically excluded			2	8

Other cash income includes cash withdrawn from savings, investments, and trust accounts. Lump sum payments include "new money" such as gifts, inheritances, and lottery winnings, but do not include reimbursements for loss.

Source: State WIC agencies' policies and procedures manuals, 1998; WIV, Final Report, 1990.

Exhibit 4-9

Income Exclusions Specified by State WIC Agencies, 1998

Source of Income	State Agencies	
	Number	Percent
Military Housing Allowance (BAQ) or VHA	24	96
Value of in-kind benefits (any benefit not provided in cash)	18	72
Subsidized housing	5	20
Military benefits received in lieu of money	1	4
Benefits received under the National School Lunch Act and Child Nutrition Act (SBP, CCFP, SFSP, Milk Program)	25	100
Benefits received under the Food Stamp Act	25	100
Student financial assistance funded through Title IV used for tuition, books, fees	25	100
Volunteers under Title I (RSVP, Foster Grandparents, VISTA)	24	96
Home Energy Assistance (Low-income Home Energy Assistance Program, LEAP)	23	92
JTPA benefits	22	88
Small Business Act Section 8 (SCORE, ACE)	20	80
Uniform Relocation Assistance and Real Property Acquisition Policies Act	20	80
Child care benefits provided under AFDC, JOBS, At-Risk Child Care Program	19	76
Indian claims (from submarginal lands held in trust)	16	64
Federal payments to Native Americans	13	52
Payments under Disaster Relief Act	12	48
Federal Distribution Program on Indian Reservations	2	8
Additional federal programs listed explicitly or by reference to federal regulations	17	68
Income exclusions not specified in federal regulations		
Bank loans	10	40
Tax refunds	3	12
Earned Income Tax Credit (EITC)	3	12
All income earned by family members under 18 years of age who are students at least half-time	2	8
Capital gains	1	4
College/University assistanceships	1	4

Source: State WIC agencies' policies and procedures manuals.

Timeframes for Determining Income

In addition to specifying guidelines for defining WIC countable income, state WIC manuals specify the time period over which income is to be measured. As discussed in Section 4.1, federal regulations encourage consideration of income during the past 12 months and comparison with the current rate of income to determine which indicator most accurately reflects the family's status, though the current rate of income must be used when persons are unemployed. In addition, FNS guidance suggests that current income be measured as income received during the month prior to WIC certification.

Most states (22 of 25) in the NSWP reflect the federal regulations in their WIC manuals and require use of current income or income for the past 12 months, whichever most accurately reflects status. The remaining three states require use of current income or, when income fluctuates, an average over the previous three months.

States differ only slightly in their definitions of **current** income, defining it as either income during the month prior to certification or income over the past four weeks.[16] Only 13 states explicitly specify multipliers for converting weekly or biweekly income amounts to monthly amounts. (Some state computer systems may perform this conversion so that specification in the state manual is unnecessary.)[17]

States differ with respect to whether or not they specify the circumstances under which it is appropriate to use income of the past 12 months, or whether they leave this determination completely to the discretion of local agencies. When specified, local workers are instructed to measure income over the past 12 months when hours fluctuate (due to seasonal work or overtime) or when earnings are from self-employment. In addition, ten states specifically instruct that lump sum income should be considered as annual income and divided by 12 to get a monthly amount.

Implications of Variation in Guidelines Across States

As discussed above, WIC income eligibility guidelines vary across states in the treatment of minors and households with separate economic units. In addition, there is some variation in the explicit enumeration of countable income sources, income exclusions, and guidance for treatment of special family situations. The impact of variation in WIC income eligibility guidelines across states, and in the complexity of rules that must be applied by local WIC clinics, is that persons determined to be income eligible at one WIC clinic may not be determined to be income eligible at another WIC clinic, even within the same state. In situations of complex household circumstances, identification of the WIC economic unit requires that WIC clinic staff ask probing questions, make decisions, and use discretion in determining the number of persons in the WIC economic unit.

The scope for discretion and differential application of guidelines in determining the size of WIC economic units depends on the distribution of household types among applicants to the program. Exhibit 4-10 shows the percentage of WIC participants in complex household situations based on the NSWP in-

16 One state requires documentation dated within 30 days; by this rule, current income may be measured for the period two months prior to certification.

17 The multiplier for converting weekly income to monthly income is 4.3 in ten states and 4.33 in three states. The multiplier for converting biweekly income to monthly income is 2.15 in 12 states, 2.17 in one state, and 2.165 in one state.

home sample of nearly 1,000 WIC participants. The "special case" that occurs with greatest frequency is separate economic units within a household, reported by 26.6 percent of respondents to the in-home survey.

Exhibit 4-10

WIC Economic Units, by Type of Household and Composition

	Percent of WIC Economic Units	Standard Error
Type of household		
Single economic unit under one roof	73.4	(2.3)
Separate economic units under one roof	26.6	(2.3)
Relationships within economic unit		
Immediate family only	80.4	(2.3)
Immediate family and other relatives	18.1	(2.1)
Immediate family and non-relatives	1.2	(0.5)
Immediate family, other relatives and non-relatives	0.4	(0.1)
Multigenerational economic unit		
No	81.4	(1.9)
Yes, WIC mom less than 20 years old, living with parents	6.7	(0.9)
Yes, WIC mom 20 years or older, living with parents	8.0	(1.5)
Yes, other	3.8	(0.9)
Economic unit characterized by		
Absent parent	36.0	(2.8)
Absent spouse	2.0	(0.6)
Special cases		
Emancipated minor	2.7	(0.6)
Foster child	1.3	(0.6)
Joint custody arrangements	3.4	(0.9)
Military personnel	2.9	(0.8)
Student living apart	0.4	(0.2)
Temporary living arrangements	1.7	(0.5)
Sample size	931	
Population	7,741,078	

"Absent spouse" is defined as the absence of a spouse, when WIC mom indicates she is married (not widowed or divorced). "Absent parent" is defined as the absence of a biological father when WIC mom has children.

Further evidence of the complexity of WIC households is seen in the fact that 19.7 percent of economic units contain persons who are not immediate family members, and 18.5 percent of economic units are multigenerational, in the sense that the "WIC mom" resides with her parents or other adults of a different

generation. In addition, 36 percent of economic units are absent a parent (i.e., only one biological parent is present). The high rate of absent parents is consistent with findings of marital status presented in Chapter 3; only 44 percent of WIC women and 51 percent of WIC mothers are married.

Other "special cases" have low incidence: less than 2 percent of WIC families have an absent spouse, foster child, student living apart, or person away in temporary living arrangements. In addition, only 2.7 percent of WIC moms are emancipated minors, 3.4 percent of WIC families contain children in joint custody arrangements, and 2.9 percent of WIC families contain military personnel.

In defining countable income, there is little effective difference across states in types of countable income. The sources of income accounting for most income in WIC families are wages and salaries and public assistance. Although four states fail to enumerate public assistance income as countable WIC income, the receipt of TANF (which accounts for most public assistance income for WIC families) makes those households adjunct eligible and not subject to limits on countable income. Other sources of income for which states fail to show complete agreement (alimony and child support, regular contributions from persons outside the household, income from self-employment, net rental income, net royalties, and veterans payments) together account for only 4.5 percent of total WIC income.

4.3 Methodology for the NSWP In-Home Survey

The NSWP in-home survey was a follow-up to the NSWP in-person survey, conducted with approximately one-third of respondents to the in-person survey. The purpose of the in-home survey was to provide data for estimation of the national error rate in income-eligibility determination, or the "income certification error rate." The main design features of the in-home survey were:

- A nationally representative sample of WIC participants
- Interviews conducted in the homes of respondents
- Detailed interviews on financial status and household size, with documents requested for all income sources
- Interviews conducted soon after WIC certification, to reduce recall error and increase the likelihood that documents were available
- A reference period for income information that matched the reference period used by most WIC clinics (the month prior to WIC certification)

This section presents the methodology for the in-home survey, including descriptions of the sample, the survey instrument, and response rates.

Overview of the Survey

The in-home survey provides data for estimation of the WIC "income certification error rate," which is presented in Section 4.4. The certification error rate is calculated as the percent of respondents **not**

income-eligible for WIC based on the WIC income-eligibility rules of their respective states, and on family size and family income as determined during in-home interviews.

For the most part, the in-home interview collected the same measures of family size and family income as were collected in the NSWP in-person interview. As a result, in practice it was the goal of the in-home interview to verify data collected during the in-person interview and revise it as necessary.

It is important to note that the purpose of the in-home interview was to verify information that determined WIC income-eligibility, but data collectors did **not** directly verify the information reported to WIC clinics. WIC clinics often recorded only total family size, total family income, and/or participation in adjunct programs, and the information in WIC clinic records was not sufficiently detailed for data collectors to verify without thorough training in WIC income-eligibility rules. Instead, data collectors verified the detailed information collected during the in-person survey, and verification of WIC income-eligibility was based on those detailed data.[18] Respondents were provided assurances of confidentiality at the start of both the in-person and in-home interviews.[19]

It was generally expected, and borne out by the data, that measures of family income from the in-person survey would, on average, exceed family income reported to WIC clinics. There are two reasons for this expectation. First, WIC clinics do not evaluate family income for applicants who are adjunct eligible so we would expect incomplete income information for adjunct-eligible applicants.[20] Second, methods for questioning applicants about family income may vary across WIC clinics, whereas the NSWP survey consistently administered income questions in all survey sites using a survey designed to minimize the opportunity for under-reporting income. (Respondents were asked separately about the income of each adult household member in each of 18 specific income categories.)

As discussed in detail below, one reason to conduct interviews in respondents' homes was to ensure access to documents to verify income data. In addition, respondents could request assistance from other family members, especially regarding income that was not a respondent's own income.

During in-home interviews, approximately one-half of respondents provided income documents for review by data collectors, and an additional 19 percent provided undocumented revisions to the income amounts reported during the in-person survey. In both of these cases, income reported during the in-home interviews reflects both under-reporting and over-reporting during in-person interviews, and suggests some common sources of measurement error in income reporting, which are discussed below.

18 This approach was also taken in the 1988 WIV.

19 Respondents were told that their answers would not be shared with WIC staff, and the information they provided would not affect the benefits or services received from WIC or any other government agency.

20 Indeed, the purpose of adjunct eligibility is to streamline the application process and relieve clinic workers from the burden of collecting these data.

The Sample

The samples for the in-person and in-home surveys were drawn simultaneously in the field at 181 WIC service sites. Sampling for both surveys is discussed in detail in Chapter 2 and Appendix A.

At each WIC service site, approximately one-third of persons sampled for in-person interviews were also simultaneously sampled for in-home interviews.[21] This sample design resulted in an in-home sample that retained the structure of the in-person sample and its national representativeness. Persons sampled for both surveys were not told of the dual selection until they completed the in-person interviews, so that response to these interviews would not be affected by the dual selection. Sampled persons who did not complete in-person interviews were not pursued for in-home interviews.

After completion of in-person interviews, persons sampled for in-home interviews were scheduled for in-home appointments. The goal was to schedule in-home interviews within three weeks of certification. Scheduling conflicts and rescheduling often pushed the in-home interview beyond the three-week window. More than one-half of in-home interviews were completed within one month of sampling, and nearly all (96 percent) were completed within two months of sampling. The largest lag between the date of sampling (which occurred at certification) and an in-home interview was 99 days. In-home interviews were conducted from mid-March 1998 through mid-June 1998.[22]

Response Rates

Response to the in-home survey depended in part on response to the in-person survey. The samples were drawn simultaneously, but persons who failed to respond to the in-person survey were not pursued for in-home interviews. The response rate to the in-home survey should be examined both as an unconditional and a conditional rate.

Exhibit 4-11 shows the response rates to the in-person and in-home surveys. The response rate to the in-person survey is equal to the number of respondents as a percent of sampled persons. Similarly, the unconditional response rate to the in-home survey is equal to the number of in-home respondents as a percentage of the total number sampled for the in-home survey. The in-person survey attained a response rate of 81.3 percent and the in-home survey attained an unconditional response rate of 66.5 percent (931 respondents divided by 1,401 sampled persons). The unconditional response rate to the in-home survey reflects nonresponse to both surveys.

Because persons who failed to respond to the in-person survey were not pursued for in-home interviews, response to the in-home survey can also be characterized by the conditional response rate. The conditional rate of response to the in-home survey (shown in Exhibit 4-12) is computed only among persons sampled for the in-home survey who completed in-person interviews. The conditional response rate was 78.8 percent.

---

21 The sampling rate was one-third for the first month of the field period and two-fifths for the second month. Sampling rates for the second month were revised because the flow of applicants into WIC sites was below expectations.

22 The 1988 WIV that is cited throughout this chapter was similarly based on in-home interviews with WIC participants. For the 1988 study, however, in-home interviews took place an average of about five months after WIC certification.

Exhibit 4-11

Response to the National Survey of WIC Participants and Their Local Agencies

Certification Category	Number Sampled for In-Person Interview[a]	Sampled for In-Home Interview		Completed In-Person Interviews		Completed In-Home Interviews	
		Number	Percent of In-Person Sample	Number	Response Rate	Number	Unconditional Response Rate[b]
Pregnant	779	278	35.7	639	82.0	182	65.5
Breastfeeding	767	281	36.6	627	81.7	200	71.2
Postpartum	736	267	36.3	587	79.8	173	64.8
Infants	756	282	37.3	614	81.2	186	66.0
Children	790	293	37.1	647	81.9	190	64.8
Total	3,828	1401	36.6	3,114	81.3	931	66.5

a "Number sampled" excludes persons sampled but found to be ineligible for the survey. Persons were found ineligible if they were not at the WIC service site for certification or if they were sampled under the wrong certification category.

b "Unconditional response rate" is the number of respondents to the in-home survey as a percentage of all sampled persons for the in-home survey, including both respondents and non-respondents to the in-person survey.

Exhibit 4-12

In-Home Interview Sample Response Rates by Participant Category

Certification Category	Number of Completed In-Person Interviews	Number Selected for In-Home Interview[a]	Number of Respondents[b]	Conditional Response Rate
Pregnant	639	238	182	76.5
Breastfeeding	627	242	200	82.6
Postpartum	587	223	173	77.6
Infant	614	236	186	78.8
Child	647	242	190	78.5
Total	3,114	1,181	931	78.8

a Selection for in-home interview is conditional upon completion of in-person interview. See Exhibit 4-11 for response rates to the in-person interview.
b The 931 respondents to in-home survey include 20 partial interviews.

Although the in-home survey achieved a high rate of response among those completing in-person interviews, there must be concern about response bias whenever respondents are aware of the nature of a survey prior to their agreement to participate. In this case, persons sampled for the in-home survey were told that they would have to receive interviewers into their homes and they would be asked to produce income documentation. The extra burden of this survey could alone be responsible for nonresponse.

Systematic patterns of nonresponse, however, could bias survey results if, for example, persons who misreported their income to WIC were more likely to refuse in-home interviews than those persons who correctly reported income to WIC.

To test for response bias to the in-home survey among respondents to the in-person survey, we compared the characteristics of respondents and nonrespondents based on data from the in-person survey. Exhibit 4-13 shows this comparison. There are no statistically significant differences between respondents and non-respondents with respect to participant category, adjunct-eligibility status, family size, maternal characteristics (education, marital status, age), mean income, and whether the WIC family is part of a larger household or is multigenerational.

The only statistically significant differences between respondents and nonrespondents are for "certification history" and "income verification policy of WIC agency". Nonrespondents were more likely to have failed to report certification history on the in-person survey, perhaps demonstrating a general lack of cooperation with surveys. Among those persons reporting certification history, respondents and nonrespondents are equally likely to have been certified for the first time. The other difference is that nonrespondents were more likely to be enrolled through WIC agencies requiring income documentation. This is the opposite of what we might expect if WIC documentation policies are related to certification error.

Exhibit 4-13

Characteristics of Respondents and Non-Respondents to the In-Home Survey

	Respondents	Non-Respondents
Participant category		
Pregnant	11.0	11.4
Breastfeeding	5.2	3.8
Postpartum	7.4	7.4
Infant	24.9	27.5
Child	51.5	49.8
Income-eligibility		
Adjunct-eligible	64.7	62.1
Non-adjunct eligible	35.3	37.9
Certification history*		
First certification	30.6	32.8
Re-certification	66.4	58.7
Not reported	3.0	8.6
Size of economic unit		
One or two	10.8	15.2
Three	28.3	23.4
Four	28.8	33.6
Five or more	32.2	27.8
Education of mother		
Not high school graduate	28.2	26.6
High school graduate or more	63.3	60.5
Marital status		
Married	52.8	49.8
Widowed, divorced, separated	12.1	14.0
Never married	35.1	36.2
Age of WIC mom		
<18 years	6.8	7.5
18-34 years	81.7	78.8
>34 years	11.5	13.7
Characteristics of economic units		
WIC economic units residing in larger households (%)	26.7	28.8
WIC economic units that are multigenerational (%)	19.1	22.7
WIC mom lives with parents	15.3	18.0
Mean monthly income of WIC economic unit reported to in-person survey	1,261	1,221
Income verification policy of WIC agency*		
Documentation required	50.4	65.9
Documentation not required	49.6	34.1
Sample size	931	250
Population	5,909,053	1,832,025

Non-respondents to the in-home survey are identified among respondents to the in-person survey. All characteristics are measured from response to the in-person survey.

For this exhibit, weights for respondents and non-respondents sum to the WIC population; for all subsequent exhibits, weights of respondents sum to the WIC population, after adjustment to account for non-response.

* denotes a statistically significant difference in the distribution of respondent and non-respondent characteristics.

Sampling weights for the in-home sample were based on the weights constructed for the in-person sample. For the in-person sample, each sampled person received a base sampling weight equal to the inverse of the probabilities of selection at each stage of the sample design (see Appendix A). At the final stage of sampling, approximately one-third of persons sampled for the in-person survey were also sampled for the in-home survey, so the probability of selection for an in-home interview was equal to the probability of selection for an in-person interview multiplied by a constant.[23] This constant was applied to the in-person weights, and the sample weights were adjusted to account for nonresponse. A final ratio adjustment was made so that the sample weights sum to total WIC participation in the contiguous United States in 1998. These procedures are analogous to the procedures applied to the in-person data and are discussed in detail in Appendix A.[24]

The Survey Instrument

In-home interviews were conducted in respondents' homes and lasted an average of 30 minutes. The survey instrument included five distinct survey sections:

- Section A: Household Enumeration
- Section B: Employment History
- Section C: Income Review Form–Individual Income and Earnings
- Section D: Household Income Review Form
- Section E: Immunizations

The main purpose of the in-home interview was to obtain accurate data for reviewing the income-eligibility of each sampled WIC participant. Sections A through D address this goal. The final section of the survey collected data on immunization histories for children in the household and was included to serve data needs outside the scope of this study. (The survey instrument is in Appendix F.)

The household enumeration section provided data for establishing the size of the WIC economic unit; this section included a household roster and a module for determining financial relationships within the household. The income review forms provided data for establishing the income of the WIC economic unit. In addition, the employment history section provided a source of verification for the earnings information provided on the income review form.

Three strategies were employed for obtaining accurate data on the in-home survey. First, Sections A, C, and D of the instrument (the household roster and income review forms) were pre-printed with data collected and processed from in-person interviews. Pre-printing of data speeded the interview process and allowed data collectors to verify information, revise the pre-printed data, and resolve discrepancies.

The second strategy (which was also employed for the in-person interview) was to minimize the opportunity for under-reporting income by separately asking about the income of each adult household member. In Section C of the survey, for each adult in the household, the respondent was asked if that

23 The change in sampling rates midway through the sample period is reflected in the sampling weights.

24 The in-home weights did not receive the final "raking" applied to in-person weights (which brought the in-person weights into alignment with population counts for each selected stratum) because the in-home sample was designed to support only national estimates.

individual had any of 18 specific sources of income. In Section D, the respondent was asked if the household received any of four types of public assistance. Data collectors asked about receipt of each income source during the month preceding WIC certification, regardless of whether receipt was indicated during the in-person survey. With this approach, there is little opportunity for errors of omission, and the specificity of questions reduces the potential for misinterpretations of what is included in "income."[25]

The third strategy for obtaining accurate data was to request documentation of all sources of income. Respondents were notified, in advance, that documentation would be requested during in-home interviews. Each person scheduled for an in-home interview was provided a brochure listing acceptable documentation for each income source. Respondents were told that the in-home interviews would go more quickly if documentation were assembled and ready at the start. Because of this extra burden, respondents were also informed that they would receive $25 gift certificates at the conclusion of the in-home interviews.

Verification of Income-Eligibility Information

The in-home survey instrument was pre-printed with information from the in-person survey, and data collectors were trained to check off pre-printed data without using it to prompt respondents. In this way, the in-home interview verified data collected during the in-person interview and revised it as necessary. Respondents were asked to report on "current" household membership and income for the reference period (the month prior to WIC certification), and data collectors revealed pre-printed information only to resolve discrepancies.[26]

There are a number of reasons why data collected during the in-person survey might be revised during the in-home survey. Respondents may have made mistakes during in-person interviews (for example, by misinterpreting questions), or errors may have occurred in processing the data. In addition, the detailed income information collected in the in-person interview was subject to recall error, rounding, and simple lack of knowledge. (The respondent may not have had knowledge of the income of all adult family members when approached in the WIC clinic for an in-person interview.) It was expected that in-home interviews would yield many revisions to the income data because respondents had advance warning of the nature of these interviews and could assemble documents and consult with family members to obtain relevant information. Household membership data, on the other hand, was not expected to need much revision during in-home interviews, particularly because in-home interviews occurred within a few weeks of in-person interviews.

Verification of the WIC Economic Unit

For the 931 cases, in-home interviews verified information about household membership from the in-person interviews in **all** cases. The only revisions to household rosters involved persons entering or leaving households during the time between interviews. New members entered the household of 3.2

25 It was also expected that the in-home interview would benefit from the two-survey design of the project. Respondents were expected to be less likely to commit errors of omission during the in-home interview for sources of income previously reported during the in-person interview, relative to a survey design in which respondents were contacted only once in their homes with a request for income information and documentation.

26 Recall that purpose of the in-home interview was to verify information that determines WIC income-eligibility, but data collectors did **not** directly verify the information reported to WIC clinics.

percent of WIC participants, mainly as a result of the birth of infants to pregnant women. Persons left the household in 0.3 percent of cases. These changes did not affect the measured size of the household at the time of certification.

Information collected during in-home interviews, however, did result in revision of the size of the economic unit (which could be a subset of the household) for 14.4 percent of sampled persons. Economic unit sizes increased for 5.1 percent of sampled persons (usually extending the economic unit to the full household), whereas economic unit size decreased for 9.3 percent of sampled persons (limiting the economic unit to the immediate family). Revision resulted from use of a more detailed instrument for determining financial relationships within the household for the in-home survey, compared to the in-person survey. Financial relationships within the household establish the size of the WIC economic unit because the economic unit may be a subset of the household—i.e., the household may contain separate economic units. NSWP deliberately used two different methods to determine the economic unit on the in-person and in-home surveys in order to reduce burden on the in-person survey.[27] All cases returning different results from the two surveys were manually reviewed to confirm the legitimacy of the in-home response, and in Section 4.5 we report the sensitivity of case error results to this change in definition of the economic unit.

Verification of Income

For the 931 cases responding to the in-home interview, 74.3 percent revised some income information previously reported during the in-person interview, 23.3 percent provided no new information, and 2.4 percent failed to respond to the income questions during the in-home interview and are excluded from all analyses in this section.[28]

New information provided during the in-home interview can be classified into three types of changes to previously reported data:

- Added income—additional sources of income were reported
- Denied income—previously reported sources of income were not confirmed
- Dollar revisions—positive dollar amounts of income were reported but differed from the amounts reported on the in-person survey

All three types of revisions were evident among respondents providing documentation, and among those not providing documentation. (More detail is provided in later sections.)

27 On the in-person survey, the respondent was asked three brief questions about each household member: does this person provide financial support to the sampled person, receive support from the sampled person, or share common support with the sampled person?

On the in-home survey, each household member was assigned to a family unit based on age and relationship consistent with the definition of an immediate family. A module of five questions addressed to each unit determined the financial independence of that unit from other family units within the household. The financial relationships module used for the in-home survey was taken from the Consumer Expenditure Survey administered for the Bureau of Labor Statistics.

28 Twenty-nine cases are excluded from analyses. These respondents either failed to respond to all income questions for some adult members of the WIC economic unit, or they reported receipt of wages/salary during the in-home interview but failed to report an amount on either the in-person or in-home interview.

Many of the revisions to income data can probably be attributed to measurement issues. The measurement issues result from three inconsistencies in the way income was reported on the two surveys:

- The in-person survey relied on respondent recall of income receipt and amounts (own income and income of other adults in the family), whereas the in-home survey used income documents to supply income amounts and the interview was conducted in the home where other household members might be available to supply information.

  It is reasonable to expect that some "misreporting" on the in-person survey was the result of an honest effort to supply the best guess, especially when asked about other adults in the family. Recall problems may have resulted in misidentification of income sources during the in-person interview, followed by subsequent denial or addition of income sources during the in-home interview. Recall problems also result in less precise responses, as evidenced by the fact that income amounts reported during the in-person interview were more likely to be rounded numbers, compared to the amounts reported during the in-home interview.[29]

- The in-person survey imposed a computational burden on respondents and interviewers because all income amounts were recorded as monthly amounts. (For example, respondents receiving weekly paychecks had to convert weekly amounts to monthly amounts.) The in-home survey did not impose this computational burden because interviewers reviewed income documents, recorded dollar amounts shown on the document, and recorded the period of time covered by the documents (weekly, monthly, two weeks, annual).

- For eight types of income, the in-person survey asked for the total amount of income received by all household members, whereas the in-home survey asked for income received by each adult household member. This inconsistency in survey design was adopted for infrequently received income sources to reduce respondent burden on the in-person survey. The eight types of income are interest on savings, regular income from dividends, pensions and annuities, income from rental units, regular contributions from other sources such as gifts from relatives or friends, alimony, child support, and lump sum income.

Before discussing the magnitude of difference in reported income amounts, the next section describes the ability of respondents to provide income documents.

Provision of Income Documents

Respondents were asked to provide income documents during in-home interviews so that data collectors could verify income information provided during in-person interviews. The interview was voluntary, however, and provision of documents, although requested, was also voluntary. Exhibit 4-14 shows the percentage of respondents who provided documents, overall and by adjunct-eligibility status.

29 For example, 61 percent of reported spouse/partner wage amounts on the in-person survey were amounts reported in even $100 amounts, whereas only 18 percent of reported spouse/partner wages on the in-home survey reported in even $100 amounts.

Exhibit 4-14

Percentage of Respondents Providing Documents, by Adjunct-Eligibility Status

	Adjunct	Non-Adjunct	Total
Provided documents	59.7 (3.9)	64.0 (5.1)	61.2 (3.7)
Did not provide documents	40.3 (3.9)	36.0 (5.1)	38.8 (3.7)
Sample size	568	334	902
Population	4,917,163	2,636,221	7,553,384

Standard errors are shown in parentheses. The chi-square test indicates that there is no statistically significant difference in the provision of documents by adjunct and non-adjunct participants.

Excludes 2.4 percent of respondents who did not respond to the income sections of the in-home interview.

Sixty-one percent of respondents provided income documents for some of all sources of income. Those who did not provide income documentation can be categorized in three groups: 10.2 percent provided undocumented revisions to the income amounts reported during the in-person survey, 22.3 percent provided no documents and no revisions, and 6.3 percent reported zero income (and had no need to provide documents). Altogether, 70 percent of respondents provided additional information (documented or undocumented) during the in-home interview.

The provision of income documents was lower than expected, and initially called into question the validity of the income-verification portion of the study.[30] In determining whether to proceed with analyses, we considered two questions. First, were there systematic differences in the characteristics of respondents who provided documents and those who did not? Second, did those without documents provide systematically different types of changes to previously reported income (i.e., additional income sources, denial of income sources, revisions to amounts)? Third, when updated income amounts were provided without documentation, was the effect systematically different from when documents were provided, in the sense that the updated amount was higher or lower than the amount reported during the in-person interview?

Exhibit 4-15 compares the characteristics of respondents who did and did not provide income documents. There are no statistically significant differences between groups with respect to participant category, adjunct-eligibility status, WIC certification history, family size, maternal characteristics (education, marital status, age), mean income reported on the in-person survey, and whether the WIC family is part of a larger household. The only statistically significant difference in respondent characteristics is that those

30 A request to provide private and confidential income documents is uncommon in government surveys. The percentage of respondents providing income documents during the 1988 WIV was not documented in that report, so we have no basis on which to judge the relative success of the present study.

Exhibit 4-15

Characteristics of In-Home Respondents by Whether They Provided Income Documents

	Documents Provided	No Documents Provided
Participant category		
Pregnant	9.4	12.8
Breastfeeding	5.2	4.3
Postpartum	7.2	7.3
Infant	23.2	29.6
Child	54.9	46.0
Income-eligibility		
Adjunct-eligible	63.5	67.6
Non-adjunct eligible	36.5	32.4
Certification history*		
First certification	28.5	35.5
Re-certification	69.3	58.4
Not reported	2.2	6.2
Size of economic unit		
One or two	8.9	12.3
Three	28.5	25.1
Four	28.8	27.7
Five or more	33.8	34.9
Education of mother		
Not high school graduate	24.9	31.1
High school graduate or mo	67.0	61.4
Marital status		
Married	58.7	48.6
Widowed, divorced, separated	12.0	9.9
Never married	29.3	41.6
Age of WIC mom		
<18 years	5.1	6.7
18-34 years	81.3	83.7
>34 years	13.6	9.6
Characteristics of economic units		
WIC economic units residing in larger households (%)	24.6	26.8
WIC economic units that are multigenerational (%)*	13.6	22.0
WIC mom lives with parents	11.1	16.5
Mean monthly income of WIC economic unit reported to in-person survey	1,278	1,200
Income verification policy of WIC agency*		
Documentation required	54.8	54.2
Documentation not required		
Sample size	540	362
Population	4,624,147	2,929,237

Excludes 2.4 percent of respondents who did not respond to the income sections of the in-home interview.

* denotes a statistically significant difference in the distribution of those who did and did not provide documents.

respondents who failed to provide documents were more likely to be in multigenerational families.[31] In addition, respondents who did and did not provide documents during the in-home survey were similarly distributed across WIC agencies that did and did not require documentation of income at certification.

Next we examined whether those with and without documents provided systematically different types of changes to previously reported income. This is an important consideration because one of the dangers in requesting documentation from respondents is that they may deny receipt of income to avoid being asked for documentation that they are unable to produce. The two-survey design of the study provides us with a means of gauging the reliability of income information provided during the second interview when documents were requested.

For each source of income, information provided during the in-home interview was compared to information provided during the in-person interview. If the information did not match, the change in information could be classified into one of three mutually exclusive categories:

- Added income—the source of income was not previously reported
- Denied income—previously reported source of income was not confirmed
- Dollar revision—positive dollar amount of income was reported but differed from the amount reported on the in-person survey

Respondents with multiple sources of income may be classified with multiple types of changes.

Exhibit 4-16 shows the percentage of respondents with each type of change in reported income. Compared to respondents who failed to provide documents, those providing documents were more likely to add income sources (15.1 versus 4.1 percent), and were much more likely to revise reported dollar amounts (87.9 versus 26.3 percent).[32] The difference in the percent of respondents denying previously reported income is not statistically significant.[33]

The bottom of Exhibit 4-16 shows the average amounts of monthly income reported on each survey, along with the average amount of income added, denied, or revised when comparing the second survey to the first. (Averages are calculated over all respondents, by provision of documents). Those providing documents added more income and denied less income, on average, than those not providing documents. Although the rate of denials between the two groups was not statistically significant, the magnitude of denied income was statistically significant: those failing to provide documents denied much larger amounts of income. There is no statistically significant difference between the two groups in the magnitude of "dollar revisions."

---

31 We also estimated logistic regressions for the probability of providing documents. Included as covariates were all the characteristics shown in Exhibit 4-15, plus whether a partner is present in the family, and number of income sources reported on in-person survey. None of the covariates was significant at the 5 percent level; at the 10 percent level, WIC mom's age was positively associated with provision of documents, and the number of income sources reported on the in-person survey was negatively associated with provision of documents.

32 The high rate of revision among those providing documents is not surprising given the high rate of "rounding" off dollar amounts reported in footnote 28.

33 The total number of reported income sources was 1,506 for the in-person survey and 1,257 for the in-home survey. The number of sources "denied" was 407, and the number of sources "added" was 158.

Exhibit 4-16

Changes in Income Reporting: In-Home Interview Responses Compared to In-Person Interview Responses

Characteristic	Documents Provided	Documents not Provided	Total
Percent of respondents			
Added income sources	15.1 (2.8)	4.1 (1.3)	10.8 (2.0)
Denied income sources	30.2 (3.5)	39.7 (4.2)	33.8 (2.6)
Revised dollar amounts	87.9 (2.4)	26.3 (4.3)	64.0 (3.6)
Mean amount of			
Monthly income: in-person survey	$1,187 (57)	$1,111 (69)	$1,158 (49)
Additions	$97 (31)	$19 (11)	$67 (21)
Denials	-$139 (23)	-$303 (63)	-$203 (28)
Revisions	$91 (27)	$86 (45)	$89 (23)
Monthly income: in-home survey	$1,244 (64)	$912 (68)	$1,116 (51)
Sample size	540	362	902
Population	4,624,147	2,929,237	7,553,384

Standard errors in parentheses.

In-person interviews were conducted in WIC clinics at the time of WIC certification. In-home interviews were conducted in respondent homes and documentation of income was requested. Both surveys requested information about income received during the month prior to WIC certification.

Mean amount of revisions is calculated for sources of income with receipt indicated on both surveys; revision is equal to in-home amount minus in-person amount.

This analysis shows that respondents who did and did not provide income documentation differ in their reporting of income on the in-home survey. The primary difference is in the magnitude of previously reported income that was denied on the second survey. It seems unlikely that all occurrences of denied income were valid corrections to mistakes made during the in-person survey, although certainly some may have been. It seems more likely that respondents denied income when they were unable to produce documentation.

Although it was disappointing that nearly 40 percent of respondents failed to provide income documents for in-home interviews, it was encouraging that nearly 70 percent provided either documents or undocumented revised amounts when interviewed in their homes. In addition, the primary difference between those who did and did not provide documents was the magnitude of "denied income." The two-survey

design of the study, however, provides us the luxury of "adding back" denied income for all respondents and examining the sensitivity of the certification error rate to different assumptions about denied income.

In Section 4.4 we calculate the WIC income certification error rate using the full sample of respondents to the in-home survey, regardless of whether they provided income documentation. We use two ways of handling denied income sources: first, we assume the report on the in-home survey (zero income) is correct; second, we assume the denials were related to the inability to provide documents and use the unverified report from the in-person survey. These two alternate assumptions about the validity of denied income yield two alternate estimates of certification error.

Provision of Documents and Income Reporting by Type of Income

Exhibit 4-17 shows that provision of income documents varied considerably across type of income. The most common income sources for WIC families are wages and salary of respondent and spouse/partner. Respondents' own wage and salary income was verified by documents in 65.5 percent of cases, and a total of 78.7 percent of cases provided either documents or undocumented revisions. Spouse/partner income was similarly documented in over 60 percent of cases, and overall it was documented or revised in a total of 75.5 percent of cases. The wages and salary of other family members was documented in only 29.7 percent of cases and received undocumented revision in an additional 26.9 percent of cases. The lack of documentation for the income of other family members is perhaps not surprising in light of the confidentiality of such information.

Other earned income includes self-employment income and military income. These income sources were documented less often than respondent or spouse/partner wages, but they were documented or revised in over 50 percent of cases. Unearned income is received by fewer than 10 percent of WIC families, and documentation of unearned income varied greatly.

TANF and food stamp benefits had relatively low rates of documentation; TANF was documented in 56 percent of cases, and food stamp benefits were documented in 45 percent of cases. TANF and food stamp benefits also had low rates of undocumented revision (6.8 percent for TANF and 7.4 percent for food stamps), but the low rates of revision are likely due to the regularity of TANF and food stamp benefits, which makes them less prone to reporting errors.

Exhibit 4-18 shows, for each category of income, the rate at which in-person reports of income **receipt** were confirmed on the in-home interview. Among respondents who reported own wage income on the in-person survey, 16.4 percent denied earning any wage income when questioned on the in-home survey. Spouse/partner wages, which are more common, had a much lower rate of denial (7.0 percent). Some categories of unearned income, which may be more difficult to document, had very high rates of denial. For example, 84.2 percent of respondents reporting interest or dividend income on the in-person survey denied receipt of interest or dividend income on the in-home survey. The final column of Exhibit 4-18 shows the percentage of WIC families receiving each income source, based on their confirmation of receipt during in-home interviews.

Exhibit 4-17

Provision of Income Documents During In-Home Interview, by Income Source

		of Those Reporting Receipt:		
	Percent with Receipt of Income Source	Provided Documents	Provided Undocumented Revisions	Total Documents or Revisions
Wages and salary received by				
Respondent	24.0%	65.5%	13.2%	78.7%
Spouse/Partner	49.2	60.6	14.9	75.5
Other family member	8.0	29.7	26.9	56.6
Income received by any family member				
Self-employment non-farm income	3.5	43.6	22.8	66.4
Self-employment farm income	0.5	52.2	0.0	52.2
Military income	2.0	51.9	18.5	70.4
Unemployment compensation	3.3	59.6	20.8	80.4
Worker's compensation	2.2	46.1	0.0	46.1
Net rental income	0.7	77.5	0.0	77.5
Interest or dividends	2.9	65.4	16.3	81.7
Social security benefits	3.5	49.8	0.9	50.7
Private pensions or annuities	0.5	44.1	0.0	44.1
Veterans' benefits	0.5	2.6	15.7	18.3
Educational benefits	2.2	30.2	46.6	76.8
Alimony	0.2	90.0	0.0	90.0
Child support payments	5.8	51.0	32.1	83.1
Regular contributions from persons not living in household	1.0	3.4	31.6	35.0
Other cash income	0.9	61.8	38.2	100.0
Public assistance income				
TANF	14.7	55.7	6.8	62.5
SSI	3.7	42.4	4.9	47.3
Other public assistance	1.5	71.0	2.1	73.1
Food stamp benefits	33.6	44.9	7.4	52.3
Sample size	902			
Population	7,553,384			

The percentage of households providing documentation is calculated among households with that income source. Respondents who "Provided Undocumented Revisions" were unable to provide documentation, but revised the income amount reported during in-person interviews.

Excludes 2.4 percent of respondents who did not respond to the income sections of the in-home interview.

Exhibit 4-18

Confirmation of Receipt of Income Sources During In-Home Interview

	Reported Receipt on In-Person	Of Those with Receipt Reported on In-Person:			Added Receipt on In-Home	Total Percent with Receipt Reported on In-Home
		Confirmed Receipt on In-Home	Denied Receipt on In-Home	Missing Data on In-Home		
Wages and salary received by						
Respondent	28.2%	81.3%	16.4%	2.3	1.1%	24.0%
Spouse/Partner	53.5	91.0	7.0	2.0	0.6	49.2
Other family member	9.6	78.9	16.1	5.0	0.5	8.0
Income received by any family member						
Self-employment non-farm income	2.4	74.0	26.0	0.0	1.7	3.5
Self-employment farm income	0.4	61.6	38.4	0.0	0.3	0.5
Military income	2.8	55.5	43.3	1.2	0.5	2.0
Unemployment compensation	3.6	78.5	20.6	0.9	0.5	3.3
Worker's compensation	2.3	85.6	13.3	1.0	0.2	2.2
Net rental income	0.8	29.8	67.9	2.3	0.4	0.7
Interest or dividends	9.0	11.3	84.2	4.5	1.8	2.9
Social security benefits	3.7	80.6	3.6	15.9	0.5	3.5
Private pensions or annuities	1.0	47.5	49.3	3.2	0.0	0.5
Veterans benefits	0.5	91.0	0.0	9.0	0.0	0.5
Educational benefits	2.4	53.5	45.3	1.2	0.9	2.2
Alimony	0.2	100.0	0.0	0.0	0.0	0.2
Child support payments	9.6	52.2	43.3	4.5	0.8	5.8
Regular contributions from persons not living in household	4.1	13.1	86.5	0.3	0.4	1.0
Other cash income	1.4	4.0	89.6	6.4	0.9	0.9
Public assistance income						
TANF	14.1	83.0	16.5	0.5	3.0	14.7
SSI	4.8	73.0	20.9	6.1	0.2	3.7
Other public assistance	5.5	4.9	82.3	12.8	1.2	1.5
Food stamp benefits	32.6	92.0	7.2	0.8	3.6	33.6
Sample size	902					
Population	7,553,384					

The percentage of families with wage and salary incomes, reported in Chapter 3, included families reporting wages and salary, self-employment income, and military income. These income sources are shown separately here to correspond with each individual survey question.

Finally, Exhibit 4-19 shows, for each type of income, the rate at which in-person **amounts** of income were confirmed among the 71 percent of respondents providing documentation or undocumented revision of income amounts during the in-home survey. Wage income was most often under-reported on the in-person interview. Nearly 50 percent of respondent wages and spouse/partner wages were under-reported, approximately 20 percent were reported accurately, and just over 30 percent were over-reported on the in-person survey. Unearned income and public assistance income were reported accurately more often than they were under-reported or over-reported, but when not reported accurately, they were more likely to be under-reported. Exhibit 4-19 does not include respondents providing no documentation or revisions, or reporting zero income on the in-home survey.

The overall differences in income reported on the in-person and in-home surveys are shown in Exhibit 4-20. This exhibit shows the mean total monthly family income reported during the in-person and in-home surveys, the percentage of households with variances in those two reports, and the mean amount of the variance. The top panel shows the subsample of families who provided documents, and the bottom panel repeats the same statistics, calculated over the full sample.

Exhibit 4-20 shows that, among families providing documentation, monthly family income was, on average, revised upward during in-home interviews. The average upward revision was $45 for adjunct families and $78 for non-adjunct families, although both of these estimates have large standard errors that reflect high variability across the sample. For the full sample (bottom panel), monthly family income was on average revised downward during the in-home interview, as a result of income denied by respondents who did not provide documentation.

It is important to remember that positive income variance does not necessarily imply that a family is ineligible for WIC. The magnitude of the variance, together with the family's level of income, determines the effect of misreporting on WIC income-eligibility. The determination of WIC income-eligibility is the subject of the next section.

4.4 Estimates of WIC Income-Certification Error

This section presents estimates of WIC income certification error based on the NSWP in-home survey. For each sampled WIC participant, information from the in-home survey was compared to WIC income eligibility guidelines to determine the participant's income-eligibility status. These individual eligibility determinations were then used to calculate:

Certification error rate. The percentage of WIC enrollees who are enrolled in violation of income-eligibility guidelines.

Dollar error. The amount of WIC food funding that is spent on individuals having a certification error.

Exhibit 4-19

Reliability of Reported Income Amounts Among Those Providing Documentation or Revisions, by Income Source

				Variances in Income Reports			
	Number Families with Source	Mean Amount In-Person	Mean Amount In-Home	Percent Under-Reported	Percent Accurate[a]	Percent Over-Reported	Mean Difference
Wages and salary received by							
Respondent	151	$ 757	$ 855	45.9	23.3	30.7	$ 98
Spouse/Partner	308	1,155	1,270	49.1	20.9	30.1	115
Other family member	51	959	1,671	63.5	24.1	12.4	712
Military income	19	1,610	1,544	38.0	38.6	23.3	–67
Unearned Income							
Unemployment compensation	24	467	505	27.0	37.7	35.3	38
Social security benefits	15	455	467	6.6	92.0	1.4	13
Child support payments	32	293	275	4.2	81.4	14.4	–18
Public assistance income							
TANF	82	282	378	32.0	50.7	17.3	96
SSI	20	678	722	28.8	61.2	10.0	44
Food stamp benefits	35	190	252	30.1	64.1	5.8	63
Sample size	644						
Population	5,395,815						

Income sources received by fewer than ten families are excluded from the table.

a Amount is considered accurately reported if the monthly amounts reported on the in-person and in-home surveys are within $50.

Exhibit 4-20

Variances in Reported Total Monthly Family Income, by Adjunct Eligibility Status

	Adjunct Eligible	Non-Adjunct Eligible	Total
Families providing documentation			
Mean income reported in in-person interview	1,004	1,505	1,187
	(66)	(92)	(57)
Mean income reported in in-home interview	1,049	1,583	1,244
	(87)	(74)	(64)
Percentage of families with variances	73.2	85.3	77.7
	(4.0)	(3.1)	(2.9)
Mean amount of variance	45	78	57
	(68)	(58)	(50)
Sample size	330	210	540
Population	2,936,589	1,687,559	4,624,147
Full sample			
Mean income reported in in-person interview	983	1,483	1,158
	(53)	(74)	(49)
Mean income reported in in-home interview	946	1,432	1,116
	(65)	(71)	(51)
Percentage of families with variances	61.3	75.4	66.2
	(3.7)	(4.0)	(3.2)
Mean amount of variance	-37	-51	-42
	(53)	(74)	(45)
Sample size	568	334	902
Population	4,917,163	2,636,221	7,553,384

The percentage of families with variances is measured as the percentage with a difference in total monthly family income measured at the in-person and in-home interviews in excess of $50.

The mean amount of variances is measured over the full sample, including variances of less than $50.

Excludes 2.4 percent of respondents who did not respond to the income sections of the in-home interview.

Methodology for Determining WIC Income Eligibility

As discussed in prior sections, applicants are income-eligible for WIC if they participate in adjunct programs or programs used for automatic eligibility in their state, or have family income below 185 percent of the federal poverty guidelines. Operationally, local WIC sites determine each applicant's WIC income-eligibility status according to the following procedure:

Step 1: Request that all applicants report family income, family size, and participation in adjunct/automatic programs.[34]

Step 2: If applicant is not adjunct/automatic income-eligible, compare income of the economic unit to the poverty guidelines.

To characterize the complete income distribution of WIC participants, we compared income to the poverty guidelines for every WIC participant in the sample (regardless of adjunct/automatic program participation).

Determining adjunct/automatic eligibility, family size, and family income for the NSWP in-home sample was initially computer-modeled in terms of the federal regulations and guidance. State-specific policies were added to the model using "if state-then" exceptions to the basic model. As discussed in Section 4.2, state income-eligibility policies may differ according to:

- Use of automatic eligibility
- Timing of when annual revised federal poverty guidelines are adopted
- Timeframes for determining income—i.e., current income versus income of past 12 months
- Definition of the family in circumstances not addressed by federal guidance
- Definition of current income (month prior to certification or past four weeks) and multipliers for converting reported income to monthly or annual values

The computer model specified the programs used for automatic income eligibility in each state. The model also specified the state-specific timing of adopting revised poverty guidelines (FY97 or FY98 poverty guidelines applied to each case depending on certification date and state timing of adopting new guidelines).

All states represented in the NSWP sample follow federal guidance in using "current income or past income, whichever more accurately reflects circumstances." States differ in defining "past income," with 23 of 25 states defining it as income over the past 12 months (as in federal guidance), and the remaining two states defining it as income over the past three months. State-specific programming was not used in this instance, because the NSWP survey collected only income of "past month" and "past year" and, in practice, availability of "past income" depended on the documentation provided by survey respondents.[35]

The computer model determined the definition of the family according to the "general definition" of the WIC economic unit, discussed in Section 4.2 and shown in Exhibit 4-4. For all states except one, the

34 Most state manuals contain the certification standards organized into separate sections and do not specify the order in which these three sets of information should be collected.

35 Federal guidance specifies use of current income except in cases when income fluctuates due to self-employment or seasonal work, but in all cases, current income should be used for persons who are unemployed. In practice, the NSWP in-home survey accepted any available documentation of income. In most cases, documentation was for the reference period (month prior to certification), which ranged from February to April 1998 or the month of the in-home interview. Of the documents provided, 86 percent had dates between February and May 1998; 10 percent were dated in December 1997 to January 1998, and most of those were year-end documents such as tax returns. When tax returns were provided, we checked the consistency of documented annual income, reported wage rate (Section B of the in-home survey), and monthly earnings reported on the in-person survey, and we used the amount consistent in two of three reports. In addition, when earnings statements contained a year-to-date amount, we used the lower of the implied monthly amount from the current period and the year-to-date amount to account for fluctuating earnings.

WIC economic unit was determined according to the self-reported measures of financial relationships within the household. An exception was one state restricting the family to those "related by blood, marriage, adoption, or guardianship." State policies defining the family in situations not addressed by federal guidance were usually complex (e.g., rules for adequacy of income for separate economic units) or required the discretion of local WIC staff. Because of their discretionary nature, these rules were not implemented in the computer model. As a final step in the process, all cases found ineligible were manually reviewed to determine if household circumstances allowed for discretion in determining the economic unit and, if so, eligibility was re-evaluated.[36] This manual review reversed the eligibility of 11 cases found ineligible by the computer model; these cases were determined eligible because the household contained separate economic units, allowing for a re-evaluation of income.[37]

Differences across states in the definition of current income and specification of multipliers were not significant, and were not accounted for in the model. Only one state used a definition of "past 4 weeks" rather than "past month" for current income;[38] differences in multipliers were primarily do to a lack of specification of multipliers by some states. We assumed that states not specifying multipliers followed federal guidance.

