SUPPORTING STATEMENT FOR

**WIC Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2)**

Tameka Owens

Office of Research and Analysis

Food and Nutrition Service

US Department of Agriculture

3101 Park Center Drive

Alexandria, VA 22302

Phone: 703-305-2321

Fax: 703-305-2576

E-mail: Tameka.Owens@fns.usda.gov

December 5, 2012

Table of Contents

[**PART B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS 1**](#_Toc329341098)

[B.1. Respondent Universe and Sampling Methods](#_Toc329341099) 1

[B.2. Procedures for the Collection of Information](#_Toc329341117) 6

[B.3. Methods to Maximize Response Rates and to Deal with Issues of Nonresponse 13](#_Toc329341128)

[B.4. Test of Procedures or Methods to be Undertaken 15](#_Toc329341130)

[B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data 15](#_Toc329341131)

 Tables

B1.1 Estimated population and sample sizes 3

B2.1 Minimum detectable differences between subgroups of interest using

 union of core longitudinal and supplemental cross-sectional samples 9

B2.2 Minimum detectable differences for child obesity and overweight status

by timing of WIC enrollment – controlled for maternal weight status –

valid at both 12 and 24 months (No subsetting by continued WIC

enrollment status) 9

B2.3 Expected Sample Sizes and Response Rates 10

Figure

B1.1 WIC site sampling process 5

Appendices

A.1 WIC Poster – English

A.2 WIC Poster – Spanish

B.1 Participant Flyer – English

B.2 Participant Flyer – Spanish

C.1 Participant Referral Script and FAX Cover – English

C.2 Participant Referral Script and FAX Cover - Spanish

D.1 Participant Referral Form – English

D.2 Participant Referral Form – Spanish

E.1 Screening Enrollment Participant Interview - English

E.2 Screening Enrollment Participant Interview – Spanish

F.1 Prenatal Enrollment Package Letter – English

F.2 Prenatal Enrollment Package Letter – Spanish

G.1 Postnatal Enrollment Package Letter – English

G.2 Postnatal Enrollment Package Letter – Spanish

H.1 Post Birth HIPAA Letter – English

H.2 Post Birth HIPAA Letter - Spanish

I.1 Prenatal Participant Interview - English

I.2 Prenatal Participant Interview - Spanish

J.1 1-Month Participant Interview - English

J.2 1-Month Participant Interview - Spanish

K.1 3-Month Participant Interview - English

K.2 3-Month Participant Interview - Spanish

L.1 5-Month Participant Interview - English

L.2 5-Month Participant Interview - Spanish

M.1 7-Month Participant Interview - English

M.2 7-Month Participant Interview - Spanish

N.1 9-Month Participant Interview - English

N.2 9-Month Participant Interview - Spanish

O.1 11-Month Participant Interview - English

O.2 11-Month Participant Interview - Spanish

P.1 13-Month Participant Interview - English

P.2 13-Month Participant Interview - Spanish

Q.1 15-Month Participant Interview - English

Q.2 15-Month Participant Interview - Spanish

R.1 18-Month Participant Interview - English

R.2 18-Month Participant Interview - Spanish

S.1 24-Month Participant Interview - English

S.2 24-Month Participant Interview - Spanish

T.1 Baseline Module Participant Interview -English

T.2 Baseline Module Participant Interview – Spanish

U.1 New Caregiver Module Participant Interview- English

U.2 New Caregiver Module Participant Interview – Spanish

V.1 Automated Multiple Pass Method 24HR Module Screenshots-English

V.2 Automated Multiple Pass Method 24HR Module Screenshots-Spanish

W.1 13-Month Food Model Booklet Letter – English

W.2 13-Month Food Model Booklet Letter – Spanish

X.1 Note Sheet for AMPM – English

X.2 Note Sheet for AMPM – Spanish

Y.1 Core Participant Informed Consent – English

Y.2 Core Participant Informed Consent - Spanish

Z.1 Supplemental Participant Informed Consent – English

Z.2 Supplemental Participant Informed Consent - Spanish

AA.1 Hospital Data Request Form – English

AA.2 Hospital Data Request Form – Spanish

BB WIC Administrative Data Request

CC.1 Provider Data Request Form – English

CC.2 Provider Data Request Form – Spanish

DD.1 Home Healthcare Agency Length/Weight Form – English

DD.2 Home Healthcare Agency Length/Weight Form – Spanish

EE.1 Home Healthcare Visit Script Length/Weight – English

EE.2 Home Healthcare Visit Script Length/Weight – Spanish

FF Feeding My Baby Brochure

GG Webinar Presentation – Overview of Study

HH Frequently Asked Questions (FAQs)

