

Report on Cognitive Interviewing
for the Continuing Survey of Food Intakes by Individuals

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GENERAL

INTRODUCTION

In the fall of 1994, staff from the Center for Survey Methods Research (CSMR) and a staff member from the Agriculture Research Service (ARS) began cognitive testing on the 1994-96 Continuing Survey of Food Intakes by Individuals or CSFII (also known as "What We Eat in America"). This survey is sponsored by the ARS and is designed to collect information about food consumption by individuals.

This research was designed to address several main areas. They are the Day 1 intake questionnaire, the Food Instruction Booklet (FIB), and reporting for children and infants.

Issues with the Day 1 questionnaire included introducing the intake section of the Day 1 questionnaire to respondents, the definition of the reference period in the intake section, the flow and content of questions Q1 through Q9, and quantifying the source in the water questions. In addition, ARS was interested in the method of collecting information for the food list question. Although the survey only asks this question on the Day 2 questionnaire, we included it in our research questionnaire.

Issues in the FIB included identifying problems with the "additions" questions, determining whether more detail could be collected on ingredients, improving reporting of sandwich components, finding methods to make respondents feel comfortable saying they don't know an answer (especially in reference to salt and fat probes), and the placement of rice mixtures in the FIB. Issues related to other specific food items were also addressed (e.g., commercially prepared baby foods, cereals, meat and poultry).

The reporting for children and infants was meant to assess the interaction between the child and adult, and to make recommendations on improving the reporting of intake from children and infants.

To address these issues, we chose to do cognitive testing of the questionnaire using the concurrent and retrospective think-aloud techniques and a debriefing of the adults who assisted the children. The concurrent think-aloud technique asks respondents to verbalize their thoughts as they are forming their answers, while the retrospective technique allows the interviewer to probe for

respondents' definitions of selected terms and phrases. These methods identify the difficulties that respondents have in understanding what the question is asking, difficulties with terms used in the question, memory recall strategies, decisions made in selecting an answer, interpretation of reference periods, and reactions to any sensitive questions. The other method we used was a debriefing of parents who participated in our interviews with children. After each survey questionnaire was administered, the child was excused from the room. The adult was then asked questions to determine who should be responsible for providing the information and why, how well he/she thought their child answered the questions, and how comfortable he/she thought their child was with the survey process.

This report provides the details and results of our testing.. The remainder of this section discusses the research design and questionnaires. The next section deals with the Day 1 intake questionnaire, followed by a section on the FIB. Next, we present our findings and recommendations on the issues dealing specifically with infants and children. Finally, we offer some concluding remarks.

RESEARCH DESIGN

The research was divided into two phases. In the first phase we concentrated on infants/children; and in the second phase we concentrated on adults. We conducted a total of 30 interviews, 15 in each phase. In the first phase, 7 of the interviews were with parents who reported for their infants aged 6-18 months, and 7 interviews were with children aged 6-11 years who reported for themselves but were assisted by an adult. In addition, there was one interview with the mother of a 3-year-old child. All of the interviews in the second phase were with adults over 18 years old.

The infant/children respondents were recruited by word of mouth as well as through fliers posted at churches, community centers, and a local pediatrician's office. The adults, on the other hand, were recruited from an advertisement in a local newspaper. All of the interviews with the infants/children were conducted in the respondent's home. Four of the adult interviews were conducted in the CSMR's lab while the others were conducted in private homes.

Interviewing was done by a team of two interviewers. One interviewer (the nutrition interviewer) administered the questionnaire to the respondent. The second interviewer (the cognitive interviewer) dealt with the cognitive aspects of the interview--keeping respondents talking about their thoughts and probing for the meaning of terms and phrases. The interviews were tape recorded with the respondent's permission. Summaries of the interviews were then prepared by the cognitive interviewer.

RESEARCH QUESTIONNAIRES

We began the research with a review and revision of specific items on the 1994-96 Day 1 intake questionnaire that was fielded from January to December 1994. Attachment A shows the pages of the questionnaire that contain the questions we focused on in our interviews. Note that page 1 is actually from the proposed 1995 Day 1 questionnaire. Due to a logistical oversight, page 8 from the proposed 1995 questionnaire was not incorporated into our research questionnaire. Throughout the rest of the report we will refer to this as the 1994-96 questionnaire.

Before interviewing, we revised the form. For Phase 1, we prepared two versions of the questionnaire, varying the placement of the introduction of the measuring guides in each. The questionnaire for Phase 1 also included the food list question from the Day 2 questionnaire, and added gum and water questions as developed by ARS. Attachment B shows the revised pages of both versions of the Phase 1 questionnaire.