Verification of Adjunct and Automatic Income Eligibility

Adjunct eligibility is established by receipt of TANF or food stamp benefits, or eligibility for Medicaid. In addition, some sampled persons in the NSWP in-home sample may have automatic income-eligibility due to receipt of general public assistance, or eligibility of a family member for the NSLP.[39]

Adjunct eligibility due to receipt of TANF or food stamp benefits was verified through documentation of benefit receipt during the in-home interview. Receipt of benefits was documented for 44 percent of those reporting these benefits. When receipt of benefits was not documented, income eligibility was determined by comparing the size and income of the economic unit to the WIC guidelines. Of those reporting TANF or food stamps and failing to document, none was found income ineligible for WIC based on the income guidelines.

Documentation of Medicaid eligibility was not requested during the in-home interview because Medicaid eligibility is difficult to verify. Medicaid cards are not dated and cannot be used to verify current Medicaid eligibility status.[40] Persons reporting Medicaid eligibility (and no other adjunct program) were

36 For the 1988 WIV, "the income-eligibility determination process was modeled for each of the state agencies in the sample, and any local agency variations were also noted." This suggests development of a section of code for each state. In contrast, there was less variation across states in 1998, and the records for each sampled person were processed through a single section of code, with variations made explicit with "if state = then do" statements. Both studies used a manual review of ineligible cases as the final step in the process, to implement the discretion allowed to local WIC staff.

37 Determination of separate economic units was based on relationships within the household, even though respondents reported sharing of income by all household members.

38 Ineligible cases in this state were reviewed; none would be eligible if current income were to be defined as four weeks rather than one month (4.3 weeks).

39 Use of automatic eligibility varies by state (see Section 3.4). In the in-home sample, 42 cases reported receipt of NSLP and resided in states using NSLP for automatic WIC income-eligibility; one case reported receipt of general assistance and resided in a state using general assistance for automatic WIC income-eligibility; no cases received SSI and lived in a state using SSI for automatic income eligibility.

40 Medicaid eligibility is verified by many WIC clinics through a phone verification procedure.

determined income-eligible for WIC by comparing the income of their economic unit to the poverty guidelines. In 1998, Medicaid and WIC shared the same income eligibility guidelines for pregnant women and children under age 5 in most states—that is, pregnant women and children were income-eligible for Medicaid if their income was at or below 185 percent of the poverty guidelines.[41] In five states in the NSWP sample, the Medicaid income eligibility level exceeded the WIC income eligibility level, and this higher limit was used to determine WIC income eligibility of NSWP-sampled persons reporting Medicaid eligibility in those states.

Among sampled persons reporting Medicaid eligibility, 4.4 percent of those for whom eligibility could be determined were found to have income above the Medicaid eligibility limit of their states.[42] Those found income-ineligible for Medicaid, however, were **not** identified as income-ineligible for WIC. This is because several Medicaid eligibility rules and practices enable enrollment of persons with incomes above 185 percent of poverty. Those practices include the flexible definition of the family unit, relatively long certification periods, eligibility redetermination practices, Medicaid waiver programs, presumptive eligibility for pregnant women, transitional coverage for working poor families, and guaranteed enrollment periods.[43]

Documentation of participation in NSLP was not requested during the in-home survey. It was thought that NSLP documentation would be difficult to produce in April to June at the end of the school year, and few persons would qualify for WIC solely on the basis of participation in NSLP by a family member. All of the participants reporting family participation in NSLP were found income-eligible for WIC based on income.

Comparison of Economic Unit Income to the Poverty Guidelines

Total economic unit income was measured as the sum of income reported for all household members determined to be part of the economic unit. Income reported on the in-home survey was counted regardless of whether the respondent provided documentation to verify the amount. As discussed in Section 4.4, some respondents provided undocumented revisions of income on the in-home survey, and these amounts, in the aggregate, were not significantly different from documented revisions.

In comparing economic unit income to the poverty guidelines, the analysis is complicated by the fact that some respondents denied receipt of income during the in-home survey for categories of income for which they reported receipt during the in-person survey.[44] We proceeded by estimating two alternate certification error rates. The first estimate is based on the assumption that all income denials of previously reported income are valid (we counted zero income in the category for which income was denied and

41 In 1998, states had the option to extend Medicaid eligibility to pregnant women and children up to age 5 with incomes above 185 percent of poverty. In spring 1998, the Medicaid limit for these groups exceeded 185 percent of poverty in eight states, and five of those states were in the NSWP sample. Source: National Governors Association, Health Policy Studies Division, *NGA Reports Online: State Medicaid Coverage of Pregnant Women and Children*.

42 Of all participants reporting Medicaid, 3.9 percent were found to have income above the Medicaid income-eligibility limit of their states, 85 percent were found income-eligible, and 11 percent were missing income data and eligibility could not be determined.

43 Lewis, K., and Ellwood, M., *Medicaid Policies and Eligibility for WIC*, Alexandria, VA: USDA/FNS/OANE, 1998.

44 For example, Exhibit 4-17 shows that 90 percent of persons reporting receipt of "other cash income" in the in-person survey denied receipt of that income in the in-home survey. Denial rates for wages and salary ranged from 6.9 percent for spouse/partner wages to 17.3 percent for wages of other family members.

ignored the previous report of positive income on the in-person survey). The second estimate is based on the assumption that all income denials of previously reported income are invalid (we counted the income amount reported on the in-person survey and ignored the denial on the in-home survey).

Certification Error Rate for the Contiguous United States

The sample frame for the NSWP was designed to yield national estimates of WIC certification error for the contiguous United States. In fiscal year 1998, the contiguous United States accounted for 96 percent of WIC participants and 95 percent of federal WIC food expenditures.

The procedures discussed above result in two alternate estimates of the WIC certification error rate for the contiguous United States of 2.6 percent and 4.5 percent. The lower estimate is based on the assumption that denials of previously reported income were valid denials; the higher estimate is based on the assumption that all income denials were invalid.

Exhibit 4-21 shows these two alternate certification error rate estimates. The error rate estimate of 2.6 percent means that 2.6 percent of WIC enrollees are enrolled in error and the 95 percent confidence interval suggests that the true value lies between 1.5 and 3.7 percent. (We are 95 percent confident that the national WIC income-eligibility error rate falls between 1.5 and 3.7 percent, with the most likely value at 2.6 percent.) For the error rate estimate of 4.5 percent, we are 95 percent confident that the true value lies between 2.8 and 6.2 percent.

Exhibit 4-21

WIC Income-Eligibility Error

	Estimate #1		Estimate #2	
	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval
Error rate				
Total	2.6%	1.5 – 3.7	4.5%	2.8 – 6.2
Adjunct	0.0	—	0.0	—
Non-adjunct	7.5	4.2 – 10.7	12.9	8.6 – 17.3
Persons enrolled in error	201,000	103,000 – 300,000	349,000	200,000 – 499,000
Dollar error[a]				
Per month	$ 5.8 million	$ 3.0 – $ 8.6 million	$ 10.0 million	$ 5.7 – $ 14.3 million
Per year	$69.6 million	$36.0 – $103.2 million	$120.0 million	$68.4 – $171.6 million

a Dollar error is equal to the average WIC food cost per participant months ($31.21), multiplied by the number of enrollees found in error, adjusted for attrition in participation (see text).

Based on the evidence presented in Section 4.3, however, it appears that denials of income were related to an inability to provide documents. As a result, we conclude that estimate #2 in Exhibit 4-21 is the best

estimate of the WIC income certification error rate for the contiguous United States, based on this study design.[45]

In terms of total enrollees, the certification error rate estimate of 4.5 percent translates to a total number of ineligible enrollees within the contiguous United States, at a point in time, of 349,000. The total enrollee population in the contiguous United States during the sample period was 7.7 million.

Dollar Error in the Contiguous United States

The WIC dollar error is defined as the cost of WIC food benefits provided to individuals who are certified in error. To calculate the dollar error, we applied the national average WIC food cost per participant to all persons in the in-home sample (national averages are not available by certification category) and summed this cost for ineligible participants. The average food cost per month per participant for the entire caseload in April 1998 was $31.76; the average WIC food cost per month per participant in the contiguous United States was $31.21.[46] The NSWP represents the contiguous United States, so we use the latter number for estimates of the dollar error rate.

In calculating the dollar error, we adjusted sampling weights to account for attrition in participation. This adjustment is necessary because the sampling weights, by design, sum to the population of WIC enrollees in April 1998 (as measured by PC98). Average WIC food costs, however, are calculated for the month of April 1998 based on the number of participants—i.e., the number of WIC enrollees who received food benefits in that month. The ratio of participants to enrollees in April 1998 was 0.92, and reflects an average monthly rate of attrition.[47]

The certification error rate estimate of 4.5 percent yields an dollar error of 10.0 million dollars per month, or 120.3 million dollars per year.[48] The 95 percent confidence interval suggests that the true value may lie between 68.9 million and 171.9 million dollars per year.

Expanded Dollar Error Rate

The dollar error estimate presented above includes only the costs of providing WIC food benefits to individuals who are certified in error. The WIC Program also incurs per participant costs for providing nutrition education and breastfeeding promotion and support. In 1998, the WIC Program spent an average of $3.73 per month, per case, on nutrition education, including breastfeeding promotion and support.[49] The average cost per month, per case within the contiguous United States was $3.75. Based on the estimate of an average of 349,000 ineligible enrollees within the contiguous U.S., the nutrition

45 It is clear that the estimate of WIC income certification error obtaining from survey data lacks precision, first because only 61 percent of respondents provided documentation to verify their income, and second because respondents provided sometimes widely divergent income information in two interviews that were held only 4 weeks apart, on average.

46 Source: USDA/FNS, WIC Program: Summary of Closeout Data, Fiscal Year 1998. These food package costs are reported in PC98.

47 It was not within the scope of this study to obtain sample-specific estimates of the participation rate, nor to determine whether participation rates differed for eligible and ineligible enrollees.

48 Dollar error is calculated by multiplying the average food cost by the number of ineligible enrollees, adjusted for attrition: $31.21 × 349,000 × 0.92.

49 Derived from USDA/FNS, WIC Program: Summary of Closeout Data, Fiscal Year 1998.

education costs expended on ineligible enrollees is $1.2 million per month,[50] and $14.4 million annually. Adding these costs to the food costs expended on ineligible cases results in a total cost of serving ineligible cases equal to $134.4 million for fiscal year 1998.

Characteristics Associated with Income-Eligibility Error

Exhibits 4-22 and 4-23 show the estimated certification error rate by characteristics of WIC participants, their households, and their local WIC agencies. Despite some difference in the point estimates of the percent eligible by characteristics—certification category, size of economic unit, age, marital status, and whether the WIC mom resides with her parents—none of these differences are statistically significant. The difference in error rates by mothers' education is statistically significant.

Exhibit 4-23 shows the estimated error rates by local WIC agency size and income verification method. The difference in error rates for local agencies of different sizes is not statistically significant. There is, however, a statistically significant difference in WIC income certification error rates for agencies requiring documentation at certification and those not requiring documentation. (In 1998, documentation policy was set by state WIC agencies; the William F. Goodling Child Nutrition Reauthorization Act of 1998 required income documentation by all WIC participants, and FNS issued regulations regarding this rule in 2000.) As shown in Exhibit 4-23, WIC participants enrolled through agencies requiring documentation had an error rate of 2.9 percent; respondents enrolled through agencies with no documentation requirement had an error rate of 6.4 percent.

The number and percentage of ineligible enrollees, by percent of poverty, is shown in Exhibit 4-24. One-third of income-ineligible enrollees have income at or below 200 percent of the poverty guidelines, and 87 percent have income at or below 250 percent of the poverty guidelines. The nearness of many ineligibles to the income cutoff is seen in the graph in Exhibit 4-25 (overall distribution). The bands of the income distribution immediately above and below 185 percent of poverty are approximately equal.

The remaining graphs in Exhibit 4-25 separately show the income distributions of adjunct and non-adjunct enrollees. The distribution of income for participants reporting adjunct program participation is skewed to the left, as is expected due to the lower income limits of TANF and FSP relative to WIC. The distribution for those not reporting adjunct program participation is more normally distributed.

50 The average number of ineligible enrollees is adjusted for attrition in participation, as discussed above.

Exhibit 4-22

Certification Error Rates by Enrollee and Household Characteristics

Characteristic	Number Sampled Persons	Percent Ineligible at Enrollment	Standard Error
Participant category			
Pregnant	172	6.3	(2.5)
Breastfeeding	194	6.2	(2.2)
Postpartum	166	3.4	(1.4)
Infant	182	4.4	(1.7)
Child	188	4.2	(1.6)
Certification history			
First certification	312	6.5	(1.6)
Re-certification	577	3.8	(1.2)
Size of economic unit			
One or two	143	5.6	(2.1)
Three	264	5.4	(1.8)
Four	262	3.9	(1.3)
Five or more	233	3.8	(2.0)
Education of mother*			
Not high school graduate	307	0.6	(0.3)
High school graduate or more	595	6.5	(1.2)
Marital status			
Married	446	4.4	(1.3)
Widowed, divorced, separated	100	4.7	(3.1)
Never married	346	4.8	(1.6)
Age of WIC mom			
<18 years	54	3.6	(2.3)
18-34 years	750	4.2	(0.8)
>34 years	98	7.1	(3.4)
Multigenerational household			
Yes	184	7.4	(3.3)
No	718	3.9	(0.9)
WIC mom lives with parents			
Yes	149	9.4	(4.1)
No	753	3.8	(0.8)
Total	902	4.5	(0.8)

* denotes a statistically significant difference in error rates by characteristic.

Exhibit 4-23

Certification Error Rates by Local Agency Characteristics

Characteristic	Number Respondents	Percent Ineligible at Enrollment	Standard Error
Local agency caseload			
Less than 1,200	71	8.8	(2.5)
1,201 - 5,000	252	4.6	(2.0)
5,001 - 10,000	187	2.8	(1.3)
Over 10,000	392	4.2	(1.4)
Local agency income verification method*			
Documentation required	461	2.9	(0.9)
Documentation not required	441	6.4	(0.8)

* denotes a statistically significant difference in error rates by characteristic.

Exhibit 4-24

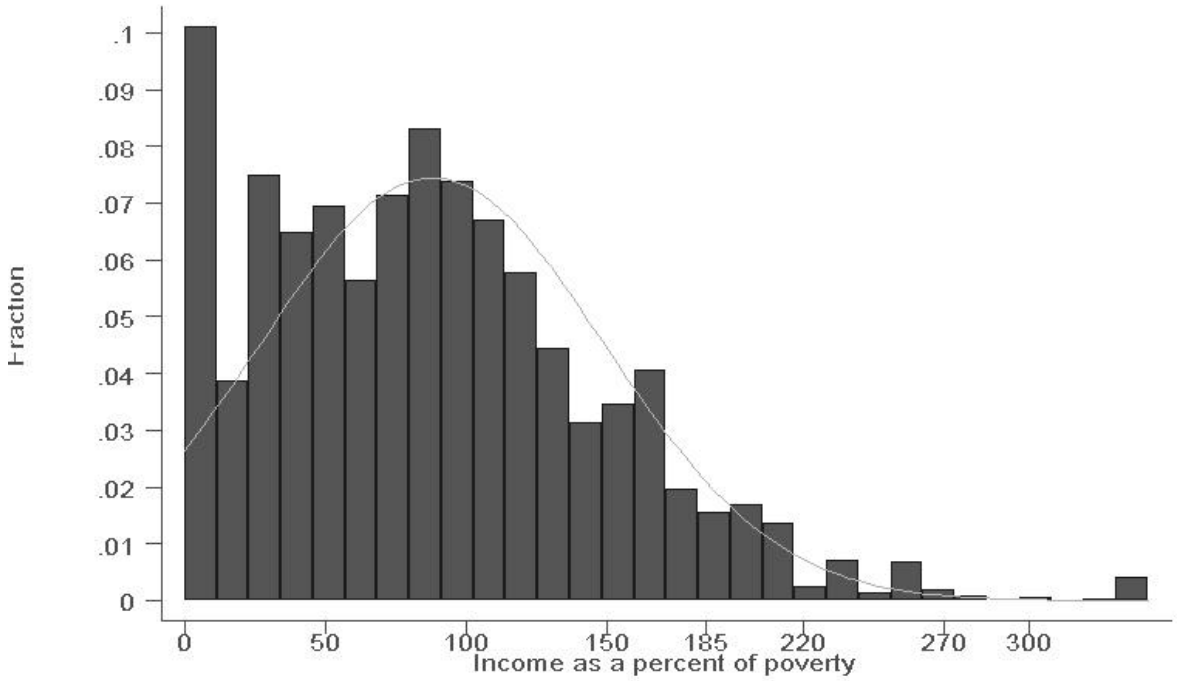
Income Distribution of Ineligible WIC Enrollees Relative to the Poverty Guidelines

Percent of Poverty	Number Ineligible Enrollees	Percent of Ineligible Enrollees	Cumulative Percent
0 – 50	0	0	0
51 – 100	0	0	0
101 – 150	0	0	0
151 – 185	0	0	0
186 – 200	14	32.9	32.9
201 – 250	21	53.9	86.8
Over 250	8	13.3	100.0

Exhibit 4-25

Income Distribution of WIC Participants

Overall



Adjunct

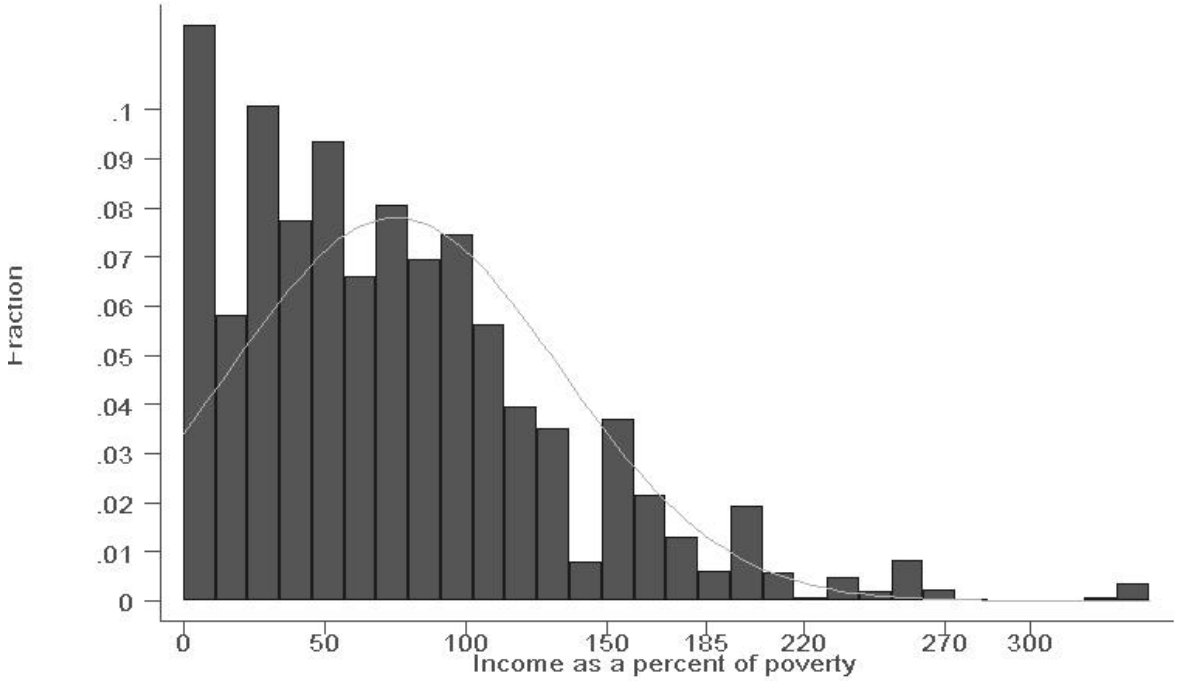
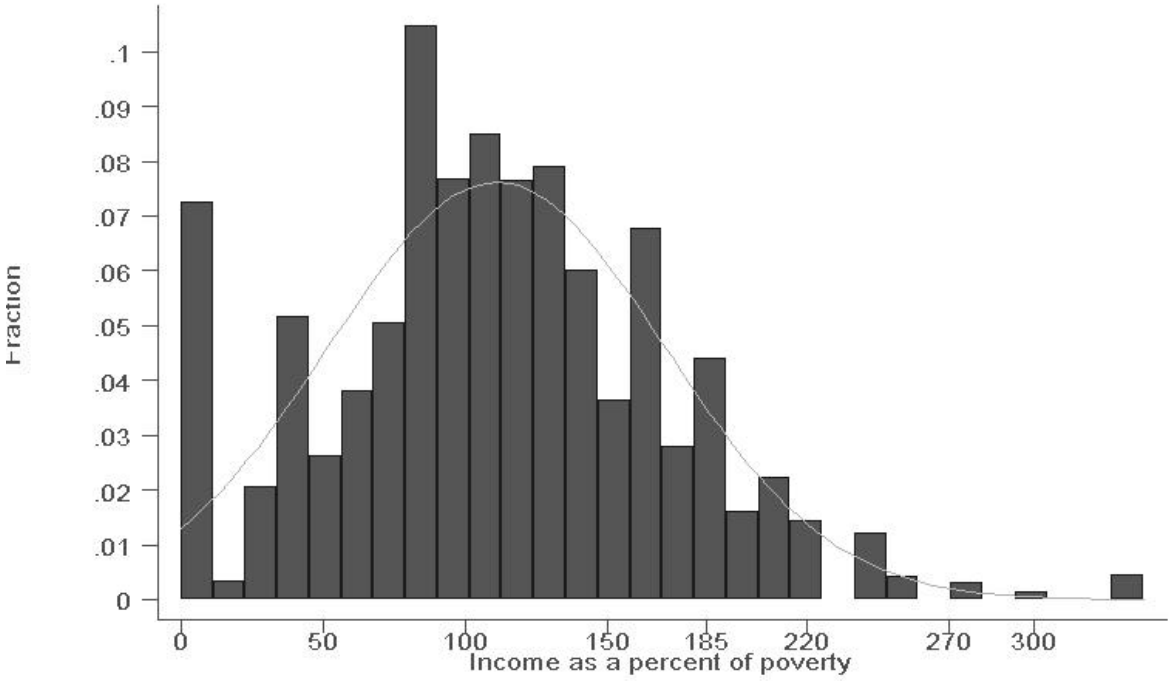


Exhibit 4-25

Income Distribution of WIC Participants

Non-Adjunct



a The distribution is based on income reported and verified during the NSWP In-home survey.

Appendix A
Sample Design, Weights, and Standard Errors

This appendix provides supporting and technical detail for the discussion, in Chapter 2, of the sample design, weighting methodology, and standard errors of estimates.

Sample Design

The sample frame for the NSWP was designed to yield national estimates of WIC participant characteristics for each WIC certification category. Thus, the sample frame contained all WIC participants in the continental United States. Abt Associates designed a large national probability sample of WIC participants using hierarchical cluster sampling.[1] The sample was constructed in four stages:

Primary sampling units
⇓
Local agencies
⇓
Service sites
⇓
WIC participants

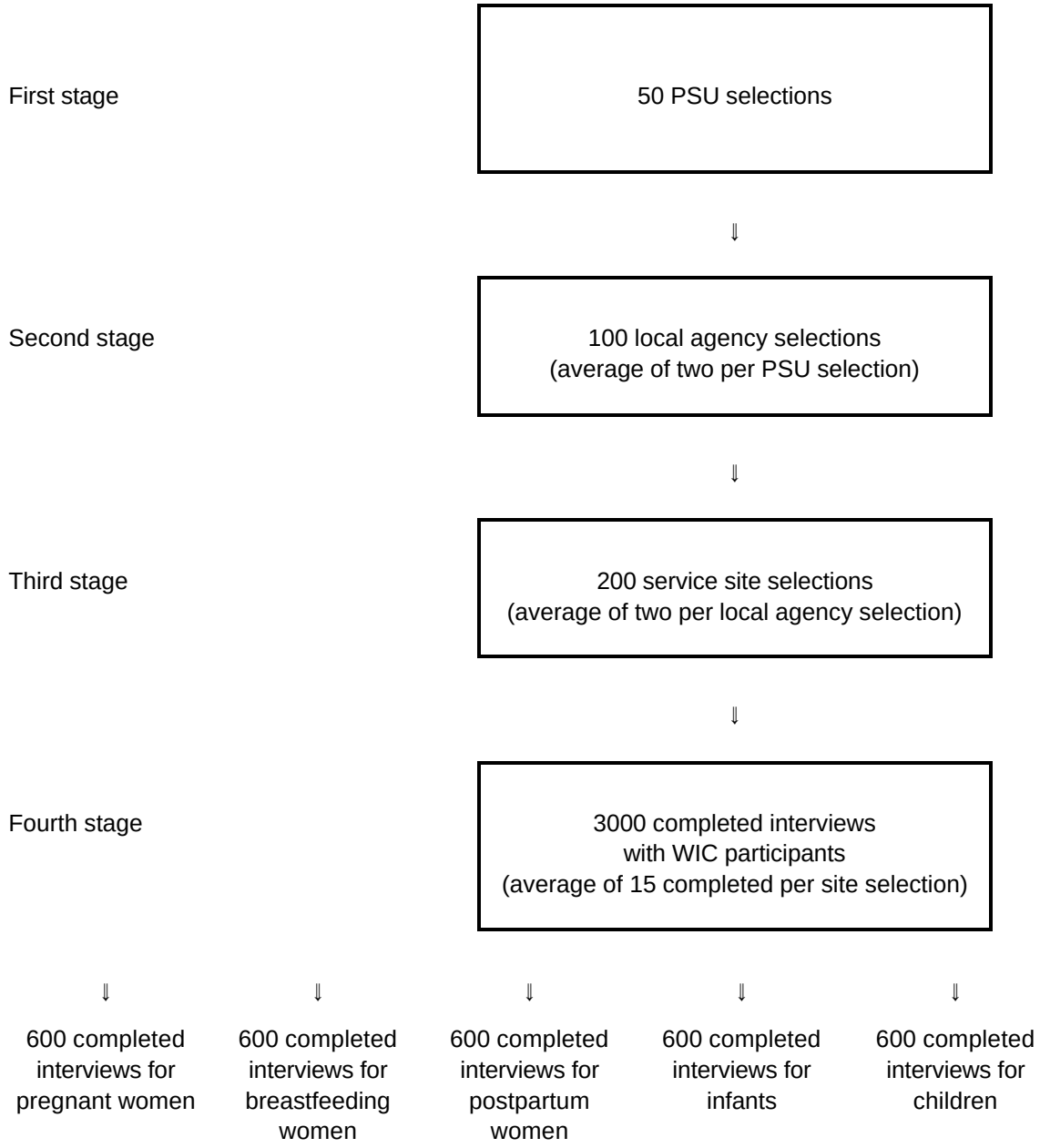
The first stage of sampling used a sampling frame of primary sampling units (PSUs) defined as a metropolitan statistical area (MSA) or a non-MSA cluster of counties. Local agencies were sampled within PSUs; an average of two service sites were sampled for each local agency; and finally, a random sample of WIC certifications and recertifications is being drawn at the chosen service sites. At the first three stages of sampling, units were selected with probability proportional to a measure of size. The goal is to interview 3,000 WIC participants overall, with 600 from each of the five WIC participant categories (pregnant women, breastfeeding women, postpartum women, infants, and children). A sample size of 600 per category provides the required precision of ±0.05 in a 95 percent confidence interval for estimates of participant characteristics within each category. Exhibit A-1 summarizes the overall structure of the initial sample design.[2]

1 This sample design eliminates the need for a complete enumeration of the sampling frame in order to draw the sample. That is, lists of WIC applicants and participants are not required to draw a sample.

2 A four-stage nested sample design was similarly used to select national probability samples for PC88 and the 1988 WIC Income Verification Study. The 1988 studies selected state WIC agencies at the first stage of sampling. NSWP samples PSUs rather than states at the first stage because sampling PSUs yields a second-stage sampling unit that is geographically smaller, on average, than the typical state. The geographic size of the second-stage sampling unit affects interviewer assignments and total interview costs.

Exhibit A-1

Summary of the Initial Sample Design for NSWP



The sample frame was constructed using data from the 1996 Study of WIC Participant and Program Characteristics (PC96). The PC96 census counted the number of participants in each of the five certification categories in each local agency in April 1996. PC96 provides estimates of current numbers of WIC participants, thus providing the measure of size for the first two stages of sampling.

As Exhibit A-1 shows, a single sample frame generates samples for each of the five participant categories. An ideal design—from the standpoint of efficiency of estimation—would have used independent surveys for each of the five categories, with separate selections of PSUs, local agencies, and service sites for each category, using the estimated number of participants in the category as the corresponding measure of size. Such a design, however, was economically impractical. The actual design drew samples from all five participant categories from each service site selected in the third stage of sampling. Below, we discuss each stage of selection.

First-Stage Selection

At the first stage, the unit of selection is the PSU, consisting of an MSA or a group of contiguous non-MSA counties.[3] To ensure representation of subdomains that are likely to be of policy interest, the first stage of sampling used three stratification variables: the state WIC agency's income documentation policy (two levels: documentation required, documentation not required), FNS region, and MSA status (MSA, non-MSA). Because income documentation policy and FNS region were to serve as stratification variables, the process of constructing PSUs took state boundaries into account.[4] The total sample frame consisted of 658 PSUs (with non-zero measure of size): 339 metropolitan PSUs and 319 non-metropolitan PSUs.

To select the sample of PSUs, we listed the PSUs in order of the three stratification variables and the PSU measure of size (total number of WIC participants). That is, we first sorted the PSUs in POLICY (the primary stratifier). Then, within each of the two values of POLICY, we sorted the PSUs on FNS region (the secondary stratifier). Next, within each combination of POLICY and FNS region, we sorted the PSUs on MSA/non-MSA (the tertiary stratifier). Finally, within each combination of POLICY, FNS region, and MSA status, we sorted the PSUs on total number of participants, alternating the order (increasing, decreasing, increasing, decreasing,...). Sorting on size in this way gives better control over size. For example, if it becomes necessary to replace a PSU, the procedure of taking an adjacent PSU in the list will yield a PSU similar in size to the one being replaced.

The distribution of PSUs and WIC population by state WIC agency income documentation policy, FNS region and MSA/non-MSA area is shown in Exhibit A-2. Exhibit A-3 shows the distribution of sampled PSUs. The number of PSUs selected from each stratum was (roughly) proportional to the total number of WIC participants in the stratum.

3 An MSA contains one or more counties and is defined by a population nucleus of 50,000 or more and adjacent communities that have a high degree of economic and social integration with the nucleus. Metropolitan areas are defined and revised by the Office of Management and Budget (OMB). Non-MSA PSUs were constructed by grouping contiguous non-MSA counties within states, using the 1993 Bureau of Census Contiguous County File.

4 Thirty MSAs cross state boundaries and were split into state-specific components.

Exhibit A-2

Count of PSUs and Total Participation by Sampling Stratifiers

	Number of PSUs		Total Participation		Percent of Participation	
FNS Region	**MSA**	**Non-MSA**	**MSA**	**Non-MSA**	**MSA**	**Non-MSA**
			Income Documentation Required			
Northeast	26	15	587,211	83,291	7.9%	1.1%
Mid-Atlantic	34	17	646,955	91,801	8.7	1.2
Midwest	50	41	628,165	161,272	8.4	2.2
Mountain Plains	19	52	170,790	146,661	2.3	2.0
Southwest	28	20	711,507	102,110	9.5	1.4
Western	3	5	20,415	23,539	0.3	0.3
Total	160	150	2,765,043	608,674		
			Income Documentation Not Required			
Northeast	10	2	122,914	7,110	1.6%	0.1%
Mid-Atlantic	2	1	11,757	3,846	0.2	0.1
Southeast	71	67	1,007,481	465,584	13.5	6.2
Midwest	16	20	254,071	86,561	3.4	1.2
Mountain Plains	17	33	109,963	93,061	1.5	1.2
Southwest	18	25	220,799	118,907	3.0	1.6
Western	45	21	1,465,572	123,903	19.6	1.7
Total	179	169	3,192,557	898,971		
Total WIC	339	319	5,957,600	1,507,645		

Exhibit A-3

Selected PSUs by State WIC Income Documentation Policy, FNS Region, and MSA Status

FNS Region	MSA	Non-MSA	Total
	Income Documentation Required		
Northeast	2[a]	1	3
Mid-Atlantic	4	1	5
Southeast	0	0	0
Midwest	4[a]	1	5
Mountain Plains	1	1	2
Southwest	5	1	6
Western	0	0	0
	Income Documentation Not Required		
Northeast	1	0	1
Mid-Atlantic	0	0	0
Southeast	7	3	10
Midwest	1	1	2
Mountain Plains	1	1	2
Southwest	2	0	2
Western	7[a]	1	8
Total	35	11	46

a Includes one self-representing PSU.

Dividing the total number of participants by the number of PSUs to be selected (50) yielded a systematic probability-proportional-to-size selection interval, *K*. Relative to this initial interval, three PSUs (New York City, Chicago, and Los Angeles) were large enough to be selected with certainty. Indeed, in both New York City and Los Angeles the total number of participants is several times as large as the selection interval. This situation has the consequence that, if we selected only two local agencies from such a PSU, its participants would be seriously under-represented. Thus, we made the three certainty PSUs self-representing by allocating local-agency selections (for the second stage of sampling) to the three self-representing PSUs in proportion to their combined size, accounting for 14 of the 100 local agencies to be selected. To obtain the remaining 86 local agencies (a target of two per PSU), we completed the first-stage sample by selecting 43 non-self-representing PSUs. To select the non-self-representing PSUs, we removed the certainty PSUs from the list and recalculated the interval *K* as the ratio of the total number

of participants in non-self-representing PSUs to the number to be selected (43). We then calculated a cumulative measure of size from the beginning of the list to the end. We selected the first non-self-representing PSU by generating a random start, *R*, between 0 and *K*, and we determined successive selections by repeatedly adding *K* to *R*. When one of these systematic selection numbers fell in the range of cumulative size corresponding to a particular PSU, then that PSU was "hit" by the sampling process. For non-self-representing PSUs (with fewer than *K* participants), the probability of selection was proportional to size.

Separating the selection of self-representing PSUs from the selection of non-self-representing PSUs in effect creates two strata for the purpose of calculating selection rates and selecting the second-stage sample. Selection rates for the self-representing PSUs are discussed below under Second-Stage Selection. The selection rate for a non-self-representing PSU is defined as:

$$f_{12j} = S_{2j}/K \qquad \textit{First-stage selection rate, non-self-representing PSUs}$$

where S_{2j} is the estimated size of PSU j (in stratum 2). This probability of selection at the first stage is a component of the overall sampling weight for each WIC participant in our sample.

The 43 non-self-representing PSUs selected for the sample were distributed among 25 states. These 43 PSUs, along with the three certainty PSUs, are shown in Exhibit A-4.

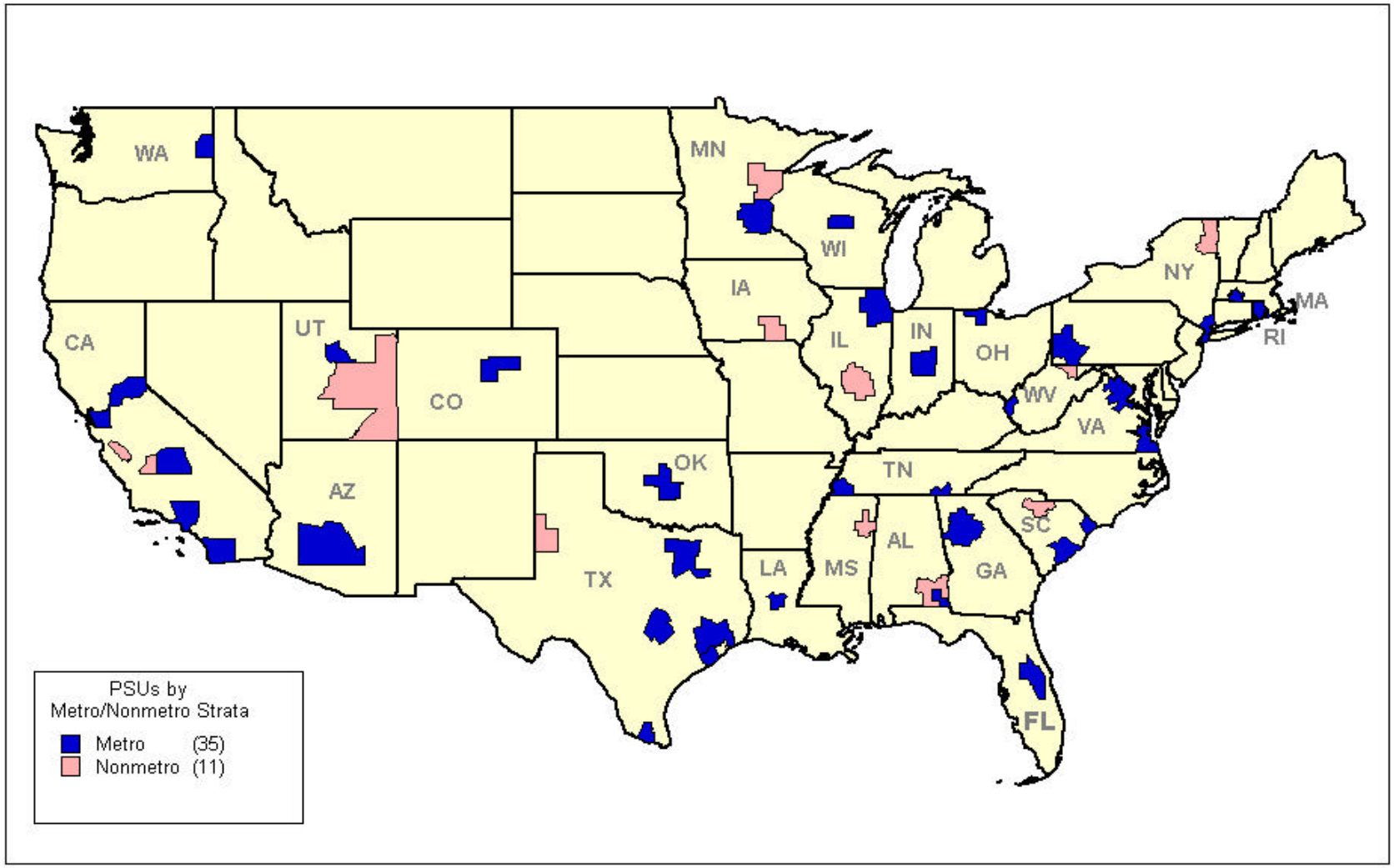
Second-Stage Selection

At the second stage we allocated a total of 100 local-agency hits among the PSUs selected at the first stage: 14 hits among the three self-representing PSUs, and two hits to each of the 43 non-self-representing PSUs. For the three self-representing PSUs we formed a single, combined list of local agencies, and sorted the list in order of increasing size within PSU. The selection interval equaled the total size of these three PSUs divided by 14. Systematic sampling with this interval and a controlled random start produced five local-agency hits in New York City, two in Chicago, and seven in Los Angeles. In Los Angeles, one local agency was so large (326,337 total participants of the 524,889 in the PSU) that it received five of the seven hits. Otherwise, each hit corresponded to a distinct local agency.

To select two local agencies within each non-self-representing PSU, we formed a separate list of local agencies for each PSU, sorted the lists in order of increasing size, calculated the selection interval for each PSU (equal to the size of the PSU divided by 2), and generated a controlled random start for each PSU. In 16 of these PSUs a single local agency received both of the local-agency hits, because it accounted for more than half of the WIC participants in the PSU (in some instances, because it was the only local agency in that PSU). As we discuss later, when this occurred, it produced a corresponding increase in the numbers of service sites and participants to be selected from that local agency. For example, when a local agency received two hits, its target number of service sites for the third stage was increased from two to four. A similar modification applied to the local agency that received five hits in the self-representing Los Angeles PSU.

Exhibit A-4

Selected PSUs for the NSWP



To derive the second-stage selection rate in the stratum of non-self-representing PSUs (i=2), we let A_{ijk} be the estimated size of the local agency receiving the kth subhit within the PSU that received hit (i,j). Define $Z_{ij}=S_{ij}/2$ to be the selection interval for hit (i,j). Then

$$f_{2ijk}=A_{ijk}/Z_{ij} \qquad \textit{Second-stage selection rate}$$

is the second-stage rate of selection for local agency (i,j,k). For local agencies within the three self-representing PSUs, the selection interval was $Z_{1j} = (S_{11} + S_{12} + S_{13})/14$; with this change the above definition of f_{2ijk} continues to apply.

Among the 80 initially-selected local agencies, only one agency refused to participate in the study.[5] A one-to-one replacement scheme was used to maintain exactly two local agency selections for the PSU.

Third-Stage Selection

To interview participants, we visited two randomly-selected service sites for each local agency selected in the second stage. To select service sites, we first defined the sampling frame of service sites for each selected local agency. Through telephone contacts we obtained lists of service sites at each selected local agency and information on the expected number of monthly certifications at each of those sites for each certification category.[6]

Selection of the two sites per agency was made with probability proportional to size and, as in the other stages, with the possibility that a site was selected more than one time if a local agency was hit two or more times. Let C_{ijkl} be the estimated size of the lth site (l = 1,2) that is selected within the local agency receiving subhit (i,j,k). We define Z_{ijk}, the selection interval for subhit (i,j,k), to be one-half the sum of all the possible C_{ijkl}. Then, the third-stage rate of selection was

$$f_{3ijkl} = C_{ijkl}/Z_{ijk}.$$

If a local agency had only one site, it was impossible to select two sites. Among the 70 local agencies selected in non-self-representing PSUs, eight had only one site. Our approach was to double the number of participants selected at the single site.

Exhibit A-5 summarizes the sampling results in the first through third stages of selection. The target number of hits is shown along with the number of selected local agencies or sites—the difference is accounted for by agencies or sites hit more than once by the sampling process.

5 The local agency refusal was requested by the state WIC director because of a recent local agency reorganization.

6 Approximately 40 percent of the local agencies provided the average number of certifications; the remaining local agencies provided average monthly caseloads. Caseload numbers were converted to expected numbers of certifications by dividing the caseload by the length of the certification period. The certification period is 6 months for breastfeeding women, postpartum women and children. The certification periods for pregnant women and infants depend on the timing of enrollment and on state policies regarding certification periods for infants (some states recertify infants at 6 months of age, and others certify infants until their first birthday). We assumed an average certification period of 7.4 months for pregnant women and 9 months for infants.

Exhibit A-5

Summary of Sampling Results

	Self-Representing PSUs (strata 1)	Non-Self-Representing PSUs (strata 2)	Total
First-stage selections	3 PSUs	43 PSUs	46 PSUs
Second-stage selections	14 local agency hits (10 local agencies)	86 local agency hits (70 local agencies)	100 hits (80 agencies)
Third-stage selections	28 site hits (27 sites)	172 site hits (154 sites)	200 hits (181 sites)

Fourth-Stage Selection

We planned to complete in-person interviews with an average of 15 participants from each certification site (i.e., per hit), for a total of 3,000 interviews with participants. With five categories, this approach results in an expected sample size of three sample participants from each category at the site level, and a total sample size of 600 completed interviews per category. Allowing for an anticipated response rate of 75 percent produced a target sample size of 800 participants per category.

For the local agency and site receiving subhit (i,j,k,l), the sampling of participants involved a final-stage selection rate for each of the five categories, f_{4ijklg} in category g. For each category separately, these selection rates were determined (via an iterative calculation) so that they approximately equalized the overall rate of selection,

$$f_{ijklg} = f_{1ij} \cdot f_{2ijk} \cdot f_{3ijkl} \cdot f_{4ijklg}$$

over the selected sites and, when applied to the site-level estimates of the number of monthly certifications, yielded an expected total sample size (over all sites) of 800 participants.

Because the actual numbers of certifications in each category during each month of the field period would not necessarily equal the estimated numbers, we monitored the number of completed in-person interviews in each category and modified the sampling scheme. The first modification consisted of extending the data collection period for March 1998 from four weeks to five weeks. A second modification, in effect for the April 1998 data collection, increased the target sample size from 800 to 1,040 for infants and from 800 to 1,000 for the other four categories. The third (and final) modification, in mid-April 1998, further increased the target sample size for infants by 67 percent, from 1,040 to 1,737.

Weights

Each participant in the sample received a base sampling weight, equal to the reciprocal of the overall selection rate for the appropriate category, f_{ijklg}. For a participant in category g from site l of local agency k in PSU j of stratum i, the base sampling weight is:

$$w_{ijklg} = 1/f_{ijklg} = 1/(f_{1ij} \cdot f_{2ijk} \cdot f_{3ijkl} \cdot f_{4ijklg}).$$

Because some participants declined to be interviewed, we reallocated their base weight among the participants with completed interviews. Specifically, within a set of cells, this adjustment for unit non-response involved multiplying the base weight of each participant with a completed interview by an adjustment factor, equal to the ratio of the sum of weights for all sampled participants in the cell to the corresponding sum of weights for all participants with a completed interview. Initially, each combination of site and certification category formed a cell. Three sites yielded no data. Of the 890 (= 178 × 5) potential cells, 66 contained no **sampled** persons (this was to be expected because the estimated numbers of certifications in some categories at some sites were small or even zero). Of the remaining 824 cells, 103 contained no respondents. Where possible (83 cells), an empty cell was combined with the cell for the other site in its local agency (and the same certification category). For 20 cells, however, that other cell also contained no respondents, and the non-response adjustment was then made at the level of the PSU. This process yielded a non-response-adjusted base sampling weight for each respondent.

At the first two stages of sampling the measure of size was the number of enrollees for the contiguous U.S. in April 1996 (from PC96). Because those counts did not necessarily match either the number of participants or the number of certifications in the spring of 1998, we further adjusted the non-response-adjusted base sampling weights so that their totals on certification category, FNS region, and MSA location (separately) matched the corresponding totals of enrollees for the contiguous U.S. from the WIC Participant and Program Characteristics, 1998 (PC98). This process is known as "poststratification," and the individual categories of the variables involved are known as "poststrata." For example, in this instance pregnant women formed one poststratum. Let the subscript h designate a poststratum. Then w_{ijklgh} is the non-response-adjusted base sampling weight for a respondent in stratum i, PSU j, local agency k, site l, and certification category g, who is also a member of poststratum h. The sample estimate of the poststratum total is

$$\hat{N}_h = \sum_i \sum_j \sum_k \sum_l \sum_g w_{ijklgh}.$$

Let N_h be the universe total for poststratum h. We can now compute the adjusted weight

$$w*_{ijklgh} = (N_h/\hat{N}_h)\, w_{ijklgh}.$$

Because the poststrata were defined separately by three variables (i.e., not by the cross-classification of those variables), we carried out the poststratification by a standard procedure of iterative ratio adjustment known as raking. The calculation took each of the variables in turn, applying the above formula for each of the appropriate values of h, and repeated the cycle until the changes in the weights were sufficiently small. Analyses of weighted data for this report used the resulting weights.

Variances and Standard Errors

In calculating point estimates and, especially, their variances or standard errors, it is necessary to take into account the sample design and the weights of the individual respondents. For these calculations we used the STATA statistical software package.[7] To account for the presence of the certainty PSUs at the first stage, we specified two strata: one for the certainty PSUs and the other for the non-certainty PSUs. In the first stratum (certainty PSUs) the primary sampling unit (which indicates the level of clustering for STATA) was the local agency, and in the second stratum (non-certainty PSUs) the primary sampling unit was the PSU. More specifically, in the NSWP datasets the variable PSUTYPE identifies the stratum, and PSUID identifies the primary sampling unit:

PSUTYPE = 1 for certainty PSUs
= 2 for non-certainty PSUs

PSUID = local agency ID if PSUTYPE = 1
= PSU ID if PSUTYPE = 2.

In addition the variable WGT gives the weight developed in the previous section. To illustrate the use of STATA with these data, the following commands produced the estimate of mean annual income for WIC participant families (accompanied by its standard error):

```
use 'stata dataset name'
svyset strata PSUTYPE
svyset psu PSUID
svyset pweight WGT
svymean ANNUAL
```

The STATA commands are in lowercase, and variable names are in uppercase. For a multistage cluster sample the variance-estimation procedures in STATA allow arbitrary clustering within the PSUs, but they do not distinguish among possible degrees of clustering (or lack of clustering) at lower levels (here, the service sites in the stratum of certainty PSUs or the local agencies in the stratum of non-certainty PSUs). Hence, the variance estimates may be somewhat conservative (i.e., the standard errors may be larger than if the structure of the clustering at the lower levels were taken into account).

7 STATA Statistical Software, release 6.0, College Station, Texas: STATA Corporation, 1999.

Appendix B
Imputation of Unreported Data Items

The central component of the NSWP is the in-person interview. Review of data from the in-person survey indicated a modest amount of missing data. This appendix describes the two types of methods used to impute missing data in the NSWP:

1. Imputation of missing or inconsistent data items using within-household data, and
2. Imputation of unreported data items using sample estimates.

The first type of imputation was primarily used to impute missing data regarding individual characteristics.[1] For example, missing data for "sex" or inconsistencies between "sex" and "relationship to respondent" could usually be resolved based on the individual's name.[2] The second type of imputation, relying mainly on regression methods, was used to impute missing data for income and food spending.[3]

Imputation Based on Within-Household Data

The main NSWP interviews were administered as paper and pencil surveys, due to the wide variety of environments experienced in WIC local service delivery sites. This limited the number of checks that could be built into the data collection instruments. As a result, edit checks were performed after the data were received from the interviewers, processed through data entry, and compiled on a central computer.