II Email Invitation to State and Local WIC Administrators

JJ Voice mail Invitation to State and Local WIC Administrators

KK Thank you letter – State Not Selected

LL.1 State WIC Key Informant Interview Guide

LL.2 Local WIC Key Informant Interview Guide

MM.1 Local Staff Online Survey - English

MM.2 Local Staff Online Survey – Spanish

MM.3 Local Staff Online Survey Sample Screenshots

NN.1 Participant Reminder Scripts - English

NN.2 Participant Reminder Scripts - Spanish

OO.1 Thank You Letter – English

OO.2 Thank You Letter – Spanish

PP Federal Register Comments

QQ Response to Federal Register Comments

RR National Agricultural Statistics Service Comments

SS Methodological Research on Incentives

TT Confidentiality and Nondisclosure Agreement

UU IRB Approval Letter

VV Details of Sampling and Eligibility Considerations

WW Imputation, Weights, and Nonresponse

XX Summary of Pretesting

# PART B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

## B.1. Respondent Universe and Sampling Methods

## ****Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.****

***Respondent Universe***

The target population is the set of WIC participants ages 0 to 3 months, and the sampling unit is the infant. The study uses a longitudinal design, asking the mother or primary caregiver questions (via survey) about their infant multiple times between the infant’s birth and second birthday, and collecting health data from WIC administrative records, hospitals, and healthcare providers. In order to gather data starting at birth, we will recruit WIC participants for the study at WIC sites during their WIC enrollment appointment. The respondents will be pregnant or enrolling an infant less than 3 months old. The target sample sizes are based on the sample needed to support minimum detectable differences (MDD) between subgroup estimates for infants at 24 months. (See section B.2 for discussion of these calculations.) Since some of the rarer subgroups (e.g., African-American women who are breastfeeding) require more extensive screening to identify the target number of participants, a supplemental sample (above and beyond the “core” sample needed to support most subgroup estimates) will be selected. Table B2.3 shows our sampling estimates which are described here. Based on the MDD calculations, the target total number of completed 24-month interviews is 2,758. Assuming response rates for the 24-month interview of 70 percent and 68 percent for the core and supplemental samples, respectively, the target size of the consented and enrolled cohort is 3,991 (2,805 consented core sample enrollees and 1,186 consented supplemental sample enrollees). Factoring in expected consent rates (85% core and 90% supplemental prenatal enrollees), live birth rate (87%), core sample eligibility rates (98 % prenatal and 80% postnatal enrollees who met screening criteria), and supplemental sample eligibility and subsampling rates (30% prenatal enrollees; 66% postnatal enrollees),[[1]](#footnote-1) the total target number of sampled WIC enrollees is 7,840.

 The WIC enrollees will be sampled from a stratified, nationally representative sample of 80 WIC sites in 27 State Agencies (described in section B2). In addition to facilitating access to and creating efficient sampling frames for recruiting WIC participants, WIC program representatives in the WIC State and Local Agencies will provide important information to the study. Table B1.1 presents the estimated population size and the expected number of respondents who will be contacted to provide data for each respondent type. We estimate that there are 2.19 million WIC participants aged 0 to 3 months,[[2]](#footnote-2) and our final sample size will be 7,840 WIC enrollees. Further, we estimate the population of respondents for the WIC State and Local Key Informant Interviews to be 12,180, which represents one WIC director and one nutrition coordinator at each of the 90 State Agencies and one local WIC administrator (the most knowledgeable person) at 12,000 services sites;[[3]](#footnote-3) accordingly, we expect a sample size of 107 WIC State and Local administrators (27 WIC State and 80 local administrators) for these interviews. The population of WIC site staff who could complete a Local Staff Online Survey is 36,000 (based on WIC sites having an average of 1.2 staff per 300 WIC participants), and the sample size is 800 (10 staff per 80 sites). Finally, the population of data managers is 4.38 million, which reflects the finite number of hospitals, health care providers, and State Agencies that would need to be contacted to obtain data on the population of WIC participants aged 0 to 3 months.[[4]](#footnote-4) The expected sample size is 4,537 data managers, which represents 3,991 hospitals of consented and enrolled participants with live births, 519 health care providers for enrollees for whom hospital records are not available (13% of consented/enrolled participants), and 27 State WIC Agencies.