Before beginning interviewing for the second phase, we again revised the questionnaire to incorporate changes we wanted to test. We used this revised questionnaire for the first 8 interviews in Phase 2 and then again revised the questionnaire and tested the revisions on the final 7 interviews. Thus, for our Phase 2 research, revisions were made to the reference period, the statement about the measuring guides, the review, the water questions and the food list items. A revision was also made to Handcard I3. The revised pages for both versions of the questionnaire for Phase 2 and the revised page of the Hand Card are included in Attachment C.

The FIB that we received from ARS had several hand-written changes that were planned for inclusion in the 1995 questionnaire. We incorporated those changes into the FIB prior to our interviewing. We also revised other pages to accommodate our goals. Attachment D presents a written description of all of the changes to the original printed version of the FIB that we included when we began interviewing for Phase 1.

DAY 1 QUESTIONNAIRE

This section presents the results of our research on the Day 1 intake questionnaire. It includes the following parts: the Quick List, the flow of questions 2-9, question 7, the review questions, the gum questions, the water questions, and the food list question.

QUICK LIST

The initial question on the 1994-96 questionnaire asks the Quick List, which requires an unstructured response, detailing what the respondent had to eat yesterday. (See Attachment A.) The question is as follows: "I'd like you to tell me everything (you/NAME) had to eat and drink all day yesterday, (DAY), from midnight to midnight. Include everything (you/NAME) ate and drank at home and away - even snacks, coffee, and alcoholic beverages." This wording

is modified for infants or children. Instead of mentioning snacks, coffee and alcoholic beverages, the last sentence reads: "Include everything (he/she) ate and drank at home and away, including snacks and drinks (and bottles or breast milk [FOR INFANTS])."

In response to ARS concerns that this wording did not prepare the respondents adequately for their task, we revised the questionnaire before we began our interviews to add an introductory statement that gave a more general statement of the task. In the introductory statement, we also tried to clarify the reference period. For Phase 1 the introductory statement read: "Now I'm going to ask you some questions about what (you/NAME) eat and drink. We are interested in everything (you/NAME) ate or drank yesterday, both at home and away. By 'yesterday,' I mean the period beginning at 12 a.m. midnight on (DAY) and ending last night at midnight."

Then, following this more general description of the response task, we included a single question that could be adapted both for adults and children. It read: "So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks, (coffee and alcoholic beverages [FOR ADULTS]./and drinks [FOR CHILDREN] (and bottles or breast milk [FOR INFANTS].)" The wording of this question was more a matter of formatting than anything. We needed to combine the questions for adults, children and infants so that we could fit all our other changes to Questions 1-6 on a single page.

Our cognitive interviews revealed that our strategy of beginning with an introductory statement followed by the question requesting foods worked well for respondents. They generally understood after the last statement, even though it was not in the form of a question, that it was their turn to speak, and they began to answer. For the most part they started off by listing foods they ate the previous day, although occasionally respondents would ask for a point of clarification.

One problem was observed with the Quick List question during the Phase 1 interviews. The initial phrase (I'm going to ask ... about what you eat and drink) introduced a potential ambiguity in that it may suggest to some people that the survey will collect information about their usual consumption rather than yesterday's consumption. This did happen during one interview with the mother of an infant, and it took quite a while before she realized we specifically were asking about what her child ate yesterday. More importantly, we observed at points throughout many of the interviews (not just during the Quick List) that respondents tended to refer to their usual eating habits when answering the questions. We felt that this may have resulted from the more general introductory statement.

For the most part the respondents understood the reference period from midnight to midnight (without the use of the flash card). As interviewers, however, we sometimes fumbled with the wording. The one reference to the DAY was sometimes read as the DAY BEFORE YESTERDAY and sometimes as YESTERDAY. Probing after the Quick List revealed that respondents did not always think

about the time between midnight and their first morning food when they answered the question. But if they didn't, they had not been awake during that time period. Recall that most of the respondents to this phase were children. The 6-11 year olds were not up after midnight, and middle-of-the-night feedings for infants were generally included in their parents' reports.

Moreover, the flash card on the reference period was not very useful. The respondents did not seem to need it, so the opportunity to test it did not present itself. In addition, we felt that at the beginning of the interview, respondents should be trained to listen carefully to the interviewers' questions. Referring to a flash card at this point would require respondents to use parallel processing, responding to both auditory and visual stimuli. This would make their reporting task even more difficult than it already is.