A centralized review of data resolved inconsistent responses and replaced missing data with imputed data inferred from other data items within the survey. Many data inconsistencies were resolved based on review of the hard-copy instruments; these revisions were due to data-entry errors and are not flagged in the final data files. Imputation was limited to a few data items, and revisions based on imputation are flagged in the final data files. The highest rate of imputation was for "sex," which was imputed for 5.2 percent of persons appearing on household enumerations; all other rates of imputation are under 1 percent.[4]

Items imputed based on within-household data are listed below. The numbers in brackets refer to the question number on the survey instrument. See Appendix D for the in-person instrument.

---

1 Missing data in the NSWP resulted from item non-response or, in a small number of cases, from centralized re-coding of out-of-range values to missing data.

2 Names were removed from the data files only after final cleaning.

3 The in-home interview was designed to validate the income information provided during the in-person interview, through review of income documents. Because the in-home interview was conducted with only one-third of in-person respondents, however, the in-home data were not used as a source for cleaning the in-person data.

4 The high rate of missing data for sex may be due to instrument design; interviewers were instructed to "ask if not apparent" on the "sex" item.

Items Imputed Based on Within-Household Data

- Relationship to respondent [A3]. (Imputed to be consistent with sex [A5].)
- Status as biological parent [A7]. (Imputation based on relationship [A3].)
- Child's age [A6]. (Age made consistent with date of birth [B2].)
- Is child receiving WIC now? [B8]. (Response coded as "Yes" for all sampled persons.)[5]
- Financial support shared with respondent [A12]. (Responses within the household were made consistent based on the assumption that immediate family members share support. Thus, if a pregnant woman reported that her mother provided her with support but her father did not share support with her, then her father was coded as sharing support based on the fact that mother and father are in the same immediate family.)
- Average weekly food spending at home, is that per week or per month? [A14b]. (Time period on which response is based was imputed based on the distribution of average weekly food spending for observations with non-missing time periods.)
- Average weekly food spending eating out, is that per week or per month? [A15b]. (Same method as above.)

Two data items were imputed based on the sampling lists. As noted above, responses to the question "Is child receiving WIC now" [B8] were re-coded for many sampled persons who received certification on the date of the interview. This question was probably misinterpreted because WIC benefits had not yet been received at the time of the interview. When the sampled person was a postpartum woman, there was some question as to whether "receiving WIC now" was answered correctly for her infant; likewise, when the sampled person was an infant, did the mother correctly respond to the question about her WIC receipt in the postpartum period [B5b]? The sampling lists were used to impute WIC status for mother or infant in these cases.[6] If both the mother and infant were on the sampling list, we assumed that both received WIC certification.

Finally, information about WIC history (Q10, Is this your first WIC certification?) for pregnant, breastfeeding, and postpartum women was found to be inconsistent with information reported on the child rosters in regard to WIC participation by mothers when pregnant and postpartum with their children. Q10 was not used for any analyses; estimates of 'WIC experience' for sampled women were based on responses from the child roster [B4, B5b].

5 It was apparent from the data that "Receiving WIC now?" was misinterpreted by many people who were interviewed on the day that they were certified.

6 Sampling books were maintained at all WIC service sites participating in NSWP, and all persons appearing at the WIC service sites for certification were logged in the sampling books.

Imputation Based on Estimates

Regression estimates were used to impute most missing data for monetary items: income and food spending. Monetary data were collected in two sections of the in-person survey. The "individual income and earnings" section asked about income received by each adult member of the family from 12 sources (e.g., wages and salary, self-employment income, social security income, etc.). The "household income and food spending" section asked about the aggregate receipt of income by the family in eight categories (mostly earnings from assets and public assistance receipt), and the average weekly food spending at home and away from home.

As with other household surveys, the incidence of missing income data follows a predictable pattern: own income and spousal income have low rates of item non-response; income of other family members has high rates of non-response.[7] In addition, for all family members, unearned income has higher rates of non-response than earned income. Exhibit B-1 shows the incidence of missing data for each component of family income and for food spending. This exhibit shows the incidence of missing data for the Yes/No question regarding receipt of income and the incidence of missing data for income amounts, conditional on receipt. The mean amounts shown in Exhibit B-1 are reported amounts prior to imputation.

For all income items except wages, missing data for amounts were imputed (as discussed below), but missing data for receipt were not imputed.

Wage and Salary Income

For wage and salary income, we had two indicators of income receipt: current employment status and the question "During last month did you receive any wages?" These two indicators are not in agreement because they reference different time periods: 11.7 percent of persons reporting wage income "last month" were currently unemployed; 9.6 percent of persons currently employed reported no wage income "last month."[8] In calculating total income for the family, we used current employment status to indicate persons with wage income at the time of certification. In other words, we imputed data for "was wage income received?" based on employment status at certification, and this imputation is reflected in the "percent with source received" shown in Exhibit B-1.[9] As a result, non-reporting of wage income shown in Exhibit B-1 is much higher than the actual item non-response to the question "How much did you earn in wages and salary last month?" In addition, prior to implementing the imputation methods described below, we imputed missing data for "wage and salary income last month" using "wage and salary income last year," divided by twelve, if the latter measure was present.

7 Moore, Jeffrey, Linda Stinson, and Edward Welniak, "Income Measurement Error in Surveys: A Review," U.S. Bureau of Census, December 1997, submitted for publication.

8 These statistics are calculated over all adults in WIC families.

9 This imputation is consistent with WIC guidelines instructing clinic staff to "consider income of the family during the past 12 months and the family's current rate of income to determine which indicator more accurately reflects the family's status." In addition, WIC guidelines specifically instruct staff to use current income to determine eligibility when persons are unemployed (USDA, FNS Instruction 803-3).

Exhibit B-1

Incidence of Missing Data for Income and Food Spending

		Source Received?			If Source Recieved, Amount Reported?			Mean Amount
	n	Yes	No	NR	*n*	Yes	No	Reported
Household income		%	%	%		%	%	
Interest on savings/bonds	3,114	9.4	89.0	1.7	265	62.5	37.5	38
Dividends/royalties/trusts	3,114	1.1	96.9	2.0	36	31.1	68.9	224
Any pensions/annuities	3,114	1.3	96.2	2.5	31	63.7	36.3	1,282
Rental income	3,114	0.8	97.5	1.7	28	80.3	19.7	652
Income from other sources	3,114	5.5	91.1	3.3	195	92.2	7.8	1,284
Alimony or child support	3,114	11.0	87.0	2.0	323	94.2	5.8	289
TANF benefits	3,114	14.8	83.4	1.8	480	90.4	9.6	387
Respondent income								
Respondent wages	3,054	26.9	72.3	0.7	767	81.0	19.0	764
Unemployment comp.	3,054	2.2	94.5	3.3	67	91.5	8.5	353
Workers compensation	3,054	0.6	96.1	3.3	19	100.0	0.0	309
Veterans benefits	3,054	0.1	95.9	4.0	3	81.1	18.9	138
Social security income	3,054	2.6	94.0	3.3	76	97.1	2.9	422
SSI	3,054	2.9	93.7	3.4	82	99.3	0.7	441
General assistance	3,054	4.7	90.6	4.8	132	84.5	15.5	343
Black lung benfits	3,054	0.2	95.8	4.1	4	45.8	54.2	54
Other public assistance	3,054	0.8	93.0	6.2	21	56.8	43.2	439
Spouse/Partner income								
Spouse/Partner	1,829	79.7	20.0	0.3	1,485	85.8	14.2	1,209
Unemployment comp.	1,829	4.0	92.7	3.4	61	91.1	8.9	615
Workers compensation	1,829	1.3	95.1	3.5	24	0.0	100.0	0
Veterans benefits	1,829	0.5	95.4	4.1	5	0.0	100.0	0
Social security income	1,829	1.4	95.1	3.4	18	83.8	16.2	575
SSI	1,829	2.1	94.4	3.5	28	83.4	16.6	662
General assistance	1,829	0.7	94.7	4.6	11	56.3	43.7	410
Black lung benfits	1,829	0.1	96.2	3.7	2	0.0	100.0	0
Other public assistance	1,829	0.0	93.7	6.3	0	—	—	—

(continued)

Exhibit B-1

Incidence of Missing Data for Income and Food Spending

		Source Received?			If Source Recieved, Amount Reported?			Mean Amount
	n	Yes	No	NR	*n*	Yes	No	Reported
Other family member								
Wages and salary	1,087	64.4	34.3	1.3	705	47.2	52.8	1,248
Unemployment comp.	1,087	1.2	88.5	10.4	18	30.6	69.4	385
Workers compensation	1,087	0.4	89.6	10.0	7	0.0	100.0	
Veterans benefits	1,087	1.3	88.8	9.9	19	11.0	89.0	525
Social security income	1,087	8.7	81.2	10.0	89	61.5	38.5	706
SSI	1,087	3.5	85.9	10.6	45	61.4	38.6	477
General assistance	1,087	0.8	87.5	11.7	14	67.1	32.9	181
Black lung benfits	1,087	0.0	90.1	9.9	—			
Other public assistance	1,087	0.7	87.3	12.0	5	74.7	25.3	1,009
Average weekly food spending		Percent not reported			Mean amount			
At home	3,114	6.6			125			
Away from home	3,114	7.3			20			

Percentages are weighted. All income questions refer to "income last month." NR = not reported.

Methods of Imputation

Two methods of imputation were used for the income and food spending items shown in Exhibit B-1. To impute most of the missing data for dollar amounts, we estimated separate linear regression equations for each source of income. The coefficient estimates from the regressions were used to calculate estimated income for persons with missing data.

Regression estimates were not used for household income items (interest on savings, dividends, pensions and annuities, contributions from other sources, income from alimony, income from child support, lump sum income, rental income), with the exception of TANF amounts. Missing data for these items were imputed by the median amount observed in non-missing observations. Medians were used because these items showed a wide distribution, low R^2 in regressions, and represented a small percentage of household income.

In addition, for individual income items with fewer than 20 non-missing observations, the sample was not large enough to support regression estimates and we imputed missing data using the mean value of non-

missing observations. Mean values were used to impute workers compensation, veteran's benefits, and Black Lung benefits, and "other public assistance."[10]

Regression Specifications

The regression estimates for individual income items had the following general specification:

Income amount = f [age, age^2, sex, education dummies (3), marital status dummies (2), relationship to respondent dummies (4), military, seasonal worker, self-employed, in college, metro area, region dummies (6)]

For individual income amounts, all covariates are the characteristics of the family member with missing income data; age is a continuous variable and all other covariates are represented as dummy variables. Regressions for "wages and salary income" were run separately for males and females, regressions for all other individual income amounts pooled males and females.

To impute missing TANF amounts, the following regression was estimated:

TANF amount = f [respondent age, age^2, family size, spouse present, number of children, respondent parent in household, wages, social security income, SSI income, other public assistance income, metro area, region dummies]

In the TANF regression, age, wages, and income amounts are continuous variables and all other covariates are represented as dummy variables.

To impute missing food spending amounts, the following regression specification was separately estimated for average weekly food spending at home and away from home:

Food spending = f [respondent age, number of male equivalents in family, education dummies (3) marital status dummies (2), adjunctively eligible for WIC, family has wage income, total monthly income, metro area, region dummies]

In the food spending regression, age, number male equivalents, and total monthly income are continuous variables, and all other covariates are represented as dummy variables.[11]

For each data item imputed by this method, Exhibit B-2 shows the number of observations with non-missing data, the number of observations with data imputed from the regression estimates, the R-square from the regression equation, the mean value before and after imputation, and the percentage of missing

10 Most responses to the question about "other public assistance" duplicated information about TANF or food stamp benefits reported in response to other questions on the survey, or were about in-kind benefits (and the amount received was missing). These responses were cleaned out of the data, leaving only 26 reports of other public assistance. Of the eight reports that were missing amounts, only one reported the type of assistance, and it was imputed based on the mean amount of other reports of that type.

11 Because households differ in size and composition, the number of "male equivalents" provides a single measure for comparing aggregate household consumption requirements. The number of male equivalents in the family is calculated by assigning equivalence values to each family member on the basis of calorie requirements by age and gender. One male equivalent is equal to an adult male able body's daily consumption requirement (in kcal).

data after imputation. Missing data remained after imputation for individuals missing data for covariates on which imputation was based. In this exhibit, individual income is not shown separately for respondents, spouses, and other family members because these individuals were pooled for obtaining regression estimates.

Exhibit B-2

Incidence of Missing Data for Income and Food Spending

	Number with Non-missing Data	Number Imputed	R^2 from Regression	Mean Amount		Percentage Missing After Imputation
				Before Imputation	After Imputation	
Household income						%
TANF benefits	440	40	0.4349	387	381	0.0
Individual income and earnings						
Wages and salary–males	1,428	362	0.1429	1,239	1,240	2.4
Wages and salary–females	770	377	0.2122	782	795	4.8
Unemployment comp.	130	16	0.4395	486	499	0.0
Social security income	137	45	0.5249	540	565	1.0
SSI	136	19	0.3508	498	491	0.6
General assistance	121	35	0.3899	340	334	1.8
Average weekly food spending						
At home	2,957	131	0.2643	75	76	0.8
Away from home	2,888	198	0.0745	13	13	0.9

Percentages are weighted. All income questions refer to "income last month."

Appendix C
Food Security Measurement and Food Spending per Adult Male Equivalent

Section F of the NSWP in-person survey instrument implemented the food security module developed by the food security measurement project, a cooperative undertaking of federal government agencies under the leadership of the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture (USDA). The food security module was first implemented on a national basis as a supplement to the U.S. Bureau of Census' Current Population Survey (CPS) to provide national statistics on household food security and hunger.

The food security module contains 18 questions. Use of the module requires that responses to the 18 questions be combined in a composite scale measure of food security, according to an algorithm developed by USDA. The composite scale is then used to assign respondent households to one of four food security status categories:

- Food secure
- Food insecure without hunger
- Food insecure with hunger, moderate
- Food insecure with hunger, severe.

The food security scale measures the condition of household members as a group, and not necessarily the condition of any particular household member. Thus, a household identified as food insecure with hunger is a household with at least one member experiencing hunger.

The algorithm for the composite scale was originally presented in the *Guide to Implementing the Food Security Module* (USDA/FNS, 1997). The Economic Research Service (ERS) of USDA issued "Updated Procedures and Corrections to the Guide to Implementing the Food Security Module" in July 1999, which were incorporated in *Guide to Measuring Household Food Security, Revised 2000*(USDA/FNS, March 2000). These procedures are summarized below, with reference to NSWP questionnaire items.

Procedures for Calculating the Food Security Scale and Assigning Food Security Status to Households

The core food security module consists of 18 questions for households with children, and ten questions for households without children. The questions are grouped as follows (with NSWP question numbers shown and an asterisk denoting questions asked only of households with children):

- Screener questions – F1, F2, F3 [not included in the composite scale]
- Stage 1 questions – F4(a), F4(b), F4(c), F4(e)*, F4(f)*
- Stage 2 questions – F4(g)*, F5, F5(a) F6, F7, F8
- Stage 3 questions – F9, F9(a), F10*, F11*, F11(a)*, F12*, F13*

The screener question asks about household food sufficiency over the past 12 months. Respondents indicating that their household had "enough to eat and the kinds of food wanted" are skipped out of the food security module and categorized as "food secure."

Stage 1 questions measure the presence of anxiety or perception that the household food budget or food supply was inadequate, and perceptions that the food eaten in the household was inadequate in quantity or quality. Stage 2 questions measure instances of moderately reduced food intake. Stage 3 questions measure instances of severely reduced food intake.

The procedure for assigning a composite scale value to each household depends on whether the household had any missing responses to the questions in the module.

Households with Complete Data

For households with no missing data, the composite scale is calculated by counting the number of affirmative responses to the questions in the module.[1] This number may range from zero to 18 for households with children, and from zero to 10 for households without children. The scale value assigned to each number of affirmative responses is shown in Exhibit C-1. The correspondence between scale value and food security category is shown in Exhibit C-2.

Among NSWP households, complete data were obtained from 88.4 percent of households with children and 93.6 percent of households without children.

Households with Incomplete Data

For households with partially missing data—i.e., item non-response to some but not all items in the core module—a procedure for imputing missing data has been prescribed by ERS. The methodology appears in the *Guide to Measuring Household Food Security, Revised 2000*

The imputation procedure prescribed by ERS imputes responses for missing items based on valid responses the same household gave to other items. The imputation procedure is "based on the ordered character of the items in the Food Security Module. That is, the items vary in severity across a wide range, and their severity ordering tends to be stable across households. As a result, a household that affirms an item will generally affirm all less severe items, and a household that denies an item will generally deny all more severe items." After imputation of data missing due to non-response, households are scored using the same methods as are used for households with complete responses.

The ordering of items prescribed by ERS, listed from least severe to most severe, is as follows:

---

1 All questions in the food security module are yes/no questions or questions eliciting information on the frequency of reduced food intake. Allowable responses to the frequency questions are "often," "sometimes," and "never;" both "often" and "sometimes" were considered affirmative responses.

NSWP administration of six of the eight questions for households with children differs from the CPS module. NSWP questions F4g, F10, F11, F11a, F12, and F13 appear in the CPS as questions referencing "your child" or "the children." NSWP addressed each of these questions with reference to each child in the family, so that each question appears as a set of questions. In constructing the food security scale, each set of questions contributes a single affirmative response if an affirmative response was obtained for any child in the family.

F4a, F4b, F4e, F4c, F4f, F5, F6, F5a, F4g, F7, F8, F10, F9, F12, F9a, F11, F11a, F13

Imputation instructions are:

- Impute "yes" to a missing item if, for that household, there is a valid affirmative response to at least one item more severe than the missing item and no negative response to any item less severe than the missing item.

- Impute all other missing items as "no."

After imputation of individual items, count the number of affirmative responses and determine the composite scale and food security category according to Exhibits C-1 and C-2.

Exhibit C-1

Food Security Scale Values for Households with no Missing Data

Number of Affirmative Responses	Scale Value	
	Households with Children	Households without Children
0	0.0	0.0
1	1.0	1.2
2	1.8	2.2
3	2.4	3.0
4	3.0	3.7
5	3.4	4.4
6	3.9	5.0
7	4.3	5.7
8	4.7	6.4
9	5.1	7.2
10	5.5	7.9
11	5.9	
12	6.3	
13	6.6	
14	7.0	
15	7.4	
16	8.0	
17	8.7	
18	9.3	

Source: *Guide to Measuring Household Food Security, Rrevised 2000*, USDA/FNS, 2000.

Exhibit C-2

Correspondence Between Food Security Scale Values and Food Security Status

Scale Value	Food Security Status Category
0.0 to 2.2	Food secure
2.4 to 4.4	Food insecure without hunger
4.7 to 6.4	Food insecure with hunger, moderate
6.6 to 9.3	Food insecure with hunger, severe

Source: *Guide to Measuring Household Food SecurityGuide to Measuring Household Food Security, Revised 2000,* USDA/FNS, 2000.

ERS suggests that imputation is appropriate if there are valid responses to three or more questions.

Among NSWP households, incomplete data were obtained for 11.6 percent of households with children and 6.4 percent of households without children. After implementing the procedures described above, food security status was determined for all households without children, and for 98.9 percent of households with children.

Food Security Measurement for Households with Young Children

As noted in Chapter 3, there is some concern that the food security scale may understate hunger in households with very young children. This concern arises because the food security scale measures the condition of the household as a group, taking into account the responses to questions about both adult and child food security.

To determine household food security, households without children are administered ten survey items, whereas households with children are administered 18 survey items. A household without children is identified as hungry if it responds affirmatively to six of ten questions in the food security module; a household with children is identified as hungry if it responds affirmatively to eight of 18 questions (see Exhibits C-1 and C-2).

Research shows, however, that very young children are generally protected from hunger whereas "adults undergo comparatively severe levels of hunger for themselves before the first indications of hunger appear among the children."[2] As a result, if there are two households—one with children and one without children—that respond identically with six affirmative responses to the ten adult survey items, the household without children will be identified as hungry and the household with children will be identified as food insecure without hunger. The adult hunger will appear as household hunger only when two affirmative responses are obtained from among the eight child questions.

2 Gary Bickel *et al., Guide to Measuring Household Food Security, Revised 2000,* Alexandria, VA: USDA/FNS/OANE, March 2000.

Analysis conducted by USDA ERS (of CPS Food Security Supplement data) shows that the food security scale substantially understates the prevalence of hunger in households in which the oldest child is two years or younger.[3] In these households the ten-item scale (excluding the child items) finds about 45 percent more households with hunger than does the 18-item scale. In other words, the measure of adult hunger is inconsistent with the measure of household hunger. This is not true of households that include older children—when households contain older children the measure of household hunger (18-item scale) and adult hunger (ten-item scale) are generally consistent. Overall, for households with children, the two scales find exactly the same prevalence of hunger.

The food security measurements presented in Chapter 3 are based on the current guidelines for the food security scale, using the ten-item scale for households without children and the 18-item scale for households with children. Because the WIC population contains a disproportionate number of families with very young children, we also examined the potential bias in the food security scale, as suggested by Mark Nord of USDA ERS. Exhibit C-3 presents the distribution of food security status among WIC families, based on the ten-item scale regardless of whether children are present in the household.

Exhibit C-3 shows estimates of hunger (food insecure with moderate hunger plus food insecure with severe hunger) that are nearly identical to that shown in Exhibit 3-39, for the entire WIC population. Families of postpartum women and infants, however, are identified with slightly higher rates of hunger when the ten-item scale is used for all households. This difference is consistent with findings of potential bias for families with young children obtained by USDA ERS from the CPS supplement. Efforts are currently underway to refine the food security module to provide better indicators of child hunger and to better define hunger among households with children.[4]

Procedures for Calculating Food Spending per Adult Male Equivalent

NSWP collected information from each respondent about total weekly food spending. Because food spending varies with family size and ages of family members, total weekly food spending for each family was converted to an amount of spending per adult male equivalent (AME).

3 Per conversations with Mark Nord, USDA ERS.

4 Mark Nord, "Problems with Estimating the Prevalence of Child Hunger," *Second Food Security Measurement and Research Conference, Volume I: Proceedings*, USDA/ERS/FANRR-11-1, February 2001.

Exhibit C-3

Distribution of Adult Food Security Status, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Food security status							
Food secure	74.5	75.1	78.8	75.9	80.3	80.4	79.3
	(2.7)	(3.7)	(2.6)	(2.6)	(2.5)	(2.5)	(2.2)
Food insecure without hunger	12.9	15.3	13.2	13.5	10.5	12.1	12.0
	(1.5)	(3.3)	(2.2)	(1.7)	(1.6)	(2.3)	(1.7)
Food insecure with moderate hunge	10.0	8.8	6.2	8.5	7.1	6.1	6.9
	(1.8)	(1.6)	(1.3)	(1.2)	(1.4)	(1.4)	(1.1)
Food insecure with severe hunger	2.7	0.8	1.9	2.0	2.1	1.4	1.7
	(0.9)	(0.3)	(0.7)	(0.6)	(0.8)	(0.5)	(0.4)
Not reported	0.6	0.5	3.2	1.4	1.2	0.9	1.1
	(0.3)	(0.3)	(2.5)	(0.8)	(0.5)	(0.4)	(0.4)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

The food security measure is a composite scale based on responses to the ten adult survey questions.

One AME is equal to an adult male's daily recommended energy allowance, measured in kilocalories. To calculate food spending per AME, the size of the family is expressed in terms of "adult male equivalents" as follows:

- Each family member is assigned the recommended daily energy allowance based on age and gender, as shown in Exhibit C-4.
- The recommended energy allowances of all family members are totaled.
- The total energy allowance for the family is divided by the recommended energy allowance of an adult male (1,800) to yield family size in terms of AMEs.
- Total weekly food spending per AME is equal to total weekly food spending divided by family size expressed as AMEs.

Exhibit C-4

Daily Recommended Energy Allowance, by Gender and Age

	Recommended Energy Allowance	
Age	**Males**	**Females**
Less than 1 year	500	500
1-3 years	740	740
4-6 years	950	950
7-10 years	1,130	1,130
11-14 years	1,440	1,310
15-18 years	1,760	1,370
19-24 years	1,780	1,350
25-50 years	1,800	1,380
51 years and older	1,530	1,280
Pregnant women		+300
Lactating women		+300

If gender is missing, the average of male and female values is used.

Source: National Resource Council, *Recommended Dietary Allowances.* Washington, DC: National Academy Press, 1989.

Appendix D

Survey Instruments

PLACE CASE ID LABEL HERE

PLACE LOCAL AGENCY/SITE LABEL HERE

OMB Number 0584-0484
Expiration Date 10/31/2000

NATIONAL SURVEY OF WIC PARTICIPANTS AND THEIR LOCAL AGENCIES

In-Person Interview

1. Field Data Collector _____

2. Sampled Person _____
Copy name from Sampling Worksheet.

3. Certification Category P BF PP I C
Circle category on Sampling Worksheet.

4. Today's date _____ / /_____
mm dd

5. Time at start of interview _____: _____ a.m.
hr min p.m.

INTERVIEWER - READ INTRODUCTION CARD

6. RESPONDENT NAME

To be sure that we can match this questionnaire with (YOUR / CHILD'S) **WIC records, please tell me your name.**
Enter respondent's name on line 1 of household roster, next page. Go to 7.

7. CERTIFICATION CATEGORY

INTERVIEWER- *Confirm with respondent the certification category from the Sampling Worksheet.*

(YOU / NAME OF CHILD) **are (is) here to be certified as** [PREGNANT / BREASTFEEDING / POSTPARTUM / INFANT / CHILD] **WIC participant. Is that correct?**

☐ 1 Yes - *Go to item 8.*
☐ 2 No - *See note below.*

If there is a discrepancy between certification category on Sampling Worksheet and category reported by respondent, follow instructions on RESOLVING DISCREPANCIES IN CERTIFICATION CATEGORY card.

8. INTERVIEWER CHECK - Is sampled person a WIC infant or child?

☐ 1 Yes - *Go to Item 9.*
☐ 2 No - *Go to Item 10.*

9. GUARDIANSHIP

Do you and (NAME OF CHILD) **live in the same household?**

☐ 1 Yes - *Go to next page.*
☐ 2 No - *See note*

INTERVIEWER- IF RESPONDENT DOES NOT LIVE IN SAME HOUSEHOLD AS SAMPLED INFANT OR CHILD, SAY,

Thank you for your time. I need to talk with someone who lives in the same household as (NAME OF CHILD).

Skip to Section I on last page.

10. WIC HISTORY

Is this your first certification in WIC?

☐ 1 Yes - *Go to next page.*
☐ 2 No, received WIC foods last month *Go to item 13.*
☐ 3 No, was in WIC at an earlier time *Go to item 11.*

11. LAST ENROLLED

When were you last enrolled in WIC?

_____ month

_____ year

12. WHY LEFT WIC

What were the reasons for your leaving the WIC program?

CHECK ALL THAT APPLY

☐ 1 **Not eligible any more**
☐ 2 **No longer needed the food benefit**
☐ 3 **The program was too much effort**
☐ 4 **I went back to work**
☐ 5 **Other** _____

13. FIRST WIC CERTIFICATION

How old were you when first enrolled in WIC?

_____ YEARS

14. WIC EXPERIENCE

Were you ever enrolled when you were- (CHECK ALL THAT APPLY)

☐ 1 **pregnant**
☐ 2 **breastfeeding**
☐ 3 **postpartum**
☐ 4 **infant**
☐ 5 **child**

Section A - Household Enumeration

COMPLETE ITEMS 2-12 FOR ALL PERSONS LIVING OR STAYING WITH RESPONDENT.

INTERVIEWER - *Complete each question for all members of household then move to next question. In reading each question, replace "..." with name in item 2.*

1. PERSON NUMBER	2. HOUSEHOLD ROSTER **What are the names of all persons who live or stay with you? Start with the names of your immediate family members, then other relatives, and then persons who usually live with you who are not related to you.** *Enter first name and last name.*	2a. Check if Sampled Person	3. RELATIONSHIP TO RESPONDENT **What is ...'s relationship to you?** (HAND CARD) *Enter code below.*	GO TO ITEM 4.	5. SEX *Ask if not apparent* **Is ... male or female?** Male / Female	6. AGE **What was** (YOUR / ...'s) **age on** (YOUR /HIS/ HER) **last birthday?** *Record number of months if age under one year.* Years / Mos	7. BIOLOGICAL PARENT *Ask if not apparent.* (ARE YOU / IS ...) **the biological parent of any children in this household?** *If YES,. enter person numbers of . . .'s children from Column 1 to boxes below.*	8. USUAL RESIDENCE **Does ... have a usual residence somewhere else?** *If YES, ask-* **Where is that?** (HAND CARD) *Enter code in 8a.* YES / NO	8a. USUAL RESIDENCE CODE	GO TO ITEM 9.	11. FINANCIAL SUPPORT **Now I have some questions about financial support arrangements among household members.** *Start with person 02.* 11a. PROVIDE SUPPORT *Ask if age 16 or older-* **Last month, did ... provide** (YOU / CHILD) **with any financial support or pay any household expenses?** *If YES, go to item 12.* YES / NO / DK 11b. RECEIVE SUPPORT **Last month, did ... receive any financial support from you?** *If YES, go to item 12.* YES / NO / DK 11c. COMMON SUPPORT **Last month, did someone in the household provide support to both** (YOU / CHILD) **and ...?** YES / NO / DK	12. INT. CHECK ITEM *Mark (X) if YES in 11a, or 11b, or 11c.* *next page.*
01		☐1	0		☐1 ☐2			☐1 ☐2				X
02		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
03		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
04		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
05		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
06		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
07		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
08		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	
09		☐1			☐1 ☐2			☐1 ☐2			☐1 ☐2 ☐8 ☐1 ☐2 ☐8 ☐1 ☐2 ☐8	

4. I have listed ... (Read names from item 2.) **Have I missed-**

	YES	NO
a. any babies or small children?	☐1	☐2
b. anyone who usually lives with you but is away now traveling, at school, or in a hospital?	☐1	☐2
c. any lodgers, boarders, or persons you employ who live with you?	☐1	☐1
d. anyone else staying with you?	☐1	☐2

If respondent answers YES to any item (a)-(d), ask for name of household member and enter name in roster (item 2) above. Go to

RELATIONSHIP CODES

0 Respondent	12 Brother/sister
1 Spouse	13 Grandparent
2 Partner	14 Uncle/aunt
3 Son/daughter	15 Cousin
4 Step-child	16 Nephew/niece
5 Foster child	17 Father-in-law
6 Mother	18 Mother-in-law
7 Step-mother	19 Bro/sis-in-law
8 Foster mother	20 Other-in-law
9 Father	21 Roomer/ boarder
10 Step-father	22 Other non-relative

USUAL RESIDENCE

1 Military quarters	5 Working away from home
2 School or institution	6 Separate residence
3 Vacation or in hospital	7 Jail/prison
4 At college	9 Other

9. Do all the persons in this household live or eat together?

☐1 YES
☐2 NO

Go to Item 10.

10. INTERVIEWER CHECK

Enter an "X" in item 12 for household members with relationship code 4 or less (See Item 3).

Ask item 11 for household members without an "X" marked in item 12.

*** Complete the HOUSEHOLD ENUMERATION WORKSHEET before turning page. ***

Section B - Child Roster

INTERVIEWER - *Complete all items for each child then go to next child. In reading each question, replace "..." with name in item 1.*

1. CHILD ROSTER

INTERVIEWER - Copy person number, name, and age from **GREEN** section of Household Enumeration Worksheet.

If no children in **GREEN** section of worksheet, go to Section C.

If age under one year, record number of months and enter (X) in Mos

2. DATE OF BIRTH — **What is ...'s date of birth?**

3. INTERVIEWER CHECK

4. WIC REC'D WHEN PREGNANT — **Did you receive WIC while you were pregnant with ...?** *If NO, go to item 5b.*

5a. WIC START — **During which month of pregnancy did you enroll in WIC when you were pregnant with ... ?** *Enter month (1 to 9)*

5b. POST-PARTUM WIC — **Did you receive WIC benefits for yourself after ... was born?**

6. BREAST-FEEDING — **Was ... ever breastfed?** *If NO, go to 7.*

6a. BREAST-FED NOW? — *If age less than 1 year, ask-* **Is ... currently being breastfed?**

6b. BREAST-FEEDING DURATION — **How old was ... when breast-feeding ended?** *Enter age and check if age is in days, weeks, or months.*

7. INTERVIEWER CHECK

8. WIC NOW — **Is ... receiving WIC now?** *If YES, go to 9. If NO, ask 8a.*

8a. WIC EVER — **Was ... ever enrolled in WIC?** *If YES, ask 9. If NO, go to next child.*

9. AGE WIC BEGAN — **How old was ... when ... first enrolled in WIC?** *Enter age and check if age is in days, weeks, or months.*

10. AGE WIC ENDED — **How old was ... when ... stopped receiving WIC?** *Enter age and check if age is in days, weeks, or months.*

11. BREAK IN WIC — **Did ... ever leave and reenter the WIC program?** *If NO, go to next child.*

12. WHY LEFT — **Why did ... leave the WIC program? Was it because-** (READ FROM BELOW) *Enter **all** codes that apply.*

PERSON #	NAME	AGE	Mos	MONTH / DAY/ YEAR	3.	4. YES	4. NO	5a.	5b. YES	5b. NO	6. YES	6. NO	6a. YES	6a. NO	6b. AGE	6b.	7.	8. YES	8. NO	8a. YES	8a. NO	9. AGE	9.	10. AGE	10.	11. YES	11. NO	12.
				/ /	↓	☐ 1	☐ 2		☐ 1	☐ 2	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos	↓	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos		___days ___wks ___mos	☐ 1	☐ 2	
				/ /	↓	☐ 1	☐ 2		☐ 1	☐ 2	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos	↓	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos		___days ___wks ___mos	☐ 1	☐ 2	
				/ /	↓	☐ 1	☐ 2		☐ 1	☐ 2	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos	↓	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos		___days ___wks ___mos	☐ 1	☐ 2	
				/ /	↓	☐ 1	☐ 2		☐ 1	☐ 2	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos	↓	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos		___days ___wks ___mos	☐ 1	☐ 2	
				/ /	↓	☐ 1	☐ 2		☐ 1	☐ 2	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos	↓	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos		___days ___wks ___mos	☐ 1	☐ 2	
				/ /	↓	☐ 1	☐ 2		☐ 1	☐ 2	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos	↓	☐ 1	☐ 2	☐ 1	☐ 2		___days ___wks ___mos		___days ___wks ___mos	☐ 1	☐ 2	

3. INTERVIEWER CHECK ITEM
Is respondent the biological mother of (NAME OF CHILD)?
Check for relationship code 3 for child in Item 3 of Section A.
☐ 1 Yes- *Go to item 4.*
☐ 2 No- *Go to item 7.*

7. INTERVIEWER CHECK ITEM
Is (NAME OF CHILD) less than 5 years old?
☐ 1 Yes- *Go to item 8.*
☐ 2 No- *Go to item 8a.*

CODES - WHY LEFT WIC PROGRAM
1 Not eligible
2 No longer needed benefits
3 Program was too much effort
4 Parent/guardian went back to work
5 Other

Section B - Child Roster - Continued

13. INTERVIEWER CHECK ITEM

Are any children on the Household Enumeration Worksheet age 3-5?

☐ 1 YES-*Go to item 14.*
☐ 2 NO- *Go to item 15.*

14. HEAD START

Do any children in your household attend Head Start?

If YES,

Who is that?

INTERVIEWER- *Enter person numbers from Household Enumeration Worksheet.*

☐ 1 YES
☐ 2 NO

☐ ☐

15. INTERVIEWER CHECK ITEM

Are any relationship codes equal to 5? (See Item 3 in Section A.)

☐ 1 YES-*Go to item 16.*
☐ 2 NO- *Go to Section C.*

16. FOSTER CHILDREN INTERVIEWER - For each person with relationship code equal to 5, copy person number and name to space at right.	PERSON # ☐ NAME _____	PERSON # ☐ NAME _____	PERSON # ☐ NAME _____	PERSON # ☐ NAME _____
17. Who has legal responsibility for (NAME OF CHILD)? (READ CHOICES AND CHECK ONE) 17a. INTERVIEWER - *If* PERSON IN HOUSEHOLD, *record person number of guardian in box.*	☐1 **Person in household** ☐2 **Person outside household** ☐3 **Agency** PERSON # ☐	☐1 **Person in household** ☐2 **Person outside household** ☐3 **Agency** PERSON # ☐	☐1 **Person in household** ☐2 **Person outside household** ☐3 **Agency** PERSON # ☐	☐1 **Person in household** ☐2 **Person outside household** ☐3 **Agency** PERSON # ☐

Section C - Adult Roster

INTERVIEWER- *Complete all items for each adult then go to next adult. In reading each question, replace "..." with name in item 1.*

1. ADULT ROSTER

I now have some questions about each adult in your household.

INTERVIEWER - Copy person number and name from **BLUE** section of Household Enumeration Worksheet.

2. GO TO ITEM 2.

5. MARITAL STATUS

Are you (is ...) now -
1 - Married?
2 - Widowed?
3 - Divorced?
4 - Separated?
5 - Never married?
(HAND CARD)
Enter code below.

6. EMPLOYMENT STATUS

Are you (is ...) currently working full-time or part-time, not counting work around the house?
If YES, go to 6a.
If NO, ask 6b.

6a. ARMED FORCES

Are you (is ...) now in the Armed Forces?
Go to item 7.

6b. REASON NOT WORKING

Are you (is ...) currently-
1. Unemployed
2. Keeping house
3. Going to school
4. Unable to work
5. On temporary layoff
6. Retired
(HAND CARD)
Enter code below.

7. SEASONAL WORK

During the past 24 months, have you (has ...) been employed as a seasonal farm worker either here or in some other place?

8. EDUCATION LEVEL

What is the highest grade or year of regular school you (...) completed?
Enter code from below.
If less than 12, go to next person.
If 12 or more, go to item 9a.

9a. COLLEGE ATTENDANCE

Are you (is ...) currently enrolled in a college or university -
1 - Full-time?
2 - Part-time?
3 - Not at all?
Enter code.
If "1" or "2", go to item 9b.
If "3," go to next person.

9b. AWAY AT COLLEGE

Do you (does ...) live away at college?
Go to next adult.

Person Number	Name	2.	5.	6. YES	6. NO	6a. YES	6a. NO	6b.	7. YES	7. NO	8.	9a.	9b. YES	9b. NO
		↓		☐ 1	☐ 2	☐ 1	☐ 2		☐ 1	☐ 2			☐ 1	☐ 2
		↓		☐ 1	☐ 2	☐ 1	☐ 2		☐ 1	☐ 2			☐ 1	☐ 2
		↓		☐ 1	☐ 2	☐ 1	☐ 2		☐ 1	☐ 2			☐ 1	☐ 2
		↓		☐ 1	☐ 2	☐ 1	☐ 2		☐ 1	☐ 2			☐ 1	☐ 2
		↓		☐ 1	☐ 2	☐ 1	☐ 2		☐ 1	☐ 2			☐ 1	☐ 2
		↓		☐ 1	☐ 2	☐ 1	☐ 2		☐ 1	☐ 2			☐ 1	☐ 2

2. INTERVIEWER CHECK

Is sampled person a pregnant woman?

☐ 1 YES - Go to 3a.
☐ 2 NO - Go to 3b.

3a. **Are any other women in your household pregnant?**

☐ 1 YES- Go to 4.
☐ 2 NO- Go to 5.

3b. **Is anyone in your household pregnant?**

☐ 1 YES- Go to 4.
☐ 2 NO- Go to 5.

4. **Who is that?**

INTERVIEWER - ENTER PERSON NUMBERS FOR PREGNANT WOMEN IN BOXES BELOW.

☐ ☐ ☐

EDUCATION LEVEL	
Never attended	00
Elementary school	01 02 03 04 05 06 07 08
High School	09 10 11 12
Years 1-4 of college	13 14 15 16
1st year of graduate school	17
2+ years of graduate school	18

Section D - Individual Income and Earnings

a. RESPONDENT PERSON NUMBER: 01 b. RESPONDENT NAME: _____

INTERVIEWER - COPY RESPONDENT NAME TO SPACE AT RIGHT.

My next questions are about income received by your household. I'm first going to ask you about your income, and then about the income of each other adult in your household. I realize that these questions may seem intrusive, but they are important in understanding the financial needs of WIC participants. As with other questions in this survey, I want to reassure you that the information you provide to us is kept confidential.

1. During last month did you receive wages or salary? Include commissions, tips, Armed Forces pay and allowances.
☐ 1 YES ☐ 2 NO

If YES- **What was the amount of wages or salary that you received last month before any deductions for taxes or anything else?**
$ _____.00

2. How about during all of last year? How much did you receive in wages or salary during the past 12 months? Include commissions, tips, Armed Forces pay and allowances.
$ _____.00
OR
☐ 1 NONE

3. During the past 12 months, did you receive any income from service in the military?
☐ 1 YES- *Go to 4.*
☐ 2 NO- *Go to 5.*

4. How much of the wages and salary you received during the past 12 months was from military pay? Please include money received from special pays, allowances, and bonuses. Do not include military housing allowance.
$ _____.00

5. During last month did you receive income or loss from your own nonfarm business, partnership, or professional practice?
☐ 1 YES ☐ 2 NO

If YES- **What was the amount of income or loss after expenses last month?**
$ _____.00
INTERVIEWER - CHECK BOX IF LOSS.
☐ 1 LOSS

6. During the past 12 months how much income or loss did you receive from your own nonfarm business, partnership, or professional practice?
$ _____.00
INTERVIEWER - CHECK BOX IF LOSS.
☐ 1 LOSS
OR
☐ 1 NONE

7. During last month did you receive income or loss from your own farm ?
☐ 1 YES ☐ 2 NO

If YES, **What was the amount of income or loss after expenses last month?**
$ _____.00
INTERVIEWER - CHECK BOX IF LOSS.
☐ 1 LOSS

8. During the past 12 months how much income or loss did you receive from your own farm?
$ _____.00
INTERVIEWER - CHECK BOX IF LOSS.
☐ 1 LOSS
OR
☐ 1 NONE

UNEARNED INCOME

My next questions are all about income that you received during last month.

During last month, did you receive any income from -

9. Unemployment compensation? ☐ 1 YES ☐ 2 NO

If YES- **What was the total amount of unemployment compensation you received last month?**
$ _____.00

10. Worker's compensation? ☐ 1 YES ☐ 2 NO

If YES, **What was the total amount of you received last month?**
$ _____.00

11. Income from veteran's benefits? ☐ 1 YES ☐ 2 NO

If YES, **What was the total amount you received last month?**
$ _____.00

During last month did you receive from the U.S. Government any money-

12a. From Social Security checks? ☐ 1 YES ☐ 2 NO

12b. From Railroad Retirement checks? ☐ 1 YES ☐ 2 NO

If YES in item 12a and/or 12b, ask-

12c. What was the amount of Social Security or Railroad Retirement payments you received last month?
$ _____.00

During last month did you receive -

13a. Any Supplemental Security Income checks from the U.S. Government? ☐ 1 YES ☐ 2 NO

13b. Any Supplemental Security Income checks from the State or local Government? ☐ 1 YES ☐ 2 NO

If YES in item 13a and/or 13b, ask-

13c. What was the total received last month in Supplemental Security Income checks?
$ _____.00

Go to item 14.

PUBLIC ASSISTANCE

Besides food stamps and TANF (Temporary Aid to Needy Families) which we will talk about a little later, during last month did you receive any public assistance from any of the following-

14. General Assistance? ☐ 1 YES ☐ 2 NO
If YES- **How much did you receive last month?** $ _____.00

15. Low Income Energy Assistance Program? ☐ 1 YES ☐ 2 NO

16. Non-military housing subsidy? ☐ 1 YES ☐ 2 NO

17. Emergency Assistance? ☐ 1 YES ☐ 2 NO

18. Black Lung benefits? ☐ 1 YES ☐ 2 NO
If YES- **How much did you receive last month?** $ _____.00

19. Other public assistance? ☐ 1 YES ☐ 2 NO
If YES, ask-
Which program is that from? _____
How much did you receive last month? $ _____.00

20 INTERVIEWER CHECK ITEM
Check Section C, item 9a. Is respondent currently enrolled in college full-time or part-time?
☐ 1 YES- *Go to 21a.*
☐ 2 NO- *Go to instructions at bottom of*

EDUCATION BENEFITS

21a. Last month, were you receiving any educational benefits for veteran's under the GI Bill or VEAP? ☐ 1 YES ☐ 2 NO

21b. Last month, were you receiving educational benefits such as scholarships, fellowships, or grants? ☐ 1 YES ☐ 2 NO

If YES to 21a or 21b, ask-

22a. How much educational aid did you receive? $ _____.00

22b. For what time period did that cover?
☐ 1 semester
☐ 2 quarter
☐ 3 school year

22c. How much of that money was spent on living expenses- that is, excluding money used for tuition, fees, and books?
$ _____.00

INTERVIEWER INSTRUCTIONS- Complete Section D for next household member listed in **BLUE** section of household enumeration worksheet. When Section D is complete for all persons listed in **BLUE** section, go to Section E

Section D - Individual Income and Earnings

INTERVIEWER - This page must be completed for each adult listed in the **BLUE** section of the Household Enumeration Worksheet. Start with person listed after respondent. Copy person number and name to space at right.

Use additional sheets as necessary.

a. PERSON NUMBER: b. NAME:

Now I'm going to ask you about (READ NAME FROM ABOVE)**'s income.**

INTERVIEWER- Replace "..." with NAME OF PERSON.

1. During last month did ... receive wages or salary? Include commissions, tips, Armed Forces pay and allowances. ☐ 1 YES ☐ 2 NO

If YES- **What was the amount of wages/salary received last month before any deductions for taxes or anything else?** $ _____.00

2. How about during all of last year? How much did ... receive in wages or salary during the past 12 months? Include commissions, tips, Armed Forces pay and allowances. $ _____.00 OR ☐ 1 NONE

3. During the past 12 months, did ... receive any income from service in the military? ☐ 1 YES- *Go to 4.* ☐ 2 NO- *Go to 5.*

4. How much of the wages and salary received during the past 12 months was from military pay? Please include money received from special pays, allowances, and bonuses. Do not include military housing allowance. $ _____.00

5. During last month did ... receive income or loss from ...'s own nonfarm business, partnership, or professional practice? ☐ 1 YES ☐ 2 NO

If YES- **What was the amount of income or loss after expenses last month?** $ _____.00

INTERVIEWER - CHECK IF LOSS. ☐ 1 LOSS

6. During the past 12 months how much income or loss did you receive from your own nonfarm business, partnership, or professional practice? $ _____.00

INTERVIEWER - CHECK BOX IF LOSS. ☐ 1 LOSS OR ☐ 1 NONE

7. During last month did you receive income or loss from your own farm ? ☐ 1 YES ☐ 2 NO

If YES, **What was the amount of income or loss after expenses last month?** $ _____.00

INTERVIEWER - CHECK BOX IF LOSS. ☐ 1 LOSS

8. During the past 12 months how much income or loss did you receive from your own farm? $ _____.00

INTERVIEWER - CHECK BOX IF LOSS. ☐ 1 LOSS OR ☐ 1 NONE

UNEARNED INCOME

My next questions are all about income that ... received during last month.

During last month, did ... receive any income from -

9. Unemployment compensation? ☐ 1 YES ☐ 2 NO

If YES- **What was the total amount of unemployment compensation ... received last month?** $ _____.00

10. Worker's compensation? ☐ 1 YES ☐ 2 NO

If YES, **What was the total amount received last month?** $ _____.00

11. Income from veteran's benefits? ☐ 1 YES ☐ 2 NO

If YES, **What was the total amount received last month?** $ _____.00

During last month did ... receive from the U.S. Government any money-

12a. From Social Security checks? ☐ 1 YES ☐ 2 NO

12b. From Railroad Retirement checks? ☐ 1 YES ☐ 2 NO

If YES in item 12a and/or 12b, ask-

12c. What was the amount of Social Security or Railroad Retirement payments received last month? $ _____.00

During last month did ... receive -

13a. Any Supplemental Security Income checks from the U.S. Government? ☐ 1 YES ☐ 2 NO

13b. Any Supplemental Security Income checks from the State or local Government? ☐ 1 YES ☐ 2 NO

If YES in item 13a and/or 13b, ask-

13c. What was the total received last month in Supplemental Security Income checks? $ _____.00

Go to item 14.

PUBLIC ASSISTANCE

Besides food stamps and TANF (Temporary Aid to Needy Families) which we will talk about a little later, during last month did . . . receive any public assistance from any of the following-

14. General Assistance? ☐ 1 YES ☐ 2 NO

If YES- **How much did . . . receive last month?** $ _____.00

15. Low Income Energy Assistance Program? ☐ 1 YES ☐ 2 NO

16. Non-military housing subsidy? ☐ 1 YES ☐ 2 NO

17. Emergency Assistance? ☐ 1 YES ☐ 2 NO

18. Black Lung benefits? ☐ 1 YES ☐ 2 NO

If YES- **How much did . . . receive last month?** $ _____.00

19. Other public assistance? ☐ 1 YES ☐ 2 NO

If YES, ask-

Which program is that from? _____

How much did . . . receive last month? $ _____.00

20 INTERVIEWER CHECK ITEM

Check Section C, item 9a. Is person currently enrolled in college full-time or part-time? ☐ 1 YES- *Go to 21a.* ☐ 2 NO-*Go to instructions at bottom of*

EDUCATION BENEFITS

21a. Last month, was . . . receiving any educational benefits for veteran's under the GI Bill or VEAP? ☐ 1 YES ☐ 2 NO

21b. Last month, was . . . receiving educational benefits such as scholarships, fellowships, or grants? ☐ 1 YES ☐ 2 NO

If YES to 21a or 21b ask-

22a. How much educational aid did ... receive ? $ _____.00

22b. For what time period did that cover? ☐ 1 semester ☐ 2 quarter ☐ 3 school year

22c. How much of that money was spent on living expenses- that is, excluding money used for tuition, fees, and books? $ _____.00

INTERVIEWER INSTRUCTIONS- Complete Section D for next household member listed in **BLUE** section of household enumeration worksheet. When Section D is complete for all persons listed in **BLUE** section, go to Section E

Section E - Household Income and Food Spending

1. INTERVIEWER CHECK

Do all persons on the household roster have an (X) marked in item 12 in Section A?