Table B1.1. Estimated population and sample sizes

|  |  |  |
| --- | --- | --- |
| Respondents | Estimated population size | Expected sample size  |
| WIC Participants Age 0-3 mo. at enrollment (Participant Interviews) | 2.19 million | 7,840 |
| State and Local WIC administrators (Key Informant Interview) | 12,180 | 107  |
| WIC Site Staff (Local Staff Online Survey) | 36,000 | 800 |
| Data Managers (Health data) | 4.38 million | 4,537 |

***Sampling Methods***

The study will use sampling methods to select the WIC site sample and the WIC participant sample. We will sample the lowest WIC unit that delivers services to WIC participants, called a “service site”. Within each service site we will sample new WIC enrollees within a pre-determined recruitment window.

* **Sampling WIC Service Sites*.*** As shown in Figure 2.1, we plan a two-stage sampling approach that uses the WIC 2010 Participant Characteristics data (WIC PC 2010) to develop the WIC site sampling frame and a stratified sample design to select the sample of sites. In the first-stage we will use a group of characteristics to stratify the WIC sites into 40 strata; details of the formation of the 40 strata are given in Section B.2. Because of uncertainties about the eligibility of the first-stage sampling units, these units will be selected in two phases. In the first phase a total of 160 sampling units in 42 State Agencies will be selected—4 from each of the 40 strata. After the phase 1 selection, we will list the service sites associated with each first-stage sampling unit selected and determine the eligibility of each unit. To be eligible for the study, a site must have an average minimum daily flow of 1.5 new WIC ITFPS-eligible enrollees per day and must be expected to remain in operation and enrolling new WIC participants during the WIC ITFPS recruitment period. In the second phase we will subsample eligible first-stage sampling units to arrive at the final sample of 80 first-stage sampling units (2 from each of the 40 strata). In first-stage sampling units that are local agencies with more than one eligible service site, a second stage of sampling will be conducted to select one service site. The final sample will consist of 80 eligible service sites. Once the second-stage sampling is complete, recruitment efforts will begin in earnest. Although due diligence will be used to recruit service sites, we anticipate that some sites may be unable or unwilling to cooperate. Such service sites will be replaced by members of a matched sample. This replacement of service sites by matched substitutes is similar to imputation.
* **Sampling WIC participants within a sampled recruiting window.** The WIC participant sample will be designed such that the total target number of sampled WIC enrollees (7,840) is spread uniformly across the 80 sampled sites; that is, the recruitment of study participants will be designed so that each site will be expected to yield 98 sampled WIC enrollees. An important part of our sampling plan is the concept of recruiting “windows.” A recruiting window will be a string of consecutive workdays during which we will be recruiting new WIC enrollees at each sampled service site. These windows will vary in length from 7 to 66 workdays. The length of the window will be pre-determined, based on typical daily enrollment volumes (obtained from the State following selection of the phase 1 sample of first-stage sampling units) and will be calculated in such a way as to yield an average of 98 sampled WIC enrollees per site. Early in the site recruitment process, the WIC service site will be informed of the length of the recruiting window. The 80 windows will be randomly assigned to a spread of starting dates across the 22-week field period for recruiting, with the pool of possible starting dates for a given site determined based on its average daily enrollments and enrollment schedule. Due to the variations in actual WIC enrollments over time, the actual number of sampled enrollees who enroll in WIC during the specified recruiting window will vary from site to site. Among those who enroll at each service site during the site’s recruiting window, two samples will be selected, a core longitudinal and supplemental cross-sectional sample. See Appendix VV for details on the selection of these two samples, as well as other sampling and eligibility considerations.