Based on the results of the Phase 1 interviews, we revised the wording of this question for Phase 2. The change was to reword the introductory statement to read: "Now I'm going to ask you some questions about what (you/NAME) ate and drank yesterday. We are interested in everything (you/NAME) ate or drank, both at home and away. By 'yesterday,' I mean the period beginning at 12.a.m. midnight on (DAY) and ending last night at midnight." The change from present tense (eat and drink) to past tense (ate and drank yesterday) was made to focus the respondent's attention on the time period they will be reporting for.

This wording worked well for adult respondents in Phase 2. As with the children, adult respondents seemed to realize after being read the Quick List that it was their turn to speak. More often than the children, they began their turn by asking for some point of clarification (am I supposed to include medicine? do you want me to include amounts? should I start at the beginning of the day, the end of the day, or what?). Once the interviewer responded (either giving an answer or advising the respondents to decide for themselves), the interview proceeded smoothly.

Also similar to the children's interviews, there was confusion on the part of the interviewers in referring to the boundaries of the reference period for the Quick List. To address this, we recommend a change in the last sentence of the introduction to refer specifically to YESTERDAY. Again, there did not seem to be a problem with underreporting of foods consumed after midnight but before morning.

Respondents defined the task of reporting the Quick List foods with varying levels of specificity. Some reported just the general food (e.g., cereal), some reported all the ingredients (e.g., cereal with milk) and others reported the amounts at the same time (e.g., 1 cup of cereal and 1/2 cup of milk). Sometimes the respondent would ask the interviewer what level of detail she wanted them to report. The CSFII interviewers manual gives brief instructions about how to address the situation where the respondent gives details during the Quick List. It says not to interrupt the respondent, but to keep notes of the additional information that is provided. However, it does not mention

anything about how to respond if the respondent asks what level of detail is required. In this case, the interviewer should instruct the respondent to give whatever level of detail he/she feels comfortable with. This instruction should be given during training and in the interviewer's manual.

As a specific point of focus, ARS requested that we consider adding more of an introduction to the Day 1 intake that described the role of the respondent and the objectives of the survey. We tried to do this on a very small scale with the new sentence that we added at the beginning of the Quick List. However, we were reluctant to do more than this for two reasons: 1) communicating the information necessary for the interviewer to motivate the respondent to cooperate is very much a matter of individual style. While such information should be available for the interviewer to explain to respondents, we think this type of information should be ad libbed rather than scripted; and 2) cognitive interviews are not an appropriate method to evaluate this kind of information since the respondents have volunteered rather than being reached through a cold contact, and field interviewers are not conducting the interviews.

During the respondent's elaboration of foods and beverages on the Quick List, we recorded every item mentioned by the respondent, even water. The purpose of this was to encourage the respondent to give as complete a listing as possible. When water was reported, once we reached it during the FIB questions we asked whether the water was carbonated or contained anything in it, like lemon. While we did not go on to collect amounts if the water was described as plain drinking water, we did not erase or cross out the water. This was because we did not want to give respondents the idea that some parts of their intake are not as valuable as others. If respondents think the survey isn't interested in reports of water, they might think other foods or beverages are also not important, and might not try to give a complete recall.

Our recommendations for the Quick List are as follows:

- Add an introduction that specifies the main objective of the survey (in the past tense). Provide a verbal description of the reference period. The recommended wording is:

"Now I'm going to ask you some questions about what (you/NAME) ate and drank yesterday. We are interested in everything (you/NAME) ate or drank, both at home and away. By "yesterday," I mean the period beginning at 12 a.m. midnight on (YESTERDAY) and ending last night at midnight."

- After the introduction, have separate question wording for children and for adults. The wording would be as follows:

ADULTS--"So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks, coffee and alcoholic beverages."

CHILDREN, WITH INFANTS IN PARENTHESES--"So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks and drinks (and bottles or breast milk.)"

- Don't use a flash card for the reference period during the Quick List.

- Include reports of water on the Quick List, but do not collect information about amounts when the FIB questions are being asked.
- Provide instructions for interviewers about how to handle respondent questions during the Quick List.
- Allow interviewers to provide information about the background of the survey in an unstandardized manner as required.