☐ 1 YES - *Go to 2.*

2. ☐

In the next set of questions, I will ask you about your household - that is, the persons with whom you share major expenses. The persons I'm including in your household are (READ NAMES OF ALL PERSONS LISTED ON THE HOUSEHOLD ENUMERATION WORKSHEET.)

REGULAR INCOME SOURCES

During last month, did you (or any member of your household) receive any money, even if only a small amount, from any of the following-

2. Interest on savings accounts or bonds?	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount of interest received by all household members last month?**	$ _____.00
3. Regular income from dividends, royalties, estates, or trusts?	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount received by all household members last month?**	$ _____.00
4. Income from pensions or annuities from private companies, military, Government, IRA, or Keogh?	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount received by all household members last month?**	$ _____.00
5a. Net income or loss from any type of rental of rooms or living units?	☐ 1 YES ☐ 2 NO
If YES, ask- **b. (1) How much net income or loss was received from roomers or boarders last month?**	$ _____.00
c. INTERVIEWER- CHECK IF LOSS.	☐ 1 Loss
d. (2) How much net income or loss was received from other rental units last month?	$ _____.00
e. INTERVIEWER- CHECK IF LOSS.	☐ 1 Loss
6. Regular contributions from other sources such as gifts from relatives or friends?	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount received last month by all household members?**	$ _____.00

ALIMONY

7. During last month, did you (or any member of your household) receive any money from someone living outside your household for alimony?	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount of alimony received by ALL household members last month?**	$ _____.00

CHILD SUPPORT

8a. During last month, did you (or any member of your household) receive any money from someone living outside your household for child support?	☐ 1 YES ☐ 2 NO
If YES, ask (b) and (c)- **b. What was the total amount received by ALL household members last month?**	$ _____.00
c. Was this a monthly payment or a lump sum payment?	☐ 1 monthly ☐ 2 lump sum

LUMP SUM INCOME

9. Now I have a question about the past year. During the past year, did you (or any member of your household) receive any property or money, valued at over $100, from estates, trusts, prizes, lottery winnings,	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount received?**	$ _____.00

PUBLIC ASSISTANCE

10. Do you live in public housing or do you (and your family) receive a rent subsidy or pay a lower rent because the federal, state, or local government is paying part of the cost?	☐ 1 YES ☐ 2 NO
11. During last month, did you (or any member of your household) receive any payments from TANF (Temporary Aid for Needy Families)? This is the program that replaced	☐ 1 YES ☐ 2 NO
If YES- **What was the total amount of TANF received by ALL household members last month?**	$ _____.00
12. Last month, did you (or any member of your household) receive any food stamp benefits from the government's Food Stamp	☐ 1 YES ☐ 2 NO
If NO, skip to 14. *If YES-* **How many dollars worth of food stamp benefits did your household receive last month?**	$ _____.00

FOOD SPENDING

13a. In addition to what your household bought with food stamps, did your household spend any money on food that you used at home last month?	☐ 1 YES ☐ 2 NO
INTERVIEWER- PROBE IF NECESSARY. *If YES, ask-* **b. How much?**	$ _____.00
c. Is that per week or the entire month?	☐ 1 wk ☐ 2 mo
14. In an *average week,* how much does your household spend on food that you use at home? [INTERVIEWER - this includes food stamp purchases and non-food stamp purchases.]	$ _____.00
Is that per week or per month?	☐ 1 wk ☐ 2 mo
15. In an *average week,* about how much does your household spend eating out, not counting meals at work or at school?	$ _____.00
Is that per week or per month?	☐ 1 wk ☐ 2 mo

FOOD AND OTHER ASSISTANCE

Is anyone in your household now receiving benefits from-

	YES	NO	Don't Know
16. Food Distribution Program on Indian Reservations (FDPIR)?	☐ 1	☐ 2	☐ 8
17. The School Breakfast program (SBP)?	☐ 1	☐ 2	☐ 8
18. The National School Lunch Program?	☐ 1	☐ 2	☐ 8
19. The Summer Feeding Program or the Summer Food Service Program?	☐ 1	☐ 2	☐ 8
20. Temporary Emergency Food Assistance Program (TEFAP)	☐ 1	☐ 2	☐ 8
21. The Commodity Supplemental Food Program (CSFP)?	☐ 1	☐ 2	☐ 8
22. Local food pantries?	☐ 1	☐ 2	☐ 8

Section F - Food Security - *Ask these items for entire household as a group.*

FOOD SECURITY

The next questions ask about your household and access to food. The persons I'm including in your household are (READ NAMES OF ALL PERSONS LISTED ON HOUSEHOLD ENUMERATION WORKSHEET).

1. Which of the following statements best describes the food eaten in your household during the last 12 months? Did your household-

CHECK ONE ITEM.

- **Have enough to eat and the kinds of food you wanted** ☐ 1 *Go to Section G.*
- **Have enough to eat, but not always the kinds of food you wanted** ☐ 2 *Skip to item 3.*
- **Sometimes not have enough to eat** ☐ 3 *Go to item 2.*
- **Often not have enough to eat** ☐ 4 *Go to item 2.*

2. Do the following reasons why people don't always have *enough to eat* apply to your household?	YES	NO	Don't Know
a. Not enough money for food	☐ 1	☐ 2	☐ 8
b. Too hard to get to the store	☐ 1	☐ 2	☐ 8
c. On a diet	☐ 1	☐ 2	☐ 8
d. Not able to cook or eat because of health problems	☐ 1	☐ 2	☐ 8
e. No working stove	☐ 1	☐ 2	☐ 8

3. Do the following reasons why people don't always have the *kinds of food* they want or need apply to your household?	YES	NO	Don't Know
a. Not enough money for food	☐ 1	☐ 2	☐ 8
b. Too hard to get to the store	☐ 1	☐ 2	☐ 8
c. On a diet	☐ 1	☐ 2	☐ 8
d. Not able to cook or eat because of health problems	☐ 1	☐ 2	☐ 8
e. No working stove	☐ 1	☐ 2	☐ 8

4. Considering the past 12 months, please tell me whether or not the following statements were OFTEN, SOMETIMES, or NEVER true of your household.	OFTEN	SOMETIMES	NEVER
a. We worried whether our food would run out before we got money to buy more.	☐ 1	☐ 2	☐ 3
b. The food that we bought just didn't last and we didn't have money to get more.	☐ 1	☐ 2	☐ 3
c. We couldn't afford to eat balanced meals.	☐ 1	☐ 2	☐ 3

INTERVIEWER CHECK

4d. Are there any children listed in the **RED** section of the Household Enumeration Worksheet? ☐ 1 YES - *Go to item 4e .* ☐ 2 NO - *Skip to item 5.*

4. (continued)	OFTEN	SOMETIMES	NEVER
e. We relied on only a few kinds of low-cost food to feed the children because we were running out of money to buy food.	☐ 1	☐ 2	☐ 3
f. We couldn't feed the children a balanced meal because we couldn't afford that.	☐ 1	☐ 2	☐ 3

INTERVIEWER - Copy person number and name from **RED** section of Household Enumeration Worksheet to spaces below. Ask question (g) for each child.

g. Considering the past 12 months, please tell me whether or not the following statement was OFTEN, SOMETIMES, or NEVER true- (NAME OF CHILD) **was not eating enough because we just couldn't afford food.**	PERSON#	NAME			
	PERSON#	NAME	☐ 1	☐ 2	☐ 3
	PERSON#	NAME	☐ 1	☐ 2	☐ 3
	PERSON#	NAME	☐ 1	☐ 2	☐ 3
	PERSON#	NAME	☐ 1	☐ 2	☐ 3

	YES	NO	DK
5. In the last 12 months, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food?	☐ 1	☐ 2	☐ 8

a. *If YES* - How often did this happen? (HAND CARD) **Was it ...** (READ CHOICES)	Almost every month	Some months	Only 1 or 2 months	Don't Know
	☐ 1	☐ 2	☐ 3	☐ 8

	YES	NO	DK
6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money to buy food?	☐ 1	☐ 2	☐ 8
7. In the last 12 months, were you ever hungry but didn't eat because you couldn't afford enough food?	☐ 1	☐ 2	☐ 8
8. In the last 12 months, did you lose weight because you didn't have enough money to buy food?	☐ 1	☐ 2	☐ 8
9. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food?	☐ 1	☐ 2	☐ 8

a. If YES- How often did this happen? (HAND CARD) **Was it ...** (READ CHOICES)	Almost every month	Some months	Only 1 or 2 months	Don't Know
	☐ 1	☐ 2	☐ 3	☐ 8

Section F - Food Security (continued)

Complete each question for all children then move to next question. In reading each question, replace . . . with name of child.

INTERVIEWER - Copy person number and name from **RED** section of Household Enumeration Worksheet to spaces below.

If there are no children in the household, go to Section G.

		10. CUT MEALS **In the last 12 months, did you ever cut the size of** (NAME OF CHILD)'s **meals because there wasn't enough money for food?**			11. SKIP MEALS **In the last 12 months, did** (NAME OF CHILD) **ever skip meals because there wasn't enough money for food?** *If No, go to item 12.*			11a. FREQUENCY OF SKIPPED MEALS **How often did this happen?** (READ CHOICES)				12. EVER HUNGRY **In the last 12 months, was** (NAME OF CHILD) **ever hungry but you just couldn't afford more food?**			13. NO FOOD **In the last 12 months, did** (NAME OF CHILD) **ever not eat for a whole day because there wasn't enough money for food?**		
PERSON#	NAME	YES	NO	Don't Know	YES	NO	Don't Know	Almost every month	Some months but not every month	Only 1 or 2 months	Don't Know	YES	NO	Don't Know	YES	NO	Don't Know
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8
		☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 3	☐ 8	☐ 1	☐ 2	☐ 8	☐ 1	☐ 2	☐ 8

Section G - Health Insurance - *Ask these items for sampled person.*

1. INTERVIEWER CHECK ITEM

Is sampled person an infant or child? (SEE ITEM 3 ON PAGE 1)

☐ 1 YES - Questions in this section refer to infant/child. Write name of child here _____ and substitute NAME OF CHILD in all questions below.

☐ 2 NO - Questions in this section refer to respondent. Read "YOU" in questions below.

Now we have a few questions about health care and hospitalization plans. We are interested in all kinds of health insurance plans except plans that pay only for accidents.

2. [Are you / Is NAME OF CHILD**] covered by any kind of private or government health or hospitalization plans or health maintenance organization (HMO) plans?**

PROBE IF NECESSARY. **Examples of health and hospitalization insurance plans include Blue Cross, Blue Shield, Medicaid, Medi-Cal, Medical Assistance, Welfare, Medical Services.**

☐ 1 YES- *Go to 3.* ☐ 2 NO- *Go to 7.* ☐ 8 Don't Know- *Go to 7.*

3. What is the source of (YOUR / NAME OF CHILD's) **health or hospitalization plan?** READ LIST. CHECK ALL THAT APPLY.

	CHECK ALL THAT APPLY
a. Policy from own/SPOUSE'S current employer	☐ 1
b. Policy from own/SPOUSE'S previous employer	☐ 2
c. Policy bought directly from a medical insurance company	☐ 3
d. Medicaid/Medi-Cal/Medical Assistance/Welfare/Medical Services	☐ 4
e. Other, SPECIFY _____	☐ 5

4. From (YOUR / NAME OF CHILD'S) **health insurance plan, are the following services available for free, at additional charge, or not at all-**

	Available for free	Available at extra charge	Not Available	Don't Know
a. Breastfeeding nutrition/support	☐ 1	☐ 2	☐ 3	☐ 8
b. Nutrition education	☐ 1	☐ 2	☐ 3	☐ 8
c. Immunizations	☐ 1	☐ 2	☐ 3	☐ 8
d. Well baby care	☐ 1	☐ 2	☐ 3	☐ 8
e. Well child care	☐ 1	☐ 2	☐ 3	☐ 8

5. INTERVIEWER CHECK ITEM
Is item 3d (box 4) checked?
☐ 1 YES - *Go to item 6.*
☐ 2 NO - *Go to item 8.*

6. Do (YOU / NAME OF CHILD) **receive Medicaid services from a managed care program?**
☐ 1 YES
☐ 2 NO

Go to Section H, next page.

7. Many people do not carry health insurance for various reasons. Which of these statements describes the reasons (YOU / NAME OF CHILD) **do not have health insurance?** READ LIST. CHECK ALL THAT APPLY.

	CHECK ALL THAT APPLY
a. Not eligible for Medicaid or Welfare	☐ 1
b. Not employed - can't afford premiums	☐ 2
c. Not employed - lost job, did not continue coverage	☐ 3
d. Employed, but employer does not offer insurance	☐ 4
e. Employed - employer offers insurance and you are eligible, but cannot afford the premiums	☐ 5
f. Don't believe in or haven't needed health insurance	☐ 6
g. Don't think you can get private health insurance	☐ 7
h. Don't think you can get Medicaid	☐ 8
i. Been refused health insurance due to poor health	☐ 9

Go to item 8.

8. Is anyone in your household currently enrolled in Medicaid?
☐ 1 YES
☐ 2 NO

IF YES, ask - **Who is that?**

INTERVIEWER- *Enter person numbers from Household Enumeration Worksheet to boxes.*

Go to Section H, next page.

Section H - Customer Satisfaction

1. WIC REFERRAL

Who referred/sent you to WIC?

	YES	NO	DON'T KNOW
a. A friend	☐ 1	☐ 2	☐ 8
If YES, ask- **Does friend receive WIC?**	☐ 1	☐ 2	☐ 8
b. Family member	☐ 1	☐ 2	☐ 8
If YES, ask- **Does family member receive WIC?**	☐ 1	☐ 2	☐ 8
c. Doctor/Health professional	☐ 1	☐ 2	☐ 8
If YES, ask- **Is doctor from-**			
Medicaid?	☐ 1	☐ 2	☐ 8
HMO?	☐ 1	☐ 2	☐ 8
Private doctor?	☐ 1	☐ 2	☐ 8
d. No one.	☐ 1	☐ 2	☐ 8
e. Television advertisement	☐ 1	☐ 2	☐ 8
f. Radio advertisement	☐ 1	☐ 2	☐ 8
g. Newspaper advertisement	☐ 1	☐ 2	☐ 8
h. Billboard/poster advertisement	☐ 1	☐ 2	☐ 8
i. Pamphlet	☐ 1	☐ 2	☐ 8
j. Other (specify)_____	☐ 1	☐ 2	☐ 8

2. DIFFICULTIES WITH WIC

I'm going to read a list of things that might make it difficult to participate in the WIC Program. For each one, please tell me if it is a BIG PROBLEM, SOMEWHAT OF A PROBLEM, or NOT A PROBLEM for you.

	BIG	SOME	NONE
a. Lack of transportation to the clinic	☐ 1	☐ 2	☐ 3
b. Inconvenient hours/days clinic is open	☐ 1	☐ 2	☐ 3
c. Services take too much time	☐ 1	☐ 2	☐ 3
d. Waiting space at the clinic is limited	☐ 1	☐ 2	☐ 3
e. Lack of child care	☐ 1	☐ 2	☐ 3
f. Language barriers	☐ 1	☐ 2	☐ 3
g. Problems qualifying for benefits	☐ 1	☐ 2	☐ 3

3. INTERVIEWER CHECK ITEM

IF SAMPLED PERSON IS PREGNANT, POSTPARTUM, OR BREASTFEEDING WOMAN-

Is YES checked for item 10 on page 1 (first WIC certification)?

☐ 1 YES- *Go to Section I (Contact Information).*
☐ 2 NO- *Go to item 4 on next page.*

IF SAMPLED PERSON IS INFANT OR CHILD-

Is YES checked for Section B, item 8 or item 8a (receiving WIC now or ever enrolled in WIC)?

☐ 1 YES- *Go to item 4 on next page.*
☐ 2 NO- *Go to Section I (Contact Information).*

Section H - Customer Satisfaction - Continued

4. DIFFICULTIES WITH WIC

I'm going to read another list of difficulties that you might have had participating in the WIC Program. For each one, please tell me if it is a BIG PROBLEM, SOMEWHAT OF A PROBLEM, or NOT A PROBLEM.

	BIG PROBLEM	SOME PROBLEM	NO PROBLEM
a. Lack of transportation to get groceries	☐ 1	☐ 2	☐ 3
b. Problems using WIC vouchers/checks	☐ 1	☐ 2	☐ 3
c. Treated negatively by staff members	☐ 1	☐ 2	☐ 3
d. Treated negatively in grocery store	☐ 1	☐ 2	☐ 3

5. WIC FOOD BRANDS

WIC food vouchers or checks are for particular *brands of foods*. Are you VERY SATISFIED, FAIRLY SATISFIED, or NOT SATISFIED with the brands of foods WIC provides for-

	VERY SATISFIED	FAIRLY SATISFIED	NOT SATISFIED
a. breakfast cereals	☐ 1	☐ 2	☐ 3
b. juices	☐ 1	☐ 2	☐ 3
c. baby formula	☐ 1	☐ 2	☐ 3
d. milk	☐ 1	☐ 2	☐ 3
e. cheese	☐ 1	☐ 2	☐ 3
f. eggs	☐ 1	☐ 2	☐ 3
g. beans or peanut butter	☐ 1	☐ 2	☐ 3

6. WIC FOOD QUANTITIES

WIC food vouchers or checks are for particular quantities of foods. Are you VERY SATISFIED, FAIRLY SATISFIED, or NOT SATISFIED with the *quantities of foods* WIC provides for-

	VERY SATISFIED	FAIRLY SATISFIED	NOT SATISFIED
a. breakfast cereals	☐ 1	☐ 2	☐ 3
b. juices	☐ 1	☐ 2	☐ 3
c. baby formula	☐ 1	☐ 2	☐ 3
d. milk	☐ 1	☐ 2	☐ 3
e. cheese	☐ 1	☐ 2	☐ 3
f. eggs	☐ 1	☐ 2	☐ 3
g. beans or peanut butter	☐ 1	☐ 2	☐ 3

7. WIC BENEFITS

I am going to read you a list of potential benefits of the WIC program. Please indicate how valuable they are to you (or your child) **by giving me a number from 0 to 5, with 5 meaning extremely valuable and 0 being not valuable to you at all.**

	SCALE 0-5
a. Time to talk with other mothers	
b. Money saved on grocery bills	
c. Health information	
d. Nutrition information	
e. Checking blood, height, and weight	
f. Advice from WIC staff	
g. Vouchers for foods I know are nutritious	
h. Helps me stay on time with shots for my child	
i. Taught me about breastfeeding	
j. Taught me about the foods babies need	
k. Taught me about the foods children need	
l. Taught me about foods I need	
m. Other (specify) _____	

WIC APPOINTMENTS

8a. Have you ever missed an appointment at the WIC clinic?
☐ 1 Yes
☐ 2 No- *Go to 10.*

8b. Would you say that you miss appointments SOMETIMES or OFTEN?
☐ 1 Sometimes
☐ 2 Often
☐ 3 Just once

9. MISSED APPOINTMENTS

Have you missed appointments because you-

	YES	NO	DON'T KNOW
a. Forget to go	☐ 1	☐ 2	☐ 8
b. Have trouble finding transportation	☐ 1	☐ 2	☐ 8
c. Cannot get off work	☐ 1	☐ 2	☐ 8

9. MISSED APPOINTMENTS (CONTINUED)

Have you missed appointments because you-

	YES	NO	DK
d. Cannot find child care	☐ 1	☐ 2	☐ 8
e. It's too far away from home	☐ 1	☐ 2	☐ 8
f. It takes too long at the WIC clinic	☐ 1	☐ 2	☐ 8
g. Other (specify)	☐ 1	☐ 2	☐ 8

_____

_____

10. STOPPED WIC

Have you ever stopped using WIC even though you (or any of your children) **were still qualified for WIC?**
☐ 1 Yes
☐ 2 No

SHOPPING

Now I have just a few questions about shopping with WIC food vouchers/checks.

11. Do you find it is EASY, SOMETIMES CONFUSING, or OFTEN CONFUSING to shop with WIC food vouchers/checks?
☐ 1 Easy
☐ 2 Sometimes confusing
☐ 3 Often confusing

12. By the end of the month, do you purchase all of the WIC items prescribed for you?
☐ 1 Yes
☐ 2 No
☐ 8 Dont' know

13. Do you typically purchase all of the (READ CATEGORY) **prescribed for you?**

	YES	NO	DK
a. breakfast cereals	☐ 1	☐ 2	☐ 8
b. juices	☐ 1	☐ 2	☐ 8
c. baby formula	☐ 1	☐ 2	☐ 8
d. milk	☐ 1	☐ 2	☐ 8
e. cheese	☐ 1	☐ 2	☐ 8
f. eggs	☐ 1	☐ 2	☐ 8
g. beans or peanut butter	☐ 1	☐ 2	☐ 8

Section I - Contact Information

INTERVIEWER - BEGIN HERE WHEN SKIPPING FROM ITEM 9 ON PAGE 1, ELSE BEGIN WITH **Thank you**.

1. What is the name of (NAME OF CHILD)**'s parent or guardian?**

FIRST NAME	LAST NAME

INTERVIEWER -GO TO ITEM 2 AND ENTER FULL CONTACT INFORMATION FOR PARENT/GUARDIAN.

RECORD RESPONDENT'S CONTACT INFORMATION IN ITEM 10.

Thank you for answering my questions. We may need to contact you at a later date to ask you some additional questions. I'd like to ask you some questions concerning ways to contact you.

2. What is your (the) exact address?

STREET ADDRESS (House No., Street, Apt. No., or other identification)		
CITY/PLACE	STATE	ZIP CODE

3. Is this also your (the) mailing address? ☐ 1 Yes ☐ 2 No - *Specify below.*

STREET ADDRESS (House No., Street, Apt. No., or other identification)		
CITY/PLACE	STATE	ZIP CODE

4. What is your (the) phone number? ( ) -

5. Under what name is the phone listed?

FIRST NAME	LAST NAME

INTERVIEWER - IS RESPONDENT OR SPOUSE/PARTNER EMPLOYED? (CHECK SECTION C, ITEM 6.)
☐ 1 YES- *Go to item 6.*
☐ 2 NO- *Go to item 8.*

6. What is (your / spouse / partner's) **phone number at work?** ( ) -

7. What is (your / spouse / partner's) **employer's name and address?**

EMPLOYER NAME		
STREET ADDRESS (House No., Street, Apt. No., or other identification)		
CITY/PLACE	STATE	ZIP CODE

8. Do you expect to change your name in the next year or so? ☐ 1 YES ☐ 2 NO

What will your new name be?

FIRST NAME	LAST NAME

9. Do you expect to move in the next year or so? ☐ 1 YES ☐ 2 NO

Approximately when do you expect to move?

MONTH	DAY	YEAR

Do you know your new address?

STREET ADDRESS (House No., Street, Apt. No., or other identification)		
CITY/PLACE	STATE	ZIP CODE

10. Please tell me the name and address of a relative or friend who knows how to contact you.

FIRST NAME	LAST NAME	
STREET ADDRESS (House No., Street, Apt. No., or other identification)		
CITY/PLACE	STATE	ZIP CODE

And what is (his/her) **phone number?** ( ) -

What is (his/her) **relationship to you?**

11. Please tell me the name and address of a second relative or friend who knows how to contact you.

FIRST NAME	LAST NAME	
STREET ADDRESS (House No., Street, Apt. No., or other identification)		
CITY/PLACE	STATE	ZIP CODE

And what is (his/her) **phone number** ( ) -

What is (his/her) **relationship to you?** _____

12. Is there another phone number where you can usually be reached? ( ) -

b. Where is that? _____

INTERVIEW STATUS CODES	Status Code	Time at end of interview
1 Complete Interview 2 Partial Interview 3 Inconsistent cert cat 4 Unable to intercept 5 Refused -time constraint 6 Refused-doesn't want to participate 7 Refused-other reason	☐	_____ : _____ a.m. p.m. hr min

1. Case ID

2. Local Agency

3. Site

4. Site ID

5. Sampled person

6. Sampled Person Certification Category

7. Respondent's name

8. Respondent's phone number

9. Respondent's address

10. Reference Month

OMB Number 0584-0484
Form Approved 10/31/2000

NATIONAL SURVEY OF WIC PARTICIPANTS

AND THEIR LOCAL AGENCIES

In-Home Interview

NOTICE - Public reporting burden for this collection of information is estimated to average 45 minutes per response, including the time for reviewing instructions, searching for existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Department Clearance Officer, OIRM, AG Box 7630, Washington, DC 20250.

12. Field Data Collector _____

ACTIVITY	DATE (mm/dd/yy)	TIME Began
INTERVIEW TIME		a.m. p.m.

NOTES

Section A - Household Enumeration

INTERVIEWER - Complete each question for all persons listed in item 1, then move to next question. Replace MONTH *with reference month listed on page 1.*

Part 1- Household roster preprinted from In-Person interview.

I will begin by reviewing with you some information about your household.

1. PERSON NUMBER	2. HOUSEHOLD ROSTER **Please tell me the names of all persons who lived in your household during** MONTH**. Just tell me their first names.** *If name is preprinted, check box. If name is not preprinted, enter name in Item 2 on next page.* PRE-PRINTED NAMES	CHECK HERE	GO TO ITEM 3.	4. INTERVIEWER CHECK ITEM *If name in Item 2 is not checked, ask-* **Did ... live in your household last month?** *If YES, check name in item 2.* *If NO, enter explanation of discrepancy below.* EXPLANATION	5. USUAL RESIDENCE **Does ... have a usual residence somewhere else?** *If YES, ask-* **Where is that?** (HAND CARD) *Confirm with check or enter code in Item 5a* PRE-PRINTED RESIDENCE	CHECK HERE	5a. USUAL RESIDENCE CODE	6. AGE **How old was ... on his/her last birthday?** *Confirm with check or enter correct age.* Enter age in years. PRINTED AGE	CHECK HERE	AGE	7. RELATIONSHIP TO RESPONDENT **What is ...'s relationship to you?** (HAND CARD) *Confirm with check or enter code from below.* PRE-PRINTED RELATIONSHIP	CHECK HERE	CODE	8. INTERVIEWER CHECK ITEM Mark (X) if relationship code (Item 7) is greater than 5.
01		☐ 1				☐ 1			☐ 1		RESPONDENT	☐ 1		
02		☐ 1				☐ 1			☐ 1			☐ 1		
03		☐ 1				☐ 1			☐ 1			☐ 1		
04		☐ 1				☐ 1			☐ 1			☐ 1		
05		☐ 1				☐ 1			☐ 1			☐ 1		
06		☐ 1				☐ 1			☐ 1			☐ 1		
07		☐ 1				☐ 1			☐ 1			☐ 1		
08		☐ 1				☐ 1			☐ 1			☐ 1		
09		☐ 1				☐ 1			☐ 1			☐ 1		

3. I have listed ... (Read names from item 2.) **Have I missed-**

	YES	NO
a. any babies or small children?	☐ 1	☐ 2
b. anyone who usually lives with you but is away now travelling, at school, or in a hospital?	☐ 1	☐ 2
c. any lodgers, boarders, or persons you employ who live with you?	☐ 1	☐ 2
d. anyone who is part of the household but is away on full-time active duty with the Armed Forces?	☐ 1	☐ 2
e. anyone else staying with you?	☐ 1	☐ 2

If respondent answers YES in(a)-(d), ask for name of household member.
If name is preprinted in the roster, place a check next to name.
If name is not preprinted, write name in Item 2 on next page.

USUAL RESIDENCE

1 Military quarters
2 School or institution
3 Vacation or in hospital
4 At college
5 Working away from home
6 Separate residence
7 Jail/prison
9 Other

RELATIONSHIP CODES	
1 Spouse	12 Brother/sister
2 Partner	13 Grandparent
3 Son/daughter	14 Uncle/aunt
4 Step-child	15 Cousin
5 Foster child	16 Nephew/niece
6 Mother	17 Father-in-law
7 Step-mother	18 Mother-in-law
8 Foster mother	19 Bro/sis-in-law
9 Father	20 Other-in-law
10 Step-father	21 Roomer/ boarder
11 Foster father	22 Other non-relative

Section A - Household Enumeration (continued)

INTERVIEWER - Complete each question for all persons listed in item 1, then move to next question. Replace MONTH *with reference month.*

Part 2- Household members **NOT** preprinted from In-Person interview.

1. PERSON NUMBER	2. HOUSEHOLD ROSTER (continued) INTERVIEWER - IF NO NAMES HAVE BEEN ADDED, GO TO NEXT PAGE. FIRST NAME	LAST NAME	ITEMS 3 AND 4 INTENTIONALLY LEFT OFF THIS PAGE.	5. USUAL RESIDENCE **Does ... have a usual residence somewhere else?** *If YES, ask-* **Where is that?** (HAND CARD) Enter code from list below. YES	NO	CODE	6. AGE **How old was ... on his/her last birthday?** Enter age in years. AGE	6b. SEX *Ask if not apparent.* **Is . . . male or female?** MALE	FEMALE	7. RELATIONSHIP TO RESPONDENT **What is ...'s relationship to you?** (HAND CARD) Enter code from list below.	8. INT CHECK ITEM Mark (X) if relationship code (Item 7) is greater than 5.	9. BIOLOGICAL PARENT **Is ... the biological parent of any children in this household?** *If YES,. enter person numbers of . . .'s children to boxes below*	10. INTERVIEWER CHECK Is anyone listed on this page age16 or older? ☐ 1 YES Add names to roster in Section B and enter each name on a blank Income Review Form. ☐ 2 NO
10				☐ 1 ☐ 2				☐ 1 ☐ 2				11. INTERVIEWER CHECK Do any individuals listed on this page have age less than 6? ☐ 1 YES Add name to Section E. ☐ 2 NO
11				☐ 1 ☐ 2				☐ 1 ☐ 2				
12				☐ 1 ☐ 2				☐ 1 ☐ 2				
13				☐ 1 ☐ 2				☐ 1 ☐ 2				
14				☐ 1 ☐ 2				☐ 1 ☐ 2				
15				☐ 1 ☐ 2				☐ 1 ☐ 2				
16				☐ 1 ☐ 2				☐ 1 ☐ 2				
17				☐ 1 ☐ 2				☐ 1 ☐ 2				
18				☐ 1 ☐ 2				☐ 1 ☐ 2				
19				☐ 1 ☐ 2				☐ 1 ☐ 2				

USUAL RESIDENCE

1 military quarters
2 school or institution
3 vacation or in hospital
4 at college
5 working away from home
6 separate residence
7 Jail/prison
9 other

RELATIONSHIP CODES

1 Spouse	12 Brother/sister
2 Partner	13 Grandparent
3 Son/daughter	14 Uncle/aunt
4 Step-child	15 Cousin
5 Foster child	16 Nephew/niece
6 Mother	17 Father-in-law
7 Step-mother	18 Mother-in-law
8 Foster mother	19 Bro/sis-in-law
9 Father	20 Other-in-law

Section A - Household Enumeration (continued)

Part 3- FINANCIAL RELATIONSHIPS

INTERVIEWER- Names of household members are printed below according to relationship to sampled person. Add names from Page 3 according to the following rules:

a) If relationship code is greater than 4 enter person number and name in LIST OF ADDITIONAL HOUSEHOLD MEMBERS.

b) If relationship code is 4 or less, enter person number and name in COLUMN 1

If there are no names in LIST OF ADDITIONAL HOUSEHOLD MEMBERS, go to item 12; otherwise, go to INTERVIEWER INSTRUCTIONS below LIST OF ADDITIONAL HOUSEHOLD MEMBERS.

LIST OF ADDITIONAL HOUSEHOLD MEMBERS (PRE-PRINTED)		**12.** FINANCIAL RESPONSIBILITY	COLUMN 1 (PRE-PRINTED)		COLUMN 2		COLUMN 3	
PERSON NUMBER	NAME	Ask (a)-(e) for group of persons listed in COLUMN 1. Then ask (a)-(e) for person or group of persons listed in COLUMN 2. Then ask (a)-(e) for person or group of persons in COLUMN 3 Replace ... with names in COLUMN.	PERSON NUMBER	NAME	PERSON NUMBER	NAME	PERSON NUMBER	NAME
		(a) Do(es) ... pay for all housing expenses with (YOUR/THEIR) **own money?**	☐ 1 YES ☐ 2 NO		☐ 1 YES ☐ 2 NO		☐ 1 YES ☐ 2 NO	
		(b) Do(es) ... pay for all food expenses with (YOUR/THEIR) **own money?**	☐ 1 YES ☐ 2 NO		☐ 1 YES ☐ 2 NO		☐ 1 YES ☐ 2 NO	
INTERVIEWER INSTRUCTIONS Copy first name from LIST OF ADDITIONAL HOUSEHOLD MEMBERS to COLUMN 2, cross the name off LIST and ask, **Is anyone in this household the spouse, partner, son, daughter, or step-child of ...?** If YES, enter names of immediate family members in COLUMN 2 and cross names off LIST. If all names are not crossed off LIST then copy next name to COLUMN 3, cross this name off LIST and ask, **Is anyone in this household the spouse, partner, son, daughter, or step-child of ...?** If YES, enter names of immediate family members in COLUMN 3 and cross names off LIST. Go to item 12.		**(c) Do(es) ... pay for all other living expenses such as clothing, transportation, etc., with (YOUR/THEIR) own money?**	☐ 1 YES ☐ 2 NO		☐ 1 YES ☐ 2 NO		☐ 1 YES ☐ 2 NO	
		INTERVIEWER CHECK ITEM Are two or more "Yes" boxes marked in items 12(a)-(c)?	☐ 1 YES - *Go to 12a for* COLUMN 2. ☐ 2 NO- *Ask item (d).*		☐ 1 YES - *Go to 12a for* COLUMN 3. ☐ 2 NO- *Ask item (d).*		☐ 1 YES - *Go to next page.* ☐ 2 NO- *Ask item (d).*	
		(d) Does all or part of the money to pay for ... (Specify expenses with "No" marked in items 12(a)-(c)) **come from someone else in this household?**	☐ 1 YES- *Ask item (e).* ☐ 2 NO		☐ 1 YES- *Ask item (e).* ☐ 2 NO		☐ 1 YES- *Ask item (e).* ☐ 2 NO	
		(e) Who is (are) these persons? Enter person numbers.						

Section A - Household Enumeration - Continued

Part 4- CHILD INFORMATION - *Complete all items for first child listed, then go to next child. In reading each question, replace . . . with name in item 13.*

13. JOINT CUSTODY **Are any children in this household under a joint custody arrangement where one parent lives elsewhere?** ☐ 1 YES- *Enter children's person numbers and names below.* ☐ 2 NO- *Go to next page.*		14. PARENT *For each child listed in item 13, ask* **Who are ...'s parents?** *Enter person numbers from Section A.*	15. DEPENDENT **Who claims ... as a dependent on income tax** **1- Parent living in the household** **2- Other parent** **3- Other** Record code below	16. TIME SPENT IN HOUSEHOLD **How much time does ... spend living here?** **1- More than half of the time** **2- Exactly half of the time** **3- Less than half** Record code below	17. CHILD'S HOUSEHOLD **Which household does (his/her) parents agree ... lives?** **1 - This household** **2 - The other parent's household** Record code below
PERSON #	NAME	PERSON NUMBER	CODE	CODE	CODE
		☐☐			
		☐☐			
		☐☐			
		☐☐			
		☐☐			
		☐☐			
		☐☐			

Section B - Employment History

INTERVIEWER - Complete questions 2-12 for first person listed, then go to next person. Replace … with name in item 1.

1. ADULT ROSTER

INTERVIEWER - Listed below are names of all household members age 16 years and older. Check page 3 to see if names were added to the roster and copy person numbers and names of household members age 16 years and older from page 3 to list below.

PERSON NUMBER	NAME	2. ANY WORK **During last month, did … do any work at all for which … was paid?** *If YES, go to item 3. If NO, go to item 7.* YES	NO	3. SAME JOB **Is … still employed at the same job as last month?** *If YES, go to item 4. If NO, go to item 5.* YES	NO	4. JOB START **When did … start working for …'s current employer?** *Go to item 10.* MONTH /YEAR	5. TENURE **How long did … work at that job before leaving?** *Enter number of months. Go to item 6.*	6. JOB START **When did … start working for that employer?** *Go to item 10.* MONTH /YEAR	7. EVER WORK **Has … ever worked for pay?** *If YES, go to item 8. If NO, go to next person.* YES	NO	8. WHEN LEFT **When did … leave …'s last job?** MONTH /YEAR	9. WHY LEFT **Why did … leave …'s last job?** HAND CARD *Enter code from below*	10. WAGE **What was …'s most recent pay on that job?**	11. FREQ **Was that- 1 hourly 2 daily 3 weekly 4 twice a month OR 5 monthly?** *Enter code.*	12. UNEMP **During the past year, has … received any unemployment compensation?** YES	NO
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2
		☐ 1	☐ 2	☐ 1	☐ 2	/		/	☐ 1	☐ 2	/		$ ________.____		☐ 1	☐ 2

WHY LEFT JOB

1 Layoff or plant closing
2 End of temporary/seasonal job
3 Discharged or fired
4 Program ended
5 Quit for pregnancy or family
6 Quit to look for another job
7 Quit to take another job
8 Other

Section C - Income Review Form

PART 1 - INDIVIDUAL INCOME AND EARNINGS

a. PERSON NUMBER: 01 b. RESPONDENT'S NAME:

INTERVIEWER - A separate pre-printed Section C is provided for each adult member of household reported at certification. Use additonal sheets for adults added to household roster on page 3.

I now have some detailed questions about your household income. Last month when we interviewed you, we asked about all the sources of income that your household receives. Because it is difficult, sometimes, to recall all of the information during an interview, we scheduled this followup meeting in your home where you can check your income records.

REPEAT CONFIDENTIALITY STATEMENT

I'm going to read a list of income sources. Most people have only a few sources of income, but to help people remember income they may have forgotten, I will read the whole list to you. We can look at your income records as we go along. I'll begin with *your* income. INTERVIEWER- FOR EACH INCOME SOURCE (a)-(r), WORK ACROSS THE PAGE READING ITEMS 1-7.

1. INCOME SOURCE **Did (**YOU / ...) **receive income from** INCOME SOURCE **during** REFERENCE MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Amount reported during InPerson Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing that income? For example** (READ FROM LIST BELOW) INTERVIEWER- Record information from first available type of document from the list below. Note that if respondent does not have documentation for income during the reference month, then income tax return should be reviewed and ANNUAL income should be recorded in item 4.	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of income shown on document.	5. FREQUENCY **What period of time did this cover?**	6. DATE OF DOCUMENT INTERVIEWER- Record end-of-payment period from document.
a. Wages and salary, except military income	☐1 YES ☐2 NO		☐1 Earnings statement/pay stub ☐2 W-2 Form ☐3 1997 Income tax return (IRS 1040A, line 7; IRS 1040EZ, line 1) ☐4 Receipts for cash jobs ☐5 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

INTERVIEWER CHECK ITEM		ab. **Are** (YOU / ...) **paid the same amount every week or do** (YOUR / ...'s) **wages fluctuate?**	ac. INTERVIEWER CHECK ITEM
aa. Is WEEK or 2 WEEKS checked in column 5 for item a?	☐1 Yes - *Go to item ac.* ☐2 No - *Go to item b.*	☐1 same every week ☐2 wages fluctuate	If document type is an earnings statement or pay stub, record the YEAR-TO-DATE amount. $ .00 YEAR-TO-DATE

b. Military income	☐1 YES ☐2 NO		☐1 Leave and Earnings Statement (LES) ☐5 Other _____ INTERVIEWER - RECORD AMOUNT OF **BASE PAY,** excluding BAQ (Basic Allowance for Military Quarters), LQA (Living Quarters Allowance), VHA (Variable Housing Allowance).	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
c. Net income from nonfarm business or other self-employment	☐1 YES ☐2 NO		☐1 1997 Income tax return, IRS 1040A line 12 ☐2 Business records ☐3 Expense receipts ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
d. Net income from farm.	☐1 YES ☐2 NO		☐1 1997 Income tax return, IRS 1040A line18 ☐2 Business records ☐3 Expense receipts ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
e. Unemployment compensation	☐1 YES ☐2 NO		☐1 Notice of determination or redetermination (award letter) ☐2 Copy of check or check stub ☐3 1997 Income tax return (IRS 1040A, line 19; IRS 1040EZ, line 3) ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

Section C - Income Review Form

PART 1 - INDIVIDUAL INCOME AND EARNINGS

a. PERSON NUMBER: b. RESPONDENT'S NAME:

INTERVIEWER - A separate pre-printed page is provided for each adult member of household reported at certification. Use additonal sheets for adults added to household roster on page 3.

1. INCOME SOURCE **Did (**YOU / ...**) receive income from** INCOME SOURCE **during** REFERENCE MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Amount reported during InPerson Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing that income? For example** (READ FROM LIST BELOW) INTERVIEWER- Record information from first available type of document from the list below. Note that if respondent does not have documentation for income during the reference month then income tax return should be reviewed and ANNUAL income should be rec	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of income shown on document.	5. FREQUENCY **What period of time did this cover?**	6. DATE OF DOCUMENT INTERVIEWER- Record end-of-payment period from document.
f. Worker's compensation	☐1 YES ☐2 NO		☐1 Award notice ☐2 Copy of check or check stub ☐3 Statement/letter from insurance company ☐4 Other _____	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR
g. Social Security (green checks)	☐1 YES ☐2 NO		☐1 SSA award letter ☐2 Statement of benefits ☐3 1997 Income tax return (IRS 1040A, line 20a) ☐4 Other _____	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR
h. Private pensions, annuities, or survivor's benefits	☐1 YES ☐2 NO		☐1 Notice of benefits ☐2 Copy of check or check stub ☐3 1997 Income tax return, IRS 1040A, line 17 ☐3 Copy of check or check stub	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR
i. Veteran's benefits	☐1 YES ☐2 NO		☐1 Copy of check or check stub ☐2 1997 Income tax return, IRS 1040A, line 17 ☐3 Other _____	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR
j. SSI (Supplemental Security Income)	☐1 YES ☐2 NO		☐1 Notice of benefits ☐2 Copy of check or check stub ☐3 Other _____	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR
k. Alimony	☐1 YES ☐2 NO		☐1 Copy of check ☐2 Support agreement ☐3 Divorce/separation decree ☐4 Court order ☐5 Other _____	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR
l. Child support	☐1 YES ☐2 NO		☐1 Copy of check ☐2 Support agreement ☐3 Divorce/separation decree ☐4 Court order ☐5 Other _____	☐1 ☐2 ☐3	$ .00	☐1 Week ☐5 Year ☐2 2 Weeks ☐6 Other ☐3 Month ☐4 Quarter _____	_____/_____/_____ MONTH DAY YEAR

Section C - Income Review Form

PART 1 - INDIVIDUAL INCOME AND EARNINGS

a. PERSON NUMBER: b. RESPONDENT'S NAME:

INTERVIEWER - A separate pre-printed page is provided for each adult member of household reported at certification. Use additonal sheets for adults added to household roster on page 3.

1. INCOME SOURCE **Did (**YOU / ...**) receive income from** INCOME SOURCE **during** REFERENCE MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Amount reported during InPerson Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing that income? For example** (READ FROM LIST BELOW) INTERVIEWER- Record information from first available type of document from the list below. Note that if respondent does not have documentation for income during the reference month then income tax return should be reviewed and ANNUAL income should be rec	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of income shown on document.	5. FREQUENCY **What period of time did this cover?**	6. DATE OF DOCUMENT INTERVIEWER- Record end-of-payment period from document.
m. Interest and dividends	☐1 YES ☐2 NO		☐1 1997 Income tax return, IRS 1040A, line 8 or 9 ☐2 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
n. Net rental income	☐1 YES ☐2 NO		☐1 Rental agreement/lease ☐2 Copy of rent check ☐3 1997 Income tax return, IRS 1040A, line 18 ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
o. Financial aid for college students (exclude money used for tuition, books, fees; include money used for room and board)	☐1 YES ☐2 NO		☐1 Student eligibility report and information sheet ☐2 Financial Aid Transcript ☐3 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
p. Money withdrawn from savings	☐1 YES ☐2 NO		☐1 Bank statement ☐2 Savings book ☐3 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
q. Regular contributions from persons outside the household (e.g. cash gifts from friends or family)	☐1 YES ☐2 NO		☐1 Copy of check or check stub ☐2 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
r. Other cash income, net royalties, income from trusts, prize winnings, bonuses	☐1 YES ☐2 NO		☐1 Copy of check or check stub ☐2 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

Section C - Income Review Form

PART 1 - INDIVIDUAL INCOME AND EARNINGS

a. PERSON NUMBER: b. NAME:

INTERVIEWER - A separate pre-printed Section C is provided for each adult member of household reported at certification. Use additonal sheets for adults added to household roster on page 3.

Now I'm going to ask you about (READ NAME)**'s income. I'm going to read a whole list of income sources to you, just as we did for your income, to help you remember income that you might have forgotten. We can look at** (READ NAME)**'S income records as we go along.**

1. INCOME SOURCE **Did (**YOU / ...) **receive income from** INCOME SOURCE **during** REFERENCE MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Amount reported during InPerson Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing that income? For example** (READ FROM LIST BELOW) INTERVIEWER- Record information from first available type of document from the list below. Note that if respondent does not have documentation for income during the reference month, then income tax return should be reviewed and ANNUAL income should be re	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of income shown on document.	5. FREQUENCY **What period of time did this cover?**	6. DATE OF DOCUMENT INTERVIEWER- Record end-of-payment period from document.
a. Wages and salary, except military income	☐1 YES ☐2 NO		☐1 Earnings statement/pay stub ☐2 W-2 Form ☐3 1997 Income tax return (IRS 1040A, line 7; IRS 1040EZ, line 1) ☐4 Receipts for cash jobs ☐5 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

INTERVIEWER CHECK ITEM			
aa. Is WEEK or 2 WEEKS checked in column 5 for item a?	☐1 Yes - *Go to item ac* ☐2 No - *Go to item b.*	**ab. Are** (YOU / ...) **paid the same amount every week or do** (YOUR / ...'s) **wages fluctuate?**	☐1 same every week ☐2 wages fluctuate

ac. INTERVIEWER CHECK ITEM
If document type is an earnings statement or pay stub, record the YEAR-TO-DATE amount. $ .00 YEAR-TO-DATE

b. Military income	☐1 YES ☐2 NO		☐1 Leave and Earnings Statement (LES) ☐5 Other _____ INTERVIEWER - RECORD AMOUNT OF **BASE PAY,** excluding BAQ (Basic Allowance for Military Quarters), LQA (Living Quarters Allowance), VHA (Variable Housing Allowance).	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
c. Net income from nonfarm business or other self-employment	☐1 YES ☐2 NO		☐1 1997 Income tax return, IRS 1040A line 12 ☐2 Business records ☐3 Expense receipts ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
d. Net income from farm.	☐1 YES ☐2 NO		☐1 1997 Income tax return, IRS 1040A line18 ☐2 Business records ☐3 Expense receipts ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
e. Unemployment compensation	☐1 YES ☐2 NO		☐1 Notice of determination or redetermination (award letter) ☐2 Copy of check or check stub ☐3 1997 Income tax return (IRS 1040A, line 19; IRS 1040EZ, line 3) ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

Section C - Income Review Form

PART 1 - INDIVIDUAL INCOME AND EARNINGS

a. PERSON NUMBER: b. NAME:

INTERVIEWER - A separate pre-printed page is provided for each adult member of household reported at certification. Use additonal sheets for adults added to household roster on page 3.

1. INCOME SOURCE **Did (**YOU / ...**) receive income from** INCOME SOURCE **during** REFERENCE MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Amount reported during InPerson Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing that income? For example** (READ FROM LIST BELOW) INTERVIEWER- Record information from first available type of document from the list below. Note that if respondent does not have documentation for income during the reference month then income tax return should be reviewed and ANNUAL income should be recorded in item 4.	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of income shown on document.	5. FREQUENCY **What period of time did this cover?**	6. DATE OF DOCUMENT INTERVIEWER- Record end-of-payment period from document.
f. Worker's compensation	☐1 YES ☐2 NO		☐1 Award notice ☐2 Copy of check or check stub ☐3 Statement/letter from insurance company ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
g. Social Security (green checks)	☐1 YES ☐2 NO		☐1 SSA award letter ☐2 Statement of benefits ☐3 1997 Income tax return (IRS 1040A, line 20a) ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
h. Private pensions, annuities, or survivor's benefits	☐1 YES ☐2 NO		☐1 Notice of benefits ☐2 Copy of check or check stub ☐3 1997 Income tax return, IRS 1040A, line 17 ☐3 Copy of check or check stub	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
i. Veteran's benefits	☐1 YES ☐2 NO		☐1 Copy of check or check stub ☐2 1997 Income tax return, IRS 1040A, line 17 ☐3 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
j. SSI (Supplemental Security Income)	☐1 YES ☐2 NO		☐1 Notice of benefits ☐2 Copy of check or check stub ☐3 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
k. Alimony	☐1 YES ☐2 NO		☐1 Copy of check ☐2 Support agreement ☐3 Divorce/separation decree ☐4 Court order ☐5 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
l. Child support	☐1 YES ☐2 NO		☐1 Copy of check ☐2 Support agreement ☐3 Divorce/separation decree ☐4 Court order ☐5 Other _____	☐1 ☐2 ☐3	$ .00	1☐ Week 5☐ Year 2☐ 2 Weeks 6☐ Other 3☐ Month 4☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

Section C - Income Review Form

PART 1 - INDIVIDUAL INCOME AND EARNINGS

a. PERSON NUMBER: b. NAME:

INTERVIEWER - A separate pre-printed page is provided for each adult member of household reported at certification. Use additonal sheets for adults added to household roster on page 3.