Figure B1-1. WIC site sampling process



***Response Rates and Non-Response Bias Analysis***

For the calculation of response rates, every enrollee approached for the study will be considered as sampled whether or not she agrees to participate; even if we are unable to collect any information from her. Recruitment success rates will be calculated with all sampled new enrollees as the denominator, and all of those completing the enrollment screener as the numerator. Conditional interview response rates will be calculated with the entire enrolled cohort as the denominator, and the number of completed interviews as the numerator.

To the extent that respondents are systematically different from the population as a whole with respect to characteristics used in an analysis, the potential for nonresponse bias exists. Statistical methods used to compensate for missing data (weighting and imputation) aim to reduce nonresponse bias. Since there is generally no way to directly measure the difference in key survey characteristics between respondents and the population as a whole, various methods have been developed that aim to assess the potential for nonresponse bias.

One approach we will use is to examine bivariate cross tabulations of data from one wave (interview) by response status at a followup wave to check for evidence of nonresponse bias at followup. A similar technique that could also be used is to compare prior-wave estimates for key statistics for respondents to the given wave, computed using the full set of prior-wave respondents. We also plan to compare unadjusted estimates (i.e., computed using weights that do not include the adjustment for nonresponse to the particular wave) to adjusted estimates. We will identify a few key variables from early waves to be used in these bias analyses.

**B.2. Procedures for the Collection of Information**

**Describe the procedures for the collection of information including:**

**• Statistical methodology for stratification and sample selection,**

**• Estimation procedure,**

**• Degree of accuracy needed for the purpose described in the justification,**

**• Unusual problems requiring specialized sampling procedures, and**

**• Any use of periodic (less frequent than annual) data collection cycles to reduce burden.**

***Statistical methodology for stratification and sample selection***

The WIC sites will be sampled using a stratified probability proportionate to size (PPS) selection procedure. The strata will be formed by creating groups of sites that are fairly homogeneous with respect to the following characteristics:

* **Features of the State WIC Agency Plan.** The State WIC Agency plan contents were reviewed to identify a few easily obtained features of the State Agencies’ WIC programs, including whether the State Agency: (1) has a breastfeeding peer counseling program; (2) has trained paraprofessionals to provide nutrition education (vs. requiring that staff who provide nutrition education have professional training or credentials); and (3) provides one can of formula for breastfeeding infants during the first 30 days of life. These features will be used to group the WIC State Agency programs into categories.
* **Percent of women who used fully breastfeeding package.** This variable is an estimate of the percentage of women in the first-stage sampling unit who utilized the fully breastfeeding food package during the postpartum period. The PC 2010 data will be used to measure food-package selection by first-stage sampling unit, and this rate will be computed by taking the ratio of the number of postpartum women who received the fully breastfeeding package during April of 2010 to the total number of postpartum women receiving any food package that same month.
* **Average of children’s and mothers’ high weight for height rates.** The PC 2010 data will be used to estimate the percent of children and the percent of mothers who are “high weight for height”[[5]](#footnote-5) at the first-stage sampling unit level, and these will be averaged together to get a measure of risk of being overweight for all participants at the first-stage sampling unit level.

WIC sites will be sampled with probabilities proportional to a measure of size (MOS). The MOS is the expected number of eligible enrollees, based on the April 2010 enrollment counts from the WIC PC 2010. The MOS will be calculated by summing the total prenatal enrollment and 20 percent of the total enrollment of infants less than 3 months.[[6]](#footnote-6)

***Degree of Accuracy Needed for the Purpose Described in the Justification***

The sample size requirements for the WIC ITFPS-2 were determined based on power projections and precision requirements. Our primary source of information for these analyses was the baseline interview of ECLS-B (Early Childhood Longitudinal Study – Birth Cohort). We used this survey both to estimate the sizes of key subgroups and to project likely intra-class correlation (ICC). In projecting sample sizes, we focused on the following key outcomes: breastfeeding initiation, breastfeeding at 6 months (with no sub-setting on initiation), and the introduction of solid foods before the age of six months.

