

APPENDIX EE2
NASS Review Response

We appreciate the positive comments and constructive suggestions from NASS. In response to the reviewer's suggestions we have the following responses:

SUGGESTION:

- The United State Department of Agriculture's (USDA) special supplemental nutrition program for woman, infants, and children (WIC) serves a special population: low-income pregnant and post-partum woman, infants, and children through their fifth birthday who are at nutrition risk. While the total amount of the food intake is very important, the appropriate distribution of the calories from each meal is also very important.
 - o You could ask the caregiver what is the child's typical three days meal and snack intake and calculate the average calories intake by meal and snack to derive their daily calorie intake pattern.

RESPONSE: Although we agree this would be interesting, we have already completed 9, and are in the process of fielding the 10th of the planned 13 intake reports in this longitudinal study. Data already collected do not follow this pattern of collecting food frequency and food record data, and therefore do not permit this particular calculation. The method we have adopted, a 24-dietary recall that will be adjusted for usual intake, is a scientifically rigorous method that guards against the common problem found in other methods of underreporting intake. We will be able to calculate daily caloric intake, and the usual intake adjustments will ensure that each child's diet will be reflective of typical consumption and typical caloric intake.

SUGGESTION:

- Fay's method is a variant of balanced repeated replication (BRR), where the basic idea is to modify the sample weights less than in BRR by using both half-samples in each replicate. Instead of deleting one-half of the sample in each replicate, one-half of the sample is weighted down by a deflating factor k , between 0 to 1, and the remaining half is weighted up by a compensating or inflating factor of $2 - k$. For example, if $k = 0.60$, then the weights decrease by 40 percent in one half of the sample and increases in the other half of the sample by 40 percent. When using Fay's

method, the variance of the replicates from the full sample estimate decreases by a factor of $(1-k)^2$ (Judkins, 1990). As there is no measure of the true variance, a conservative approach to selecting a Fay-factor for the estimated means would be to select a relatively small Fay-factor. Choosing $k=0.30$ is reasonable, but testing different value of k , such as 0.20, 0.40 and 0.50, is recommended.

RESPONSE: We agree that with an approach such as Fay's methods, evaluations to examine alternative values of Fay's factor are useful. However, because such an evaluation can only be done through complex simulation, and not through applying different values to our study data, we must rely on existing simulations that have been conducted. A simulation of this type was done in the Judkins (1990) paper that is cited in the NASS comments. As a result of that evaluation, Judkins recommended using k in the range of 0.3 to 0.5. Judkins was the original lead statistician in the design period of the WIC Infant and Toddler Feeding Practice Study-2, and in internal study discussions he more strongly recommended a value of 0.3, so we have adopted that recommendation.