1. INCOME SOURCE **Did (**YOU / ...**) receive income from** INCOME SOURCE **during** REFERENCE MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Amount reported during InPerson Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing that income? For example** (READ FROM LIST BELOW) INTERVIEWER- Record information from first available type of document from the list below. Note that if respondent does not have documentation for income during the reference month then income tax return should be reviewed and ANNUAL income should be rec	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of income shown on document.	5. FREQUENCY **What period of time did this cover?**	6. DATE OF DOCUMENT INTERVIEWER- Record end-of-payment period from document.
m. Interest and dividends	☐1 YES ☐2 NO		☐1 1997 Income tax return, IRS 1040A, line 8 or 9 ☐2 Other _____	☐1 ☐2 ☐3	$ .00	1 ☐ Week ☐ 5 Year 2 ☐ 2 Weeks ☐ 6 Other 3 ☐ Month 4 ☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
n. Net rental income	☐1 YES ☐2 NO		☐1 Rental agreement/lease ☐2 Copy of rent check ☐3 1997 Income tax return, IRS 1040A, line 18 ☐4 Other _____	☐1 ☐2 ☐3	$ .00	1 ☐ Week ☐ 5 Year 2 ☐ 2 Weeks ☐ 6 Other 3 ☐ Month 4 ☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
o. Financial aid for college students (exclude money used for tuition, books, fees; include money used for room and board)	☐1 YES ☐2 NO		☐1 Student eligibility report and information sheet ☐2 Financial Aid Transcript ☐3 Other _____	☐1 ☐2 ☐3	$ .00	1 ☐ Week ☐ 5 Year 2 ☐ 2 Weeks ☐ 6 Other 3 ☐ Month 4 ☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
p. Money withdrawn from savings	☐1 YES ☐2 NO		☐1 Bank statement ☐2 Savings book ☐3 Other _____	☐1 ☐2 ☐3	$ .00	1 ☐ Week ☐ 5 Year 2 ☐ 2 Weeks ☐ 6 Other 3 ☐ Month 4 ☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
q. Regular contributions from persons outside the household (e.g. cash gifts from friends or family)	☐1 YES ☐2 NO		☐1 Copy of check or check stub ☐2 Other _____	☐1 ☐2 ☐3	$ .00	1 ☐ Week ☐ 5 Year 2 ☐ 2 Weeks ☐ 6 Other 3 ☐ Month 4 ☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR
r. Other cash income, net royalties, income from trusts, prize winnings, bonuses	☐1 YES ☐2 NO		☐1 Copy of check or check stub ☐2 Other _____	☐1 ☐2 ☐3	$ .00	1 ☐ Week ☐ 5 Year 2 ☐ 2 Weeks ☐ 6 Other 3 ☐ Month 4 ☐ Quarter _____	_____/_____/_____ MONTH DAY YEAR

Section D - Household Income Review Form

PART 2 - HOUSEHOLD INCOME

The next questions are about public assistance income. I'll ask you about income received by anyone in your household, that is by- READ NAMES OF PERSONS UNDER **COLUMN 1** ON PAGE 4.

1. INCOME SOURCE **Did your household receive benefits from** INCOME SOURCE **during** MONTH**?** IF NO, GO TO NEXT INCOME ITEM.		Monthly benefit amount reported during In-Person Interview	2. TYPE OF DOCUMENT **Do you have any paper documents showing the amount of benefits that you received? For example** (READ FROM LIST BELOW)	3. INTERVIEWER CHECK Does amount on documentation match pre-printed amount? *If YES, go to item 5.* *If No, go to item 4.* *If no document available, go to next income item.* YES / NO / DOCUMENT NOT AVAIL	4. UPDATED AMOUNT INTERVIEWER- Enter amount of monthly benefit receipt shown on document.	ITEM 5 INTENTIONALLY LEFT OFF THIS PAGE.	6. DATE OF DOCUMENT INTERVIEWER- Record date from document.
a. AFDC/TANF	☐ 1 YES ☐ 2 NO		☐ 1 Explanation of grant acceptance ☐ 2 Notice of Eligibility ☐ 3 Copy of TANF check ☐ 4 Letter from social worker	☐ 1 ☐ 2 ☐ 3	$ .00		_____/_____/_____ MONTH DAY YEAR
b. Food Stamps	☐ 1 YES ☐ 2 NO		☐ 1 Food Stamp Program certification letter ☐ 2 Authorization to Participate (ATP) notice ☐ 3 Other _____	☐ 1 ☐ 2 ☐ 3	$ .00		_____/_____/_____ MONTH DAY YEAR
c. Emergency Assistance	☐ 1 YES ☐ 2 NO		☐ 1 Explanation of grant acceptance ☐ 2 Award notice ☐ 3 Other _____	☐ 1 ☐ 2 ☐ 3	$ .00		_____/_____/_____ MONTH DAY YEAR
d. Other public assistance	☐ 1 YES ☐ 2 NO		☐ 1 Award notice ☐ 2 Other _____	☐ 1 ☐ 2 ☐ 3	$ .00		_____/_____/_____ MONTH DAY YEAR

Section E - Immunizations

INTERVIEWER - Ask questions 1-8 for each child (questions continue on next page), then move to next column for next child

	Child #1	Child #2	Child #3	Child #4
	_____ _____ PERSON # NAME	_____ _____ PERSON # NAME	_____ _____ PERSON # NAME	_____ _____ PERSON # NAME
My final questions are health-related and concern immunizations for infants and children in your household.				
INTERVIEWER Add names of children age 5 and under from page 3.				
1. ANY SHOT **Has ... ever received an immunization, that is a shot or drops?**	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW
2. RECORDS **The next questions may be easier if you look at your records of** (NAME OF CHILD)**'s shots. Do you have a written record of ...'s immunizations or shots?**	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW	☐ 1 YES ☐ 2 NO ☐ 8 DON'T KNOW
3. DTP **Has ... ever received a D-T-P shot - sometimes called a D-P-T shot, diphtheria-tetanus-pertussis shot, baby shot, or three-in-one shot?**	☐ 1 YES ☐ 2 NO- *Go to 4*. ☐ 8 DK- *Go to 4*.	☐ 1 YES ☐ 2 NO- *Go to 4*. ☐ 8 DK- *Go to 4*.	☐ 1 YES ☐ 2 NO- *Go to 4*. ☐ 8 DK- *Go to 4*.	☐ 1 YES ☐ 2 NO- *Go to 4*. ☐ 8 DK- *Go to 4*.
If YES- **3a. How many D-T-P shots did ... ever receive?**	_____ NUMBER	_____ NUMBER	_____ NUMBER	_____ NUMBER
3b. What was date of most recent D-T-P shot?	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy
4. POLIO **Has ... ever received a polio vaccine by mouth, pink drops, or by a polio shot?**	☐ 1 YES ☐ 2 NO- *Go to 5.* ☐ 8 DK- *Go to 5.*	☐ 1 YES ☐ 2 NO- *Go to 5.* ☐ 8 DK- *Go to 5.*	☐ 1 YES ☐ 2 NO- *Go to 5.* ☐ 8 DK- *Go to 5.*	☐ 1 YES ☐ 2 NO- *Go to 5.* ☐ 8 DK- *Go to 5.*
If YES- **4a. How many polio shots did ... ever receive?**	_____ NUMBER	_____ NUMBER	_____ NUMBER	_____ NUMBER
4b. What was date of most recent polio shot?	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy
5. M-M-R **Has ... ever received a measles or M-M-R (measles-mumps-Rubella) shot?**	☐ 1 YES ☐ 2 NO- *Go to 6 (next* ☐ 8 DK- *Go to 6 (next*	☐ 1 YES ☐ 2 NO- *Go to 6 (next* ☐ 8 DK- *Go to 6 (next*	☐ 1 YES ☐ 2 NO- *Go to 6 (next* ☐ 8 DK- *Go to 6 (next*	☐ 1 YES ☐ 2 NO- *Go to 6 (next* ☐ 8 DK- *Go to 6 (next*
If YES- **5a. How many M-M-R shots did ... ever receive?**	_____ NUMBER	_____ NUMBER	_____ NUMBER	_____ NUMBER
5b. What was date of most recent M-M-R shot?	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy
If # of shots=1, ask- **5c. Was that shot measles or M-M-R only?**	☐ 1 Measles only ☐ 2 M-M-R only ☐ 8 Don't Know Go to next page.	☐ 1 Measles only ☐ 2 M-M-R only ☐ 8 Don't Know Go to next page.	☐ 1 Measles only ☐ 2 M-M-R only ☐ 8 Don't Know Go to next page.	☐ 1 Measles only ☐ 2 M-M-R only ☐ 8 Don't Know Go to next page.

Section E - Immunizations

INTERVIEWER - Ask questions 1-8 for each child (questions continue on next page), then move to next column for next child

	Child #1	Child #2	Child #3	Child #4
6. H-I-B **Has ... ever received an H-I-B shot. This shot is for meningitis and is called Haemophilus Influenzae, H-I-B vaccine, or H flu vaccine.**	☐ 1 YES ☐ 2 NO- *Go to 7.* ☐ 8 DK- *Go to 7.*	☐ 1 YES ☐ 2 NO- *Go to 7.* ☐ 8 DK- *Go to 7.*	☐ 1 YES ☐ 2 NO- *Go to 7.* ☐ 8 DK- *Go to 7.*	☐ 1 YES ☐ 2 NO- *Go to 7.* ☐ 8 DK- *Go to 7.*
If YES- **6a. How many H-I-B shots did ... ever receive?**	_____ NUMBER	_____ NUMBER	_____ NUMBER	_____ NUMBER
6b. What was date of most recent H-I-B shot?	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy
7. HEPATITIS B **Has ... ever received a Hepatitus B shot?**	☐ 1 YES ☐ 2 NO- *Go to 8.* ☐ 8 DK- *Go to 8.*	☐ 1 YES ☐ 2 NO- *Go to 8.* ☐ 8 DK- *Go to 8.*	☐ 1 YES ☐ 2 NO- *Go to 8.* ☐ 8 DK- *Go to 8.*	☐ 1 YES ☐ 2 NO- *Go to 8.* ☐ 8 DK- *Go to 8.*
If YES- **7a. How many Hepatitis shots did ... ever receive?**	_____ NUMBER	_____ NUMBER	_____ NUMBER	_____ NUMBER
7b. What was date of most recent Hepatitis shot?	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy
8. CHICKEN POX **Has ... ever received a chicken pox (or Varicella) shot?**	☐ 1 YES ☐ 2 NO ☐ 8 DK	☐ 1 YES ☐ 2 NO ☐ 8 DK	☐ 1 YES ☐ 2 NO ☐ 8 DK	☐ 1 YES ☐ 2 NO ☐ 8 DK
If YES- **8a. How many shots did ... ever receive?**	_____ NUMBER	_____ NUMBER	_____ NUMBER	_____ NUMBER
8b. What was date of the most recent shot?	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy	_____/_____/_____ mm dd yy
	Go to Item E1 for next child.	*Go to Item E1 for next child.*	*Go to Item E1 for next child.*	*Go to Item E1 for next child.*
INTERVIEWER CHECK ITEM Did respondent provide information from written	☐ 1 YES ☐ 2 NO	☐ 1 YES ☐ 2 NO	☐ 1 YES ☐ 2 NO	☐ 1 YES ☐ 2 NO

Section F - Contact Information

Thank you for answering my questions. We may need to contact you at a later date to ask you some additional questions. I'd like to verify some contact information with you.

INTERVIEWER - Verify printed information collected during In-Person interview.

2. What is your (the) exact address?

STREET ADDRESS (House No., Street, Apt. No., or other identification)

CITY/PLACE | STATE | ZIP CODE

3. Is this also your (the) mailing address? ☐ 1 Yes ☐ 2 No - *Specify below.*

STREET ADDRESS (House No., Street, Apt. No., or other identification)

CITY/PLACE | STATE | ZIP CODE

4. What is your (the) phone number? ( ) -

5. Under what name is the phone listed? FIRST NAME | LAST NAME

6. What is (your / spouse / partner's) **phone number at work?** ( ) -

7. What is (your / spouse / partner's) **employer's name and address?**

EMPLOYER NAME

STREET ADDRESS (House No., Street, Apt. No., or other identification)

CITY/PLACE | STATE | ZIP CODE

8. Do you expect to change your name in the next year or so? ☐ 1 YES ☐ 2 NO

What will your new name be? FIRST NAME | LAST NAME

9. Do you expect to move in the next year or so? ☐ 1 YES ☐ 2 NO

Approximately when do you expect to move? MONTH | DAY | YEAR

Do you know your new address?

STREET ADDRESS (House No., Street, Apt. No., or other identification)

CITY/PLACE | STATE | ZIP CODE

10. Please tell me the name and address of a relative or friend who knows how to contact you.

FIRST NAME | LAST NAME

STREET ADDRESS (House No., Street, Apt. No., or other identification)

CITY/PLACE | STATE | ZIP CODE

And what is (his/her) **phone number?** ( ) -

What is (his/her) **relationship to you?** _____

11. Please tell me the name and address of a second relative or friend who knows how to contact you.

FIRST NAME | LAST NAME

STREET ADDRESS (House No., Street, Apt. No., or other identification)

CITY/PLACE | STATE | ZIP CODE

And what is (his/her) **phone number** ( ) -

What is (his/her) **relationship to you?** _____

12. Is there another phone number where you can usually be reached? ( ) -

b. Where is that? _____

INTERVIEW STATUS CODES	Status Code	Time at end of interview
1 Complete Interview 3 Unable to contact 2 Partial Interview 4 Refused	☐	hr min a.m. p.m.

Appendix E
Supplemental Exhibits

With the exception of Exhibits 3-1 and 3-2, each exhibit in Chapter 3 appears in this appendix in an expanded form that gives the standard error for each entry. For convenience of access the numbering scheme for these tables simply replaces the "3" with "E"; thus, for example, Exhibit E-3 corresponds to Exhibit 3-3.

The presence of standard errors allows some comparisons to be made more formally, with statements of statistical significance. For example, in Exhibit E-3 one might ask whether the percentage of breastfeeding women who are married differs significantly from the corresponding percentage for pregnant women. As we explain below, it is straightforward to calculate the standard error of the difference between these two percentages from the standard errors of the percentages themselves. That approach is not valid for all pairs of percentages in an exhibit, even when the comparison might be meaningful. For example, if one wanted to test the significance of the difference (also in Exhibit E-3) between the percentage of pregnant women with 8 to 11 years of education and the percentage of pregnant women with 12 years of education, the calculation of the standard error would be more complicated, because those two percentages come from categories of the same categorical variable, in the same sample.

More generally, in order to calculate the standard error of the difference between two estimates by the formula given below, the estimates must come from independent samples. In the comparison of marital status between pregnant women and breastfeeding women mentioned above, the sampling for these two certification categories was separate (by design—see Chapter 2 and Appendix A). In the example involving highest grade of education, however, the two percentages came from classification of the same sample, the sample of pregnant women.

In the exhibits of this appendix the certification categories are not the only source of independent samples. As one example in Exhibit E-3, the three categories of Age of Women are non-overlapping. This feature produces independent samples for those categories, even though they are determined by information collected in the interview. A more complicated example arises in Exhibit E-22, which reports *per capita* income. Within each certification category (and also in the columns for "Total Women" and "Total WIC"), the three age categories are non-overlapping, and hence they yield independent samples of *per capita* income. The same statement applies to the categories of the other maternal characteristics that make up the rows of Exhibit E-22. The distinction is that *per capita* income is an additional variable (as opposed to the percentage distribution over the given categories).

The Standard Error of a Difference

When two estimates, Y_1 and Y_2, come from independent samples, the standard error of the difference, $Y_1 - Y_2$, equals the square root of the sum of the squares of the respective standard errors:

$$s.e.(Y_1 - Y_2) = [\{s.e.(Y_1)\}^2 + \{s.e.(Y_2)\}^2]^{1/2}.$$

In the example mentioned earlier, 60.8% (s.e. 3.1 percentage points) of breastfeeding women were married, and 40.1% (s.e. 2.7 percentage points) of pregnant women were married (Exhibit E-3). The standard error of the difference, 60.8% – 40.1% = 20.7%, is

$$[(3.1)^2 + (2.7)^2]^{1/2} = 4.1 \text{ percentage points.}$$

The usual 95 percent confidence interval for the population difference (based on the normal distribution) is

$$20.7 \pm 1.96 \times 4.1 \text{ or } (12.6\%, 28.8\%).$$

This interval does not include 0, so the difference is statistically significant at the (two-sided) 0.05 level.

Similarly, in Exhibit E-22 pregnant women under 18 years of age reported a mean *per capita* income of $4,327 (s.e. $51), and pregnant women age 18 to 34 reported a mean *per capita* income of $5,286 (s.e. $20). The standard error of the difference, $5,286 – $4,327 = $959, is

$$[(20)^2 + (51)^2]^{1/2} = \$55,$$

and the 95 percent confidence interval is

$$\$959 \pm \$107.$$

Multiplicity

In a table such as Exhibit E-22, where almost all the maternal characteristics have more than two categories, comparisons often go beyond a single pair of categories (as in the preceding example). If one judges the significance of each individual comparison at the 0.05 level, one expects a larger number of comparisons that are "significant" by chance alone (quantitatively, 0.05 times the number of comparisons). To guard against such an increased rate of "false positives," one common procedure (based on Bonferroni's inequality) divides the 0.05 by the total number of comparisons and uses this more stringent level for each individual comparison. As a result, the probability of getting one or more false-positive comparisons by chance alone cannot exceed 0.05 (now referred to as a "simultaneous 0.05 level").

For example, in Exhibit E-22 Age has three categories: Less than 18, 18 to 34, and 35 or older. There are three possible pairwise comparisons:

Less than 18 *vs.* 18 to 34
Less than 18 *vs.* 35 or older
18 to 34 *vs.* 35 or older.

Making allowance for the multiplicity, one would use the 0.05/3 = 0.0167 level for each of these three comparisons. The resulting (simultaneous) confidence intervals would use 2.394 times the standard error of the difference (rather than 1.96).

Comparison of Distributions

When a percentage distribution involves more than two categories, as Marital Status does (Exhibit E-3), it may be desired to compare the whole distribution between two certification categories (or among three or more certification categories), rather than focusing on a single category (as in the example discussed above). The customary statistical technique for such comparisons is the chi-squared test. In order to carry out this test, one must use the weighted individual-level data in the NSWP public-use data set and rely on software (such as SUDAAN, STATA, or SAS [Version 8]) that can take the sample design and the survey weights into account. Appendix A gives the necessary information on the sample design.

Exhibit E-3

Demographic Characteristics of WIC Women by Participant Category: Percent Distribution

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Age of Women		
					< 18 years	18-34 years	> 34 years
Marital status							
Married	40.1	60.8	38.9	44.1	8.5	46.1	56.4
	(2.7)	(3.1)	(2.9)	(2.2)	(2.3)	(2.4)	(5.4)
Widowed, separated, or divorced	10.2	9.5	12.2	10.7	0.4	10.3	24.1
	(1.4)	(1.3)	(1.6)	(0.8)	(0.4)	(0.9)	(5.2)
Never married	49.6	29.7	48.9	45.2	91.1	43.6	19.4
	(2.7)	(2.8)	(2.9)	(2.0)	(2.4)	(2.4)	(4.4)
Adult male present	69.5	79.0	60.1	68.5	57.0	70.1	70.6
	(2.3)	(2.3)	(3.4)	(1.9)	(6.8)	(2.1)	(4.5)
Highest grade of education							
Less than 8 years	5.8	9.5	3.9	6.0	0.0	5.9	14.0
	(1.8)	(1.9)	(1.4)	(1.3)	(0.0)	(1.4)	(3.5)
8 to 11 years	26.2	19.9	25.1	24.5	0.0	28.0	16.8
	(2.2)	(2.0)	(2.6)	(1.7)	(0.0)	(1.8)	(3.8)
12 years	38.5	31.2	40.1	37.5	0.0	42.0	35.5
	(2.7)	(2.2)	(2.4)	(1.9)	(0.0)	(2.1)	(4.1)
13 or more years	19.9	33.9	18.3	22.3	0.0	24.0	32.5
	(1.9)	(2.8)	(1.9)	(1.6)	(0.0)	(1.6)	(4.0)
Schooling incomplete, age <18	9.6	5.0	12.2	9.4	100.0	0.0	0.0
	(1.1)	(0.9)	(2.6)	(0.9)	(0.0)	(0.0)	(0.0)
Attending college							
Full time	3.6	4.1	1.8	3.1	0.0	3.7	0.0
	(0.7)	(2.1)	(0.6)	(0.5)	(0.0)	(0.6)	(0.0)
Part time	2.4	3.2	1.3	2.2	0.0	2.2	4.6
	(0.6)	(0.7)	(0.4)	(0.4)	(0.0)	(0.4)	(1.7)
Employment status							
Currently employed	31.9	19.5	17.7	24.9	12.1	25.8	27.0
	(2.2)	(2.0)	(2.3)	(1.6)	(3.5)	(1.7)	(5.0)
Not currently employed	68.1	80.5	82.3	75.1	87.9	74.2	73.0
	(2.2)	(2.0)	(2.3)	(1.6)	(3.5)	(1.7)	(5.0)
If not currently employed							
Employed in last 12 months	58.9	48.5	45.2	52.4	29.6	54.5	51.8
	(2.7)	(2.8)	(2.9)	(2.2)	(5.3)	(2.3)	(4.8)

Exhibit E-3 (cont.)

Demographic Characteristics of WIC Women by Participant Category: Percent Distribution

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Age of Women		
					< 18 years	18-34 years	> 34 years
Reasons not working							
Unemployed	21.7	9.3	11.6	15.4	7.9	16.3	16.0
	(2.9)	(1.5)	(1.8)	(1.6)	(3.1)	(1.9)	(5.8)
Keeping house	44.2	71.5	62.1	56.5	21.8	59.7	58.0
	(3.3)	(3.1)	(3.7)	(2.6)	(4.1)	(2.9)	(5.2)
Going to school	16.7	7.9	10.9	12.7	65.7	7.9	4.7
	(2.1)	(2.3)	(1.4)	(1.0)	(4.6)	(1.0)	(2.0)
Unable to work	12.8	7.6	9.8	10.6	4.7	10.8	16.2
	(2.0)	(1.8)	(2.2)	(1.5)	(2.4)	(1.6)	(4.2)
On temporary layoff	4.6	3.6	5.5	4.7	0.0	5.2	5.1
	(1.2)	(1.0)	(1.2)	(0.9)	(0.0)	(1.0)	(2.3)
Retired	0.0	0.0	0.1	0.1	0.0	0.1	0.0
	(0.0)	(0.0)	(0.2)	(0.1)	(0.0)	(0.1)	(0.0)
Number of biological children							
None	48.5	0.0	1.3	23.5	46.2	22.7	7.4
	(2.4)	(0.0)	(0.5)	(1.2)	(6.2)	(1.2)	(2.3)
One	31.9	39.4	47.4	38.4	50.0	38.4	25.8
	(1.7)	(2.8)	(3.0)	(1.5)	(6.2)	(1.6)	(5.5)
Two	11.9	32.1	27.9	21.1	3.1	22.6	25.4
	(1.3)	(2.6)	(2.4)	(1.0)	(1.9)	(1.3)	(4.2)
Three	5.8	18.3	14.3	11.1	0.6	11.6	16.7
	(1.0)	(1.6)	(1.8)	(0.9)	(0.7)	(0.9)	(4.0)
Four or more	1.9	10.2	9.1	5.9	0.0	4.7	24.7
	(0.6)	(1.4)	(1.3)	(0.6)	(0.0)	(0.6)	(4.5)
Rates of item non-response							
Marital status	2.9	0.5	4.5	2.9	14.8	1.8	1.7
	(1.0)	(0.3)	(2.6)	(0.9)	(8.7)	(0.6)	(1.1)
Highest grade of education	1.2	0.6	0.4	0.8	0.0	0.9	1.2
	(0.4)	(0.3)	(0.2)	(0.2)	(0.0)	(0.3)	(1.2)
Employment status	1.0	0.4	3.6	1.7	14.3	0.4	0.8
	(0.4)	(0.3)	(2.5)	(0.8)	(8.7)	(0.2)	(0.8)
Reasons not working	6.3	6.8	3.7	5.5	4.8	5.7	4.5
	(2.3)	(1.9)	(1.5)	(1.7)	(3.8)	(1.8)	(2.8)
Sample size	639	627	587	1,853	140	1,548	149
Population	859,381	376,463	573,899	1,809,743	154,982	1,504,823	135,430

Exhibit E-4

Demographic Characteristics of Mothers of WIC Infants and Children: Percent Distribution

	Mothers of Infants	Mothers of Children	Total WIC Mothers	Age of Mothers		
				< 18 years	18-34 years	> 34 years
Marital status						
Married	49.4	51.9	51.1	22.8	52.6	51.7
	(2.8)	(2.7)	(2.3)	(8.2)	(2.5)	(4.0)
Widowed, separated, or divorced	11.3	17.9	15.7	2.7	13.2	32.1
	(1.6)	(2.0)	(1.6)	(2.5)	(2.1)	(3.5)
Never married	39.3	30.2	33.2	74.5	34.3	16.2
	(2.8)	(2.3)	(1.9)	(9.0)	(2.1)	(3.8)
Adult male present	69.4	69.8	69.7	60.3	71.4	66.6
	(3.0)	(3.0)	(2.6)	(8.2)	(2.8)	(3.5)
Highest grade of education						
Less than 8 years	6.0	5.1	5.4	0.0	5.1	8.7
	(1.7)	(1.3)	(1.2)	(0.0)	(1.3)	(2.5)
8 to 11 years	25.3	26.7	26.2	0.0	28.7	22.6
	(2.1)	(2.5)	(1.9)	(0.0)	(2.0)	(4.3)
12 years	35.2	41.3	39.2	0.0	41.7	40.3
	(2.7)	(2.1)	(1.8)	(0.0)	(1.7)	(6.1)
13 or more years	24.5	23.3	23.7	0.0	24.4	28.3
	(2.7)	(2.3)	(2.1)	(0.0)	(2.1)	(4.5)
Schooling incomplete, age <18	8.8	3.5	5.3	100.0	0.0	0.0
	(1.3)	(0.9)	(0.8)	(0.0)	(0.0)	(0.0)
Attending college						
Full time	1.5	4.9	3.7	3.4	4.6	0.0
	(0.6)	(1.0)	(0.7)	(3.3)	(0.8)	(0.0)
Part time	2.0	3.1	2.7	0.0	2.9	2.4
	(0.5)	(0.7)	(0.5)	(0.0)	(0.6)	(1.1)
Employment status						
Currently employed	18.0	32.2	27.5	14.9	26.8	34.4
	(2.0)	(2.0)	(1.6)	(5.5)	(1.8)	(4.4)
Not currently employed	82.0	67.8	72.5	85.1	73.2	65.6
	(2.0)	(2.0)	(1.6)	(5.5)	(1.8)	(4.4)
If not currently employed						
Employed in last 12 months	52.3	49.2	50.2	32.4	51.9	46.5
	(2.0)	(2.3)	(2.0)	(7.6)	(2.4)	(4.4)

Exhibit E-4 (cont.)

Demographic Characteristics of Mothers of WIC Infants and Children: Percentage Distribution

	Mothers of Infants	Mothers of Children	Total WIC Mothers	Age of Mothers		
				< 18 years	18-34 years	> 34 years
Reasons not working						
Unemployed	13.0	11.6	12.1	4.2	11.4	18.8
	(2.1)	(2.0)	(1.7)	(2.0)	(1.8)	(4.4)
Keeping house	63.9	68.8	66.9	56.8	68.4	63.1
	(3.4)	(3.5)	(3.0)	(8.7)	(3.2)	(4.8)
Going to school	6.5	8.4	7.7	28.9	7.2	2.5
	(1.2)	(1.7)	(1.1)	(6.3)	(1.3)	(1.6)
Unable to work	12.0	7.9	9.4	7.0	9.3	11.7
	(1.9)	(2.4)	(1.8)	(4.4)	(1.9)	(3.2)
On temporary layoff	4.2	2.8	3.3	3.2	3.6	1.9
	(1.0)	(0.8)	(0.6)	(3.0)	(0.8)	(1.1)
Retired	0.4	0.5	0.5	0.0	0.2	2.1
	(0.3)	(0.4)	(0.2)	(0.0)	(0.2)	(1.5)
Number of biological children						
One	43.0	26.9	32.3	87.7	32.8	15.1
	(2.5)	(1.8)	(1.6)	(5.7)	(1.9)	(4.2)
Two	28.8	36.6	34.0	11.2	37.6	22.7
	(2.3)	(2.5)	(1.8)	(5.8)	(1.9)	(4.7)
Three	14.4	18.4	17.0	1.1	17.1	20.2
	(1.5)	(1.8)	(1.2)	(1.0)	(1.3)	(3.6)
Four or more	12.0	13.9	13.3	0.0	12.1	23.6
	(2.0)	(1.4)	(1.2)	(0.0)	(1.1)	(4.3)
Rates of item non-response						
Marital status	1.5	1.8	1.7	4.2	1.7	0.0
	(0.6)	(0.6)	(0.5)	(3.3)	(0.5)	(0.0)
Highest grade of education	0.7	0.6	0.7	0.0	0.8	0.0
	(0.3)	(0.4)	(0.3)	(0.0)	(0.3)	(0.0)
Employment status	0.8	0.9	0.8	4.2	0.6	0.0
	(0.4)	(0.4)	(0.3)	(3.3)	(0.3)	(0.0)
Reasons not working	4.1	4.8	4.6	2.2	5.0	3.3
	(1.3)	(2.2)	(1.7)	(1.8)	(2.1)	(1.6)
Sample size	614	647	1,261	64	1,015	169
Population	1,978,411	3,952,924	5,931,335	257,585	4,685,675	934,750

Exhibit E-5

Demographic Characteristics of WIC Women and WIC Mothers, by Metro-Nonmetro Location

	Metropolitan	Nonmetropolitan
Age		
<18 years	5.1	6.2
	(0.7)	(1.1)
18-34 years	80.0	79.7
	(1.3)	(2.9)
>34 years	13.8	14.0
	(1.1)	(3.1)
Marital status		
Married	48.6	52.6
	(2.3)	(2.8)
Widowed, separated, or divorced	14.7	14.0
	(1.5)	(2.3)
Never married	36.7	33.4
	(2.0)	(3.5)
Adult male present	67.8	75.8
	(2.6)	(3.0)
Highest grade of education		
Less than 8 years	6.7	1.3
	(1.4)	(1.1)
8 to 11 years	26.7	22.6
	(1.8)	(2.9)
12 years	37.3	44.9
	(1.5)	(3.7)
13 or more years	23.0	24.9
	(2.3)	(1.9)
Schooling incomplete, age <18	6.2	6.3
	(0.8)	(1.1)
Attending college		
Full time	3.5	3.8
	(0.7)	(1.0)
Part time	2.9	1.3
	(0.5)	(0.7)
Employment status		
Currently employed	26.1	29.6
	(1.6)	(3.3)
Not currently employed	73.9	70.4
	(1.6)	(3.3)
Employment history, if not employed		
employed in last 12 months	49.2	56.6
	(2.0)	(3.7)
Reasons not working, if not employed		
Unemployed	12.0	16.6
	(1.6)	(4.6)
Keeping house	65.5	60.1
	(3.1)	(5.9)
Going to school	8.9	8.8
	(1.1)	(1.4)
Unable to work	9.2	11.9
	(1.8)	(2.7)
On temporary layoff	3.9	2.5
	(0.7)	(0.8)
Retired	0.5	0.0
	(0.2)	(0.0)

Exhibit E-5 (cont.)

Demographic Characteristics of WIC Women and WIC Mothers, by Metro-Nonmetro Location

	Metropolitan	Nonmetropolitan
Number of biological children		
None	5.3	6.1
	(0.4)	(0.7)
One	32.9	36.9
	(1.3)	(3.1)
Two	31.9	27.2
	(1.6)	(3.0)
Three	14.8	18.8
	(1.0)	(1.7)
Four or more	12.1	9.6
	(1.0)	(1.6)
Rates of item non-response		
Age	1.1	0.1
	(0.4)	(0.1)
Marital status	2.2	1.3
	(0.5)	(0.4)
Highest grade of education	0.9	0.1
	(0.3)	(0.1)
College attendence	3.9	2.2
	(0.7)	(0.8)
Employment status	1.2	0.3
	(0.4)	(0.2)
Reasons not working	4.3	6.9
	(2.0)	(2.7)
Sample size	2,387	727
Population	6,143,639	1,597,439

Exhibit E-6

Demographic Characteristics of WIC Infants and Children at Certification: Percent Distribution

	WIC Infants	WIC Children
Gender		
Male	49.9	47.9
	(2.3)	(2.2)
Female	50.1	52.1
	(2.3)	(2.2)
Birth order		
First	43.8	46.8
	(2.4)	(2.4)
Second	29.5	27.4
	(2.3)	(2.1)
Third or more	26.7	25.8
	(2.3)	(2.5)
Household characteristics		
Biological mother present	97.9	95.2
	(0.7)	(1.1)
Biological father present	58.3	57.9
	(3.4)	(2.7)
Foster child	1.3	2.7
	(0.6)	(0.7)
WIC experience		
First WIC certification	86.5	0.9
	(2.3)	(0.4)
WIC recertification	13.5	99.1
	(2.3)	(0.4)
Mother's WIC experience with sampled child		
Mother in WIC when pregnant only	3.2	12.4
	(0.9)	(2.1)
Mother in WIC when pregnant & postpartum	74.5	67.7
	(1.9)	(2.0)
Mother in WIC postpartum only	16.6	11.3
	(1.9)	(1.6)
Mother not in WIC with sampled child	5.7	8.7
	(1.2)	(1.5)
Other public assistance		
Receiving TANF	12.5	14.1
	(1.8)	(1.9)
Receiving Food Stamps	31.4	35.5
	(2.4)	(2.6)
Attending Head Start	NA	6.6
		(1.0)

Exhibit E-6 (cont.)

Demographic Characteristics of WIC Infants and Children at Certification: Percent Distribution

	WIC Infants	WIC Children
Rates of item non-response		
Gender	1.7	0.9
	(0.6)	(0.4)
Birth order indeterminant	1.8	4.1
	(0.7)	(0.9)
WIC experience	3.1	7.6
	(0.8)	(1.6)
Mother's WIC experience	2.2	5.6
	(0.6)	(1.0)
Receiving TANF	1.6	1.9
	(0.7)	(0.5)
Receiving Food Stamps	1.0	1.6
	(0.5)	(0.6)
Attending Head Start	0.0	0.0
	(0.0)	(0.0)
Sample size	614	647
Population	1,978,411	3,952,924

Exhibit E-7

WIC Economic Unit Composition by Participant Category: Mean Economic Unit Size, Number of Adults Present, and Number of WIC Participants

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Economic unit size	3.12	4.17	3.94	3.60	4.14	4.16	4.02
	(0.07)	(0.08)	(0.09)	(0.05)	(0.10)	(0.07)	(0.05)
Adult in unit	1.86	1.94	1.71	1.83	1.76	1.75	1.77
	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.03)
WIC participants in unit	1.35	2.45	2.35	1.90	2.14	1.60	1.81
	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.03)
Sample size	639	627	587	1853	614	647	3114
Population	859381	376463	573899	1809743	1978411	3952924	7741078

Exhibit E-8

WIC Economic Unit Composition by Participant Category: Distribution of Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Economic unit size							
1	7.7	0.0	0.4	3.8	1.3	2.7	2.6
	(1.1)	(0.0)	(0.3)	(0.5)	(0.6)	(0.7)	(0.5)
2	30.9	7.5	9.4	19.2	9.2	8.1	11.0
	(2.0)	(2.2)	(2.1)	(1.5)	(1.3)	(1.1)	(0.9)
3	30.3	25.7	32.9	30.2	26.8	23.7	26.0
	(1.9)	(2.0)	(3.3)	(1.4)	(2.4)	(1.8)	(1.1)
4	14.3	32.3	29.2	22.8	29.6	30.0	28.2
	(1.3)	(1.6)	(2.3)	(0.9)	(2.1)	(1.9)	(1.2)
5	10.3	21.1	17.4	14.8	16.6	18.9	17.4
	(1.7)	(2.4)	(2.2)	(1.3)	(1.6)	(1.8)	(1.1)
6 or more	6.4	13.5	10.7	9.2	16.5	16.5	14.8
	(1.3)	(1.6)	(1.8)	(0.8)	(2.2)	(1.8)	(1.2)
Adults in unit							
None	1.2	0.6	1.7	1.2	3.9	3.3	3.0
	(0.4)	(0.3)	(0.5)	(0.3)	(1.0)	(0.8)	(0.5)
1	29.3	20.1	36.6	29.7	27.1	27.8	28.1
	(1.9)	(2.6)	(2.9)	(1.8)	(2.6)	(2.5)	(1.9)
2	56.0	67.4	52.2	57.2	59.9	61.2	59.9
	(2.4)	(2.6)	(2.8)	(1.8)	(2.5)	(2.3)	(1.8)
3	9.9	9.0	8.0	9.1	7.2	6.2	7.1
	(1.3)	(2.2)	(1.5)	(0.9)	(1.4)	(1.1)	(0.9)
4	2.9	2.4	1.4	2.3	1.5	1.0	1.5
	(0.7)	(0.7)	(0.5)	(0.4)	(0.6)	(0.4)	(0.3)
5	0.7	0.5	0.0	0.4	0.2	0.5	0.4
	(0.5)	(0.3)	(0.0)	(0.2)	(0.2)	(0.5)	(0.3)
6 or more	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	(0.0)
WIC participants in unit							
1	69.5	0.0	3.9	34.2	16.0	56.6	41.0
	(2.2)	(0.0)	(1.0)	(1.4)	(1.9)	(2.7)	(1.6)
2	26.1	62.7	64.0	45.7	58.1	30.1	40.9
	(2.0)	(3.0)	(3.2)	(1.4)	(2.2)	(2.2)	(1.3)
3	3.9	30.3	26.1	16.4	21.8	10.6	14.8
	(0.7)	(2.6)	(2.5)	(1.2)	(1.7)	(1.7)	(1.1)
4 or more	0.5	7.0	6.1	3.6	4.1	2.7	3.3
	(0.3)	(1.4)	(1.1)	(0.5)	(1.1)	(0.6)	(0.5)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-9

WIC Economic Unit Composition by Metro-Nonmetro Location: Distribution of Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Pregnant Women		Breastfeeding Women		Postpartum Women		Total Women	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Economic unit size								
1	7.4	8.8	0.0	0.0	0.3	0.8	3.5	4.7
	(1.3)	(1.7)	(0.0)	(0.0)	(0.2)	(0.8)	(0.6)	(0.7)
2	33.0	23.9	7.9	4.9	9.9	7.6	20.2	15.4
	(2.3)	(2.8)	(2.5)	(3.1)	(2.6)	(2.3)	(1.7)	(2.1)
3	30.3	30.3	25.3	27.5	32.4	34.7	29.9	31.3
	(2.2)	(3.9)	(2.2)	(4.9)	(3.9)	(5.7)	(1.7)	(2.0)
4	13.7	16.5	32.6	31.2	30.7	23.8	23.2	21.3
	(1.3)	(3.5)	(1.8)	(2.7)	(2.7)	(2.8)	(1.0)	(1.8)
5	10.1	11.1	20.9	21.8	15.0	25.9	14.0	17.8
	(2.1)	(2.2)	(2.7)	(4.2)	(2.2)	(5.3)	(1.5)	(1.9)
6 or more	5.5	9.4	13.3	14.6	11.7	7.1	9.2	9.5
	(1.4)	(2.7)	(1.8)	(2.9)	(2.1)	(3.1)	(0.9)	(1.4)
Adults in unit								
None	1.0	2.1	0.7	0.0	1.3	3.1	1.0	2.1
	(0.4)	(1.3)	(0.3)	(0.0)	(0.5)	(1.4)	(0.3)	(0.8)
1	29.4	29.0	20.4	18.5	39.4	26.9	30.5	26.6
	(2.2)	(4.1)	(2.8)	(6.7)	(3.5)	(2.6)	(2.2)	(2.1)
2	56.5	54.3	66.5	72.2	49.8	60.9	56.6	59.4
	(2.9)	(3.4)	(2.9)	(6.7)	(3.3)	(3.8)	(2.2)	(2.4)
3	8.7	14.1	9.8	4.5	8.4	6.6	8.8	10.0
	(1.4)	(2.4)	(2.5)	(2.3)	(1.8)	(1.9)	(1.0)	(1.6)
4	3.6	0.5	2.3	2.6	1.2	2.5	2.6	1.5
	(0.9)	(0.5)	(0.8)	(1.4)	(0.5)	(1.3)	(0.5)	(0.5)
5	0.9	0.0	0.2	2.1	0.0	0.0	0.5	0.3
	(0.6)	(0.0)	(0.2)	(1.4)	(0.0)	(0.0)	(0.3)	(0.3)
6 or more	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
WIC participants in unit								
1	69.8	68.7	0.0	0.0	4.3	2.4	33.9	35.4
	(2.6)	(3.7)	(0.0)	(0.0)	(1.2)	(1.5)	(1.6)	(2.6)
2	26.2	25.6	60.9	72.4	62.1	70.6	45.0	48.2
	(2.5)	(2.8)	(3.1)	(8.2)	(3.8)	(5.4)	(1.7)	(2.2)
3	3.4	5.7	31.8	22.2	27.4	21.6	17.2	13.7
	(0.8)	(1.6)	(2.6)	(6.3)	(2.9)	(5.0)	(1.3)	(2.7)
4 or more	0.6	0.0	7.3	5.4	6.3	5.4	3.9	2.7
	(0.4)	(0.0)	(1.5)	(3.1)	(1.3)	(1.8)	(0.6)	(1.0)
Sample size	481	158	514	113	442	145	1,437	416
Population	668,251	191,130	315,918	60,545	446,008	127,891	1,430,17	379,566

Exhibit E-9 (cont.)