INTRODUCTION TO FOOD DESCRIPTIONS AND AMOUNTS

The 1994-96 questionnaire contained an introduction to food descriptions and amounts which highlighted the specificity of the food and beverage questions, the FIB, the different measuring guides, and the use of the respondent's own utensils for quantity estimation as follows: "Now I'm going to ask you specific questions about the foods and beverages we just listed. I will be using this special notebook of questions for the foods you just told me about. When you remember anything else (you/NAME) ate or drank as we go along, please tell me.

When I ask about amounts, you can use these measuring guides: the cups and spoons for volumes of foods; the ruler for length, width, and heights of foods; the sticks for thickness of meat, poultry, and cheeses; and the circles on the card for the diameter of round foods. Please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank at home yesterday, or check any package label that may be helpful."

ARS wanted us to specifically examine the appropriateness of the placement of the introductory section on measuring guides in the questionnaire. We decided not to probe this issue because that would make the measuring guides more salient to respondents--respondents may use the guides more if we asked more questions about them. It follows that we would not have been able to determine whether the use of the guides in the research was a result of the descriptive paragraph or of our cognitive probes. Instead, we examined the issue by developing two versions of the intake questionnaire in Phase I of the research. Version One, the revised version (see Attachment B), had the measuring guide paragraph positioned after Q3 (name of eating occasion); the paragraph was read only once by the nutrition interviewer for the first food reported in the Quick List. We felt that this may be a better location for the measuring guide description because respondents would be introduced to it just before they were requested to supply detailed descriptions of reported foods (Q4). In contrast, Version Two or the control version, had the paragraph in the same position as the original 1994-96 CSFII questionnaire. Alternate versions of the questionnaire were administered with each successive interview.

After the completion of the Phase I interviews, we concluded that the placement of the measuring guide paragraph didn't affect respondents' use of the guides. For both questionnaire formats, respondents did not ask questions about use of the measuring guides and did not rely on the guides for making

quantity estimates--neither format really created any additional awareness or interest on the part of respondents. We observed that adult respondents tended to use the guides when suggested by the interviewers, and even then respondents seemed indifferent.

Respondents also tended to use a very limited number of guides, mainly the measuring cups and spoons, and ruler. Questionnaire format really made no difference for children because both the terminology and quantity estimation task were just too complex for them. We observed that children were far more interested in playing with the measuring guides. They frequently required parental guidance when called on to make quantity estimates.

The fact that respondents seemed disinterested in the guides, despite varying questionnaire formats, supported our opinion that the paragraph was too long--respondents were just not listening. Thus, for Phase 2, the original version of the questionnaire was used with revisions. We shortened the measuring guide paragraph to "When I ask about amounts, you can use these measuring guides. Also, please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank yesterday, or check any package label that may be helpful." The shortened description was then combined with the introductory statement about the FIB.

Like Phase 1, Phase 2 interviews revealed that respondents were not using the measuring guides. Respondents felt most comfortable visualizing amounts in their minds. When one respondent was asked to use the measuring guides, she remarked that she never drank out of a measuring cup and that relating this measure back to her cup of morning coffee didn't really help. Other respondents used their hands to describe dimensions of foods. Interestingly, respondents liked the 2-cup measuring cup because it seemed to be most like respondents' own bowls and most like the larger portions of food they consumed. Another respondent reported difficulty in reading sizes off the handles of the measuring cups. Although not described in the measuring guide paragraph, the laminated hand card helped one respondent revise her estimate of the amount of chicken breast eaten. As in Phase 1, we observed that the measuring cups and spoons seemed to be more frequently used than other measurement aids.

Overall, we found that the revised placement of the measuring guide introduction was awkward. There was no optimal place to put this paragraph. We would have liked to put it right before the amount (Q5) was asked for the first time. This was not possible, however, with the current paper design because we would have had to insert it each time the quantity question was listed in the FIB. Therefore, we decided to keep the paragraph in its original position with some revision to its content. It was our opinion that greater emphasis may be needed in the introduction about the importance of collecting detail on food descriptions and amounts.

Our recommendations fall into four categories as follows:

- Keep the original placement of the introductory section on measuring guides (Phase 1, Version 2).

- Revise the wording of the entire introduction to food descriptions and amounts. First, it is our expert opinion that the phrase about the "special notebook of questions" is unnecessary. Second, we suggest that the introductory paragraph should carry a greater motivational message. This message should convey the importance of having both the interviewer and respondent work together to obtain as accurate information as possible about the foods and beverages consumed. We recommend the following changes:

"Now I'm going to ask you specific questions about the foods and beverages we just listed. [PAUSE]

Please remember that your answers to this survey are very important. We want to emphasize that the information you give us today will be used to determine the nutrient content of diets for all Americans. [PAUSE]

Foods and beverages vary in nutrient content depending on the brand of the food, what was added to it such as salt and fat, or even the quantity of the food eaten. [PAUSE] By reading the labels on food packages with me, or by measuring the amounts of foods using these measuring guides, you can provide more exact information. This will improve the accuracy of the results from this survey, and thus policy decisions can be based on better information.

