

SUPPORTING STATEMENT PART B FOR

Revision to OMB Number 0584-0580

**WIC Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2):
Age 6 Extension**

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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

This is a revision to an approved study, The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2) (OMB No. 0584-0580, expiration date: 07/31/2019), extending the longitudinal study an additional year, until the children turn 6 years old. The respondent universe for the Age 6 Extension includes children enrolled in the base cohort of WIC ITFPS-2. The study uses a longitudinal design, and the revision will continue to gather data from mothers/caregivers about their 72-month old children via a telephone interview (Appendix D1, D2, D3) and will collect height and weight data from direct measurements at WIC site offices or from health care providers (Appendix F1, F2).

Table B1.1. Respondent Universe, Samples, Expected Response Rates for Year 6, and Response Rates for Most Recent Completed Activity

Respondent	Universe	Initial Sample	Expected Response Rate Year 6	Target completed cases Year 6	Response Rates for Most Recent Completed Activity
Individuals/ Households					
Telephone Interview	442,905	4,046	47%	1,901	65% ^a
Replicate Dietary Intake Interview	442,905	285	67%	190	67% ^b
Height/Weight Measurement	442,905	1,901	80%	1,521	72% ^c
State & Local Government					
State WIC Staff	27	27	100%	27	100% ^d
WIC Site Staff	80	80	100%	80	100% ^d
TOTAL	888,822	6,339		3,719	

^a The most recent completed interview is the 42-month.

^b The most recent completed replicate dietary intake was done at 36-months,

^c The most recent completed collection of height and weight data was at 36-months.

^d The most recent completed webinar with WIC staff was completed at the time of the age 4/5 extension

Our base cohort sample was designed to obtain minimum detectable differences (MDDs) of 5 to 10 percentage points between subgroups of interest at the originally planned final measurement of 24 months. Our current sample yielded 2,627 completed 36-month interviews, and with the earlier expansion of the study to 60 months, we obtained a total of 2,636 completed 42-month interviews (projected total was 2,319); with projected totals of 2,200 48-month interviews; 2,087 54-month interviews; and 1,980 60-month interviews, assuming 10 percent annual attrition from the 24-month interview.¹ We project that during the period of the extension our current sample will yield 1,901 72-month interviews, assuming 10 percent annual attrition from the actual response to the 36-month interview.

¹The ITFPS-2 annual attrition rate between birth and 1 year of age was 7.3%; between the first and second birthdays, the attrition rate was 9.3%.

Table B1.2. Expected completed interviews and response rates ^a

	Mother infant events/interviews	Completed interviews	Rates
Cohort	Total live infants consented & enrolled pre/post-natal ^b	4,046	
	36-Month ^c	2,627	65%
	42-Month ^d	2,636	65%
	48-Month	2,200	54%
	54-Month	2,087	52%
	60-Month	1,980	49%
	72-Month	1,901	47%

^a Numbers of completed interviews are projections based on the full consented/enrolled sample

^b Total live births in Base study cohort

^c Interview is complete, this is the actual response rate. Anticipated responses were 2,444.

^d Interview is complete, this is the actual response rate. Anticipated responses were 2,319

For generic characteristics with 20 percent, 40 percent, and 50 percent prevalences, the projected sample sizes at 60 months are expected to yield confidence interval half-widths at 6 years ranging from 2.2 to 7.8 percentage points for 95 percent confidence intervals, and from 1.8 to 6.5 percentage points for 90 percent confidence intervals, and are expected to yield coefficients of variation (CVs) ranging from 2.8 percent to 15.8 percent (for the range of estimates considered).

WIC program representatives in the WIC State and Local Agencies will provide important assistance to the study. A total of 27 State Agencies and 80 of their WIC Sites were originally selected as the recruitment sites for the study. Staff at these WIC sites will continue to support the study by conducting height and weight measurements on the study children, all of whom are former WIC children. Moreover, the 27 State WIC administrators and 80 local WIC site staff will continue to support data collection efforts for

the Age 6 Extension through providing updated contact information for participants still enrolled in WIC for another child.