WIC Economic Unit Composition by Metro-Nonmetro Location: Distribution of Economic Unit Size, Numbers of Adults Present, and Number of WIC Participants

	Infants		Children		Total WIC	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Economic unit size						
1	1.5	0.6	3.0	1.7	2.7	2.2
	(0.8)	(0.6)	(0.9)	(1.0)	(0.6)	(0.6)
2	8.7	11.2	8.1	7.9	11.1	10.5
	(1.3)	(4.1)	(1.4)	(1.9)	(1.1)	(1.1)
3	27.8	22.7	24.8	19.6	26.7	23.1
	(2.9)	(4.9)	(2.2)	(2.2)	(1.4)	(1.3)
4	29.5	30.1	29.8	30.8	28.2	28.4
	(2.4)	(3.7)	(2.4)	(2.0)	(1.4)	(1.8)
5	15.9	19.4	18.4	20.8	16.8	19.7
	(1.8)	(3.9)	(2.1)	(3.5)	(1.3)	(1.9)
6 or more	16.6	16.0	15.8	19.1	14.5	16.1
	(2.6)	(2.7)	(1.9)	(4.5)	(1.3)	(2.2)
Adults in unit						
None	4.4	2.1	3.9	1.7	3.3	1.9
	(1.2)	(1.0)	(1.0)	(1.0)	(0.6)	(0.6)
1	27.9	23.9	29.2	22.5	29.2	23.8
	(3.0)	(5.5)	(3.0)	(3.5)	(2.3)	(2.7)
2	58.7	64.9	59.1	68.8	58.4	65.6
	(2.9)	(3.6)	(2.7)	(3.2)	(2.1)	(1.9)
3	6.8	8.8	6.4	5.5	7.1	7.4
	(1.5)	(3.2)	(1.3)	(2.3)	(1.0)	(2.0)
4	1.8	0.4	0.9	1.6	1.5	1.3
	(0.7)	(0.4)	(0.4)	(1.2)	(0.4)	(0.7)
5	0.3	0.0	0.7	0.0	0.5	0.1
	(0.3)	(0.0)	(0.7)	(0.0)	(0.3)	(0.1)
6 or more	0.1	0.0	0.0	0.0	0.0	0.0
	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
WIC participants in unit						
1	16.2	15.3	55.0	62.5	40.0	44.7
	(2.2)	(3.7)	(2.9)	(5.8)	(1.7)	(3.4)
2	56.9	62.9	30.7	27.8	40.8	41.1
	(2.5)	(3.7)	(2.4)	(5.4)	(1.4)	(2.7)
3	22.4	19.6	11.6	6.8	15.7	11.5
	(1.6)	(5.1)	(2.0)	(2.3)	(1.1)	(2.3)
4 or more	4.6	2.1	2.6	2.9	3.4	2.7
	(1.4)	(0.9)	(0.6)	(1.8)	(0.5)	(0.9)
Sample size	474	140	476	171	2,387	727
Population	1,593,475	384,936	3,119,987	832,937	6,143,639	1,597,439

Exhibit E-10

Distribution of WIC Infants and Children, by Number of Siblings Age-Eligible for WIC

	Infants	Children	Total WIC
Percent with any siblings age-eligible for WIC	42.2 (2.9)	46.6 (2.5)	45.1 (2.1)
Number siblings age-eligible for WIC			
None	57.8 (2.9)	53.4 (2.5)	54.9 (2.1)
One	32.8 (2.6)	39.3 (2.7)	37.1 (2.0)
Two	7.4 (1.2)	6.5 (1.1)	6.8 (0.8)
Three	1.9 (1.0)	0.6 (0.3)	1.0 (0.4)
Four or more	0.1 (0.1)	0.2 (0.2)	0.2 (0.1)
Mean number siblings age-eligible for WIC	0.54 (0.04)	0.55 (0.03)	0.55 (0.03)
Percent with any siblings age 5 years or older	28.4 (2.2)	43.9 (1.9)	38.7 (1.3)
Number siblings age 5 years or older			
None	71.6 (2.2)	56.1 (1.9)	61.3 (1.3)
One	14.9 (1.3)	25.1 (1.7)	21.7 (1.1)
Two	9.0 (1.3)	12.4 (1.5)	11.3 (1.1)
Three	2.4 (0.6)	4.2 (0.8)	3.6 (0.5)
Four or more	2.0 (0.9)	2.2 (0.7)	2.1 (0.6)
Mean number siblings age 5 years or older	0.52 (0.07)	0.72 (0.04)	0.66 (0.04)
Sample size	614	647	1,261
Population	1,978,411	3,952,924	5,931,335

Exhibit E-11

Percent of WIC Infants and Children, by Number of Siblings Age-Eligible for WC and Number of Siblings Receiving WIC

	Number of Siblings Currently Receiving WIC			Sample	
	None	One	Two	Size	Population
Number Siblings Age-Eligible for WIC					
One	19.2	80.8	--	474	2,298,070
	(1.8)	(1.8)			
Two	12.6	20.7	66.7	111	503,105
	(3.2)	(3.9)	(4.5)		

Exhibit E-12

Percent of Siblings of WIC Infants and Children who are also Certified in WIC, by Age of Siblings

	Percent Currently in WIC	Percent Not in WIC	Number Siblings in Age Group
Age of siblings			
Less than 1 year	92.8	7.1	182
	(1.9)	(1.9)	
1 year old	90.6	9.4	139
	(2.5)	(2.5)	
2 years old	82.6	17.4	144
	(3.2)	(3.2)	
3 years old	78.6	21.4	140
	(3.5)	(3.5)	
4 years old	69.9	30.1	123
	(4.1)	(4.1)	
Total	83.8	16.2	728
	(1.4)	(1.4)	

Exhibit E-13

Characteristics of WIC Households, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Household realtionship to economic unit							
Percent of WIC economic units residing by themselves	83.5 (1.7)	86.1 (2.7)	81.1 (3.1)	83.3 (1.6)	84.1 (1.9)	85.7 (2.0)	84.7 (1.5)
Percent of WIC economic units residing in larger households	16.5 (1.7)	13.9 (2.7)	18.9 (3.1)	16.7 (1.6)	15.9 (1.9)	14.3 (2.0)	15.3 (1.5)
Percent of households containing unrelated individuals	6.6 (2.0)	5.4 (1.4)	3.7 (1.1)	5.4 (1.3)	4.4 (1.2)	3.5 (1.0)	4.2 (0.7)
WIC economic units by number of household members not in unit							
None	83.5 (1.7)	86.1 (2.7)	81.1 (3.1)	83.3 (1.6)	84.1 (1.9)	85.7 (2.0)	84.7 (1.5)
One	6.5 (1.2)	5.2 (1.3)	8.9 (2.5)	7.0 (0.9)	4.1 (1.0)	6.1 (1.5)	5.8 (1.0)
Two	3.6 (0.8)	3.5 (0.7)	5.0 (1.1)	4.0 (0.5)	4.8 (1.1)	1.9 (0.6)	3.1 (0.5)
Three	3.6 (1.0)	3.2 (1.6)	1.7 (0.6)	2.9 (0.5)	3.0 (0.7)	3.1 (0.8)	3.0 (0.5)
Four or more	2.8 (0.8)	2.0 (0.5)	3.4 (1.0)	2.8 (0.6)	4.0 (1.3)	3.3 (0.9)	3.3 (0.6)
Multigenerational households							
Percentage of households that are multigenerational	25.7 (2.0)	16.4 (2.5)	29.3 (2.7)	24.9 (1.3)	23.1 (2.2)	15.3 (1.8)	19.5 (1.3)
Percentage of multigenerational households in which all household members are in WIC economic unit	63.4 (4.1)	45.6 (7.8)	51.3 (6.9)	56.4 (4.0)	59.5 (5.8)	51.6 (7.0)	55.4 (4.3)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-14

Percentage of WIC Participants with Reported Participation in Adjunct Programs at Certification

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Adjunctive income eligibility							
TANF	9.3	13.8	21.7	14.2	14.0	16.0	15.0
	(1.9)	(2.3)	(3.1)	(1.9)	(2.2)	(2.3)	(1.9)
Food Stamp Program	23.3	22.4	38.4	27.8	31.4	35.5	32.7
	(2.2)	(2.4)	(2.9)	(1.9)	(2.4)	(2.6)	(1.8)
Medicaid	51.1	57.2	69.3	58.2	65.3	61.4	61.6
	(3.0)	(2.8)	(2.8)	(2.1)	(3.5)	(3.2)	(2.5)
Automatic income eligibility							
Food Distribution Program	0.2	0.0	0.0	0.1	0.0	0.0	0.0
on Indian Reservations	(0.2)	(0.0)	(0.0)	(0.1)	(0.0)	(0.0)	(0.0)
Supplemental Security Income	4.3	4.1	4.0	4.2	3.6	7.2	5.6
	(1.5)	(1.3)	(1.7)	(1.4)	(1.2)	(2.8)	(2.0)
Free or reduced-price NSLP meals	0.0	0.0	0.0	0.0	0.0	0.7	0.3
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.4)	(0.2)
Head Start	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
General Assistance	1.5	0.2	1.0	1.0	1.4	0.3	0.8
	(0.7)	(0.2)	(0.5)	(0.5)	(1.2)	(0.3)	(0.4)
Home Energy Assistance	0.6	0.4	0.2	0.4	0.0	0.0	0.1
	(0.6)	(0.3)	(0.2)	(0.4)	(0.0)	(0.0)	(0.1)
Overall							
No participation in adjunct	45.2	40.1	28.2	38.8	31.3	36.6	35.7
or automatic programs	(2.7)	(2.9)	(2.8)	(2.2)	(2.9)	(2.9)	(2.3)
Adjunct/automatic eligibility	4.4	2.7	6.6	4.7	4.1	4.1	4.2
status could not be determined	(0.9)	(0.6)	(2.6)	(1.1)	(1.0)	(0.9)	(0.7)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-15

Sources of Monthly Income, All WIC Economic Units

	Percent with Source	Percent without Source	Percent not Reported	Among Those with Source: Percent with Amount Reported	Among Those with Source: Mean Amount Reported
Source of Income					
Wages or salary	73.7	26.3	0.4	85.9	14.1
	(1.8)	(1.8)	(0.2)	(1.4)	(1.4)
Unemployment insurance	4.9	95.1	2.2	87.4	12.6
	(0.8)	(0.8)	(0.6)	(4.7)	(4.7)
Worker's compensation	1.6	98.4	2.3	43.0	57.0
	(0.3)	(0.3)	(0.6)	(10.7)	(10.7)
TANF	15.0	85.0	1.8	90.4	9.6
	(1.9)	(1.9)	(0.4)	(2.2)	(2.2)
SSI	5.4	94.6	2.4	87.3	12.7
	(0.8)	(0.8)	(0.6)	(4.2)	(4.2)
Other welfare program	5.8	94.2	2.4	87.0	13.0
	(1.0)	(1.0)	(0.6)	(4.3)	(4.3)
Social Security	5.9	94.1	2.3	85.1	14.9
	(0.7)	(0.7)	(0.6)	(3.7)	(3.7)
Veteran's benefits	0.8	99.2	2.5	17.6	82.4
	(0.3)	(0.3)	(0.6)	(12.3)	(12.3)
Pensions or annuities	1.3	98.7	2.5	63.7	36.3
	(0.3)	(0.3)	(0.4)	(11.1)	(11.1)
Rental income	0.8	99.2	1.7	80.3	19.7
	(0.3)	(0.3)	(0.4)	(9.9)	(9.9)
Interest on savings	9.5	90.5	1.7	62.5	37.5
	(0.8)	(0.8)	(0.4)	(4.8)	(4.8)
Dividends, royalties, trusts	1.1	98.9	2.0	31.1	68.9
	(0.3)	(0.3)	(0.4)	(14.5)	(14.5)
Alimony or child support	11.2	88.8	2.0	94.0	6.0
	(1.2)	(1.2)	(0.4)	(1.9)	(1.9)
Other	5.7	94.3	3.3	92.2	7.8
	(0.8)	(0.8)	(0.6)	(1.8)	(1.8)
Sample size	3,114	3,114	3,114		
Population	7,741,078	7,741,078	7,741,078		

Exhibit E-16

Sources of Monthly Income for WIC Economic Units, by Participant Category: Percent with Source

Source of Income	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Wages or salary	77.1	77.2	67.4	74.0	74.6	73.0	73.7
	(2.0)	(2.7)	(2.7)	(1.8)	(2.0)	(2.7)	(1.8)
Unemployment insurance	3.9	5.6	4.5	4.5	4.9	5.2	4.9
	(1.0)	(1.3)	(0.9)	(0.7)	(1.0)	(1.3)	(0.8)
Worker's compensation	1.6	1.2	2.1	1.7	2.2	1.3	1.6
	(0.5)	(0.5)	(0.7)	(0.4)	(0.6)	(0.4)	(0.3)
TANF	9.3	13.8	21.7	14.2	14.0	16.0	15.0
	(1.9)	(2.3)	(3.1)	(1.9)	(2.2)	(2.3)	(1.9)
SSI	5.1	3.9	4.0	4.5	4.6	6.2	5.4
	(0.9)	(0.8)	(0.9)	(0.6)	(1.1)	(1.3)	(0.8)
Other welfare program	5.2	3.8	5.3	4.9	5.5	6.4	5.8
	(1.0)	(0.8)	(1.3)	(0.8)	(1.5)	(1.3)	(1.0)
Social Security	5.9	3.0	6.1	5.3	6.6	5.8	5.9
	(1.0)	(0.8)	(1.1)	(0.7)	(1.4)	(1.0)	(0.7)
Veteran's benefits	1.5	0.4	1.0	1.1	0.4	0.9	0.8
	(0.4)	(0.2)	(0.4)	(0.3)	(0.2)	(0.5)	(0.3)
Pensions or annuities	1.0	0.3	0.6	0.7	1.0	1.7	1.3
	(0.4)	(0.2)	(0.3)	(0.2)	(0.4)	(0.5)	(0.3)
Rental income	1.6	2.3	0.5	1.4	0.2	0.7	0.8
	(0.5)	(1.7)	(0.3)	(0.4)	(0.2)	(0.5)	(0.3)
Interest on savings	8.8	8.2	7.5	8.3	9.0	10.4	9.5
	(1.6)	(1.5)	(1.4)	(1.1)	(1.5)	(1.3)	(0.8)
Dividends, royalties, trusts	1.2	0.9	1.4	1.2	0.4	1.4	1.1
	(0.6)	(0.5)	(0.5)	(0.5)	(0.3)	(0.6)	(0.3)
Alimony or child support	10.5	7.4	11.7	10.2	9.8	12.3	11.2
	(1.5)	(1.3)	(1.7)	(1.0)	(1.5)	(1.7)	(1.2)
Other	6.7	7.3	4.9	6.2	8.3	4.2	5.7
	(1.0)	(1.3)	(1.1)	(0.7)	(1.4)	(1.3)	(0.8)
Percent receiving any source	92.9	93.1	93.4	93.1	93.2	93.6	93.4
	(1.4)	(2.2)	(1.2)	(0.9)	(1.2)	(1.9)	(1.2)
Percent with no source of income	7.1	6.9	6.6	6.9	6.8	6.4	6.6
	(1.4)	(2.2)	(1.2)	(0.9)	(1.2)	(1.9)	(1.2)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-17

Mean Amount of Monthly Income for WIC Economic Units, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Source of Income							
Wages or salary	1,400	1,425	1,324	1,383	1,372	1,360	1,369
	(67)	(44)	(59)	(40)	(40)	(46)	(34)
Unemployment insurance	348	529	563	463	579	459	490
	(54)	(88)	(85)	(44)	(108)	(49)	(46)
Worker's compensation	333	298	297	313	374	281	324
	(0)	(42)	(31)	(15)	(38)	(34)	(18)
TANF	354	384	345	356	368	408	386
	(39)	(21)	(27)	(25)	(28)	(36)	(27)
SSI	444	472	397	435	450	601	529
	(43)	(61)	(45)	(29)	(44)	(63)	(43)
Other welfare program	327	443	388	366	350	409	385
	(40)	(35)	(38)	(30)	(84)	(36)	(33)
Social Security	662	751	584	645	553	679	635
	(57)	(121)	(45)	(33)	(28)	(139)	(69)
Pensions or annuities	1,285	381	611	1,026	683	706	747
	(490)	(233)	(48)	(353)	(21)	(245)	(168)
Rental income	312	241	121	265	330	326	286
	(31)	(40)	(180)	(36)	(18)	(263)	(64)
Interest on savings	17	35	24	23	27	26	26
	(8)	(24)	(11)	(8)	(10)	(11)	(8)
Alimony or child support	206	264	247	230	278	317	289
	(20)	(27)	(25)	(17)	(23)	(27)	(17)
Other	341	352	205	310	207	349	287
	(78)	(119)	(38)	(48)	(44)	(140)	(63)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-18

Sources of Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location: Percent with Source

	Pregnant Women		Breastfeeding Women		Postpartum Women		Total Women	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of Income								
Wages or salary	76.9	77.6	76.2	82.4	64.8	76.3	73.0	77.9
	(2.3)	(4.1)	(3.1)	(2.2)	(3.1)	(5.0)	(2.0)	(3.3)
Unemployment insurance	3.9	4.1	4.8	10.0	3.6	7.7	4.0	6.3
	(1.2)	(1.4)	(1.2)	(3.7)	(0.9)	(1.5)	(0.8)	(1.3)
Worker's compensation	1.4	2.4	1.0	2.4	2.6	0.4	1.7	1.7
	(0.6)	(1.1)	(0.5)	(1.2)	(0.9)	(0.4)	(0.4)	(0.6)
TANF	10.0	6.7	13.8	13.8	22.8	18.0	14.8	11.7
	(2.3)	(2.5)	(2.7)	(3.3)	(3.7)	(5.3)	(2.3)	(3.1)
SSI	5.3	4.3	4.1	3.3	4.8	1.4	4.9	3.1
	(1.0)	(1.4)	(0.8)	(2.1)	(1.1)	(0.8)	(0.7)	(0.7)
Other welfare program	5.7	3.2	4.3	1.3	4.9	6.6	5.1	4.1
	(1.3)	(1.4)	(0.9)	(0.8)	(1.5)	(2.6)	(1.0)	(1.1)
Social Security	5.3	8.0	3.2	1.9	5.6	7.8	4.9	7.0
	(1.2)	(2.2)	(1.0)	(1.4)	(1.3)	(2.0)	(0.7)	(1.6)
Veteran's benefits	1.7	0.5	0.4	0.6	1.3	0.0	1.3	0.4
	(0.5)	(0.5)	(0.3)	(0.6)	(0.5)	(0.0)	(0.4)	(0.3)
Pensions or annuities	1.3	0.0	0.4	0.0	0.6	0.5	0.9	0.2
	(0.5)	(0.0)	(0.2)	(0.0)	(0.3)	(0.5)	(0.2)	(0.2)
Rental income	1.6	1.6	2.8	0.0	0.7	0.0	1.6	0.8
	(0.6)	(0.9)	(2.0)	(0.0)	(0.3)	(0.0)	(0.5)	(0.4)
Interest on savings	7.7	12.4	7.4	12.6	7.6	7.1	7.6	10.6
	(1.4)	(4.7)	(1.7)	(2.9)	(1.5)	(3.4)	(1.2)	(2.4)
Dividends, royalties, trusts	1.2	1.2	0.9	1.3	1.4	1.1	1.2	1.2
	(0.8)	(0.8)	(0.6)	(0.8)	(0.6)	(1.1)	(0.6)	(0.7)
Alimony or child support	8.0	19.1	7.1	9.2	13.3	6.4	9.5	13.1
	(1.2)	(5.2)	(1.5)	(2.0)	(2.0)	(2.3)	(1.0)	(3.1)
Other	7.0	5.6	7.1	8.5	5.3	3.6	6.5	5.4
	(1.2)	(1.2)	(1.4)	(3.4)	(1.2)	(1.9)	(0.8)	(1.4)
Percent receiving any source	92.5	94.4	92.7	95.3	92.1	97.7	92.4	95.6
	(1.7)	(1.7)	(2.5)	(3.2)	(1.5)	(1.0)	(1.1)	(0.9)
Percent with no source of income	7.5	5.6	7.3	4.7	7.9	2.3	7.6	4.4
	(1.7)	(1.7)	(2.5)	(3.2)	(1.5)	(1.0)	(1.1)	(0.9)
Sample size	481	158	514	113	442	145	1,437	416
Population	668,251	191,130	315,918	60,545	446,008	127,891	1,430,177	379,566

Exhibit E-18 (cont.)

Sources of Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location: Percent with Source

	Infants		Children		Total WIC	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of Income						
Wages or salary	75.2	72.3	72.1	76.5	73.1	75.8
	(2.2)	(4.6)	(3.2)	(4.1)	(2.1)	(2.5)
Unemployment insurance	4.3	7.1	5.7	3.3	4.9	4.9
	(1.0)	(2.6)	(1.5)	(2.1)	(1.0)	(1.0)
Worker's compensation	2.2	2.1	1.4	0.9	1.7	1.4
	(0.7)	(1.6)	(0.5)	(0.8)	(0.4)	(0.5)
TANF	14.4	12.4	16.6	13.7	15.6	12.9
	(2.5)	(3.4)	(2.6)	(5.0)	(2.2)	(3.9)
SSI	5.2	2.2	6.8	3.7	5.9	3.2
	(1.3)	(1.1)	(1.6)	(2.1)	(1.0)	(1.1)
Other welfare program	4.1	11.3	6.2	7.2	5.4	7.4
	(1.0)	(5.2)	(1.2)	(3.8)	(0.9)	(2.8)
Social Security	6.0	9.2	5.5	6.7	5.5	7.4
	(1.3)	(4.1)	(1.1)	(2.1)	(0.8)	(1.7)
Veteran's benefits	0.3	0.8	0.9	0.8	0.8	0.7
	(0.2)	(0.8)	(0.6)	(0.8)	(0.4)	(0.4)
Pensions or annuities	0.8	1.8	1.9	0.8	1.4	0.9
	(0.4)	(1.0)	(0.7)	(0.5)	(0.3)	(0.4)
Rental income	0.3	0.0	0.8	0.4	0.9	0.4
	(0.2)	(0.0)	(0.7)	(0.4)	(0.4)	(0.2)
Interest on savings	8.5	11.0	10.6	9.5	9.3	10.1
	(1.8)	(2.8)	(1.5)	(2.9)	(0.8)	(2.1)
Dividends, royalties, trusts	0.3	0.7	1.4	1.3	1.1	1.1
	(0.3)	(0.5)	(0.7)	(0.8)	(0.4)	(0.6)
Alimony or child support	9.9	9.2	11.0	17.2	10.4	14.3
	(1.7)	(2.5)	(1.7)	(4.3)	(1.2)	(2.6)
Other	8.8	6.1	3.1	8.3	5.3	7.1
	(1.7)	(1.9)	(0.8)	(4.7)	(0.8)	(2.5)
Percent receiving any source	92.5	95.9	92.5	97.7	92.5	96.8
	(1.2)	(3.4)	(2.4)	(1.2)	(1.5)	(1.0)
Percent with no source of income	7.5	4.1	7.5	2.3	7.5	3.2
	(1.2)	(3.4)	(2.4)	(1.2)	(1.5)	(1.0)
Sample size	474	140	476	171	2,387	727
Population	1,593,475	384,936	3,119,987	832,937	6,143,639	1,597,439

Exhibit E-19

Mean Amount of Monthly Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location

	Pregnant Women		Breastfeeding Women		Postpartum Women		Total Women	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of Income								
Wages or salary	1,381	1,468	1,398	1,555	1,335	1,291	1,372	1,424
	(81)	(101)	(50)	(108)	(73)	(83)	(47)	(79)
Unemployment insurance	389	*	566	437	681	350	517	324
	(60)		(114)	(75)	(103)	(108)	(51)	(46)
TANF	365	294	381	399	361	278	366	305
	(43)	(28)	(25)	(11)	(31)	(27)	(29)	(20)
SSI	453	*	418	*	391	*	428	482
	(50)		(41)		(47)		(32)	(62)
Other welfare program	350	*	434	*	396	362	379	297
	(42)		(34)		(38)	(102)	(31)	(78)
Social Security	690	596	714	*	547	675	643	648
	(63)	(122)	(127)		(61)	(51)	(40)	(58)
Interest on savings	23	5	44	6	30	*	30	5
	(11)	(1)	(31)	(2)	(14)		(10)	(1)
Alimony or child support	221	183	281	196	253	*	245	188
	(28)	(25)	(32)	(31)	(26)		(18)	(28)
Other	360	253	399	151	228	*	336	189
	(94)	(58)	(138)	(80)	(43)		(56)	(38)
Sample size	481	158	514	113	442	145	1,437	416
Population	668,251	191,130	315,918	60,545	446,008	127,891	1,430,177	379,566

* Denotes fewer than 10 WIC participants in cell.

Exhibit E-19 (cont.)

Mean Amount of Monthly Income for WIC Economic Units, by Participant Category and Metro-Nonmetro Location

	Infants		Children		Total WIC	
	Metro	Nonmetro	Metro	Nonmetro	Metro	Nonmetro
Source of Income						
Wages or salary	1,364	1,410	1,365	1,346	1,366	1,379
	(46)	(82)	(53)	(90)	(38)	(72)
Unemployment insurance	527	*	409	*	457	621
	(125)		(47)		(53)	(59)
TANF	371	354	416	372	394	353
	(33)	(33)	(41)	(53)	(31)	(36)
SSI	436	*	634	*	542	429
	(45)		(65)		(47)	(65)
Other welfare program	413	*	411	399	404	329
	(101)		(44)	(41)	(36)	(63)
Social Security	563	*	703	615	649	597
	(35)		(189)	(64)	(93)	(43)
Interest on savings	33	8	27	22	29	14
	(13)	(2)	(13)	(18)	(10)	(9)
Alimony or child support	280	272	350	235	310	230
	(23)	(63)	(35)	(32)	(19)	(27)
Other	205	225	150	*	226	465
	(51)	(43)	(62)		(42)	(137)
Sample size	474	140	476	171	2,387	727
Population	1,593,475	384,936	3,119,987	832,937	6,143,639	1,597,439

* Denotes fewer than 10 WIC participants in cell.

Exhibit E-20

Mean Annualized Family or Economic Unit Income of WIC Participants by Participant Category and Adjunct-Eligibility Status

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
All Economic Units							
Average (mean) income	15,100	15,483	13,254	14,594	14,708	14,822	14,739
	(65)	(59)	(62)	(44)	(50)	(67)	(44)
Per capita income	5,184	3,737	3,372	4,308	3,671	3,575	3,774
	(20)	(12)	(13)	(12)	(12)	(14)	(10)
Percent with income not reported	0.6	0.6	0.6	0.6	2.2	3.5	2.5
	(0.3)	(0.3)	(0.3)	(0.2)	(0.9)	(0.8)	(0.6)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Adjunctively eligible							
Average (mean) income	12,362	13,483	12,116	12,495	13,430	12,839	12,924
	(63)	(81)	(62)	(38)	(60)	(63)	(39)
Per capita income	4,341	3,286	3,072	3,650	3,395	3,119	3,317
	(24)	(17)	(14)	(11)	(15)	(13)	(9)
Percent with income not reported	0.8	0.3	0.7	0.6	2.4	5.2	3.4
	(0.4)	(0.3)	(0.3)	(0.2)	(1.0)	(1.3)	(0.7)
Sample size	342	374	426	1,142	405	414	1,961
Population	458,522	217,868	410,318	1,086,708	1,341,504	2,460,773	4,888,984
Not adjunctively eligible							
Average (mean) income	18,218	18,249	16,097	17,744	17,385	17,943	17,769
	(135)	(75)	(149)	(94)	(92)	(127)	(80)
Per capita income	6,144	4,360	4,120	5,296	4,249	4,294	4,539
	(34)	(17)	(34)	(26)	(23)	(23)	(17)
Percent with income not reported	0.4	1.0	0.3	0.5	1.9	0.6	0.9
	(0.4)	(0.7)	(0.3)	(0.3)	(1.8)	(0.6)	(0.7)
Sample size	297	253	161	711	209	233	1,153
Population	400,859	158,595	163,581	723,035	636,907	1,492,151	2,852,094

Exhibit E-21

Mean Annualized Family or Economic Unit Income of WIC Participants by Participant Category and Metro-Nonmetro Location

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
All Economic Units							
Average (mean) income	15,100	15,483	13,254	14,594	14,708	14,822	14,739
	(65)	(59)	(62)	(44)	(50)	(67)	(44)
Per capita income	5,184	3,737	3,372	4,308	3,671	3,575	3,774
	(20)	(12)	(13)	(12)	(12)	(14)	(10)
Percent with income not reported	0.6	0.6	0.6	0.6	2.2	3.5	2.5
	(0.3)	(0.3)	(0.3)	(0.2)	(0.9)	(0.8)	(0.6)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Metro areas							
Average (mean) income	15,135	15,100	13,093	14,490	14,661	14,626	14,603
	(79)	(69)	(75)	(53)	(56)	(81)	(53)
Per capita income	5,296	3,647	3,342	4,323	3,657	3,542	3,758
	(24)	(14)	(16)	(15)	(14)	(17)	(12)
Percent with income not reported	0.4	0.7	0.4	0.5	2.5	3.6	2.6
	(0.3)	(0.4)	(0.2)	(0.2)	(1.0)	(1.0)	(0.7)
Sample size	481	514	442	1,437	474	476	2,387
Population	668,251	315,918	446,008	1,430,177	1,593,475	3,119,987	6,143,639
Nonmetro areas							
Average (mean) income	14,975	17,468	13,818	14,988	14,900	15,553	15,259
	(98)	(89)	(104)	(74)	(120)	(98)	(63)
Per capita income	4,787	4,205	3,477	4,252	3,726	3,699	3,838
	(32)	(27)	(19)	(21)	(24)	(21)	(14)
Percent with income not reported	1.2	0.0	1.2	1.0	1.0	2.9	2.0
	(0.9)	(0.0)	(0.9)	(0.5)	(0.8)	(1.4)	(0.9)
Sample size	158	113	145	416	140	171	727
Population	191,130	60,545	127,891	379,566	384,936	832,937	1,597,439

Exhibit E-23

Per Capita Economic Unit Income of WIC Participants by Category and Selected Maternal Characteristics

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Age							
Less than 18	4,327	4,075	3,319	3,905	3,737	4,324	3,945
	(51)	(44)	(48)	(31)	(31)	(85)	(26)
18-34	5,286	3,748	3,350	4,364	3,734	3,593	3,819
	(20)	(14)	(14)	(13)	(13)	(16)	(10)
35 or older	5,048	3,685	3,994	4,323	3,082	3,545	3,587
	(55)	(45)	(44)	(29)	(36)	(24)	(19)
Marital status							
Married	5,185	4,131	3,776	4,490	3,963	3,840	4,010
	(21)	(13)	(20)	(11)	(17)	(13)	(9)
Widowed,divorced, or separated	5,248	2,901	2,510	3,826	2,712	2,858	3,003
	(54)	(31)	(30)	(32)	(22)	(41)	(25)
Never married	5,199	3,207	3,211	4,248	3,528	3,612	3,772
	(32)	(30)	(18)	(20)	(22)	(19)	(15)
Not reported	4,896	3,414	4,176	4,480	5,776	3,571	4,371
	(97)	(104)	(57)	(57)	(124)	(107)	(58)
Adult male present							
Yes	5,450	4,013	4,042	4,715	4,161	3,814	4,116
	(24)	(16)	(17)	(15)	(13)	(13)	(10)
No	4,594	2,695	2,392	3,443	2,578	3,097	3,050
	(33)	(16)	(20)	(16)	(21)	(32)	(20)
Highest grade of education							
Less than 8 years	3,397	2,626	2,635	2,983	2,558	2,765	2,764
	(40)	(26)	(48)	(19)	(42)	(28)	(19)
8-11 years	4,183	3,160	2,938	3,604	3,171	2,807	3,077
	(24)	(18)	(16)	(14)	(22)	(22)	(13)
12 years	5,294	4,218	3,522	4,503	3,748	3,548	3,816
	(32)	(22)	(16)	(18)	(17)	(18)	(13)
13 or more years	7,256	3,978	3,988	5,370	4,439	4,694	4,780
	(59)	(28)	(22)	(31)	(18)	(23)	(15)
Schooling incomplete, age <18	4,406	3,670	3,255	3,854	3,652	3,973	3,812
	(50)	(37)	(44)	(30)	(26)	(73)	(24)
Not reported	3,948	4,613	1,189	3,934	2,095	8,090	4,763
	(108)	(73)	(0)	(86)	(39)	(0)	(136)

Exhibit E-23 (continued)

Per Capita Economic Unit Income of WIC Participants by Category and Selected Maternal Characteristics

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Size of economic unit							
1 person	6,512	--	6,897	6,520	--	--	6,520
	(74)		(536)	(73)			(73)
2 persons	5,633	2,247	2,348	4,874	2,734	3,495	3,897
	(35)	(78)	(30)	(34)	(41)	(45)	(28)
3-5 persons	4,974	3,985	3,504	4,185	4,023	3,720	3,902
	(30)	(11)	(14)	(14)	(12)	(14)	(9)
6 or more persons	3,289	3,098	3,243	3,213	2,685	3,102	2,998
	(45)	(25)	(41)	(19)	(29)	(27)	(19)
Currently Employed							
Yes	7,570	5,080	5,192	6,630	5,083	4,948	5,346
	(40)	(28)	(28)	(28)	(19)	(19)	(16)
No, employed in last 12 mos.	4,036	3,898	2,907	3,653	3,617	2,930	3,384
	(29)	(16)	(18)	(15)	(18)	(21)	(9)
No, not employed in last 12 mos.	4,173	3,143	2,997	3,518	3,248	2,979	3,169
	(30)	(18)	(16)	(16)	(18)	(18)	(13)
Overall	5,190	3,737	3,381	4,314	3,679	3,597	3,790
	(20)	(12)	(13)	(13)	(12)	(14)	(10)

Exhibit E-24

Distribution of Percent of Poverty Level of WIC Participants, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent of Poverty Level							
0-50	24.8	26.4	34.8	28.3	26.0	27.6	27.3
	(1.9)	(2.4)	(2.6)	(1.3)	(2.0)	(2.6)	(1.5)
51-100	28.4	35.1	33.0	31.3	39.0	37.7	36.5
	(2.2)	(2.3)	(2.2)	(1.3)	(2.5)	(2.4)	(1.5)
101-130	14.6	17.4	15.6	15.5	16.4	13.9	14.9
	(1.3)	(2.1)	(2.8)	(1.0)	(1.6)	(1.5)	(1.0)
131-150	11.2	7.5	6.5	8.9	5.7	8.4	7.8
	(1.2)	(1.2)	(1.4)	(0.9)	(0.9)	(1.3)	(0.8)
151-185	14.0	7.7	6.1	10.2	6.8	6.8	7.6
	(1.8)	(1.2)	(1.0)	(1.1)	(1.4)	(1.1)	(0.8)
186-200	1.4	1.8	0.6	1.2	1.1	2.6	1.9
	(0.5)	(0.5)	(0.3)	(0.3)	(0.4)	(0.6)	(0.4)
201-225	1.5	1.8	1.3	1.5	2.4	1.5	1.7
	(0.5)	(0.4)	(0.5)	(0.3)	(0.7)	(0.5)	(0.3)
226-250	1.2	1.1	0.5	1.0	1.2	0.8	0.9
	(0.4)	(0.4)	(0.3)	(0.2)	(0.4)	(0.6)	(0.3)
Over 250	3.0	1.2	1.5	2.2	1.4	0.8	1.3
	(0.8)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.3)
Not reported*	0.7	0.6	0.6	0.7	2.4	4.1	2.9
	(0.3)	(0.3)	(0.3)	(0.2)	(0.9)	(0.9)	(0.6)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-25

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent of Poverty Level							
0-50	24.8	26.4	34.8	28.3	26.0	27.6	27.3
	(1.9)	(2.4)	(2.6)	(1.3)	(2.0)	(2.6)	(1.5)
51-100	53.2	61.5	67.8	59.6	65.0	65.3	63.9
	(2.3)	(2.6)	(3.2)	(1.6)	(2.5)	(2.5)	(1.8)
101-130	67.8	78.9	83.4	75.0	81.5	79.2	78.8
	(2.5)	(1.6)	(2.0)	(1.5)	(1.9)	(2.0)	(1.6)
131-150	79.0	86.4	89.9	84.0	87.1	87.6	86.6
	(2.1)	(1.4)	(1.4)	(1.3)	(1.7)	(1.5)	(1.1)
151-185	93.0	94.1	96.0	94.2	93.9	94.3	94.2
	(1.1)	(1.1)	(0.9)	(0.7)	(0.9)	(0.9)	(0.7)
186-200	94.4	95.9	96.6	95.4	95.0	96.9	96.1
	(1.0)	(0.9)	(0.8)	(0.7)	(0.8)	(0.9)	(0.6)
201-225	95.8	97.7	97.9	96.9	97.4	98.4	97.8
	(0.9)	(0.7)	(0.5)	(0.6)	(0.6)	(0.7)	(0.4)
226-250	97.0	98.8	98.5	97.8	98.6	99.2	98.7
	(0.8)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.3)
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported*	0.7	0.6	0.6	0.7	2.4	4.1	2.9
	(0.3)	(0.3)	(0.3)	(0.2)	(0.9)	(0.9)	(0.6)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-26

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Adjunctive Income Eligibility

Percent of Poverty Level	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Adjunctively income eligible							
0-50	33.3	33.0	40.6	36.0	29.9	36.2	34.4
	(3.2)	(3.3)	(3.0)	(1.7)	(2.3)	(3.0)	(1.7)
51-100	62.1	71.7	74.1	68.6	73.5	74.9	73.1
	(3.0)	(3.5)	(3.8)	(1.5)	(3.0)	(2.0)	(1.3)
101-130	77.2	87.7	88.6	83.6	86.2	87.3	86.1
	(2.5)	(1.7)	(1.8)	(1.5)	(2.4)	(1.9)	(1.5)
131-150	85.6	91.0	92.7	89.4	89.4	91.8	90.6
	(2.2)	(1.6)	(1.3)	(1.2)	(2.2)	(1.6)	(1.2)
151-185	95.4	95.9	97.2	96.2	94.9	95.3	95.4
	(1.2)	(1.0)	(0.9)	(0.6)	(1.1)	(1.1)	(0.7)
186-200	96.4	97.1	97.2	96.8	95.9	97.2	96.8
	(1.0)	(0.8)	(0.9)	(0.6)	(0.9)	(1.0)	(0.6)
201-225	97.4	98.6	98.0	97.9	97.6	98.7	98.2
	(0.8)	(0.5)	(0.7)	(0.5)	(0.7)	(0.7)	(0.4)
226-250	98.7	99.1	98.4	98.7	98.6	98.8	98.7
	(0.6)	(0.4)	(0.6)	(0.4)	(0.6)	(0.7)	(0.4)
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported*	0.8	0.3	0.7	0.6	2.4	5.2	3.4
	(0.4)	(0.3)	(0.3)	(0.2)	(1.0)	(1.3)	(0.7)
Sample size	342	374	426	1,142	405	414	1,961
Population	458,522	217,868	410,318	1,086,708	1,341,504	2,460,773	4,888,984

Exhibit E-26 (cont.)

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Adjunctive Income Eligibility

Percent of Poverty Level	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Not adjunctively income eligible							
0-50	15.2	17.4	20.2	16.8	17.7	13.9	15.5
	(2.2)	(3.1)	(6.2)	(2.2)	(4.1)	(3.6)	(2.4)
51-100	43.0	47.4	52.0	46.0	47.2	49.9	48.3
	(4.0)	(3.7)	(6.9)	(3.4)	(4.5)	(5.0)	(3.6)
101-130	57.0	66.8	70.3	62.2	71.3	66.2	66.3
	(4.2)	(2.8)	(4.9)	(3.2)	(3.1)	(4.1)	(2.8)
131-150	71.4	80.0	82.7	75.8	82.4	80.7	79.9
	(3.6)	(2.4)	(3.5)	(2.7)	(2.7)	(2.9)	(1.8)
151-185	90.2	91.7	92.8	91.1	92.0	92.8	92.2
	(2.1)	(2.1)	(1.9)	(1.5)	(2.0)	(2.0)	(1.2)
186-200	92.1	94.3	95.1	93.2	93.1	96.5	94.9
	(1.9)	(1.8)	(1.5)	(1.3)	(1.9)	(1.6)	(1.0)
201-225	94.0	96.4	97.7	95.4	97.2	98.0	97.2
	(1.7)	(1.3)	(0.9)	(1.1)	(1.3)	(1.5)	(0.9)
226-250	95.0	98.3	98.6	96.5	98.6	99.8	98.7
	(1.7)	(0.8)	(0.7)	(1.0)	(1.1)	(0.2)	(0.5)
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported*	0.6	1.0	1.2	0.8	2.6	2.2	1.9
	(0.4)	(0.7)	(0.7)	(0.3)	(1.8)	(1.0)	(0.8)
Sample size	297	253	161	711	209	233	1,153
Population	400,859	158,595	163,581	723,035	636,907	1,492,151	2,852,094

Exhibit E-27

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Metro-Nonmetro Location

Percent of Poverty Level	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Metropolitan Location							
0-50	23.6	27.9	35.9	28.4	26.1	27.9	27.5
	(2.1)	(2.6)	(3.1)	(1.6)	(2.1)	(3.2)	(1.8)
51-100	52.8	64.5	67.5	60.0	65.4	66.0	64.4
	(2.6)	(2.9)	(4.0)	(1.8)	(2.9)	(2.9)	(2.1)
101-130	67.7	80.4	83.7	75.5	81.8	79.3	79.0
	(3.0)	(1.5)	(2.4)	(1.8)	(2.2)	(2.2)	(1.8)
131-150	78.0	86.7	89.6	83.5	87.3	86.9	86.2
	(2.6)	(1.5)	(1.6)	(1.5)	(2.1)	(1.8)	(1.3)
151-185	92.6	94.4	96.1	94.1	94.0	93.9	94.0
	(1.4)	(1.2)	(1.0)	(0.9)	(1.0)	(1.1)	(0.7)
186-200	94.0	95.7	96.7	95.2	95.0	96.6	95.9
	(1.2)	(1.0)	(0.9)	(0.8)	(0.9)	(1.1)	(0.7)
201-225	95.7	97.3	97.8	96.7	97.2	98.4	97.7
	(1.1)	(0.8)	(0.6)	(0.7)	(0.8)	(0.9)	(0.5)
226-250	97.0	98.6	98.5	97.8	98.4	99.3	98.7
	(1.0)	(0.6)	(0.6)	(0.6)	(0.7)	(0.5)	(0.3)
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported*	0.5	0.7	0.7	0.6	2.8	4.4	3.1
	(0.3)	(0.4)	(0.3)	(0.2)	(1.0)	(1.1)	(0.7)
Sample size	481	514	442	1,437	474	476	2,387
Population	668,251	315,918	446,008	1,430,177	1,593,475	3,119,987	6,143,639

Exhibit E-27 (cont.)

Distribution of Cumulative Percent of Poverty Level of WIC Participants, by Metro-Nonmetro Location

Percent of Poverty Level	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Nonmetropolitan Location							
0-50	29.0	18.8	30.8	28.0	25.5	26.5	26.6
	(4.1)	(4.2)	(4.6)	(1.8)	(5.4)	(3.9)	(2.6)
51-100	54.5	46.2	68.9	58.0	63.6	62.6	61.8
	(4.4)	(4.9)	(4.6)	(2.9)	(4.1)	(4.1)	(2.7)
101-130	68.2	70.9	82.3	73.4	80.2	78.9	77.9
	(3.6)	(6.8)	(3.6)	(2.8)	(4.1)	(4.9)	(3.6)
131-150	82.2	85.1	90.9	85.6	86.5	89.9	88.0
	(2.3)	(4.3)	(3.0)	(2.1)	(2.8)	(2.8)	(1.9)
151-185	94.1	92.7	95.3	94.3	93.8	95.8	95.0
	(1.5)	(2.8)	(1.8)	(1.4)	(2.0)	(1.9)	(1.5)
186-200	95.7	97.0	96.1	96.1	94.9	98.2	96.9
	(1.6)	(1.4)	(1.7)	(1.3)	(1.6)	(1.0)	(1.0)
201-225	96.4	99.4	98.5	97.6	98.5	98.6	98.3
	(1.5)	(0.6)	(0.8)	(1.0)	(0.8)	(1.0)	(0.8)
226-250	96.9	99.4	98.5	97.8	99.4	98.6	98.6
	(1.5)	(0.6)	(0.8)	(1.0)	(0.6)	(1.0)	(0.7)
Over 250	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Not reported*	1.2	0.0	1.2	1.0	1.0	2.9	2.0
	(0.9)	(0.0)	(0.9)	(0.5)	(0.8)	(1.4)	(0.9)
Sample size	158	113	145	416	140	171	727
Population	191,130	60,545	127,891	379,566	384,936	832,937	1,597,439

Exhibit E-30

Distribution of Number of Nutritional Risk Factors, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Anthropometric risks							
None	25.7	37.5	42.1	33.1	75.2	61.5	58.4
	(2.8)	(3.1)	(3.6)	(2.0)	(2.7)	(2.8)	(1.4)
One	39.7	32.4	23.6	33.3	15.2	28.2	26.0
	(2.6)	(2.5)	(2.8)	(1.7)	(1.9)	(2.1)	(1.3)
Two or more	34.6	30.1	34.3	33.6	9.6	10.3	15.6
	(2.8)	(2.9)	(2.8)	(1.6)	(1.6)	(2.1)	(1.2)
Conditions specific to pregnancy							
None	53.8	NA	NA	77.3	NA	NA	94.7
	(2.4)			(1.2)			(0.3)
One	34.0	NA	NA	16.7	NA	NA	3.9
	(2.1)			(1.0)			(0.3)
Two or more	12.3	NA	NA	6.0	NA	NA	1.4
	(1.7)			(0.9)			(0.2)
Potentially toxic substances							
None	76.1	89.7	77.8	79.3	99.9	99.5	94.9
	(2.7)	(1.8)	(2.9)	(2.1)	(0.1)	(0.3)	(0.5)
One	21.2	9.6	19.9	18.5	0.1	0.5	4.6
	(2.3)	(1.8)	(2.6)	(1.8)	(0.1)	(0.3)	(0.5)
Two or more	2.7	0.7	2.3	2.2	0.0	0.0	0.5
	(0.9)	(0.3)	(0.7)	(0.5)	(0.0)	(0.0)	(0.1)
Biochemical and other medical risks							
None	45.9	52.6	42.2	46.1	79.1	64.6	64.0
	(2.8)	(3.0)	(2.8)	(2.3)	(2.1)	(2.7)	(1.9)
One	39.2	32.5	40.3	38.2	16.1	28.5	27.6
	(2.5)	(2.2)	(2.8)	(2.0)	(1.9)	(2.7)	(1.8)
Two or more	14.9	14.9	17.5	15.7	4.8	7.0	8.4
	(2.0)	(1.9)	(2.2)	(1.5)	(1.2)	(1.5)	(0.9)

Exhibit E-30 (cont.)

Distribution of Number of Nutritional Risk Factors, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Dietary risks							
None	25.5	23.0	32.2	27.1	73.3	22.3	36.5
	(3.8)	(3.1)	(4.9)	(3.6)	(2.1)	(3.8)	(2.8)
One	71.8	75.4	67.0	71.0	14.8	75.7	58.9
	(3.7)	(3.1)	(4.9)	(3.5)	(1.8)	(3.8)	(2.8)
Two or more	2.6	1.6	0.9	1.9	12.0	2.0	4.5
	(0.9)	(0.7)	(0.4)	(0.5)	(2.0)	(0.8)	(0.7)
Predisposing risks							
None	90.0	91.7	87.8	89.7	82.4	88.7	87.3
	(1.4)	(1.6)	(2.3)	(1.2)	(2.2)	(1.6)	(1.3)
One	8.5	7.4	9.6	8.6	14.7	9.1	10.4
	(1.3)	(1.5)	(1.9)	(1.0)	(1.8)	(1.4)	(0.9)
Two or more	1.5	0.9	2.5	1.7	2.9	2.3	2.3
	(0.5)	(0.4)	(1.2)	(0.4)	(0.8)	(0.8)	(0.5)
Other risks							
None	95.8	83.6	86.6	90.5	6.1	97.5	72.4
	(1.1)	(2.9)	(2.8)	(1.6)	(1.2)	(0.9)	(1.1)
One	3.9	7.3	11.3	6.9	91.5	2.3	26.3
	(0.9)	(1.4)	(2.6)	(1.1)	(1.4)	(0.9)	(1.1)
Two or more	0.3	9.1	2.0	2.6	2.4	0.2	1.3
	(0.2)	(2.4)	(0.7)	(0.6)	(0.9)	(0.2)	(0.4)
Total risks							
One	10.9	16.9	17.7	14.2	43.2	44.6	37.1
	(2.2)	(1.9)	(3.2)	(1.6)	(2.2)	(2.2)	(1.5)
Two	16.2	23.9	21.2	19.3	24.2	30.8	26.4
	(1.7)	(2.1)	(2.4)	(1.4)	(1.7)	(2.2)	(1.4)
Three	24.1	24.6	23.8	24.1	13.4	15.0	16.7
	(2.0)	(2.3)	(1.9)	(1.3)	(1.4)	(1.5)	(1.0)
Four or more	48.8	34.6	37.3	42.4	19.2	9.6	19.8
	(2.9)	(2.0)	(3.1)	(1.9)	(1.9)	(2.3)	(1.4)
Sample size	613	569	541	1,723	571	586	2,880
Population	815,949	332,539	514,259	1,662,748	1,819,440	3,605,613	7,087,801

Exhibit E-31

Percent of WIC Pregnant Women with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Anthropometric Risk Criteria			
Prepregnancy underweight	14.3	79.1	6.6
	(1.5)	(2.2)	(1.8)
Low maternal weight gain	18.5	70.0	11.5
	(1.9)	(2.6)	(2.4)
Maternal weight loss during preg.	12.9	75.4	11.7
	(1.6)	(2.5)	(2.3)
Prepregnancy overweight	39.6	55.1	5.4
	(2.7)	(2.6)	(1.6)
High gestational weight gain	28.4	61.9	9.6
	(2.6)	(2.7)	(2.0)
Biochemical and Other Medical Risk Criteria			
Anemia	25.1	63.7	11.3
	(2.5)	(3.0)	(2.2)
Nutrient deficiency diseases	2.8	75.5	21.6
	(0.9)	(3.3)	(3.4)
Gastrointestinal disorders	3.3	73.9	22.8
	(0.9)	(3.9)	(4.0)
Nausea and vomiting during preg.	30.5	58.8	10.7
	(2.5)	(2.4)	(2.2)
Diabetes mellitus	1.3	80.3	18.3
	(0.6)	(3.1)	(3.2)
Gestational diabetes	2.4	78.4	19.1
	(0.9)	(3.1)	(3.2)
Thyroid disorders	0.6	73.5	25.9
	(0.3)	(4.1)	(4.2)
Chronic hypertension	2.1	76.4	21.5
	(0.7)	(3.9)	(3.8)
Renal disease	0.5	73.3	26.2
	(0.3)	(4.1)	(4.2)
Cancer	0.6	72.3	27.2
	(0.3)	(4.1)	(4.2)
Central nervous system disorders	1.1	71.8	27.1
	(0.5)	(4.1)	(4.2)
Genetic and congenital disorders	0.9	72.0	27.1
	(0.4)	(4.3)	(4.4)
Inborn errors of metabolism	0.7	73.3	26.0
	(0.3)	(4.3)	(4.4)
Chronic or recurrent infections	0.8	73.1	26.1
	(0.4)	(4.2)	(4.2)
HIV infections and AIDS	0.6	68.9	30.5
	(0.3)	(4.1)	(4.2)
Recent major surgery/trauma/etc.	1.0	73.9	25.2
	(0.4)	(4.2)	(4.2)
Other nutritionally-related cond.	2.5	75.3	22.2
	(0.7)	(3.7)	(3.7)
Food allergies	1.7	81.2	17.1
	(0.6)	(2.9)	(3.0)
Celiac disease	0.4	73.6	26.0
	(0.3)	(3.9)	(3.9)
Lactose intolerance	1.8	79.7	18.5
	(0.7)	(3.6)	(3.4)

Exhibit E-31 (cont.)

Percent of WIC Pregnant Women with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Conditions Specific to Pregnancy			
Pregnancy at a young age	22.6	70.4	6.9
	(2.4)	(2.7)	(1.8)
Closely spaced pregnancies	19.7	74.6	5.6
	(2.0)	(2.3)	(1.2)
History of preterm delivery	7.9	80.6	11.5
	(1.2)	(2.2)	(2.1)
History of low birth weight	4.1	84.5	11.4
	(0.8)	(2.5)	(2.2)
History of birth with congenital or birth defect	1.0	86.0	13.0
	(0.4)	(2.4)	(2.4)
Lack of prenatal care	7.9	84.5	7.7
	(1.2)	(2.0)	(1.7)
Multifetal gestation	1.9	86.4	11.7
	(0.5)	(2.0)	(2.0)
Fetal growth restriction	0.7	81.2	18.1
	(0.4)	(2.8)	(2.8)
Potentially Toxic Substances			
Long-term drug-nutrient interactions	0.9	79.6	19.4
	(0.4)	(3.4)	(3.4)
Maternal smoking	20.5	73.8	5.7
	(2.5)	(2.8)	(1.6)
Alcohol and illegal drug use	5.5	87.5	7.1
	(1.5)	(2.4)	(1.9)
Lead poisoning	0.5	68.0	31.6
	(0.3)	(4.0)	(4.1)
Dietary Risk Criteria			
Failure to meet Dietary Guidelines	74.2	20.6	5.2
	(3.9)	(3.2)	(1.6)
Vegan diets	1.1	86.8	12.1
	(0.7)	(2.5)	(2.5)
Highly restrictive diets	1.5	87.0	11.5
	(0.5)	(2.4)	(2.4)
Pica	0.9	88.1	11.1
	(0.4)	(2.6)	(2.7)
Predisposing Risk Criteria			
Homelessness	0.6	89.4	10.0
	(0.4)	(1.8)	(1.8)
Migrancy	0.6	88.4	11.0
	(0.4)	(1.9)	(1.9)
Low level of maternal education	8.4	72.2	19.4
	(1.3)	(3.4)	(3.6)
Maternal depression	1.9	67.6	30.5
	(0.6)	(3.8)	(3.8)
Battering	0.7	65.7	33.6
	(0.3)	(4.2)	(4.2)
Other Risks			
Pregnancy at age >=34	1.2	NA	NA
	(0.4)		
Sample size	613	613	613
Population	815,949	815,949	815,949

Exhibit E-32

Percent of WIC Breastfeeding Women with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Anthropometric Risk Criteria			
Prepregnancy overweight	26.0	55.5	18.5
	(2.4)	(2.7)	(2.9)
High gestational weight gain	21.5	63.3	15.2
	(3.3)	(3.2)	(2.8)
Postpartum underweight	6.1	82.6	11.4
	(1.0)	(2.2)	(2.0)
Postpartum overweight	46.4	46.6	7.0
	(2.9)	(2.4)	(2.0)
Biochemical and Other MedicalRisk Criteria			
Anemia	29.7	60.0	10.3
	(3.3)	(3.9)	(2.0)
Nutrient deficiency diseases	5.1	75.3	19.6
	(1.2)	(4.0)	(3.8)
Gastrointestinal disorders	0.7	75.8	23.5
	(0.5)	(4.1)	(4.0)
Nausea and vomiting during preg.	15.2	58.4	26.4
	(2.3)	(3.8)	(3.7)
Diabetes mellitus	1.8	78.5	19.7
	(0.5)	(3.4)	(3.4)
Thyroid disorders	0.5	70.9	28.5
	(0.4)	(4.2)	(4.3)
Chronic hypertension	1.4	75.5	23.1
	(0.5)	(3.6)	(3.8)
Renal disease	0.1	71.0	28.9
	(0.1)	(4.1)	(4.1)
Cancer	0.1	70.8	29.1
	(0.1)	(3.9)	(3.9)
Central nervous system disorders	0.3	69.2	30.6
	(0.2)	(4.0)	(4.0)
Genetic and congenital disorders	0.1	69.2	30.6
	(0.1)	(4.1)	(4.1)
Inborn errors of metabolism	0.0	69.9	30.1
	(0.0)	(4.1)	(4.1)
Chronic or recurrent infections	0.9	70.5	28.6
	(0.3)	(4.2)	(4.1)
HIV infections and AIDS	0.0	68.9	31.1
	(0.0)	(3.7)	(3.7)
Recent major surgery/trauma/etc.	3.4	69.9	26.6
	(0.9)	(3.7)	(3.8)
Other nutritionally-related cond.	1.5	78.6	19.9
	(0.9)	(3.7)	(3.7)
Food allergies	1.9	84.5	13.6
	(0.6)	(3.4)	(3.3)
Celiac disease	0.0	72.9	27.1
	(0.0)	(3.9)	(3.9)
Lactose intolerance	1.9	82.3	15.8
	(0.7)	(3.3)	(3.4)
Multifetal gestation	1.0	79.4	19.5
	(0.4)	(3.8)	(3.8)
Potentially Toxic Substances			
Long-term drug-nutrient interaction	0.1	76.5	23.3
	(0.2)	(3.8)	(3.8)
Maternal smoking	9.3	81.4	9.3
	(1.7)	(2.4)	(2.4)
Alcohol and illegal drug use	1.5	88.8	9.7
	(0.6)	(2.4)	(2.3)

Exhibit E-32 (cont.)