The precision requirement was that for key national estimates for the full “currently on WIC” group, a 95% confidence interval should have a half-width of no more than 5 percentage points. Additionally, for subgroup estimates (for key subgroups), a 90% confidence interval should have a half-width of no more than 5 percentage points.  The sample should also support detection of minimum detectable differences (MDDs) among the categories of each of the key subgroups with power of at least 0.80 and a significance level of 0.05. The core sample size was determined by the need to meet the precision target on the breastfeeding initiation rate for African-American mothers. The supplemental sample size was driven by the need to provide the same precision on the comparable statistic restricted to African-American mothers who keep their children on WIC for 24 months. Other statistics for the population that keep their children on WIC for 24 months are also at the desired precision limit. Table B2.1 shows minimum detectable differences (MDDs) between subgroups of interest for three critical outcomes using a test size of 0.05 and power of 0.80. They range from 5 to 10 percentage points. Based on subgroup differences observed in ECLS-B, it appears reasonable to expect differences of this magnitude for some but not all of the comparisons. Note that MDDs for upward and downward changes are slightly different. The numbers shown in this table are the average of the MDDs and upward and downward change. These figures use the total of the core and supplemental samples.

Table B2.2 shows minimum detectable differences (MDDs) in child obesity and overweight status by timing of maternal WIC enrollment, controlling for maternal weight status. We assumed that controlling for maternal weight status in these analyses will reduce variances by 20 percent. These projections apply to either age 12 months or 24 months. Power to detect these effects is 0.80.

Table B2.1. Minimum detectable differences between subgroups of interest (based on both the core longitudinal and supplemental cross-sectional samples)

|  |  |  |  |
| --- | --- | --- | --- |
| **Comparison** | **Percent initiating breastfeeding** | **Percent breastfeeding at six months** | **Percent introduced solid food prior to 6 months** |
| African-American vs. white | 9.7 | 5.8 | 8.4 |
| Other vs. white | 7.6 | 7.0 | 7.8 |
| Hispanic vs. Non-Hispanic | 6.0 | 5.9 | 6.4 |
| Breastfed 1-3 months vs. never | na | na | 7.2 |
| Breastfed 4+ months vs. never | na | 5.9 | 7.8 |
| 1st trimester enrollment vs. postnatal | 8.6 | 6.4 | 7.5 |
| 2nd or 3rd trimester vs. postnatal | 9.0 | 6.8 | 6.7 |
| Mom overweight vs. normal or low | 8.2 | 6.8 | 7.3 |
| Mom obese vs. normal or low | 8.1 | 5.1 | 7.0 |
| Under 75% poverty vs. 76 to 129% | 8.7 | 5.8 | 7.9 |
| Over 130% poverty vs. 76 to 129% | 7.5 | 5.9 | 7.6 |

Table B2.2. Minimum detectable differences for child obesity and overweight status by timing of WIC enrollment – controlled for maternal weight status – valid at both 12 and 24 months

|  |  |  |  |
| --- | --- | --- | --- |
| **Timing of maternal WIC enrollment** | **MDD in percent obese** | **MDD in percent overweight** | **MDD in percent obese or overweight** |
| 1st trimester enrollment vs. postnatal | 3.2 | 4.4 | 5.2 |
| 2nd or 3rd trimester vs. postnatal | 3.3 | 4.5 | 5.4 |

Table B2.3 shows our projected sample sizes and response rates at various recruitment and interviewing stages over time. The overall sample size required to obtain the MDDs shown in Tables B2.1 and B2.2 is a total of 2,758 respondents to the 24-month interview. In order to attain this expected sample size, this target must be adjusted to account for assumptions about attrition rates, consent rates, live birth rates, eligibility rates, and subsampling rates for the supplemental sample. These assumptions are shown in the “Rates” columns of Table B2.3. For all interviews except the prenatal and 3-month supplemental, the rates shown are computed as the number of completed interviews divided by the cohort size (2,805 for the core sample and 1,186 for the supplemental sample). In general, these rates account only for nonresponse to the particular interview (including attrition). The 1-month and 3-month interviews are the exception; for those interviews, these rates account for the fact that only a portion of the sample will have enrolled in WIC in time to be eligible for the 1-month interview. For the supplemental sample, the only enrollees administered the 3-month interview are those who were not enrolled in time for the 1-month interview. The distribution of cases to prenatal sampling versus postnatal sampling is according to the timing of their WIC enrollment (prenatal vs. postnatal).