Sampling Methods

The Age 6 Extension will continue to collect data from both core and supplemental participants who were recruited in the base study.² All participants still enrolled in the study at the beginning of the field period for the 72-month interview will be eligible for subsampling for the replicate dietary intake (AMPM) interview. Before the first 72-month interview is fielded, 15 percent of participants will be randomly selected for the replicate AMPM interview with the goal of obtaining a completed replicate AMPM interview for 10 percent of the sample who complete the initial AMPM. Some participants sampled for the replicate AMPM will not complete the initial AMPM at 72-months and thus will be ineligible for the replicate interview. We expect that around 67 percent participants who complete the initial AMPM will also complete the replicate interview.

Response Rates

We have undertaken many steps, both in already completed activities and for future activities, to ensure high response rates and reduce the risk of

² The base study included a core sample and a supplemental sample. Through the 24-month interview the core sample was interviewed more frequently (up to 11 times) than the supplemental sample (up to 4 times). Since then, both the core and supplemental samples have participated in every interview.

nonresponse bias. Full time study liaisons (SLs) serve as personalized points-of-contact for our participants. We provide incentives for study activities to communicate that we continue to value our participants. We strive to ensure flexibility in the time at which interviews are completed, and to express our appreciation of participants through thank-you notes and recognizing birthdays. These efforts are described further in Section B.3.

This longitudinal data collection is ongoing; consequently, we present response rates for interviews that have already been completed and for which weighted response rates are available. We expect a 47% response rate for the 72 month interview. The total response rate for all components of the 72 month data collection is expected to be 59%. In the study, the response rates of the base cohorts to the first twelve postnatal interviews are as follows: 85 percent for the 1 month interview; 88 percent for the 3-month interview; 83 percent for the 5-month interview; 80 percent for the 7-month interview; 79 percent for the 9-month interview; 75 percent for the 11 month interview; 72 percent for the 13-month interview; 66 percent for the 15-month interview; 64 percent for the 18-month interview; 65 percent for the 24-month interview; 68 percent for the 30-month interview; and 69 percent for the 36-month interview. The expected response rate of the base cohort to the 42-month interview, which has completed fielding but has not yet been weighted, is 69 percent.

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.**

The Age 6 Extension will involve: (1) conducting one additional follow-up telephone interview with the mother/caregiver when the child is 72 months old; (2) conducting a second, replicate dietary intake interview with a 10 percent subsample of caregivers who complete the first interview, and (3) obtaining height and weight measurements at 72 months on each child from caregiver's provision to the study of health care provider measurements, or from direct measurements taken at WIC sites.

Statistical Methodology for Stratification and Sample Selection

The Age 6 Extension will continue to collect data from participants who were recruited in the base study. (A description of the statistical methodology for stratification and sample selection for the base study sample is given in Appendix W.) A random sample of 15 percent of all participants who complete the first 72-month interview will be selected for the replicate AMPM interview.

Estimation Procedures

The estimation procedures for the extension are the same as those for the base study. 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 cross-sectional weights for the 72-Month interview. As with other waves of interviews in the Base study and previous Extensions, the only participants that will receive a positive weight for the 72-Month interview will be those who responded to the 72-Month interview. Weighting will be used to adjust for nonresponse to the initial interview and to adjust for attrition and other nonresponse that results in failure to complete the particular interview (in this case, the 72-Month interview). Additionally, a few sets of longitudinal weights (which weight up participants to particular combinations of interviews) may be developed for specific analyses. Imputation will be used to fill in scattered item nonresponse within completed interviews.

We will develop sampling weights aimed at yielding nearly unbiased estimates of population parameters. Although the base study includes separate sets of weights for analyses of the core sample by itself, the 72-Month interview will be administered to both the core and supplemental samples. Thus, the cross-sectional weights for this extension will be developed for joint analyses of the core and supplemental sample samples.

Details of the calculation of the weights and of nonresponse bias analysis are found in Appendix X.

Degree of Accuracy Needed for the Purpose Described in the Justification

The sample size requirements for the WIC ITFPS-2 base study were determined based on power projections and precision requirements for estimates at 12 and 24 months. As noted in Section B.1, for generic characteristics with 20 percent, 40 percent, and 50 percent prevalences, the projected sample sizes at 60 months are expected to yield confidence interval half-widths at 6 years ranging from 2.2 to 7.8 percentage points for 95 percent confidence intervals, and from 1.8 to 6.5 percentage points for 90 percent confidence intervals, and are expected to yield CVs ranging from 2.8 percent to 15.8 percent (for the range of estimates considered).