So, when I ask about amounts, I'd like you to use these measuring guides. Also, I'd like you to use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank yesterday. We should also check package labels when possible.

Last, you can stop me at any time when you remember anything else (you/NAME) ate or drank as we go along."

- Include "stops" in the introductory paragraph. "Stops" could be verbal or visual aids printed on the questionnaire which would alert the interviewer to pause slightly before continuing. (Note that these have been inserted in the above recommendation.) This would help to monitor the speed with which interviewers deliver the paragraph. Stops give respondents more time to process the information being presented to them, in this case, particularly the information about the use of the measuring guides. Training procedures and manuals should incorporate this point as well.

- Include a wider range of measuring guides, as expressed in our earlier 1992 report on the CSFII.

FLOW OF QUESTIONS 2-9

The 1994-96 CSFII food recall task was organized with two separate passes through the respondent-reported foods. The first time through, the respondent answered questions about the time of the eating occasion, name of the eating occasion, details of the food, and amount of food eaten (Q2-Q6). Once this was completed, the interviewer asked a series of review questions designed to elicit reports of foods and beverages that may have been previously forgotten. After the review, the interviewer cycled through the list of foods again, and asked where the food was obtained, whether it was eaten at home, and if not, whether it was ever in the respondent's home before he/she ate it (Q7-Q9). This meant that the last trip through the list of reported foods was somewhat

monotonous, and the answers to some of these questions may already be known to the interviewer based on responses to earlier questions. ARS suspected that this was not an optimum question sequence, and we set out to see if it could be improved.

Prior to conducting our interviews, the only change we made to these questions was to move the interviewer instruction about verifying responses to precede rather than follow the question it refers to. For Q2a the instruction was "CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST;" for Q2b and 3 it was "CONFIRM IF RECORDED ON QUICK LIST." This more closely corresponds to the order in which interviewers need these two pieces of information.

Our cognitive interviews revealed that, although the sequence of questions in the last pass (Q7-Q9) was redundant, it did not seem troubling to respondents. On the other hand, once respondents got into the rhythm of the questions after the food items, it was not clear whether they were really giving considered answers to the questions, or whether they were just giving automatic responses without even thinking about them. This was especially true when most of the food items came from the same place.

In addition, it seemed odd to us to finish an extended series of questions about each food, then do a review to have the respondent think about the whole day and see if there were any foods or beverages that were forgotten, and then return to the list of foods once again and ask additional questions about each one.

Therefore, we revised the sequence during Phase 2 to reverse the order of these last two sets of questions. After asking the amount question (Q5), the interviewer asked Q7-Q9 for each food item. This meant that for each food item, Q2-Q9 were asked all at once while the respondent was concentrating on that food item. In doing this, we eliminated the lead-in sentence that explicitly refers to another pass through the day ("Now let's go back to the beginning of the day and ..."). In addition, we deleted the reference to time in Q2a, since it seemed unnecessary.

Our cognitive interviews suggest that these revisions worked well with our respondents. This question sequence could address two sources of redundancy in providing answers about where the food was obtained: first, the source of a food item may already be known to the interviewer if, for example, the respondent got it at McDonald's; second, the respondent may note that all the food items for a particular meal have been obtained at the same place. Asking this question as part of a larger sequence allows the interviewer to more naturally acknowledge that the respondent has already provided some relevant information. Additionally, the repetitive questions (i.e., where did you get the food? where did you eat it?) are spaced farther apart in the interview and do not seem so redundant.

Our recommendations for the flow of Questions 2-9 are as follows:

- Obtain the review information after all the item-specific information has been obtained. This means moving Questions 7-9 before the review.

- Move the "CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST" instruction to the front of Question 2a, and the "CONFIRM IF RECORDED ON QUICK LIST" instruction to the front of Questions 2b and 3.

QUESTION 7

Previously we conducted interviews that dealt specifically with the wording of the questions in the 24-hour recall (see DeMaio et al, 1992). In our current work, we are concentrating on other issues dealing with the questionnaire flow and the perceived completeness of respondents' reporting. However, although we did not concentrate on question wording, we observed problems with Q7 that are worth noting.