Table B2.3. Expected Sample Sizes and Response Rates

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Mother infant events/interviews** | **Core sample** | **Rates** | **Supplemental sample** | **Rates** | **Sub-****Total**  | **2nd 24HR** | **Grand****Total** |
| Prenatal sampling | Prenatal WIC Enrollees Sampled | 3,097 |   | 3,097 |   | 6,194 |   |   |
| Met Screening Criteria | 3,035 | 98% | 929 | 30% | 3,964 |   |   |
| Consented & Enrolled | 2,580 | 85% | 836 | 90% | 3,416 |   |   |
| Live birth  | 2,245 | 87% | 727 | 87% | 2,972 |   |   |
| Postnatal sampling | Infant WIC Enrollees Sampled | 823 |  | 823 |  | 1,646 |  |  |
| Met Screening Criteria | 659 | 80% | 540 | 66% | 1,199 |   |   |
| Consented & Enrolled | 560 | 85% | 459 | 85% | 1,019 |   |   |
| **Prenatal & Postnatal**  | **Total Sampled** |  |  |  |  | **7,840** |  |  |
| **Total Screened** |  |  |  |  | **5,163** |  |  |
| **Total Consented/Enrolled** |  |  |  |  | **4,435** |  |  |
| Cohort | Total live infants consented & enrolled pre/post-natal | **2,805** |  | **1,186** |  | **3,991** |  |  |
| Follow-up interviews | Prenatala | 2,193 | 85% |   |   | 2,193 |   | 2,193  |
| 1-Month  | 2,354 | 84% | 985 | 83% | 3,339 |  | 3,339 |
| 3-Month Supplementalb |   |   | 70 | 15% | 70 |   | 70 |
| 3-Month Core | 2,344 | 84% |   |   | 2,344 |  | 2,344 |
| 5-Month | 2,297 | 82% |   |   | 2,297 |  | 2,297 |
| 7-Month  | 2,251 | 80% | 970 | 82% | 3,221 |  | 3,221 |
| 9-Month  | 2,206 | 79% |   |   | 2,206 |  | 2,206 |
| 11-Month  | 2,162 | 77% |   |   | 2,162 |  | 2,162 |
| 13-Month  | 2,119 | 76% | 883 | 74% | 3,002 | 212 | 3,214 |
| 15-Month | 2,076 | 74% |   |   | 2,076 | 208 | 2,284 |
| 18-Month  | 2,035 | 73% |   |   | 2,035 | 203 | 2,238 |
| 24-Month  | 1,955 | 70% | 803 | 68% | 2,758 | 195 | 2,953 |
| ***Total interviewsc*** | ***23,992*** |  | ***3,711*** |  | ***27,703*** | ***818*** | ***28,521*** |

a 85% Response rate =2,193/2,580 (Core prenatal sampling consented and enrolled is the only group eligible for prenatal interview)

b 15% Response rate = 70/459 (Only those who don’t enroll in time to make the 1-month interview window [a subgroup of supplemental postnatal sampling consented and enrolled] are eligible for 3-month supplemental interview)

c Total interviews = Prenatal through 24-months

***Estimation Procedures***

We plan to use standard design-based methods for estimation and variance estimation that will lead to confidence intervals on means and percentages, and hypothesis tests on contrasts of means and percentages. We will prepare a separate set of weights for each wave of data collection. The only respondents that will receive a positive weight for a wave will be those who responded to the wave and those who missed the wave but returned to the sample after missing no more than two consecutive waves. Respondents returning to the sample after one or two missed waves will be asked some retrospective “catch-up” questions to get

the timing of a few critical items where transitions are noted such as when nursing mothers stopped nursing, and when cereal was introduced into the child’s diet. Weighting will be used to adjust for nonresponse to the initial interview and to adjust for attrition. Imputation will be used to fill in scattered item nonresponse within completed interviews and missing data from other sources such as hospital records when we have questionnaire data from mothers.