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 described in this extension will occur within a 15 month period. The study design requires that participants be interviewed at multiple times, as described in Section B.1.

Procedures for Conducting Interviews

Participants will be contacted and interviewed using the same procedures that have proven successful thus far for them in this longitudinal study. Participants will receive an advance letter informing them of their upcoming 72-month interview (Appendix C1, C2). The window for the interview is six weeks long, and during that time highly trained interviewers, most of whom have been with the study since its inception, will make outbound calls to participants during varying days and time periods. Participants are also offered the opportunity to make inbound toll-free calls to complete the interview at their convenience, or they can request outbound appointment calls (see Section B.3 for further details). As is sometimes necessary with parents of young children, interviewers are trained to allow breaks for interruptions in the participants' environments, or to schedule call-backs to complete interviews not finished due to interruptions.

Estimation and Calculation of Sampling Errors

All WIC ITFPS-2 data files, including those associated with this extension, will contain the information necessary for analysts to use either replication or Taylor series linearization methods to compute standard errors of estimates. For this study, 40 replicates were created, and the replication approach used was a modified balanced repeated replication (BRR) method

suggested by Fay,³ with $K=0.3$ (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,⁴ the procedures used to compute the full-sample weights will be repeated for each of the replicates.

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 27 State Agencies and 80 WIC sites recruited for the base study will be invited to attend a 1-hour webinar that will share information on the study extension and highlight FNS-cleared key study findings to date (Appendices L1, L2, M). After the webinar, individual conference calls will be made with each State Point of Contact and representatives from the original 80 sites to discuss the study extension in more detail, including the logistics of conducting measurements of height and weight at individual WIC sites (Appendix N). As was done with the age 5 extension, we will discuss the

³Judkins, D. (1990). Fay’s method for variance estimation. *Journal of Official Statistics*, 6, 223-239.

⁴Ernst, 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.

possibility of participants returning to any WIC site in the State to have their child's height and weight measured at 6 years of age.

Caregivers of Former WIC Children

Successful retention of our sample for the extended study hinges on our ability to make participants want to continue in the study and our ability to locate participants over time. While many participants become more committed to the study with each interview they complete, others experience survey fatigue which may overwhelm their interest in continuing. We will employ these strategies to retain as many members of the sample as possible through the 72-month interview:

1. **Keep Participants Informed and Excited About the Study.** Once we have OMB approval, we will send participants a letter about the study extension to age 6. Depending on the timing of OMB approval and the launch date of participants' 60-month interview, this announcement may either be combined with the 60-month advance letter (Appendix B1a, B1b) or be a standalone letter if the 60-month advance letter has already been sent (Appendix B2a, B2b).
2. **Utilize Study Liaisons Who Serve as the Point-of-Contact for the Study.** Full-time study liaisons (SLs), who have been the points-of-contact for our participants since the start of the study, will continue to answer participant questions, offer encouragement for continued study participation, remind participants about expiring interviews (Appendix E1a, E1b), trace participants whose phone numbers and/or addresses have changed (Appendix E2a, E2b), help participants identify the nearest WIC office for height and weight measurements (Appendix G1, G2) and encourage them to send copies of

measurements from recent health care provider visits (Appendix H1, H2). SLs will also conduct refusal conversion, following up on standard study refusal conversion letters (Appendices E3a, E3b E4a, E4b), as their longstanding relationships with participants help them in discussing and addressing personal circumstances that may interfere with participation.

3. **Provide the Same Incentive for the 72-Month Interview and Child Measurement as at 60-Months.** We will keep the incentive for the 72-month interview at \$60 to help combat survey fatigue, and continue to provide incentives to address personal cellphone costs for interviews (\$10). We will also keep the same incentive for taking the child for measurements (\$60 plus \$10 for transportation costs), recognizing the effort and commitment required to take a child to be measured.
4. **Attempt Interviews at Different Times of the Day and Week.** We will use telephone call scheduling procedures to call numbers at different times of the day (between 9 am and 9 pm in the participant's time zone) and week (Sunday through Saturday) during the 42 day window, to improve the chances of interviewing participants. When participants cannot be reached, we will leave voicemail messages periodically and provide a toll-free call-in number that participants can use to complete the interview (Appendices E5a, E5b, E6a, E6b).
5. **Encourage Participants to Call In.** We will send an advance letter a few weeks before the start of the interview to remind participants about the upcoming interview, and to provide the toll-free call-in number and hours the telephone center is open to encourage them to call in to complete the interview at their convenience (Appendix C1, C2).