The wording of the question in the 1994-96 questionnaire included an introduction that gave the general objective of the question: "Now let's go back to the beginning of the day and find out where (you/NAME), or other people who live here, obtained the food (you/he/she) ate and where (you/he/she) ate it." Following this, the question was worded as follows: "(Looking at this card) Where did (you/he/she) obtain this (FOOD/MOST OF THE INGREDIENTS FOR THIS FOOD)?" We maintained this question wording in our Phase 1 interviews.

The problem we observed was that respondents did not make the proper distinctions about where food was obtained. Specifically, they tended to ignore the "someone else/gift" response category. This happened in several different ways. One 9-year old boy had eaten a pot luck lunch at his church the day before the interview, and he initially reported "they got it from home but where they got it from there, we don't know." After several comments from both his father and the interviewer, the boy read all the way down the card and answered "someone else." Another girl had eaten crackers and potato chips at her grandmother's house; she reported them as obtained at the grocery store because that is where her grandmother got them. Similarly, a friend had stopped at a convenience store and bought grape soda before coming to the girl's house; she reported that she got it from a friend but the friend got it at the grocery store.

One frequently-offered reason for not choosing the appropriate "someone else/gift" response in these instances was that these things were not thought of as gifts. The wording of the response category really threw the respondents off the track of what the survey intends. To deal with this confusion, we changed the wording of the question in the second round of Phase 2. We eliminated the introduction to the question and incorporated its critical content (that is, the fact that the question concerns "you or other people who live here") into the question itself. We thought that by making this information more salient to respondents, we could clarify that we were not asking about where non-household members obtained food items.

We also made a change to the flash card. The "someone else/gift" category was listed as number 13, very near the bottom and buried after the category "grown or caught by you or someone you know" and its follow-up question. To make this category more prominent, we moved it up to number 7, following the frequently reported categories of stores, fast food places, and cafeterias.

We also deleted the word "gift" from the category name. The intent was to avoid misleading respondents. (This change was made on the questionnaire, but due to an oversight, it remained on the flash card that respondents saw.)

Due to the oversight in revising the flash card, it is impossible to evaluate the effects of our changes. Two respondents in the last phase of interviewing reported foods that should have been reported as "someone else." One reported correctly and one incorrectly reported "some other place." In observing our respondents we noticed a tendency for them to read through the first several response categories. Then, if they didn't see anything that pertained to them, they went down to the bottom of the list. Categories in the middle of the card (which is where we moved the "someone else" category) tended to be overlooked. Thus, number 7 does not seem to be a good place to move this potentially underreported response category.

Another of our observations was that when respondents went down to the bottom of the list on the flash card, they were confused because the first thirteen response categories had numbers and the last one didn't. Although this is a relatively minor issue, it might be helpful for respondents if the card is consistent from the top to the bottom.

Our recommendations for Question 7 are as follows:

- Delete the introduction to the question. Revise the question wording to incorporate the reference to household members as follows:
 "(Looking at this card,) Where did (you/NAME), or other people who live here, obtain (this FOOD/most of the ingredients for this FOOD?)"
- Delete the reference to "gift" in the response category.
- Add an item number to the "some other place (please describe)" category.

REVIEW QUESTIONS

In the 1994-96 questionnaire, the review section consisted of an introduction and three review questions. The introduction presented the general review task to respondents and provided some cues about the kinds of foods that may have been forgotten. It read as follows: "Now let's see if I have everything. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about, including anything (you/he/she) ate or drank while preparing a meal or while waiting to eat."

After the introduction, the three questions targeted three specific time periods in chronological order--between midnight and the first reported food, between each of the eating occasions, and after the last reported food but before midnight. These questions required the interviewer to refer back to the Detailed List and include the actual time of the eating occasion, the foods eaten, and the name of the occasion as given by the respondent. (a. "At (EARLIEST TIME) (you/NAME) had (FOODS) for (EARLIEST OCCASION)...Did (you/he/she) have anything to eat or drink before that, starting at midnight?"; b. "Next, at (TIME) (you/he/she) had (FOODS) for

(OCCASION)...Did (you/he/she) have anything to eat or drink between (LAST OCCASION) at (LAST TIME) and (THIS OCCASION) at (THIS TIME)?"; c. Did (you/he/she) have anything to eat or drink yesterday after (LAST TIME) but before midnight?"