We will develop sampling weights aimed at yielding nearly unbiased estimates of population parameters such as the breastfeeding initiation rate. These weights will begin with the calculation of base weights (the inverse of the probability of selection), and these will be adjusted for nonresponse across the waves of the study. One set of weights will be developed for analyses of the core sample by itself. A different set of weights will be developed for joint analyses of the core and supplemental sample samples. Details of the calculation of the weights and nonresponse are found in Appendix WW.

Imputation will be used to adjust for item nonresponse (i.e., missing data for particular items among those who respond to a given wave). As with weighting, a carefully designed imputation procedure will reduce bias due to item nonresponse. Further discussion will be needed to identify the particular set of items to be imputed but this set should include, at a minimum, variables needed for weighting as well as key survey outcomes and covariates. A cyclical n-partition hot deck (an approach analogous to the Gibbs sampler but using the hot deck to generate the imputations) will be used for imputation. (See Appendix WW for details of the imputation process.)

 ***Estimation and Calculation of Sampling Errors***

Two broad classes of methods have been developed for computation of standard errors of estimates from complex sample surveys: (1) replication methods and (2) Taylor series linearization. The WIC ITFPS-2 data files will contain the information necessary for analysts to use either of these approaches to compute standard errors. For WIC ITFPS-2, 40 replicates will be created, and the replication approach that will be used is a modified balanced repeated replication (BRR) method suggested by Fay,[[7]](#footnote-7) with K=0.5 (K is the perturbation factor known as “Fay’s factor”). To appropriately reflect the effects of the various stages of weighting on the variances of survey estimates,[[8]](#footnote-8) the procedures used to compute the full-sample weights will be repeated for each of the replicates. Software packages that use Taylor series linearization to estimate variances of statistics from complex sample surveys require the user to specify design information including “stratum” and “cluster” variables.

***Unusual Problems Requiring Specialized Sampling Procedures***

No specialized sampling procedures are involved.

***Any use of Periodic (less frequent than annual) Data Collection Cycles to Reduce Burden***

All data collection activities will occur within a 36 month period.  The study design requires that respondents be surveyed at multiple times, as described in Section B.1.

## B.3. Methods to Maximize Response Rates and to Deal with Issues of Nonresponse

**Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.**

***WIC State and Local Administrators and their WIC Sites***

The recruitment of the 80 WIC sites will focus on explaining the importance and usefulness of the study data. Specific procedures to maximize response rates include:

* + Distribute an informational study brochure to all WIC State and Local administrators describing the study and the timeline. (Appendix FF).
	+ Conduct a webinar presentation for State and Local administrators to explain the study and answer questions. (Appendix GG)
	+ Send a list of frequently asked questions (FAQs) to the State administrators in sampled States that emphasizes the importance of the study and how the information will help FNS better understand how to support the WIC program. (Appendix HH)
	+ Send an email invitation with voicemail follow-up to invite State WIC Directors in 27 State Agencies to support the study. (Appendices II-JJ)
	+ Contact State and Local WIC administrators through telephone, web, and in-person meetings to recruit and answer additional questions. In doing so, we will be sensitive to administrators’ time and schedule interviews at their convenience.
	+ Request for data from the Hospital data manager and Provider data manager (Profit/Nonprofit businesses) will yield a 100% response rate.

***WIC Participants***

Our procedures for ensuring high response rates among WIC participants include:

* Launch a rigorous recruitment effort that involves interacting with and recruiting women in-person and via telephone.
* Provide a toll-free number for respondents to call to verify the study’s legitimacy or to ask questions.
* Schedule appointment windows for the follow-up telephone interviews.
* Use telephone call scheduling procedures that are designed to call numbers at different times of the day (between 8 am and 9 pm in the respondent’s time zone) and week (Sunday through Saturday), to improve the chances of finding respondents at home.
* Make every reasonable effort to obtain a telephone interview when respondent is contacted, but allow respondents flexibility in rescheduling interviews.
* Conduct silent monitoring of telephone interviews to identify and promptly correct behaviors that could be inviting refusals or otherwise contributing to low cooperation rates.
* Leave a generic message on voice mail on the participant’s telephone to let her know the call was for a scheduled interview for the research study (Appendix NN).
* Require up to 9 unsuccessful telephone call attempts to a number without reaching someone before considering whether to treat the case as “unable to contact.”
* Use study liaisons to facilitate engagement with participants outside of the telephone interviews. This will allow participants to build rapport with a member of the study staff to answer questions, and will facilitate tracking and retention.
* Implement refusal conversion efforts by study liaisons and skilled telephone interviewers.
* Implement standardized training for all data collectors that focuses on basic skills of interviewing, the study background and questionnaires, gaining participant cooperation, effective neutral probing, and appropriate contact procedures. They must complete a certification process to work on the study.
* Provide a monetary incentive up to $400, administered incrementally per follow up survey, to encourage women to enroll and continue participation through the 2-year data collection period (Appendix SS).

## B.4. Test of Procedures or Methods to be Undertaken

**Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.**

Table B4.1 in Appendix XX shows the WIC participants instruments that were pre-tested in February-March, 2012. All testing was done with 9 or fewer English and Spanish-speaking respondents. Using standard cognitive testing methodology, respondents were asked to answer the questions in the interview and the interviewer probed with follow-up questions to assess whether the question intent was clear, the terminology well-defined, and the responses unambiguous. The length of the interviews was also evaluated to ensure the respondent burden is reasonable. Instruments were revised as needed.

## B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

**Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.**

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Affiliation | Telephone Number | e-mail |
| Suzanne McNutt | Westat | 301-738-3554 | Susiemcnutt@westat.com |
| Laurie May | Westat | 301-517-8068 | lauriemay@westat.com |
| Jill Montaquila | Westat | 301-517-4046 | jillmontaquila@westat.com |
| David Hancock | NASS | 202-690-2388 | dhancock@nass.usda.gov |
| Tameka Owens | USDA/FNS | 703-305-2321 | Tameka.Owens@fns.usda.gov |

1. The eligibility and subsampling rates are combined into one rate: 30% prenatal = 98% eligibility x 30% subsampling ; 66% postnatal = 80% eligibility x 82% subsampling; the subsampling rate are predetermined to target the rarer subgroups to meet precision requirements for estimates for these groups [↑](#footnote-ref-1)
2. Estimate based on a total of 2.37 million infant participants, 92.4 percent of whom were enrolled by 3 months of age. Source: U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis, WIC Participant and Program Characteristics 2010, WIC-1-PC, by Patty Connor, Susan Bartlett, Michele Mendelson, Kelly Lawrence, Katherine Wen, et al. Project Officer, Fred Lesnett Alexandria, VA: December 2011. [↑](#footnote-ref-2)
3. National WIC Association <http://www.nwica.org/?q=nwa/1> [↑](#footnote-ref-3)
4. 2.19 million hospitals, 2.19 million healthcare providers, and 90 State Agencies [↑](#footnote-ref-4)
5. For children (12 months or older), “high weight for height” is determined based on nutrition risk code 110. For children 24 months and older, it is defined as higher than the 95th percentile of BMI for age. For children 12 to 24 months, it is defined as at risk of being overweight by virtue of having a mother or father who is obese (BMI of 30 or greater). For mothers, the criterion is a pregravid BMI of 25 or higher. [↑](#footnote-ref-5)
6. The 20 percent figure is based on an estimate from the Early Childhood Longitudinal Study-Birth (ECLS-B) Cohort that 20 percent of infants enrolled in WIC were not enrolled prenatally [↑](#footnote-ref-6)
7. Judkins, D. (1990). Fay's method for variance estimation. *Journal of Official Statistics*, 6, 223-239. [↑](#footnote-ref-7)
8. Ernst, L.R. and Williams, T.R. (1987).Some aspects of estimating variances by half-sample replication in CPS.*Proceedings of the Section on Survey Research Methods of the American Statistical Association*, pp. 480-485. [↑](#footnote-ref-8)