6. **Send Texts and Reminder Emails 10 Days After Start of the Window.** We will send out reminder texts or emails on the 10th day of the interviewing window to participants who have not yet completed their interviews (Appendix E1a, E1b).
7. **Contact Participants Whose Interview Windows are Expiring.** The study liaisons will continue to make reminder calls and send reminder emails and texts (Appendix E1a, E1b, E4a, E4b) to participants whose interview windows are within 2 and then 1 week of expiring.
8. **Send Birthday Cards to Participating Caregivers and Children.** As part of the ongoing relationship building, the study liaisons will send birthday cards, either printed or electronic, to participants (Appendix J1, J2). When the children reach age 6 we will also send birthday cards to the children (Appendix K1, K2).
9. **Send Thank you notes.** We will send electronic thank you notes after the 72-month interview, thanking participants for their continued engagement (Appendix L1, L2).

Details of projected response rates are discussed in section B.1. We are experiencing high cooperation rates for interviews that are currently in the field, with a cooperation rate of 84 percent for 54-month interview and 86 percent for the 60-month interview.⁵ Given these high cooperation rates and the steps listed above to secure continued participation, we have good

⁵ Cooperation rates are calculated as the number of completed interviews divided by the number of respondents who are still actively enrolled in the study at the time of that interview. Cooperation rates are higher than response rate, as response rates include in the denominator all respondents who experienced a live birth, including those who permanently left the study before a given interview was fielded.

reason to expect that we will achieve the response rates described with no need for back-up plans.

Nonresponse Bias Analysis

To the extent that participants in the Age 6 Extension are systematically different from the population as a whole with respect to characteristics used in an analysis, the potential for nonresponse bias exists. We will use the approach proposed in the base study, which is to examine bivariate cross tabulations of data available for the eligible, enrolled cohort by response status at the 72-month interview to check for evidence of nonresponse bias in the 72-month interview. Details of the calculation of nonresponse are found in Appendix X of this submission, a reprint of an appendix originally submitted with the supporting statement for the Base study, ICR Reference No. 201208-0584-002; Expiration date: 05/31/2016.

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.

The majority of items that will be included in the 72-Month interview have either been cognitively tested for previously approved interviews on this study, or drawn from other established studies, including a well-

validated 24-hour dietary recall module that comprises more than half of the interview. The small number of new questions have not been pretested with respondents. Instead, new or modified items have undergone review by an expert survey methodology team to ensure methodological soundness and minimized burden on participants. Testing was done through simulation by survey experts to evaluate timing and flow of the 72-month interview, confirming that the flow is logical and the estimated timing is accurate.

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.

Individuals consulted on statistical aspects of the design are listed below.

Westat staff will be responsible for the collection and analysis of the study’s data, in coordination with FNS.

Table B5.1. Individuals consulted on statistical aspects and individuals collecting and analyzing data

Name/ Title	Affilia tion	Telephon e number	e-mail
Nancy Weinfield Senior Study Director, Project Director	Westat	240-314- 2480	nancyweinfield@westat.c om
Christine Borger Senior Study Director, Project Analyst	Westat	301-294- 2072	christineborger@westat.c om
Jill DeMatteis Associate Director, Senior	Westat	301-517- 4046	jilldematteis@westat.com

Statistician Crystal MacAllum Senior Study Director, Deputy Project Director, Operations Director	Westat	301-251- 4232	crystalmacallum@westat. com
Douglas Kilburg Mathematical Statistician	NASS	202-720- 3777	Douglas.Kilburg@nass.us da.gov
Danielle Berman Branch Chief, Special Nutrition Evaluation Branch, Office of Policy Support	USDA/ FNS	703-305- 2698	danielle.berman@fns.usd a.gov