We maintained the original question wording in our Phase 1 interviews. We learned that proper administration of these questions on the part of the interviewer was a logistical nightmare. Under the best of circumstances, finding the appropriate time, eating occasion, and foods was time-consuming and confusing. But when the respondent had not provided the foods in a chronological manner throughout the day, the review section was even more difficult to administer. The problem with questions that are difficult to administer is that across interviewers they end up being asked in many different ways. Thus the question is no longer standardized and it is not clear what question the respondents are answering.

Despite our general failure to ask the review questions correctly, there were some additional foods reported by our young respondents in Phase 1. There were only a couple of interviews in which something additional was not reported. In our interviews with mothers of infants, additional bottles, nursing occasions, a snack and a lunch were picked up during the review. For our 6-11 year-olds, we added quite a few beverage breaks (juice, orange drink, soda, water) and fewer snacks (candy corn, popcorn, string cheese, sunflower seeds). Most of these food items were added in response to the review probes on the questionnaire, but a few of them were added because the cognitive probes brought them to mind. In some of the interviews with younger children, additional foods were added when interviewers clarified in response to parents' questions that even a child's taste of the parent's food should be reported.

For Phase 2, we revised the wording of part b, which was the most confusing question to administer. We thought it was not necessary for the interviewer to repeat the foods that were consumed as part of a meal, since the question was designed to elicit reports of additional eating occasions, but not reports of additional foods during an eating occasion. On the other hand, the specific foods consumed as snacks would need to be repeated for two reasons. First, "snack" is not the term that was usually used by the respondent to describe the food eaten at that time (they used terms like beverage break, thirsty break, picking while cooking, etc). Therefore, it would be confusing to respondents if the interviewer referred to their eating occasion by a term that they had not used. Second, even if respondents did use the term "snack" to describe their foods, they would not necessarily differentiate between one snack and another without listing the foods. Thus, our revised wording for part b was: "Next, at (THIS TIME) (you/he/she) had (FOODS) [for OCCASION]... Did (you/he/she) have anything to eat or drink between (FOOD if not a meal/LAST OCCASION if a meal) at (LAST TIME) and (FOOD if not a meal/THIS OCCASION if a meal) at (THIS TIME)? We tried this for half of our Phase 2 interviews, but discovered that our fix was no fix at all--it was even more difficult to administer than the original.

Thus we went back to the drawing board and revised the question again for the last eight interviews. We considered developing a set of review questions using memory aid techniques based on the respondent's activities the previous day, since respondents did tend to report their foods based on their activities. However, this would be a large task, and one that we could not complete within our time frame.

So we used a different approach, which was designed to elicit reports of both missed eating occasions and missed foods within an eating occasion. We explicitly made the review the cue for another review of the respondent's day. We focused the questions on the eating occasions reported rather than on the times reported as the original question does. In addition, we added a question specifically about drinks with meals, since these tended to be reported during the review section of our Phase 1 interviews, and because ARS requested that we consider ways to improve reporting of beverages with meals. The series was revised as follows: "Now let's go back to the beginning of the day. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about. Include anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.

A. You said (you/NAME) had (FIRST MEAL) at (TIME). Did you have anything to eat or drink between midnight and (TIME) (besides FOODS FROM NON-MEALS)?
CONTINUE WITH "B"

B. Did (you/he/she) have anything else with the (FOODS) you had for (MEAL)?
CONTINUE WITH "C"

C. Did (you/he/she) have anything (else) to drink with (MEAL)?
IF ANOTHER MEAL REPORTED, CONTINUE WITH D.
OTHERWISE SKIP TO E.

D. You said (you/NAME) had (NEXT MEAL) at (TIME). Did you have anything else to eat or drink between (EARLIER MEAL) at (TIME) and (NEXT MEAL) at (TIME) (besides FOODS FROM NON-MEALS)?
CONTINUE WITH "B"

E. Did (you/NAME) have anything to eat or drink after (LAST MEAL) at (TIME) but before midnight (besides FOODS FROM NON-MEALS)?"

This version of the review section worked much better for both interviewers and respondents. Interviewers did not seem to have any problems administering the question series, and respondents were not put off by interviewer stumbling.

In contrast to Phase 1 where most respondents added a number of foods or beverages, very few additional foods or beverages were reported during Phase 2. This could have been a difference between reporting of children and adults. It is not likely to have resulted from the revised question series, since neither of our questionnaire revisions in Phase 2 (the unsuccessful one or the successful one) elicited many additions.