Percent of WIC Breastfeeding Women with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Lead poisoning	0.0	66.8	33.2
	(0.0)	(4.0)	(4.0)
Dietary Risk Criteria			
Failure to meet Dietary Guidelines	76.6	16.9	6.5
	(3.2)	(2.3)	(2.4)
Vegan diets	1.0	83.4	15.6
	(0.4)	(3.3)	(3.2)
Highly restrictive diets	1.3	83.9	14.8
	(0.6)	(3.2)	(3.2)
Predisposing Risk Criteria			
Homelessness	0.7	88.8	10.5
	(0.3)	(2.5)	(2.4)
Migrancy	0.8	87.2	12.0
	(0.4)	(2.6)	(2.5)
Low level of maternal education	5.8	72.6	21.6
	(1.5)	(4.0)	(4.1)
Maternal depression	2.0	65.5	32.6
	(0.6)	(3.9)	(3.9)
Battering	0.0	63.3	36.7
	(0.0)	(4.0)	(4.0)
Other Risks			
Pregnancy at young age	3.1	NA	NA
	(1.0)		
Pregnancy at age >=34	1.5	NA	NA
	(0.6)		
Breastfeeding infant	100.0	NA	NA
	(0.0)		
Miscarriage	0.7	NA	NA
	(0.5)		
Closely spaced pregnancies	5.1	NA	NA
	(1.1)		
Sample size	569	569	569
Population	332,539	332,539	332,539

Exhibit E-33

Percent of WIC Postpartum Women with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Anthropometric Risk Criteria			
Prepregnancy overweight	31.6	54.5	13.9
	(2.5)	(2.7)	(2.5)
High gestational weight gain	18.3	66.2	15.6
	(2.4)	(3.1)	(2.7)
Postpartum underweight	4.6	84.7	10.7
	(0.9)	(2.5)	(2.4)
Postpartum overweight	46.1	47.2	6.7
	(3.6)	(3.1)	(2.3)
Biochemical and Other MedicalRisk Criteria			
Anemia	36.8	56.4	6.8
	(3.4)	(3.8)	(1.8)
Nutrient deficiency diseases	3.0	75.7	21.2
	(0.8)	(4.0)	(4.0)
Gastrointestinal disorders	1.5	72.3	26.2
	(0.7)	(4.4)	(4.4)
Nausea and vomiting during preg.	17.9	55.6	26.6
	(2.5)	(3.9)	(3.6)
Diabetes mellitus	3.2	75.3	21.6
	(0.9)	(3.8)	(3.5)
Thyroid disorders	1.3	71.0	27.7
	(0.7)	(4.4)	(4.3)
Chronic hypertension	4.3	72.4	23.3
	(1.3)	(4.2)	(4.1)
Renal disease	0.5	71.2	28.3
	(0.5)	(4.5)	(4.4)
Cancer	0.5	69.8	29.6
	(0.5)	(4.4)	(4.3)
Central nervous system disorders	1.1	69.4	29.6
	(0.6)	(4.5)	(4.4)
Genetic and congenital disorders	0.9	68.7	30.4
	(0.6)	(4.5)	(4.3)
Inborn errors of metabolism	0.5	68.9	30.6
	(0.5)	(4.6)	(4.5)
Chronic or recurrent infections	1.4	69.0	29.6
	(0.6)	(4.4)	(4.3)
HIV infections and AIDS	0.5	68.6	30.9
	(0.5)	(4.5)	(4.4)
Recent major surgery/trauma/etc.	4.0	68.2	27.8
	(0.9)	(4.3)	(4.1)
Other nutritionally-related cond.	4.3	71.3	24.3
	(0.9)	(4.2)	(4.2)
Food allergies	2.4	76.6	21.0
	(0.7)	(4.1)	(4.1)
Celiac disease	0.0	71.8	28.2
	(0.0)	(4.1)	(4.1)
Lactose intolerance	1.7	78.1	20.2
	(0.6)	(3.8)	(3.9)
Multifetal gestation	1.9	76.9	21.2
	(0.7)	(3.4)	(3.2)
Potentially Toxic Substances			
Long-term drug-nutrient interaction	0.9	73.0	26.1
	(0.4)	(4.1)	(4.1)
Maternal smoking	20.2	72.3	7.5
	(2.8)	(3.1)	(2.1)
Alcohol and illegal drug use	3.5	85.9	10.6
	(1.1)	(2.4)	(2.4)

Exhibit E-33 (cont.)

Percent of WIC Postpartum Women with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Lead poisoning	0.2	61.4	38.4
	(0.2)	(4.2)	(4.2)
Dietary Risk Criteria			
Failure to meet Dietary Guidelines	67.8	25.0	7.2
	(4.9)	(4.7)	(2.9)
Vegan diets	0.4	84.9	14.7
	(0.2)	(3.3)	(3.3)
Highly restrictive diets	0.7	84.9	14.4
	(0.4)	(3.3)	(3.3)
Predisposing Risk Criteria			
Homelessness	1.7	87.9	10.4
	(1.0)	(2.4)	(2.3)
Migrancy	0.9	84.5	14.6
	(0.5)	(2.7)	(2.6)
Low level of maternal education	8.4	70.2	21.4
	(1.9)	(4.0)	(3.6)
Maternal depression	4.2	61.5	34.3
	(1.5)	(4.3)	(4.6)
Battering	0.9	61.4	37.6
	(0.8)	(4.6)	(4.6)
Other Risks			
Pregnancy at young age	5.5	NA	NA
	(1.4)		
Pregnancy at age >=34	1.6	NA	NA
	(0.5)		
Breastfeeding infant	0.0	NA	NA
	(0.0)		
Miscarriage	0.9	NA	NA
	(0.5)		
Closely spaced pregnancies	5.7	NA	NA
	(1.6)		
Sample size	541	541	541
Population	514,259	514,259	514,259

Exhibit E-34

Percent of WIC Infants with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Anthropometric Risk Criteria			
Low birth weight	10.8	83.5	5.8
	(1.8)	(2.6)	(2.0)
Small for gestational age	3.6	86.4	10.0
	(0.9)	(2.9)	(2.6)
Short stature	11.0	81.2	7.8
	(1.7)	(2.6)	(2.4)
Underweight	5.9	87.0	7.1
	(1.3)	(2.8)	(2.3)
Low head circumference	1.2	55.8	43.1
	(0.5)	(4.8)	(4.8)
Overweight	6.2	85.7	8.1
	(1.2)	(2.5)	(2.5)
Slow growth	2.8	83.1	14.1
	(1.0)	(2.9)	(3.0)
Biochemical and Other Medical Risk Criteria			
Anemia	3.6	49.1	47.3
	(1.0)	(3.3)	(3.3)
Failure to thrive	0.5	80.7	18.9
	(0.3)	(3.1)	(3.0)
Nutrient deficiency diseases	0.6	74.8	24.6
	(0.4)	(4.1)	(4.1)
Gastrointestinal disorders	3.5	69.2	27.3
	(1.1)	(4.5)	(4.7)
Diabetes mellitus	0.4	69.0	30.6
	(0.3)	(4.2)	(4.2)
Thyroid disorders	0.1	67.3	32.5
	(0.1)	(4.5)	(4.5)
Chronic hypertension	0.2	67.2	32.5
	(0.2)	(4.5)	(4.5)
Renal disease	0.0	67.4	32.6
	(0.0)	(4.6)	(4.6)
Cancer	0.0	66.8	33.2
	(0.0)	(4.6)	(4.6)
Central nervous system disorders	0.3	67.9	31.8
	(0.3)	(4.6)	(4.6)
Genetic and congenital disorders	0.7	68.9	30.4
	(0.3)	(4.6)	(4.7)
Inborn errors of metabolism	0.3	69.1	30.7
	(0.2)	(4.7)	(4.7)
Chronic or recurrent infections	1.4	69.1	29.5
	(0.5)	(4.6)	(4.7)
HIV infections and AIDS	0.0	66.3	33.7
	(0.0)	(4.6)	(4.6)
Recent major surgery/trauma/etc.	1.2	72.1	26.7
	(0.4)	(4.8)	(4.7)
Other nutritionally-related cond.	1.2	75.1	23.8
	(0.5)	(4.1)	(4.2)
Food allergies	2.0	73.0	25.0
	(0.6)	(3.8)	(4.0)
Celiac disease	0.0	70.0	30.0
	(0.0)	(4.7)	(4.7)
Lactose intolerance	3.8	72.9	23.3
	(1.3)	(3.9)	(4.1)

Exhibit E-34 (cont.)

Percent of WIC Infants with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Prematurity	8.5	74.8	16.7
	(1.2)	(3.1)	(3.3)
Hypoglycemia	0.1	63.3	36.6
	(0.1)	(4.6)	(4.6)
Potentially Toxic Substances			
Lead poisoning	0.1	54.9	45.0
	(0.1)	(4.5)	(4.5)
Dietary Risk Criteria			
Failure to meet Dietary Guidelines	14.8	72.9	12.3
	(2.1)	(3.2)	(3.0)
Highly restrictive diets	0.8	82.9	16.3
	(0.4)	(2.8)	(2.8)
Inappropriate infant feeding	13.8	75.8	10.4
	(2.0)	(3.1)	(2.6)
Early introduction of solid foods	5.9	81.9	12.2
	(1.5)	(2.8)	(2.8)
Feeding cow milk during first yr	2.3	85.2	12.5
	(0.9)	(3.1)	(2.8)
No dependable source of iron after 4-6 months	1.3	79.0	19.7
	(0.7)	(3.4)	(3.1)
Improper dilution of formula	1.9	85.7	12.4
	(1.0)	(2.9)	(2.8)
Feeding other foods low in nutrients	1.2	85.6	13.2
	(0.6)	(2.8)	(2.8)
Lack of sanitation prep of bottles	0.9	78.7	20.4
	(0.5)	(3.5)	(3.5)
Infreq breastfeeding as sole source of nutrients	1.7	82.7	15.6
	(0.6)	(2.8)	(2.8)
Inappropriate use of nursing bottle	4.3	79.9	15.9
	(1.5)	(3.1)	(2.9)
Predisposing Risk Criteria			
Homelessness	0.7	89.1	10.1
	(0.4)	(2.7)	(2.6)
Migrancy	0.9	87.6	11.5
	(0.5)	(2.8)	(2.7)
Low level of maternal education	6.7	74.0	19.3
	(1.5)	(4.1)	(3.8)
Maternal depression	2.5	66.3	31.2
	(0.8)	(4.5)	(4.4)
Child abuse or neglect	1.9	67.9	30.1
	(0.7)	(4.2)	(4.1)
Child of a young caregiver	9.4	75.2	15.4
	(1.4)	(3.2)	(2.8)
Child of a mentally retarded parent	0.3	82.8	16.8
	(0.3)	(3.0)	(2.9)
Other risks			
Second-hand smoke	2.3	NA	NA
	(0.9)		
Drug exposure	0.5	NA	NA
	(0.3)		

Exhibit E-34 (cont.)

Percent of WIC Infants with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Conferred risk			
Breastfeeding infant	31.0 (3.0)	NA	NA
Not breastfeeding; Mom on WIC	58.9 (3.1)	NA	NA
Not breastfeeding; Mom on WIC preg	3.8 (0.9)	NA	NA
Sample size	571	571	571
Population	1,819,440	1,819,440	1,819,440

Exhibit E-35

Percent of WIC Children with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Anthropometric Risk Criteria			
Low birth weight	6.2	71.8	22.1
	(1.9)	(3.4)	(3.1)
Short stature	13.8	78.7	7.5
	(2.2)	(2.7)	(2.1)
Underweight	8.9	84.2	6.9
	(1.8)	(2.8)	(2.3)
Overweight	17.2	76.4	6.4
	(2.1)	(3.0)	(1.8)
Slow growth	8.3	80.8	10.9
	(1.7)	(3.0)	(2.6)
Biochemical and Other Medical Risk Criteria			
Anemia	24.1	65.8	10.0
	(3.1)	(3.4)	(2.1)
Failure to thrive	1.1	85.8	13.1
	(0.5)	(2.4)	(2.3)
Nutrient deficiency diseases	1.6	78.9	19.4
	(0.5)	(3.6)	(3.6)
Gastrointestinal disorders	0.7	75.4	23.9
	(0.4)	(4.2)	(4.1)
Diabetes mellitus	0.2	74.9	24.9
	(0.2)	(4.2)	(4.1)
Thyroid disorders	0.4	71.7	27.9
	(0.3)	(4.3)	(4.3)
Chronic hypertension	0.0	71.8	28.2
	(0.0)	(4.4)	(4.4)
Renal disease	0.0	71.5	28.5
	(0.0)	(4.3)	(4.3)
Cancer	0.0	70.4	29.6
	(0.0)	(4.3)	(4.3)
Central nervous system disorders	0.0	71.0	29.0
	(0.0)	(4.3)	(4.3)
Genetic and congenital disorders	1.1	72.0	26.9
	(0.5)	(4.4)	(4.3)
Inborn errors of metabolism	0.1	72.9	27.0
	(0.1)	(4.3)	(4.3)
Chronic or recurrent infections	7.6	68.3	24.1
	(1.8)	(4.1)	(4.4)
HIV infections and AIDS	0.0	68.0	32.0
	(0.0)	(4.3)	(4.3)
Recent major surgery/trauma/etc.	1.8	74.2	24.0
	(0.5)	(4.4)	(4.3)
Other nutritionally-related cond.	2.0	76.9	21.2
	(0.6)	(4.0)	(4.1)
Food allergies	1.7	82.2	16.1
	(0.5)	(3.4)	(3.5)
Celiac disease	0.0	72.5	27.5
	(0.0)	(4.3)	(4.3)
Lactose intolerance	1.1	81.1	17.8
	(0.4)	(3.9)	(3.9)
Hypoglycemia	0.0	72.9	27.1
	(0.0)	(4.3)	(4.3)
Potentially Toxic Substances			
Lead poisoning	0.5	69.4	30.1
	(0.3)	(4.0)	(4.1)

Exhibit E-35 (cont.)

Percent of WIC Children with Specific Nutritional Risk Factors

	Risk Present	Risk Not Present	Risk Not Assessed
Dietary Risk Criteria			
Failure to meet Dietary Guidelines	77.6	17.7	4.7
	(3.8)	(3.5)	(1.5)
Vegan diets	0.2	86.8	13.0
	(0.2)	(2.6)	(2.6)
Highly restrictive diets	0.5	87.9	11.6
	(0.3)	(2.5)	(2.5)
Pica	1.4	82.4	16.2
	(0.8)	(3.3)	(3.3)
Predisposing Risk Criteria			
Homelessness	0.6	88.3	11.1
	(0.3)	(2.5)	(2.5)
Migrancy	1.0	87.1	11.9
	(0.5)	(2.5)	(2.5)
Low level of maternal education	7.5	70.9	21.7
	(1.4)	(3.5)	(3.3)
Maternal depression	0.2	65.7	34.0
	(0.2)	(4.1)	(4.1)
Child abuse or neglect	0.9	68.6	30.5
	(0.4)	(3.9)	(3.8)
Child of a young caregiver	3.6	74.6	21.8
	(1.0)	(3.9)	(3.8)
Child of a mentally retarded parent	0.3	79.6	20.2
	(0.2)	(3.5)	(3.6)
Sample size	586	586	586
Population	3,605,613	3,605,613	3,605,613

Exhibit E-36

Percent of WIC Participants in Families Receiving Non-WIC Food Assistance, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Receiving any non-WIC food assistance	36.5 (2.3)	36.9 (2.9)	46.2 (3.3)	39.7 (2.2)	41.8 (1.8)	52.6 (2.6)	46.8 (1.9)
Receipt by program:							
Food Distribution Program on Indian Reservations	0.5 (0.3)	0.1 (0.1)	0.1 (0.1)	0.3 (0.1)	0.4 (0.4)	0.0 (0.0)	0.2 (0.1)
Food Stamp Program	23.3 (2.2)	22.4 (2.4)	38.4 (2.9)	27.8 (1.9)	31.4 (2.4)	35.5 (2.6)	32.7 (1.8)
School Breakfast Program	16.5 (1.6)	15.1 (2.1)	15.5 (1.9)	15.9 (1.4)	15.2 (2.0)	26.3 (2.7)	21.0 (1.9)
National School Lunch Program	18.9 (1.7)	19.2 (2.2)	19.9 (2.2)	19.3 (1.5)	20.3 (2.2)	33.2 (2.4)	26.6 (1.7)
Temporary Emergency Food Assistance Program	0.5 (0.3)	0.3 (0.2)	0.2 (0.1)	0.4 (0.1)	1.0 (0.4)	0.5 (0.3)	0.6 (0.2)
Commodity Supplemental Food Progr	0.8 (0.3)	0.7 (0.3)	0.9 (0.4)	0.8 (0.2)	0.8 (0.4)	1.2 (0.5)	1.0 (0.3)
Local food pantries	4.3 (1.3)	3.2 (0.9)	4.1 (1.4)	4.0 (0.9)	3.1 (1.4)	3.3 (0.8)	3.4 (0.7)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-37

Percent of WIC Participants in Families Receiving Non-WIC Food Assistance, by Location

	Metropolitan	Nonmetropolitan
Receiving any non-WIC food assistance	44.5 (1.9)	55.8 (3.6)
Receipt by program:		
Food Distribution Program on Indian Reservations	0.2 (0.1)	0.0 (0.0)
Food Stamp Program	30.6 (1.7)	40.6 (4.0)
School Breakfast Program	19.5 (2.0)	26.7 (4.1)
National School Lunch Program	25.4 (1.9)	31.1 (2.9)
Temporary Emergency Food Assistance Program	0.5 (0.2)	0.7 (0.3)
Commodity Supplemental Food Program	0.7 (0.3)	2.3 (0.7)
Local food pantries	2.3 (0.5)	7.8 (2.2)
Sample size	2,387	727
Population	6,143,639	1,597,439

Exhibit E-38

Average Weekly Food Spending of WIC Economic Units per Adult Male Equivalent, by Participant Category and Participation in the Food Stamp Program

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
All economic units							
Food at home	$30.75	$26.08	$33.68	$30.71	$33.03	$30.75	$31.32
	(0.84)	(0.65)	(1.02)	(0.64)	(1.19)	(0.91)	(0.62)
Total	38.11	30.50	39.48	36.96	39.39	35.87	37.02
	(1.27)	(0.72)	(1.14)	(0.84)	(1.55)	(1.14)	(0.78)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Food Stamp Program recipients							
Food at home	30.93	28.45	33.14	31.46	32.41	32.13	32.07
	(1.26)	(1.95)	(1.38)	(1.02)	(1.64)	(1.24)	(0.81)
Total	35.43	31.36	37.33	35.55	36.33	36.34	36.18
	(1.45)	(1.96)	(1.33)	(0.98)	(1.81)	(1.34)	(0.83)
Sample size	159	153	227	539	178	239	956
Population	197,219	83,597	212,182	492,999	614,875	1,382,731	2,490,604
Non-Food Stamp Program recipients							
Food at home	30.70	25.40	34.00	30.43	33.32	30.01	30.97
	(1.01)	(0.69)	(1.37)	(0.78)	(1.54)	(1.15)	(0.82)
Total	38.92	30.25	40.73	37.48	40.78	35.62	37.43
	(1.54)	(0.86)	(1.61)	(1.11)	(2.09)	(1.51)	(1.07)
Sample size	480	474	360	1,314	436	408	2,158
Population	662,162	292,866	361,717	1,316,744	1,363,536	2,570,193	5,250,474
Rates of nonresponse before imputation							
Average weekly food spending, food at home							
All WIC economic units	8.0	6.0	9.0	7.9	5.7	4.3	5.5
	(1.2)	(2.2)	(2.8)	(1.1)	(1.2)	(1.6)	(1.2)
Food Stamp Program recipients	3.5	0.0	2.2	2.3	1.9	0.0	0.9
	(1.4)	(0.0)	(1.1)	(0.8)	(1.1)	(0.0)	(0.3)
Non-Food Stamp Program recipients	9.3	7.7	13.1	10.0	7.4	6.7	7.7
	(1.6)	(2.8)	(4.2)	(1.4)	(1.7)	(2.3)	(1.7)
Average weekly food spending, total							
All WIC economic units	12.2	9.8	14.3	12.4	9.4	9.0	9.9
	(1.4)	(2.2)	(3.4)	(1.3)	(1.6)	(1.9)	(1.3)
Food Stamp Program recipients	8.0	4.6	7.2	7.1	6.2	6.2	6.4
	(2.4)	(1.6)	(1.6)	(1.3)	(1.9)	(2.4)	(1.4)
Non-Food Stamp Program recipients	13.4	11.3	18.5	14.3	10.8	10.4	11.5
	(1.8)	(2.8)	(5.2)	(1.7)	(2.1)	(2.5)	(1.7)

Exhibit E-39

Distribution of Food Security Status, by Participant Category

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Food security status							
Food secure	73.1	71.6	75.4	73.5	77.5	77.1	76.4
	(2.9)	(3.6)	(2.7)	(2.7)	(3.0)	(2.6)	(2.4)
Food insecure without hunger	15.0	19.6	18.5	17.0	13.9	15.2	15.3
	(1.7)	(3.1)	(2.4)	(1.8)	(2.0)	(2.0)	(1.6)
Food insecure with hunger, moderate	8.9	8.1	4.0	7.2	6.9	6.3	6.7
	(1.9)	(1.3)	(0.9)	(1.1)	(1.3)	(1.3)	(1.1)
Food insecure with hunger, severe	3.0	0.7	2.1	2.2	1.6	1.4	1.7
	(1.2)	(0.4)	(0.8)	(0.7)	(0.6)	(0.5)	(0.4)
Not reported	0.6	0.5	3.2	1.4	1.2	0.9	1.1
	(0.3)	(0.3)	(2.5)	(0.8)	(0.5)	(0.4)	(0.4)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-40

Distribution of Food Security Status by Participant Category and Poverty Level

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Food security status of WIC units with income <= 100% of poverty level							
Food secure	68.0	69.7	74.8	70.8	76.4	72.5	73.1
	(3.3)	(3.8)	(3.2)	(2.8)	(3.1)	(3.1)	(2.6)
Food insecure without hunger	15.5	19.4	19.0	17.6	12.9	17.7	16.4
	(2.3)	(2.7)	(3.1)	(1.8)	(1.8)	(2.6)	(1.7)
Food insecure with hunger, moderate	13.2	9.7	3.9	9.1	8.8	8.2	8.6
	(3.0)	(1.9)	(1.1)	(1.6)	(1.6)	(2.0)	(1.5)
Food insecure with hunger, severe	3.3	1.2	2.2	2.5	1.9	1.6	1.9
	(1.2)	(0.6)	(0.8)	(0.7)	(0.9)	(0.6)	(0.4)
Not reported	0.6	0.9	0.6	0.7	0.4	0.4	0.5
	(0.4)	(0.5)	(0.3)	(0.2)	(0.3)	(0.4)	(0.2)
Sample size	338	381	398	1,117	370	398	1,885
Population	454,001	230,301	385,903	1,070,204	1,254,949	2,476,422	4,801,575
Food security status of WIC units with income > 100% of poverty level							
Food secure	79.0	74.2	76.2	77.3	79.0	84.0	81.0
	(3.1)	(5.2)	(4.1)	(2.7)	(4.1)	(3.4)	(2.6)
Food insecure without hunger	14.1	20.0	17.8	16.2	16.3	11.3	13.8
	(2.3)	(5.2)	(3.2)	(2.2)	(3.5)	(2.7)	(1.9)
Food insecure with hunger, moderate	4.1	5.8	4.3	4.5	3.7	3.4	3.8
	(1.3)	(1.9)	(1.7)	(0.9)	(1.3)	(1.3)	(0.8)
Food insecure with hunger, severe	2.8	0.0	1.7	2.0	1.1	1.3	1.4
	(1.5)	(0.0)	(1.2)	(0.9)	(0.8)	(0.8)	(0.5)
Not reported	0.0	0.0	8.0	2.0	2.0	0.0	1.0
	(0.0)	(0.0)	(7.5)	(2.0)	(1.4)	(0.0)	(0.9)
Sample size	296	243	182	721	230	225	1,176
Population	399,373	143,999	183,175	726,547	675,158	1,316,167	2,717,872

Exhibit E-41

Distribution of Food Security Status, by Reported Food Program Participation

	WIC Only	WIC and Food Stamps	WIC and Other Food Benefits (No Food Stamps)	WIC, FSP, and Other
Food security status				
Food secure	77.8	77.7	76.2	69.9
	(3.7)	(3.2)	(3.2)	(4.1)
Food insecure without hunger	15.6	12.7	15.0	17.3
	(2.3)	(2.3)	(2.6)	(2.4)
Food insecure with hunger, moderate	5.9	7.0	6.1	9.8
	(2.1)	(1.4)	(1.4)	(2.2)
Food insecure with hunger, severe	0.7	2.6	2.7	3.0
	(0.3)	(1.2)	(0.9)	(1.2)
Not reported	1.9	0.2	0.0	0.1
	(0.6)	(0.1)	(0.0)	(0.1)
Sample size	1,740	572	418	384
Population	4,116,283	1,320,800	1,134,191	1,169,804

Exhibit E-42

Food Security Status of WIC Families, by Selected Characteristics

	Food Secure	Food Insecure: Without Hunger	Food Insecure: With Hunger, Moderate	Food Insecure: With Hunger, Severe	Sample Size	Population
Household type						
Single family unit, single parent	76.1 (2.6)	16.7 (1.9)	4.8 (1.4)	2.4 (0.8)	602	1,533,53
Single family unit, dual parent	75.5 (2.8)	16.9 (2.3)	6.6 (0.8)	1.0 (0.4)	1,554	3,952,15
Multi-family unit, single parent	79.1 (3.5)	9.4 (1.5)	8.9 (3.9)	2.6 (0.8)	654	1,512,18
Multi-family unit, dual parent	75.7 (4.7)	16.0 (4.2)	6.8 (2.2)	1.5 (1.1)	279	659,877
Maternal age						
Less than 18 years	85.5 (2.7)	10.0 (2.6)	1.8 (0.7)	2.6 (1.3)	201	388,509
18 - 34 years	76.0 (2.6)	15.1 (1.7)	7.2 (1.2)	1.7 (0.4)	2,546	6,146,60
More than 43 years	75.3 (4.0)	17.7 (3.3)	5.6 (1.9)	1.3 (0.8)	316	1,064,47
Maternal education						
Less than 8 years	57.9 (7.7)	18.1 (6.2)	21.4 (6.7)	2.7 (1.3)	158	423,776
8-11 years	74.9 (3.3)	15.1 (1.9)	7.9 (2.7)	2.1 (0.7)	764	1,968,44
12 years	78.2 (2.3)	14.7 (1.8)	5.9 (0.9)	1.2 (0.6)	1,149	2,984,09
13 or more years	77.5 (3.7)	16.5 (3.3)	4.4 (1.0)	1.6 (0.8)	767	1,791,24
Schooling incomplete, age<18	83.3 (3.1)	11.6 (3.0)	2.8 (1.0)	2.3 (1.1)	227	446,667
Not reported	87.1 (8.6)	11.0 (8.0)	0.0 (0.0)	1.9 (2.1)	16	31,221

Exhibit E-43

Food Security Status of WIC Families, by Geographic Area

	Food Secure	Food Insecure: Without Hunger	Food Insecure: With Hunger, Moderate	Food Insecure: With Hunger, Severe	Sample Size	Population
Location						
Non-metropolitan area	80.4 (1.8)	14.4 (1.8)	4.5 (0.9)	0.6 (0.2)	725	1,585,93
Metropolitan area	75.3 (2.9)	15.5 (1.9)	7.3 (1.3)	1.9 (0.4)	2,364	6,071,81
FNS region						
Northeast	78.3 (1.5)	13.5 (1.8)	7.4 (1.9)	0.8 (0.6)	395	803,845
Mid-Atlantic	84.1 (2.5)	10.0 (1.9)	5.2 (1.3)	0.6 (0.3)	340	749,863
Southeast	76.4 (6.8)	13.5 (2.8)	7.5 (4.7)	2.6 (0.9)	446	1,485,98
Midwest	77.3 (3.0)	14.6 (2.4)	7.3 (1.0)	0.8 (0.3)	457	1,140,85
Mountain Plains	72.4 (4.7)	21.2 (3.3)	5.2 (1.4)	1.2 (0.7)	233	514,709
Southwest	77.6 (3.6)	14.4 (2.7)	4.5 (1.3)	3.5 (1.2)	602	1,149,66
Western	72.0 (6.8)	18.9 (4.8)	7.8 (1.7)	1.3 (0.8)	616	1,812,83
Total WIC	76.4 (2.4)	15.3 (1.6)	6.7 (1.1)	1.7 (0.4)	3,114	7,741,078

Exhibit E-44

Distribution of Food Security Status by Number of Nutritional Risk Factors : Pregnant Women

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Anthropometric risks						
None	68.4	15.2	12.9	3.6	145	204,527
	(7.0)	(3.4)	(6.6)	(3.0)		
One	76.6	13.6	5.9	3.9	254	322,363
	(3.2)	(2.4)	(1.6)	(1.5)		
Two or more	71.9	15.7	10.1	2.2	208	281,373
	(3.3)	(2.5)	(2.1)	(1.0)		
Conditions specific to pregnancy						
None	75.2	15.6	8.5	0.8	331	428,657
	(2.6)	(2.3)	(2.0)	(0.5)		
One	66.8	16.0	10.6	6.6	197	274,697
	(5.2)	(2.7)	(4.1)	(2.8)		
Two or more	78.6	8.5	8.5	4.4	75	100,065
	(5.0)	(2.9)	(2.8)	(2.7)		
Potentially toxic substances						
None	74.0	13.5	10.5	2.0	452	606,511
	(3.2)	(1.8)	(2.6)	(0.9)		
One	68.9	20.3	5.1	5.7	136	173,355
	(4.8)	(3.7)	(1.7)	(2.5)		
Two or more	71.8	5.5	6.5	16.2	14	21,975
	(12.1)	(5.6)	(6.1)	(10.8)		
Other biochemical and medical risks						
None	70.7	16.9	10.1	2.3	272	363,465
	(4.5)	(2.7)	(3.4)	(1.0)		
One	73.7	15.2	8.6	2.5	237	318,646
	(2.9)	(2.5)	(3.4)	(1.3)		
Two or more	76.3	7.8	8.0	7.9	94	120,685
	(5.6)	(2.6)	(3.0)	(3.9)		

Exhibit E-44 (cont.)

Distribution of Food Security Status by Number of Nutritional Risk Factors : Pregnant Women

	Food Secure	Food Insecure: Without Hunger	Food Insecure: With Hunger, Moderate	Food Insecure: With Hunger, Severe	Sample Size	Population
Dietary risks						
None	64.5	21.8	12.3	1.3	144	202,336
	(7.0)	(3.2)	(5.7)	(0.9)		
One	75.9	12.5	8.1	3.5	447	582,238
	(2.3)	(2.0)	(1.6)	(1.2)		
Two or more	62.0	16.3	7.3	14.4	15	21,583
	(12.2)	(9.8)	(6.9)	(9.5)		
Predisposing risks						
None	73.6	15.4	8.7	2.3	539	712,074
	(2.7)	(1.8)	(1.9)	(0.9)		
One	67.3	10.9	11.8	10.0	49	69,226
	(7.9)	(4.3)	(6.3)	(4.5)		
Two or more	66.0	15.3	0.0	18.6	9	11,997
	(18.3)	(14.0)	(0.0)	(16.3)		
Total risks						
One	61.4	13.5	25.1	0.0	62	87,491
	(13.2)	(4.0)	(11.5)	(0.0)		
Two	74.5	19.3	6.1	0.0	99	132,322
	(5.7)	(5.3)	(3.5)	(0.0)		
Three	75.5	15.2	6.6	2.7	146	196,370
	(3.7)	(3.4)	(2.0)	(1.5)		
Four or more	73.6	13.4	7.8	5.2	303	395,880
	(3.1)	(1.8)	(1.5)	(2.0)		
Overall						
Total pregnant	72.9	14.8	9.1	3.2	610	812,063
	(2.8)	(1.7)	(2.0)	(1.3)		

Exhibit E-45

Distribution of Food Security Status by Number of Nutritional Risk Factors : Breastfeeding Women

	Food Secure	Food Insecure: Without Hunger	Food Insecure: With Hunger, Moderate	Food Insecure: With Hunger, Severe	Sample Size	Population
Anthropometric risks						
None	74.5	14.0	10.9	0.5	221	120,990
	(4.1)	(3.0)	(3.5)	(0.5)		
One	71.6	20.5	7.0	0.9	174	106,617
	(5.2)	(5.6)	(1.7)	(0.9)		
Two or more	74.4	19.3	5.8	0.5	164	99,254
	(4.9)	(4.2)	(1.4)	(0.5)		
Potentially toxic substances						
None	74.3	17.6	7.4	0.7	497	294,494
	(3.4)	(2.6)	(1.4)	(0.4)		
One	66.8	18.5	14.6	0.0	58	31,080
	(5.2)	(4.2)	(4.3)	(0.0)		
Two or more	78.0	22.0	0.0	0.0	5	2,179
	(20.1)	(20.1)	(0.0)	(0.0)		
Other biochemical and medical risks						
None	75.4	15.7	8.3	0.6	284	170,171
	(3.1)	(2.3)	(1.8)	(0.5)		
One	69.8	19.9	9.9	0.5	192	107,260
	(5.1)	(3.3)	(3.3)	(0.5)		
Two or more	75.1	20.2	3.4	1.3	84	49,450
	(6.9)	(7.0)	(1.6)	(1.3)		
Dietary risks						
None	75.7	16.6	7.7	0.0	134	74,386
	(5.2)	(4.4)	(2.1)	(0.0)		
One	73.4	17.6	8.2	0.8	419	249,175
	(3.9)	(2.9)	(1.7)	(0.5)		
Two or more	53.4	40.1	6.5	0.0	9	4,793
	(19.2)	(18.2)	(6.6)	(0.0)		

Exhibit E-45 (cont.)

Distribution of Food Security Status by Number of Nutritional Risk Factors : Breastfeeding Women

	Food Secure	Food Insecure: Without Hunger	Food Insecure: With Hunger, Moderate	Food Insecure: With Hunger, Severe	Sample Size	Population
Predisposing risks						
None	73.1	18.5	8.0	0.4	513	298,197
	(3.4)	(2.5)	(1.4)	(0.3)		
One	75.8	10.4	9.9	3.9	39	24,456
	(8.2)	(5.5)	(5.2)	(3.7)		
Two or more	83.4	16.6	0.0	0.0	6	3,050
	(15.3)	(15.3)	(0.0)	(0.0)		
Total risks						
One	81.1	13.4	5.5	0.0	107	56,193
	(3.5)	(3.5)	(1.9)	(0.0)		
Two	71.5	12.1	16.4	0.0	133	79,524
	(5.2)	(2.1)	(4.7)	(0.0)		
Three	72.9	17.7	7.3	2.0	128	80,441
	(5.2)	(3.6)	(2.8)	(1.4)		
Four or more	72.4	23.3	3.8	0.4	197	114,340
	(4.5)	(4.7)	(1.0)	(0.4)		
Overall						
Total breastfeeding	73.8	17.6	8.0	0.6	565	330,499
	(3.2)	(2.4)	(1.4)	(0.4)		

Exhibit E-46

Distribution of Food Security Status by Number of Nutritional Risk Factors : Postpartum Women

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Anthropometric risks						
None	77.5	16.2	5.2	1.1	212	197,408
	(3.8)	(3.5)	(1.9)	(0.7)		
One	74.6	20.2	3.7	1.5	131	120,587
	(3.7)	(3.8)	(1.7)	(1.4)		
Two or more	76.7	15.6	3.4	4.3	190	175,032
	(4.2)	(3.3)	(1.4)	(1.6)		
Potentially toxic substances						
None	77.0	15.8	4.6	2.6	412	378,225
	(2.7)	(2.3)	(1.2)	(1.2)		
One	74.7	22.6	2.1	0.6	105	101,558
	(5.1)	(5.1)	(1.2)	(0.6)		
Two or more	62.4	25.0	5.6	7.0	13	11,635
	(14.4)	(13.7)	(5.7)	(6.5)		
Other biochemical and medical risks						
None	77.8	17.0	2.8	2.4	224	214,405
	(3.6)	(3.0)	(1.5)	(1.2)		
One	75.2	17.2	6.7	0.8	211	191,211
	(4.7)	(4.2)	(1.9)	(0.6)		
Two or more	73.1	19.6	2.1	5.2	98	89,004
	(3.5)	(3.3)	(1.2)	(2.5)		
Dietary risks						
None	77.0	20.1	2.5	0.4	143	145,940
	(4.9)	(4.9)	(1.6)	(0.4)		
One	75.9	16.2	5.0	2.9	384	343,624
	(2.8)	(2.1)	(1.2)	(1.3)		
Two or more	40.1	37.8	0.0	22.0	5	3,803
	(16.8)	(26.0)	(0.0)	(14.7)		

Exhibit E-46 (cont.)

Distribution of Food Security Status by Number of Nutritional Risk Factors : Postpartum Women

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Predisposing risks						
None	75.7	17.5	4.6	2.2	471	426,940
	(2.7)	(2.2)	(1.1)	(1.0)		
One	74.8	21.6	1.1	2.4	47	49,578
	(8.7)	(8.4)	(1.1)	(1.7)		
Two or more	93.5	0.0	0.0	6.5	9	12,915
	(4.5)	(0.0)	(0.0)	(4.5)		
Total risks						
One	80.2	11.2	7.3	1.4	76	75,876
	(5.7)	(3.9)	(4.2)	(1.4)		
Two	76.4	16.7	4.7	2.1	129	109,048
	(4.9)	(4.3)	(2.0)	(1.7)		
Three	70.1	23.7	4.2	1.9	127	121,476
	(5.6)	(4.9)	(1.8)	(1.5)		
Four or more	77.7	16.7	2.6	3.0	204	190,230
	(3.5)	(3.8)	(1.0)	(1.3)		
Overall						
Total postpartum	75.9	17.6	4.2	2.3	536	496,629
	(2.5)	(2.1)	(1.0)	(0.9)		

Exhibit E-47

Distribution of Food Security Status by Number of Nutritional Risk Factors : Infants

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Anthropometric risks						
None	78.6	13.6	6.2	1.6	429	1,344,97
	(3.9)	(2.6)	(1.7)	(0.9)		
One	70.8	16.3	11.5	1.4	79	268,869
	(6.4)	(4.8)	(4.7)	(1.3)		
Two or more	70.6	20.4	7.3	1.7	54	174,645
	(5.6)	(5.6)	(3.7)	(1.6)		
Potentially toxic substances						
None	76.8	14.5	7.1	1.6	557	1,770,16
	(3.2)	(2.0)	(1.4)	(0.7)		
One	100.0	0.0	0.0	0.0	1	1,688
	(0.0)	(0.0)	(0.0)	(0.0)		
Other biochemical and medical risks						
None	76.7	14.2	7.4	1.8	442	1,416,88
	(4.1)	(2.5)	(1.7)	(0.8)		
One	73.3	18.9	6.5	1.3	93	293,542
	(6.2)	(5.1)	(2.9)	(1.2)		
Two or more	85.6	11.7	2.7	0.0	30	87,194
	(6.2)	(5.1)	(2.7)	(0.0)		
Dietary risks						
None	77.9	14.4	6.4	1.3	408	1,300,48
	(3.7)	(2.6)	(1.3)	(0.7)		
One	74.7	14.7	6.3	4.3	93	268,832
	(5.3)	(3.7)	(3.4)	(3.3)		
Two or more	72.2	15.7	12.1	0.0	61	217,650
	(5.5)	(5.3)	(4.9)	(0.0)		

Exhibit E-47 (cont.)

Distribution of Food Security Status by Number of Nutritional Risk Factors : Infants

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Predisposing risks						
None	76.7	14.3	7.2	1.8	469	1,471,76
	(3.7)	(2.1)	(1.6)	(0.8)		
One	77.5	16.3	6.3	0.0	75	259,660
	(6.2)	(5.5)	(2.8)	(0.0)		
Two or more	72.6	14.4	8.9	4.0	17	52,008
	(14.0)	(13.0)	(8.6)	(3.9)		
Total risks						
One	77.7	15.4	5.5	1.4	245	779,770
	(5.1)	(3.3)	(1.9)	(1.0)		
Two	79.4	14.3	4.3	2.0	138	428,994
	(4.8)	(3.9)	(1.9)	(2.0)		
Three	76.6	7.5	13.5	2.4	79	243,483
	(5.5)	(3.4)	(4.1)	(1.7)		
Four or more	70.8	19.1	9.2	0.8	105	349,417
	(5.5)	(4.4)	(3.6)	(0.8)		
Overall						
Total infants	76.6	14.8	7.0	1.6	567	1,801,66
	(3.2)	(2.0)	(1.4)	(0.7)		

Exhibit E-48

Distribution of Food Security Status by Number of Nutritional Risk Factors : Children

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Anthropometric risks						
None	80.7	12.3	5.2	1.8	356	2,165,80
	(3.1)	(2.5)	(1.1)	(0.8)		
One	73.4	19.9	5.0	1.7	165	1,007,67
	(3.7)	(3.3)	(1.7)	(1.0)		
Two or more	66.8	14.6	18.7	0.0	54	362,264
	(9.5)	(6.0)	(11.1)	(0.0)		
Potentially toxic substances						
None	76.9	14.8	6.7	1.6	564	3,450,84
	(2.6)	(2.0)	(1.5)	(0.5)		
One	100.0	0.0	0.0	0.0	3	18,160
	(0.0)	(0.0)	(0.0)	(0.0)		
Other biochemical and medical risks						
None	79.2	14.2	5.1	1.5	380	2,275,84
	(2.7)	(2.1)	(1.1)	(0.5)		
One	71.6	16.7	10.1	1.6	159	1,001,75
	(4.9)	(3.3)	(4.4)	(0.9)		
Two or more	82.1	10.1	5.2	2.5	37	250,688
	(7.4)	(6.1)	(3.2)	(2.6)		
Dietary risks						
None	72.0	15.8	9.8	2.4	108	731,480
	(6.3)	(3.6)	(6.0)	(1.3)		
One	78.1	14.6	5.9	1.4	461	2,727,92
	(2.8)	(2.2)	(1.0)	(0.5)		
Two or more	100.0	0.0	0.0	0.0	8	72,983
	(0.0)	(0.0)	(0.0)	(0.0)		

Exhibit E-48 (cont.)

Distribution of Food Security Status by Number of Nutritional Risk Factors : Children

	Food Secure	Food Insecure			Sample Size	Population
		Without Hunger	With Hunger, Moderate	With Hunger, Severe		
Predisposing risks						
None	77.0	15.5	6.0	1.5	511	3,096,09
	(2.8)	(2.0)	(1.6)	(0.6)		
One	77.1	10.0	12.8	0.0	50	326,866
	(5.4)	(4.1)	(4.9)	(0.0)		
Two or more	80.3	3.7	4.3	11.7	11	82,210
	(10.3)	(3.8)	(4.2)	(8.7)		
Total risks						
One	80.6	14.8	3.2	1.4	273	1,603,13
	(2.9)	(2.5)	(1.0)	(0.6)		
Two	75.6	15.4	7.3	1.8	181	1,100,77
	(4.2)	(3.2)	(1.9)	(1.0)		
Three	82.7	9.1	5.7	2.6	81	531,024
	(4.0)	(3.6)	(2.3)	(1.6)		
Four or more	60.9	18.9	20.2	0.0	48	345,395
	(8.3)	(7.4)	(10.7)	(0.0)		
Overall						
Total children	77.5	14.5	6.5	1.6	583	3,580,32
	(2.6)	(2.0)	(1.4)	(0.5)		

Exhibit E-49

Percentage of WIC Participants by Health Insurance Coverage and Reasons for Lack of Health Insurance

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent covered by health insurance							
Yes	70.6	76.7	85.5	76.7	86.1	84.5	83.1
	(3.3)	(2.8)	(2.8)	(2.6)	(3.0)	(2.1)	(2.0)
No	29.4	23.3	14.5	23.3	13.9	15.5	16.9
	(3.3)	(2.8)	(2.8)	(2.6)	(3.0)	(2.1)	(2.0)
Percent by source of insurance							
Employer	18.3	30.1	22.9	22.2	24.6	26.0	24.8
	(2.1)	(2.6)	(2.1)	(1.5)	(2.5)	(2.1)	(1.6)
Medicaid	49.9	47.7	62.0	53.3	61.3	58.8	58.1
	(3.1)	(3.3)	(3.0)	(2.4)	(3.8)	(3.2)	(2.7)
Other	3.8	3.1	2.2	3.2	1.8	2.9	2.7
	(0.8)	(0.9)	(0.7)	(0.5)	(0.5)	(0.8)	(0.5)
Source not reported	0.3	0.6	0.5	0.4	0.5	0.4	0.4
	(0.2)	(0.3)	(0.4)	(0.2)	(0.3)	(0.2)	(0.2)
No health insurance	29.1	23.1	14.5	23.2	13.9	15.5	16.9
	(3.3)	(2.9)	(2.8)	(2.6)	(3.0)	(2.1)	(2.0)
Reasons for no health insurance, if none							
Not eligible for or don't think I can get Medicaid	42.2 (7.9)	69.1 (5.8)	65.0 (9.2)	52.7 (7.0)	56.7 (11.8)	60.8 (7.8)	57.4 (7.2)
Not employed, coverage discontinued /can't afford it	55.4 (4.7)	52.8 (4.6)	58.4 (6.1)	55.5 (2.8)	50.4 (6.8)	33.2 (6.0)	43.9 (3.4)
Employed, insurance not offerred or can't afford it	40.8 (5.2)	34.9 (5.4)	21.0 (4.6)	35.3 (2.8)	47.8 (11.5)	43.7 (6.5)	41.8 (4.4)
Don't think I can get private health insurance	13.0 (4.8)	22.7 (8.8)	24.1 (8.2)	17.4 (6.1)	21.0 (8.5)	10.1 (5.7)	14.7 (6.2)
Haven't needed health insurance	5.2	4.3	3.8	4.7	2.7	1.7	2.9
	(2.3)	(2.1)	(2.3)	(1.4)	(2.1)	(1.2)	(0.8)
Been refused insurance due to health	3.4 (2.1)	0.9 (0.9)	1.0 (1.0)	2.4 (1.3)	1.1 (1.2)	0.0 (0.0)	1.0 (0.5)
Item nonresponse							
Health insurance coverage	2.0	0.5	0.5	1.2	0.6	1.0	0.9
	(0.7)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.3)
Reasons for no health insurance	10.8	7.4	0.6	8.0	13.6	7.5	9.0
	(3.3)	(3.8)	(0.6)	(2.4)	(4.9)	(2.6)	(2.5)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-50

Health Insurance Coverage and Reasons for Lack of Health Insurance, by Medicaid Income Eligibility Limit of State of Residence

	Medicaid Income Limit Less than 185% FPL	Medicaid Income Limit 185% FPL or higher
Percent covered by health insurance		
Yes	81.2	86.2
	(2.8)	(2.3)
No	18.8	13.8
	(2.8)	(2.3)
Percent by source of insurance		
Employer	25.0	24.3
	(1.8)	(2.2)
Medicaid	55.5	62.6
	(3.1)	(3.6)
Other	3.0	2.2
	(0.7)	(0.5)
Source not reported	0.4	0.5
	(0.2)	(0.3)
No health insurance	18.7	13.8
	(2.8)	(2.3)
Reasons for no health insurance, if none		
Not eligible for or don't think I can get Medicaid	60.4	49.9
	(9.1)	(5.4)
Not employed, coverage discontinued or can't afford it	39.6	54.6
	(4.4)	(4.6)
Employed, insurance not offerred or can't afford it	46.1	31.1
	(5.2)	(5.5)
Don't think I can get private health insurance	14.7	14.5
	(8.6)	(3.5)
Haven't needed health insurance	1.6	6.0
	(0.8)	(2.0)
Been refused insurance due to health	0.3	2.7
	(0.3)	(1.4)
Item nonresponse		
Health insurance coverage	0.9	1.0
	(0.4)	(0.3)
Reasons for no health insurance	6.5	14.7
	(2.1)	(4.3)
Sample size	1,469	1,645
Population	4,833,931	2,907,147

Exhibit E-51

Health Insurance Coverage by WIC Experience and Medicaid Income Eligibility Limit of State of Residence

	First WIC experience for family	Family has WIC experience
WIC Participants in All States		
Percent covered by health insurance		
Yes	80.1	84.3
	(3.2)	(1.9)
No	19.9	15.7
	(3.2)	(1.9)
Percent by source of insurance		
Employer	23.7	25.1
	(1.9)	(1.9)
Medicaid	55.0	59.4
	(3.0)	(2.9)
Other	2.7	2.9
	(0.6)	(0.7)
Source not reported	0.6	0.4
	(0.3)	(0.2)
No health insurance	19.9	15.7
	(3.2)	(1.9)
Sample size	1,075	1,979
Population	2,355,274	5,024,068
State Medicaid Income Limit < 185% FPL		
Percent covered by health insurance		
Yes	76.6	82.2
	(7.2)	(2.2)
No	23.4	17.8
	(7.2)	(2.2)
Percent by source of insurance		
Employer	25.5	24.7
	(3.5)	(2.2)
Medicaid	50.5	56.6
	(5.3)	(3.2)
Other	2.0	3.4
	(0.8)	(0.9)
Source not reported	0.1	0.5
	(0.1)	(0.2)
No health insurance	23.4	17.8
	(7.2)	(2.2)
Sample size	403	1,024
Population	867,085	3,687,451

Exhibit E-51 (cont.)

Health Insurance Coverage by WIC Experience and Medicaid Income Eligibility Limit of State of Residence

	First WIC experience for family	Family has WIC experience
State Medicaid Income Limit >= 185% FPL		
Percent covered by health insurance		
Yes	82.2	90.2
	(2.7)	(2.0)
No	17.8	9.8
	(2.7)	(2.0)
Percent by source of insurance		
Employer	22.7	26.3
	(2.3)	(2.8)
Medicaid	57.6	67.4
	(3.4)	(4.2)
Other	3.0	1.5
	(0.8)	(0.5)
Source not reported	0.9	0.1
	(0.5)	(0.1)
No health insurance	17.8	9.8
	(2.7)	(2.0)
Sample size	672	955
Population	1,488,189	1,336,616

Exhibit E-52

Distribution of Reported Service Availability from WIC Participants' Health Insurance Plans

	Medicaid	Other insurance	Total with insurance
Breastfeeding nutrition support			
Available for free	50.8	22.3	42.3
	(3.0)	(3.0)	(2.6)
Available at extra charge	0.9	7.5	2.9
	(0.4)	(1.4)	(0.5)
Not available	11.5	27.4	16.2
	(2.3)	(3.2)	(2.3)
Don't know	36.8	42.8	38.6
	(2.9)	(3.0)	(2.5)
Nutrition education			
Available for free	54.0	23.3	44.8
	(3.2)	(3.2)	(2.8)
Available at extra charge	0.7	9.2	3.2
	(0.3)	(1.6)	(0.5)
Not available	13.1	26.5	17.1
	(2.5)	(3.2)	(2.4)
Don't know	32.2	41.0	34.8
	(2.8)	(3.6)	(2.6)
Immunizations			
Available for free	86.2	47.6	74.6
	(2.1)	(4.0)	(2.2)
Available at extra charge	3.0	31.0	11.4
	(0.9)	(3.2)	(1.4)
Not available	2.3	10.9	4.9
	(0.6)	(2.2)	(0.8)
Don't know	8.5	10.4	9.1
	(1.5)	(1.8)	(1.2)
Well baby care			
Available for free	79.5	37.6	66.9
	(2.9)	(3.2)	(2.6)
Available at extra charge	2.9	32.8	11.9
	(1.1)	(3.0)	(1.3)
Not available	3.0	11.8	5.6
	(0.7)	(2.2)	(0.9)
Don't know	14.6	17.8	15.5
	(2.2)	(2.1)	(1.8)
Well child care			
Available for free	78.2	35.8	65.5
	(3.0)	(3.3)	(2.7)
Available at extra charge	2.9	31.2	11.4
	(1.0)	(2.8)	(1.2)
Not available	3.7	13.3	6.5
	(0.9)	(2.4)	(1.0)
Don't know	15.3	19.7	16.6
	(2.3)	(2.1)	(1.9)

Exhibit E-52 (cont.)

Distribution of Reported Service Availability from WIC Participants' Health Insurance Plans

	Medicaid	Other insurance	Total with insurance
Item nonresponse			
Breastfeeding nutrition support	1.4	1.9	1.5
	(0.5)	(0.9)	(0.4)
Nutrition education	1.4	1.6	1.5
	(0.4)	(0.8)	(0.4)
Immunizations	1.1	1.7	1.3
	(0.4)	(0.9)	(0.4)
Well baby care	1.5	1.5	1.5
	(0.5)	(0.8)	(0.4)
Well child care	1.5	2.1	1.7
	(0.4)	(0.9)	(0.4)
Sample size	1,731	789	2,520
Population	4,457,630	1,915,470	6,373,100

Exhibit E-53

Percent of WIC Women and WIC Mothers in WIC When Their Children Were Born

	Breastfeeding Women	Postpartum Women	Mothers of Infants	Mothers of Children
On WIC as pregnant woman				
Yes	84.1 (1.5)	82.1 (2.2)	77.6 (1.8)	80.1 (2.0)
No	15.9 (1.5)	17.9 (2.2)	22.4 (1.8)	19.9 (2.0)
Not reported*	0.8 (0.4)	3.3 (0.9)	3.1 (0.9)	7.9 (1.4)
Sample size	627	587	614	647
Population	376,463	573,899	1,978,411	3,952,924

Exhibit E-54

Distribution of Pregnant Women WIC Participants, by Trimester of Current Enrollment

	No Prior WIC Experience	Prior WIC Experience	Total Pregnant Women
Trimester of Enrollment			
First trimester	44.0 (3.7)	37.2 (3.9)	41.5 (2.9)
Second trimester	38.2 (3.2)	41.7 (3.5)	39.5 (2.6)
Third trimester	17.8 (2.4)	21.1 (3.2)	19.0 (1.9)
Trimester not reported*	18.5 (2.8)	19.7 (3.5)	19.0 (2.5)
Sample size	394	245	639
Population	532,798	326,583	859,381

Exhibit E-55

Distribution of Age at First WIC Certification, by Whether Mother Participated in WIC When Pregnant: Infants

	Mother in WIC When Pregnant		Mother Not in WIC When Pregnant		Total Infants	
	Percent	Cum Pct	Percent	Cum Pct	Percent	Cum Pct
Age at First Certification						
Less than 1 week	30.6	30.6	6.5	6.5	25.9	25.9
	(4.2)	(4.2)	(2.3)	(2.3)	(3.2)	(3.2)
1-2 weeks	28.4	59.0	14.3	20.7	24.7	50.6
	(3.4)	(3.9)	(3.2)	(3.4)	(2.8)	(3.3)
2-4 weeks	20.5	79.5	22.4	43.1	20.7	71.3
	(3.0)	(2.7)	(4.3)	(6.2)	(2.3)	(2.8)
5-8 weeks	11.8	91.3	18.2	61.3	13.5	84.7
	(2.1)	(1.5)	(4.9)	(6.0)	(2.3)	(1.8)
9-12 weeks	2.4	93.6	8.5	69.8	3.6	88.4
	(0.8)	(1.2)	(2.8)	(5.7)	(0.8)	(1.7)
13-25 weeks	4.6	98.2	21.3	91.2	8.2	96.6
	(1.0)	(0.7)	(5.9)	(3.0)	(1.6)	(0.9)
26-40 weeks	1.6	99.8	8.1	99.2	3.1	99.7
	(0.6)	(0.2)	(2.7)	(0.5)	(0.8)	(0.2)
> 10 months	0.2	100.0	0.8	100.0	0.3	100.0
	(0.2)	(0.0)	(0.5)	(0.0)	(0.2)	(0.0)
Sample size	465	465	132	132	614	614
Population	1,488,706	1,488,706	429,321	429,321	1,978,411	1,978,411

Exhibit E-56

Distribution of Age at First WIC Certification, by Whether Mother Participated in WIC When Pregnant: Children

	Mother in WIC When Pregnant		Mother Not in WIC When Pregnant		Total Children	
	Percent	Cum Pct	Percent	Cum Pct	Percent	Cum Pct
Age at First Certification						
Less than 1 week	39.7	39.7	21.2	21.2	36.1	36.1
	(4.9)	(4.9)	(3.9)	(3.9)	(4.1)	(4.1)
1-2 weeks	34.1	73.7	12.1	33.2	28.3	64.4
	(3.7)	(2.6)	(3.3)	(5.5)	(3.1)	(2.6)
2-4 weeks	3.3	77.1	4.9	38.1	3.7	68.1
	(0.9)	(2.5)	(2.0)	(5.5)	(0.9)	(2.4)
5-8 weeks	11.9	88.9	18.1	56.2	12.8	80.9
	(2.0)	(2.0)	(5.2)	(6.0)	(1.7)	(2.0)
9-12 weeks	4.3	93.3	10.4	66.6	5.3	86.1
	(1.8)	(1.4)	(2.8)	(5.8)	(1.4)	(1.8)
13-25 weeks	3.6	96.9	11.4	78.0	5.6	91.7
	(0.9)	(1.0)	(3.7)	(4.7)	(1.0)	(1.3)
26-40 weeks	1.9	98.7	5.4	83.4	2.7	94.4
	(0.6)	(0.7)	(2.5)	(3.8)	(0.8)	(1.0)
More than one year:						
41-52 weeks	0.5	99.3	1.2	84.6	1.1	95.5
	(0.4)	(0.6)	(0.9)	(3.7)	(0.4)	(1.0)
13-18 months	0.9	99.7	4.9	89.1	2.3	96.9
	(0.4)	(0.3)	(1.7)	(3.3)	(0.5)	(0.8)
19-24 months	0.3	100.0	5.9	94.9	1.3	98.2
	(0.3)	(0.0)	(2.9)	(1.8)	(0.6)	(0.7)
25-36 months	0.0	100.0	4.3	99.2	1.1	99.2
	(0.0)	(0.0)	(1.7)	(0.8)	(0.4)	(0.5)
37-48 months	0.0	100.0	0.8	100.0	0.8	100.0
	(0.0)	(0.0)	(0.8)	(0.0)	(0.5)	(0.0)
49-51 months	0.0	100.0	0.0	100.0	0.0	100.0
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Sample size	481	481	114	114	647	647
Population	2,915,040	2,915,040	726,029	726,029	3,952,924	3,952,924

Exhibit E-57

Prior WIC Experience of WIC Women

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women
Certification history				
First WIC certification	62.0	8.4	17.5	36.8
	(2.3)	(1.4)	(1.8)	(1.2)
Received WIC last month	1.1	89.2	75.5	43.0
	(0.4)	(1.5)	(2.5)	(1.2)
Received WIC at earlier time	36.9	2.4	7.0	20.2
	(2.2)	(0.6)	(1.4)	(1.3)
Sample size	639	627	587	1,853
Population	859,381	376,463	573,899	1,809,743

Exhibit E-58

Prior WIC Experience of WIC Infants and Children

	WIC Infants	WIC Children
Certification history		
First WIC certification	86.5	0.9
	(2.3)	(0.4)
Recertification	13.5	99.1
	(2.3)	(0.4)
Indeterminant	3.1	7.6
	(0.8)	(1.6)
Ever leave and reenter the WIC program?		
Yes	NA	24.6
		(2.0)
No	NA	75.4
		(2.0)
Not reported	NA	12.5
		(2.5)
Sample size	614	647
Population	1,978,411	3,952,924

Exhibit E-59

Breastfeeding Status Reported at WIC Certification Among WIC Infants and Children

	Infants	Children
Breastfeeding experience		
Currently breastfeeding	31.0	0.4
	(2.8)	(0.2)
Previously breastfed	25.1	50.0
	(2.6)	(2.8)
Never breastfed	43.9	49.6
	(3.6)	(2.8)
Not reported*	1.2	4.2
	(0.4)	(0.9)
Sample size	614	647
Population	1,978,411	3,952,924
Cumulative distribution of breastfeeding duration among those ever breastfed		
26 or more weeks	7.3	42.7
	(1.9)	(3.8)
21 or more weeks	10.1	46.4
	(1.9)	(4.0)
13 or more weeks	18.6	62.8
	(3.5)	(4.3)
8 or more weeks	24.4	70.4
	(3.6)	(4.3)
4 or more weeks	44.1	84.7
	(4.2)	(3.0)
3 or more weeks	52.1	87.2
	(3.6)	(2.7)
2 or more weeks	71.6	92.8
	(3.5)	(1.7)
1 or more weeks	89.1	94.6
	(2.1)	(1.5)
1 or more days	100.0	100.0
Not reported*	5.7	10.3
	(1.5)	(2.0)
Sample size	340	306
Population	1,095,895	1,906,828

Exhibit E-60

Distribution of WIC Infants and Children by Own Breastfeeding Status and Presence of Siblings Ever Breastfed

	Infants	Children
WIC participants who breastfed:		
Percent with no siblings	46.3	35.3
	(4.0)	(3.4)
Among those with siblings:		
No siblings ever breastfed	21.8	13.5
	(3.7)	(2.9)
One sibling ever breastfed	62.0	61.9
	(4.4)	(3.8)
Two siblings ever breastfed	15.2	19.3
	(3.3)	(3.2)
More than two siblings ever breastfed	1.0	5.2
	(0.6)	(1.5)
Sample size	340	306
Population	1,095,895	1,906,828
WIC participants who did not breastfeed		
Percent with no siblings	47.3	37.0
	(4.2)	(3.2)
Among those with siblings:		
No siblings ever breastfed	82.7	81.7
	(3.8)	(3.1)
One sibling ever breastfed	14.2	17.1
	(3.4)	(3.0)
Two siblings ever breastfed	3.1	1.2
	(1.5)	(0.8)
More than two siblings ever breastfed	0.0	0.0
	(0.0)	(0.0)
Sample size	265	311
Population	858,278	1,879,370

Exhibit E-61

Distribution of Referrals to the WIC Program, by Participant Category and Metro-Nonmetro Location

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Total							
Friend	35.0	40.1	33.4	35.5	37.7	33.3	34.9
	(2.3)	(3.0)	(2.4)	(1.6)	(2.5)	(2.5)	(1.8)
Family member	32.2	34.2	38.4	34.6	32.4	33.6	33.5
	(2.5)	(2.7)	(2.9)	(2.0)	(2.4)	(2.5)	(1.9)
Doctor/Health professional	37.8	35.0	32.8	35.6	33.3	35.7	35.1
	(2.4)	(3.0)	(2.7)	(1.9)	(2.9)	(2.6)	(2.1)
Television advertisement	4.9	4.8	4.5	4.8	6.0	5.5	5.4
	(1.1)	(1.1)	(1.1)	(1.0)	(1.4)	(1.0)	(0.9)
Radio advertisement	1.7	2.4	2.3	2.0	2.2	2.6	2.4
	(0.5)	(1.0)	(0.7)	(0.4)	(0.6)	(0.8)	(0.5)
Newspaper advertisement	2.1	2.3	1.8	2.1	2.5	2.6	2.4
	(0.7)	(0.7)	(0.7)	(0.5)	(0.8)	(0.8)	(0.6)
Billboard/Poster advertisement	6.6	7.5	9.0	7.6	7.2	8.3	7.8
	(1.5)	(2.1)	(1.7)	(1.3)	(1.7)	(1.7)	(1.3)
Pamphlet	8.4	13.1	10.7	10.1	10.4	10.5	10.4
	(1.6)	(2.8)	(2.0)	(1.6)	(2.2)	(1.9)	(1.7)
Other	9.5	10.5	9.8	9.8	10.9	9.3	9.8
	(1.3)	(2.2)	(1.7)	(1.1)	(1.6)	(1.6)	(1.2)
No referral received	5.9	4.3	7.4	6.0	6.9	7.4	7.0
	(1.1)	(1.1)	(1.4)	(0.8)	(1.3)	(1.2)	(0.9)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078
Metro residents							
Friend	35.9	39.6	35.6	36.6	38.7	32.6	35.1
	(2.6)	(3.5)	(2.8)	(1.8)	(2.4)	(2.3)	(1.6)
Family member	31.9	34.2	34.8	33.3	30.8	33.4	32.7
	(2.9)	(3.0)	(3.3)	(2.4)	(2.6)	(3.0)	(2.2)
Doctor/Health professional	37.7	36.5	35.9	36.9	34.4	36.2	35.9
	(2.7)	(3.3)	(3.1)	(2.2)	(3.1)	(3.0)	(2.4)
Television advertisement	5.4	5.0	4.5	5.0	7.0	5.3	5.7
	(1.4)	(1.2)	(1.2)	(1.1)	(1.7)	(1.1)	(1.1)
Radio advertisement	2.2	2.7	2.8	2.5	2.7	2.6	2.6
	(0.6)	(1.2)	(0.9)	(0.5)	(0.7)	(0.9)	(0.6)
Newspaper advertisement	2.6	2.1	1.5	2.1	2.5	2.2	2.3
	(0.9)	(0.7)	(0.6)	(0.6)	(1.0)	(0.9)	(0.6)
Billboard/Poster advertisement	7.4	8.5	9.5	8.3	8.5	8.8	8.6
	(1.8)	(2.5)	(2.0)	(1.7)	(2.1)	(2.0)	(1.5)

Exhibit E-61 (continued)

Distribution of Referrals to the WIC Program, by Participant Category and Metro-Nonmetro Location

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Pamphlet	9.1	13.8	12.5	11.2	11.7	11.2	11.4
	(1.9)	(3.3)	(2.5)	(2.0)	(2.6)	(2.1)	(2.0)
Other	9.2	8.8	9.8	9.3	11.1	9.9	10.1
	(1.5)	(1.8)	(2.0)	(1.2)	(1.7)	(1.8)	(1.2)
No referral received	5.7	3.6	7.1	5.7	6.9	6.4	6.3
	(1.3)	(1.1)	(1.7)	(0.9)	(1.6)	(1.2)	(1.0)
Sample size	481	514	442	1,437	474	476	2,387
Population	668,251	315,918	446,008	1,430,177	1,593,475	3,119,987	6,143,639
Nonmetro residents							
Friend	31.8	42.8	25.7	31.5	33.6	35.8	34.2
	(4.6)	(4.4)	(3.9)	(3.1)	(8.7)	(8.2)	(6.5)
Family member	33.3	34.3	51.1	39.5	39.3	34.4	36.8
	(5.3)	(6.2)	(3.9)	(3.3)	(4.8)	(4.5)	(3.4)
Doctor/Health professional	38.0	27.1	21.9	30.9	28.7	33.7	31.8
	(5.3)	(7.8)	(4.4)	(3.1)	(7.2)	(5.3)	(3.9)
Television advertisement	3.1	3.9	4.4	3.7	2.0	6.0	4.5
	(1.1)	(2.2)	(3.1)	(1.7)	(1.7)	(2.7)	(2.1)
Radio advertisement	0.0	0.9	0.5	0.3	0.0	2.5	1.4
	(0.0)	(0.8)	(0.5)	(0.2)	(0.0)	(1.8)	(1.0)
Newspaper advertisement	0.6	3.3	2.6	1.7	2.2	4.1	3.1
	(0.6)	(1.6)	(2.2)	(1.0)	(1.3)	(2.1)	(1.5)
Billboard/Poster advertisement	4.0	2.2	7.4	4.9	1.5	6.4	4.9
	(1.6)	(1.5)	(3.1)	(1.2)	(1.2)	(3.1)	(1.9)
Pamphlet	6.1	9.5	4.2	6.0	4.8	7.8	6.7
	(2.0)	(2.9)	(2.4)	(1.9)	(2.5)	(4.0)	(3.0)
Other	10.5	19.2	9.5	11.6	10.0	6.9	8.7
	(3.0)	(10.6)	(2.8)	(3.0)	(4.5)	(3.4)	(3.3)
No referral received	6.6	8.4	8.2	7.4	7.2	11.4	9.4
	(2.5)	(3.7)	(2.0)	(2.0)	(2.2)	(3.3)	(2.4)
Sample size	158	113	145	416	140	171	727
Population	191,130	60,545	127,891	379,566	384,936	832,937	1,597,439

Exhibit E-62

Distribution of Referrals to the WIC Program, by Local Agency Sponsorship

	State Agency	District Agency	County Agency	Municipal Agency	Community Agency	Hospital	Total WIC
Source of referral							
Friend	32.1	35.3	36.3	40.3	26.6	36.7	34.9
	(4.5)	(3.1)	(3.7)	(7.1)	(4.4)	(2.6)	(1.8)
Family member	26.3	31.2	34.6	32.6	46.0	30.7	33.5
	(4.6)	(4.9)	(2.6)	(5.6)	(6.4)	(2.3)	(1.9)
Doctor/Health professional	31.5	30.6	36.0	34.0	33.0	38.0	35.1
	(4.7)	(4.4)	(3.6)	(7.1)	(5.2)	(6.0)	(2.1)
Doctor from Medicaid	11.5	7.4	16.2	15.0	9.6	16.6	14.2
	(2.8)	(4.4)	(2.6)	(4.2)	(3.2)	(4.3)	(1.8)
Doctor from HMO	0.3	6.1	3.9	0.9	3.0	4.5	3.6
	(0.2)	(2.0)	(0.8)	(0.6)	(0.7)	(1.0)	(0.5)
Private doctor	8.8	9.1	9.8	4.9	9.6	12.3	9.9
	(2.4)	(1.0)	(1.8)	(3.1)	(3.5)	(2.5)	(1.1)
Television advertisement	5.1	3.9	4.6	7.2	7.6	6.4	5.4
	(1.9)	(1.7)	(1.2)	(5.9)	(4.0)	(2.3)	(0.9)
Radio advertisement	1.3	1.3	2.3	3.6	2.0	3.4	2.4
	(0.9)	(0.6)	(0.8)	(2.9)	(1.2)	(1.4)	(0.5)
Newspaper advertisement	2.3	2.0	1.7	1.5	4.7	3.1	2.4
	(1.0)	(1.0)	(0.7)	(1.1)	(2.5)	(1.6)	(0.6)
Billboard/Poster advertisement	8.4	9.5	4.9	6.2	12.0	10.5	7.8
	(4.3)	(3.6)	(1.5)	(5.1)	(5.1)	(3.1)	(1.3)
Pamphlet	8.9	9.3	7.5	9.9	19.7	12.4	10.4
	(3.6)	(5.1)	(2.0)	(7.0)	(8.2)	(4.0)	(1.7)
Other	12.2	14.5	8.1	4.9	11.1	10.0	9.8
	(2.9)	(2.4)	(1.9)	(2.0)	(4.3)	(2.0)	(1.2)
No referral received	11.8	5.9	6.0	0.9	7.5	7.6	7.0
	(2.3)	(2.5)	(1.3)	(0.3)	(1.5)	(1.7)	(0.9)
Sample size	375	276	1,227	147	376	713	3,114
Population	918,183	708,232	3,152,368	323,414	825,792	1,813,088	7,741,078

Exhibit E-63

Distribution of Perceived Barriers to WIC Participation, by Participant Category

Perceived Barrier	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Lack of transportation to clinic							
A big problem	5.3	7.1	7.2	6.3	4.3	7.5	6.4
	(1.6)	(1.3)	(1.3)	(1.2)	(0.9)	(1.4)	(0.9)
Somewhat of a problem	16.0	16.8	18.4	16.9	15.7	12.8	14.5
	(1.5)	(2.7)	(2.3)	(1.4)	(2.1)	(1.5)	(1.3)
Not a problem	78.7	76.2	74.3	76.8	80.0	79.7	79.1
	(2.3)	(3.4)	(3.0)	(2.2)	(2.2)	(2.1)	(1.7)
Inconvenient hours/days clinic is open							
A big problem	3.2	1.8	5.0	3.5	2.6	4.3	3.7
	(0.9)	(0.6)	(1.1)	(0.7)	(0.7)	(1.0)	(0.7)
Somewhat of a problem	12.9	12.5	10.9	12.2	14.0	10.7	11.9
	(1.5)	(1.7)	(1.6)	(1.1)	(2.1)	(1.5)	(1.0)
Not a problem	83.9	85.7	84.1	84.4	83.4	85.0	84.5
	(1.9)	(2.0)	(1.9)	(1.3)	(2.1)	(1.9)	(1.2)
Services take too much time							
A big problem	3.6	6.0	7.9	5.4	4.3	4.4	4.6
	(1.1)	(1.5)	(1.4)	(0.8)	(1.0)	(1.0)	(0.8)
Somewhat of a problem	15.2	22.2	18.0	17.6	17.7	20.4	19.1
	(2.1)	(2.2)	(2.2)	(1.5)	(2.8)	(2.4)	(1.7)
Not a problem	81.2	71.8	74.2	77.0	78.0	75.2	76.3
	(2.3)	(2.9)	(3.0)	(2.0)	(3.1)	(2.6)	(2.0)
Waiting space at clinic is limited							
A big problem	3.8	3.8	2.7	3.4	3.7	3.8	3.7
	(1.1)	(1.2)	(1.0)	(0.8)	(1.1)	(0.9)	(0.7)
Somewhat of a problem	6.3	11.2	11.7	9.0	9.6	11.2	10.3
	(1.2)	(1.8)	(2.4)	(1.3)	(1.6)	(2.0)	(1.4)
Not a problem	90.0	85.0	85.6	87.5	86.7	85.0	86.0
	(1.5)	(1.9)	(2.5)	(1.3)	(1.9)	(2.1)	(1.6)
Lack of child care							
A big problem	2.6	5.0	3.4	3.4	3.7	6.0	4.8
	(0.7)	(1.1)	(1.0)	(0.6)	(1.0)	(1.4)	(0.8)
Somewhat of a problem	7.3	8.0	9.3	8.1	8.2	11.1	9.7
	(1.2)	(1.3)	(1.7)	(1.0)	(1.4)	(1.7)	(1.1)
Not a problem	90.1	87.0	87.2	88.6	88.1	82.9	85.5
	(1.5)	(1.9)	(2.1)	(1.3)	(1.4)	(2.3)	(1.5)

Exhibit E-63 (cont.)

Distribution of Perceived Barriers to WIC Participation, by Participant Category

Perceived Barrier	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Language barriers							
A big problem	1.7	3.5	0.7	1.8	1.5	2.1	1.9
	(0.6)	(1.4)	(0.4)	(0.5)	(0.7)	(1.0)	(0.7)
Somewhat of a problem	3.1	2.9	1.8	2.6	1.8	1.4	1.8
	(0.7)	(0.9)	(0.6)	(0.5)	(0.6)	(0.5)	(0.4)
Not a problem	95.3	93.6	97.4	95.6	96.7	96.5	96.3
	(0.9)	(2.0)	(0.7)	(0.8)	(0.9)	(1.1)	(0.9)
Problems qualifying for benefits							
A big problem	0.7	1.8	0.5	0.9	1.5	0.9	1.0
	(0.5)	(0.7)	(0.2)	(0.3)	(0.5)	(0.4)	(0.3)
Somewhat of a problem	3.3	3.8	3.7	3.5	2.7	4.3	3.7
	(0.8)	(1.0)	(1.0)	(0.6)	(0.8)	(0.7)	(0.5)
Not a problem	96.0	94.4	95.8	95.6	95.8	94.9	95.3
	(0.9)	(1.3)	(1.0)	(0.6)	(1.1)	(1.0)	(0.7)
Rates of item non-response							
Lack of transportation to clinic	2.0	2.1	4.2	2.7	2.7	2.4	2.6
	(0.9)	(0.7)	(1.4)	(0.9)	(1.2)	(1.0)	(0.8)
Inconvenient hours/days clinic is open	2.1	2.3	4.1	2.8	2.7	2.6	2.7
	(0.9)	(0.7)	(1.3)	(0.8)	(1.2)	(1.0)	(0.8)
Services take too much time	2.3	2.4	4.1	2.9	2.9	2.4	2.6
	(0.9)	(0.7)	(1.3)	(0.8)	(1.2)	(1.0)	(0.8)
Waiting space at clinic is limite	2.3	2.3	4.2	2.9	3.1	2.8	2.9
	(0.9)	(0.7)	(1.3)	(0.8)	(1.2)	(1.1)	(0.9)
Lack of child care	4.8	3.5	4.3	4.4	3.3	2.7	3.2
	(1.7)	(1.1)	(1.3)	(1.0)	(1.2)	(1.0)	(0.8)
Language barriers	2.3	2.1	4.1	2.8	3.0	2.6	2.7
	(0.9)	(0.7)	(1.3)	(0.8)	(1.2)	(1.1)	(0.9)
Problems qualifying for benefits	2.5	2.3	4.1	3.0	3.1	2.6	2.8
	(0.9)	(0.7)	(1.3)	(0.8)	(1.2)	(1.0)	(0.8)
Sample size	639	627	587	1,853	614	647	3,114
Population	859,381	376,463	573,899	1,809,743	1,978,411	3,952,924	7,741,078

Exhibit E-64

Distribution of Perceived Barriers to WIC Participation, by Local Agency Sponsorship

Perceived Barrier	State Agency	District Agency	County Agency	Municipal Agency	Community Agency	Hospital	Total WIC
Lack of transportation to clinic							
A big problem	6.0	2.5	6.0	9.6	6.3	8.2	6.4
	(1.6)	(1.7)	(1.1)	(2.6)	(2.7)	(2.3)	(0.9)
Somewhat of a problem	10.7	16.3	14.6	21.7	15.2	13.8	14.5
	(4.0)	(3.6)	(1.7)	(3.7)	(3.4)	(2.3)	(1.3)
Not a problem	83.3	81.2	79.4	68.7	78.5	78.0	79.1
	(5.2)	(2.4)	(2.4)	(2.7)	(5.9)	(2.2)	(1.7)
Inconvenient hours/days clinic is open							
A big problem	7.7	0.9	4.5	1.6	1.5	2.5	3.7
	(2.4)	(0.8)	(1.0)	(1.3)	(0.8)	(1.2)	(0.7)
Somewhat of a problem	11.1	17.7	13.4	17.2	5.9	9.3	11.9
	(2.4)	(3.2)	(1.7)	(4.8)	(2.2)	(1.6)	(1.0)
Not a problem	81.2	81.4	82.1	81.2	92.6	88.2	84.5
	(2.4)	(3.0)	(1.8)	(6.1)	(2.9)	(2.0)	(1.2)
Services take too much time							
A big problem	7.5	4.2	4.6	3.1	0.8	5.4	4.6
	(2.8)	(3.1)	(1.1)	(1.4)	(0.8)	(1.1)	(0.8)
Somewhat of a problem	25.0	17.5	21.5	39.9	4.4	15.4	19.1
	(4.5)	(2.7)	(3.0)	(6.9)	(1.5)	(2.3)	(1.7)
Not a problem	67.6	78.3	73.9	57.0	94.8	79.2	76.3
	(5.7)	(5.4)	(3.3)	(6.9)	(1.7)	(2.4)	(2.0)
Waiting space at clinic is limited							
A big problem	2.7	2.3	3.7	1.5	1.9	6.0	3.7
	(1.6)	(1.5)	(1.0)	(1.5)	(0.7)	(2.1)	(0.7)
Somewhat of a problem	7.6	13.4	11.9	12.9	4.1	9.8	10.3
	(2.9)	(3.0)	(2.7)	(2.7)	(1.6)	(2.3)	(1.4)
Not a problem	89.7	84.3	84.4	85.6	94.0	84.2	86.0
	(4.1)	(4.3)	(2.8)	(2.5)	(2.2)	(3.7)	(1.6)
Lack of child care							
A big problem	9.3	4.0	5.5	2.1	0.9	4.0	4.8
	(3.6)	(2.6)	(1.1)	(1.1)	(0.8)	(1.3)	(0.8)
Somewhat of a problem	11.3	9.0	11.1	18.2	2.5	8.5	9.7
	(2.3)	(1.6)	(2.1)	(2.6)	(0.8)	(2.0)	(1.1)
Not a problem	79.3	87.0	83.5	79.7	96.6	87.5	85.5
	(5.4)	(2.0)	(2.6)	(2.3)	(1.1)	(2.0)	(1.5)

Exhibit E-64 (cont.)

Distribution of Perceived Barriers to WIC Participation, by Local Agency Sponsorship

Perceived Barrier	State Agency	District Agency	County Agency	Municipal Agency	Community Agency	Hospital	Total WIC
Language barriers							
A big problem	5.8	0.4	1.1	0.3	0.4	2.8	1.9
	(5.0)	(0.2)	(0.5)	(0.3)	(0.4)	(1.2)	(0.7)
Somewhat of a problem	0.7	1.6	2.8	3.6	0.6	1.0	1.8
	(0.5)	(1.0)	(0.8)	(1.6)	(0.2)	(0.3)	(0.4)
Not a problem	93.5	98.0	96.1	96.0	99.0	96.3	96.3
	(5.5)	(0.9)	(0.9)	(1.6)	(0.5)	(1.4)	(0.9)
Problems qualifying for benefits							
A big problem	1.4	1.9	1.1	1.8	0.6	0.5	1.0
	(0.8)	(1.6)	(0.4)	(1.3)	(0.4)	(0.3)	(0.3)
Somewhat of a problem	3.2	2.9	3.6	2.8	3.5	4.7	3.7
	(1.0)	(1.8)	(0.9)	(1.2)	(1.3)	(1.6)	(0.5)
Not a problem	95.4	95.2	95.3	95.5	95.9	94.8	95.3
	(1.1)	(3.3)	(1.1)	(2.4)	(1.5)	(1.6)	(0.7)
Rates of item non-response							
Lack of transportation to clinic	4.8	1.8	2.8	0.0	1.6	2.1	2.6
	(2.9)	(0.7)	(1.7)	(0.0)	(0.7)	(0.8)	(0.8)
Inconvenient hours/days clinic is open	4.8	1.8	3.1	0.0	1.6	2.2	2.7
	(2.9)	(0.7)	(1.6)	(0.0)	(0.7)	(0.8)	(0.8)
Services take too much time	4.8	1.8	2.9	0.1	1.6	2.4	2.6
	(2.9)	(0.7)	(1.6)	(0.1)	(0.7)	(0.8)	(0.8)
Waiting space at clinic is limite	5.4	1.8	3.1	0.2	1.9	2.5	2.9
	(2.9)	(0.7)	(1.8)	(0.2)	(0.5)	(0.8)	(0.9)
Lack of child care	6.1	1.8	3.2	0.4	2.3	3.3	3.2
	(3.1)	(0.7)	(1.6)	(0.3)	(0.4)	(1.0)	(0.8)
Language barriers	4.8	1.8	3.0	0.0	1.6	2.4	2.7
	(2.9)	(0.7)	(1.8)	(0.0)	(0.7)	(0.8)	(0.9)
Problems qualifying for benefits	4.8	1.8	3.0	0.3	2.3	2.6	2.8
	(2.9)	(0.7)	(1.6)	(0.3)	(0.6)	(0.9)	(0.8)
Sample size	375	276	1,227	147	376	713	3,114
Population	918,183	708,232	3,152,368	323,414	825,792	1,813,088	7,741,078

Exhibit E-65

Distribution of Reported Difficulties with the WIC Program Among Respondents with Prior WIC Experience

Reported Difficulty	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Lack of transportation to get groceries							
A big problem	4.1	3.1	4.5	4.0	2.8	3.9	3.7
	(1.3)	(0.7)	(1.3)	(0.7)	(0.9)	(1.4)	(0.8)
Somewhat of a problem	11.4	11.9	15.3	13.2	13.4	9.3	10.9
	(2.0)	(1.6)	(2.3)	(1.3)	(2.0)	(1.3)	(1.1)
Not a problem	84.5	85.0	80.2	82.9	83.8	86.8	85.4
	(2.3)	(1.8)	(2.4)	(1.5)	(2.2)	(2.0)	(1.4)
Problems using WIC vouchers/checks							
A big problem	0.8	0.4	0.3	0.5	1.5	1.7	1.4
	(0.6)	(0.3)	(0.2)	(0.2)	(0.6)	(0.6)	(0.4)
Somewhat of a problem	6.4	6.4	3.5	5.2	3.2	5.6	5.0
	(1.8)	(1.0)	(0.9)	(0.8)	(0.8)	(1.1)	(0.7)
Not a problem	92.8	93.1	96.1	94.3	95.3	92.7	93.6
	(1.8)	(1.1)	(0.9)	(0.8)	(1.1)	(1.2)	(0.8)
Treated negatively by staff member							
A big problem	0.0	0.2	0.0	0.0	0.2	1.2	0.8
	(0.0)	(0.2)	(0.0)	(0.0)	(0.2)	(0.5)	(0.3)
Somewhat of a problem	2.3	1.8	1.8	2.0	2.2	3.9	3.2
	(1.0)	(0.7)	(0.8)	(0.5)	(0.7)	(0.8)	(0.6)
Not a problem	97.7	98.0	98.2	98.0	97.7	94.9	96.1
	(1.0)	(0.8)	(0.8)	(0.5)	(0.8)	(0.9)	(0.7)
Treated negatively in grocery store							
A big problem	2.1	2.3	1.6	2.0	2.8	2.6	2.5
	(1.1)	(0.8)	(0.9)	(0.5)	(0.9)	(0.7)	(0.5)
Somewhat of a problem	11.3	13.9	12.1	12.4	11.1	13.3	12.6
	(2.3)	(2.0)	(2.0)	(1.5)	(1.9)	(1.7)	(1.3)
Not a problem	86.5	83.8	86.3	85.7	86.1	84.1	84.9
	(2.5)	(2.0)	(2.2)	(1.6)	(2.1)	(1.9)	(1.5)
Rates of item non-response							
Lack of transportation to	21.6	23.2	23.2	22.7	17.1	3.7	10.7
get groceries	(3.8)	(3.1)	(2.9)	(2.4)	(3.1)	(1.5)	(1.7)
Problems using WIC vouchers/check	22.4	23.3	26.1	24.2	17.6	4.0	11.3
	(3.8)	(3.2)	(4.0)	(2.7)	(3.1)	(1.8)	(1.9)
Treated negatively by staff membe	21.8	22.7	25.0	23.4	17.2	3.2	10.6
	(3.7)	(3.1)	(3.9)	(2.6)	(2.8)	(1.1)	(1.3)
Treated negatively in grocery sto	22.4	23.6	25.9	24.2	17.6	4.3	11.5
	(3.8)	(3.2)	(4.0)	(2.7)	(2.9)	(1.8)	(1.8)

Exhibit E-65 (cont.)

Distribution of Reported Difficulties with the WIC Program Among Respondents with Prior WIC Experience

Reported Difficulty	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Sample							
Percent of families with prior WIC experience	82.8 (3.3)	94.8 (1.0)	94.4 (1.2)	90.8 (1.1)	95.8 (0.9)	97.7 (0.7)	95.8 (0.5)
Of families WIC experience, percent administered customer satisfaction section	79.1 (3.7)	77.6 (3.0)	78.2 (2.6)	78.3 (2.2)	84.6 (2.6)	97.7 (0.7)	90.7 (1.1)
Sample size	277	593	547	1,417	587	628	2,632
Population	368,670	356,805	535,811	1,261,286	1,884,471	3,846,741	6,992,499

Exhibit E-66

Distribution of Reported Overall Satisfaction with WIC Foods Among Respondents with Prior WIC Experience

	Satisfied with Food Brands	Satisfied with Food Quantities
Breakfast cereals		
Very satisfied	62.3	79.0
	(2.7)	(1.9)
Fairly satisfied	28.1	16.0
	(2.0)	(1.3)
Not satisfied	9.7	5.0
	(1.6)	(1.0)
Juices		
Very satisfied	81.4	79.9
	(2.2)	(2.0)
Fairly satisfied	15.7	13.9
	(2.1)	(1.4)
Not satisfied	2.9	6.2
	(0.5)	(1.0)
Baby formula		
Very satisfied	85.7	79.6
	(3.4)	(2.7)
Fairly satisfied	12.4	14.5
	(3.3)	(2.5)
Not satisfied	1.9	5.9
	(0.8)	(1.4)
Milk		
Very satisfied	89.1	80.9
	(2.2)	(2.1)
Fairly satisfied	10.0	12.7
	(2.2)	(1.3)
Not satisfied	0.9	6.4
	(0.3)	(1.3)
Cheese		
Very satisfied	87.5	80.9
	(2.1)	(2.2)
Fairly satisfied	10.6	13.7
	(2.0)	(1.6)
Not satisfied	1.9	5.5
	(0.4)	(1.0)
Eggs		
Very satisfied	90.0	82.8
	(2.2)	(2.0)
Fairly satisfied	9.5	13.0
	(2.2)	(1.6)
Not satisfied	0.5	4.2
	(0.2)	(0.8)
Beans or peanut butter		
Very satisfied	86.6	83.9
	(2.2)	(2.1)
Fairly satisfied	11.9	12.8
	(2.1)	(1.8)
Not satisfied	1.5	3.3
	(0.3)	(0.7)

Exhibit E-66 (cont.)

Distribution of Reported Overall Satisfaction with WIC Foods Among Respondents with Prior WIC Experience

	Satisfied with Food Brands	Satisfied with Food Quantities
Percent nonresponse to each item		
Breakfast cereal	10.6	10.6
	(1.2)	(1.2)
Juices	10.5	10.7
	(1.1)	(1.1)
Baby formula	26.3	26.6
	(3.0)	(3.0)
Milk	10.8	11.2
	(1.2)	(1.2)
Cheese	10.8	11.1
	(1.2)	(1.2)
Eggs	11.0	11.2
	(1.2)	(1.2)
Beans or peanut butter	11.3	11.5
	(1.2)	(1.2)
Sample		
Percent of families with WIC experience	95.8	95.8
	(0.5)	(0.5)
Of families WIC experience, percent administered customer satisfaction section	90.7	90.7
	(1.1)	(1.1)
Sample size	2,632	2,632
Population	6,992,499	6,992,499

Exhibit 3-67

Incidence of Missed WIC Appointments Among Respondents with Prior WIC Experience

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Percent ever missed appointment at WIC clinic	38.0 (3.0)	39.1 (3.0)	42.2 (3.5)	40.1 (2.2)	37.0 (3.2)	50.6 (2.9)	45.6 (2.1)
Distribution of frequency of missed appointments							
Sometimes	21.7 (2.9)	16.3 (2.5)	15.4 (2.1)	17.5 (1.6)	16.5 (2.1)	27.0 (1.9)	22.9 (1.5)
Often	3.5 (1.4)	1.7 (0.5)	3.8 (1.2)	3.1 (0.8)	3.4 (1.0)	2.9 (0.7)	3.1 (0.6)
Just once	12.7 (2.4)	21.1 (2.9)	22.5 (2.9)	19.2 (1.8)	16.7 (2.1)	20.4 (2.5)	19.3 (1.4)
Never	62.2 (3.0)	60.9 (3.0)	58.3 (3.5)	60.2 (2.2)	63.4 (3.2)	49.7 (2.9)	54.7 (2.1)
Distribution of reasons for missed appointments							
Forget to go	44.7 (6.3)	35.2 (5.5)	43.0 (6.0)	41.4 (4.2)	38.3 (3.8)	44.0 (5.0)	42.5 (3.9)
Trouble finding transportation	39.8 (4.6)	34.7 (5.8)	38.3 (5.1)	37.7 (3.0)	29.3 (3.4)	28.6 (3.6)	29.9 (2.9)
Cannot get off work	21.9 (5.9)	13.4 (3.9)	12.0 (2.4)	15.1 (2.3)	17.8 (3.2)	22.3 (2.7)	20.4 (2.1)
Cannot find child care	12.0 (4.0)	13.3 (2.7)	14.9 (4.3)	13.6 (2.2)	12.7 (2.9)	12.7 (2.8)	12.8 (2.2)
Clinic is too far from home	11.9 (3.5)	10.8 (2.4)	8.9 (2.4)	10.2 (1.7)	11.8 (2.4)	8.2 (1.6)	9.2 (1.3)
It takes too long at the WIC clin	10.2 (3.2)	10.4 (2.4)	11.3 (4.7)	10.7 (2.5)	8.1 (2.3)	8.2 (1.9)	8.5 (1.6)
Rates of item nonresponse							
Ever missed appoinment	21.4 (3.7)	22.9 (3.1)	24.6 (3.9)	23.2 (2.6)	16.1 (2.5)	2.4 (0.7)	9.8 (1.0)
Frequency of missed appointments	21.6 (3.7)	23.0 (3.1)	25.2 (3.9)	23.5 (2.5)	16.7 (2.5)	2.9 (0.7)	10.3 (1.0)
Reasons for missed appointments	23.3 (3.6)	25.2 (3.1)	26.5 (3.8)	25.2 (2.5)	18.8 (2.6)	6.7 (1.0)	13.3 (1.2)

NOTES: The distribution of reasons for missed appointments is measured among respondents who missed appointments; the distribution sums to more than 100 due to multiple responses.

Exhibit 3-68

Distribution of Shopping Experiences and Food Benefit Redemption Among Respondents with Prior WIC Experience

	Pregnant Women	Breastfeeding Women	Postpartum Women	Total Women	Infants	Children	Total WIC
Overall WIC participation							
Percent who ever stopped	39.6	23.0	24.0	28.4	24.1	25.7	25.7
using WIC while still eligible	(3.1)	(3.1)	(2.8)	(2.2)	(2.4)	(2.1)	(1.5)
Experience shopping with WIC vouchers							
Easy	81.5	80.2	89.3	84.3	81.9	84.6	83.9
	(3.4)	(2.9)	(1.9)	(1.9)	(2.1)	(2.2)	(1.8)
Sometimes confusing	15.2	18.8	9.7	14.0	17.1	13.0	14.2
	(3.0)	(2.6)	(1.7)	(1.6)	(2.1)	(1.8)	(1.5)
Often confusing	3.3	1.0	1.0	1.7	1.0	2.4	1.9
	(1.3)	(0.6)	(0.5)	(0.6)	(0.4)	(0.8)	(0.5)
Percent of respondents who usually purchase all WIC food items							
Overall	91.7	88.6	91.0	90.5	90.9	94.3	92.8
	(2.1)	(2.1)	(1.6)	(1.2)	(1.4)	(0.8)	(0.6)
Breakfast cereals	96.5	97.1	96.9	96.8	96.0	97.1	96.8
	(1.4)	(0.7)	(1.0)	(0.6)	(1.1)	(0.8)	(0.7)
Juices	97.0	98.3	98.1	97.9	98.8	98.9	98.7
	(1.2)	(0.5)	(0.7)	(0.4)	(0.6)	(0.5)	(0.4)
Baby formula	95.6	91.2	99.4	96.2	96.4	92.0	93.8
	(1.9)	(3.1)	(0.4)	(1.1)	(1.1)	(2.1)	(1.4)
Milk	96.3	95.6	95.6	95.8	96.0	96.5	96.3
	(1.2)	(1.1)	(1.2)	(0.8)	(1.0)	(1.4)	(0.8)
Cheese	98.5	97.4	98.1	98.0	98.0	99.2	98.7
	(0.7)	(0.7)	(0.7)	(0.4)	(0.8)	(0.4)	(0.3)
Eggs	97.1	94.8	97.4	96.6	95.9	97.8	97.1
	(1.5)	(1.8)	(0.8)	(0.8)	(1.0)	(0.7)	(0.6)
Beans or peanut butter	94.2	94.9	94.2	94.4	93.0	95.6	94.8
	(1.9)	(1.4)	(1.4)	(0.9)	(1.5)	(1.3)	(1.0)
Rates of item nonresponse							
Ever stopped using WIC	22.0	23.6	25.5	23.9	16.4	3.3	10.6
	(3.8)	(3.2)	(3.9)	(2.6)	(2.5)	(1.0)	(1.2)
Experience using WIC vouchers	22.1	24.0	26.3	24.4	17.4	4.6	11.6
	(3.8)	(3.2)	(4.1)	(2.8)	(3.0)	(1.9)	(1.9)
Item nonresponse to "Usually purchase all WIC foods"							
Overall	26.1	27.0	28.8	27.5	21.3	10.5	16.5
	(3.8)	(3.2)	(3.8)	(2.9)	(3.2)	(2.5)	(2.2)

Breakfast cereals	21.9	23.5	25.4	23.8	18.6	5.1	12.1
	(3.7)	(3.1)	(3.9)	(2.6)	(3.0)	(1.4)	(1.6)
Juices	22.3	24.2	25.4	24.1	18.5	5.3	12.3
	(3.7)	(3.1)	(3.9)	(2.6)	(3.0)	(1.4)	(1.6)
Baby formula	0.0	0.0	0.0	0.0	26.1	0.0	7.0
	(0.0)	(0.0)	(0.0)	(0.0)	(3.4)	(0.0)	(0.9)
Milk	22.6	24.7	25.4	24.4	19.0	5.3	12.4
	(3.8)	(3.1)	(3.9)	(2.6)	(2.9)	(1.4)	(1.6)
Cheese	22.3	24.5	25.4	24.2	19.1	5.2	12.4
	(3.7)	(3.1)	(3.9)	(2.6)	(3.0)	(1.4)	(1.6)
Eggs	22.7	24.4	25.5	24.3	19.1	5.3	12.5
	(3.8)	(3.1)	(3.9)	(2.6)	(3.0)	(1.4)	(1.6)
Beans or peanut butter	23.0	24.7	25.5	24.5	19.6	5.2	12.6
	(3.8)	(3.0)	(3.9)	(2.6)	(3.0)	(1.4)	(1.6)