Our recommendations for the review questions are as follows:

- Revise the series as noted above. The suggested wording is as follows:
 "Now let's go back to the beginning of the day. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about. Include anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.
- A. You said (you/NAME) had (FIRST MEAL) at (TIME). Did you have anything to eat or drink between midnight and (TIME) (besides FOODS FROM NON-MEALS)?
 CONTINUE WITH "B"
- B. Did (you/he/she) have anything else with the (FOODS) you had for (MEAL)?
 CONTINUE WITH "C"
- C. Did (you/he/she) have anything (else) to drink with (MEAL)?
 IF ANOTHER MEAL REPORTED, CONTINUE WITH D.
 OTHERWISE SKIP TO E.
- D. You said (you/NAME) had (NEXT MEAL) at (TIME). Did you have anything else to eat or drink between (EARLIER MEAL) at (TIME) and (NEXT MEAL) at (TIME) (besides FOODS FROM NON-MEALS)?
 CONTINUE WITH "B"
- E. Did (you/NAME) have anything to eat or drink after (LAST MEAL) at (TIME) but before midnight (besides FOODS FROM NON-MEALS)?"

We also have recommendations regarding the placement of the review questions, which are discussed in an earlier section (see Flow of Questions 2-9).

GUM QUESTIONS

The 1994-96 questionnaire did not contain any questions on gum. ARS requested that questions be added using the same approach taken for water consumption-- if gum was reported during the Quick List, details about the type and quantity of gum chewed during the reference period would not be collected during the food intake portion of the interview but after the questions on usual intake. Four questions were tested in the research which included: (1) "Did you chew gum yesterday?"; (2) "What was the brand name?"; (3) "Was it regular, sugar-free; or something else?"; and (4) "How many pieces did you chew yesterday?" No revisions to the questions were made over the two phases of the cognitive research.

The questions on gum were not problematic. Respondents understood the intent of the questions but in the majority of interviews, only the first question was asked because most respondents did not chew gum during the recall period. Respondents who reported chewing gum did not report the gum during the Quick List. For those four respondents (2 adults, 2 children), our interviews uncovered no problems with the questions. Some respondents even seemed familiar with the questions because of their experience with the FIB and

provided information before it was asked. When questioned about brand name, respondents readily provided names such as Sonic Boom, Dentyne, and Big Red. (We can't make any statements about the validity of these responses because we didn't verify the brand name information provided.) Parents assisted children in reporting information about the sugar-content of the gum (e.g., regular, sugar-free, or something else) and parents of infants frequently commented that these questions were inappropriate. As concerns the quantity chewed, respondents seemed confident in their estimates.

Our recommendations for the gum questions are as follows:

- Keep the wording and position of these questions as is. We suggest that the following questions be positioned after the usual intake questions:

"Did you chew gum yesterday?

What was the brand name?

Was it regular, sugar-free, or something else?

How many pieces did you chew yesterday?"

WATER QUESTIONS

The original 1994-96 questionnaire item consisted of an introductory statement and four questions about the amount of total plain drinking water consumed during the recall day and the source of this water, as follows:

<HAND CARD I5> "Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday, regardless of where (you/he/she) drank it. By plain drinking water, I mean tap water or any bottled water that is not carbonated, with nothing added to it, not even lemon.

How many ounces of plain drinking water did (you/he/she) drink yesterday?

How much of this plain drinking water came from your home? Would you say all, most, some or none?

What was the main source of plain drinking water that did not come from your home? Was it tap water, water from a drinking fountain, bottled water, or something else?"

ARS requested that revisions be made to these questions to obtain more specific information for the reference period about the sources of plain drinking water consumed and the quantities consumed from each source. For Phase I of the cognitive research, we revised the approach to the original set of questions. We shortened the introductory statement and developed eight questions which addressed more specifically the source and quantity issues. The introduction and questions replaced the 1994-96 items in the Phase I research. Interviewers were directed through these questions through a series of newly developed "check item" boxes. Only the introduction and questions are listed below (see Attachment B for the specific format and sequence).

<HAND CARD I5> "Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. By plain drinking water, I mean tap water or any bottled water that is not carbonated, with nothing added to it, not even lemon.

Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?

Did (you/NAME) drink any bottled water yesterday?

Did (you/NAME) drink any plain drinking water from any other source yesterday?

What was the source?

How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from the tap or water fountain?

How much of this water came from (your/his/her) home? Would you say all, most, some, or none?

How many fluid ounces of bottled water did (you/NAME) drink yesterday?

How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from (SOURCES LISTED IN Q21b)?"

Cognitive probes were developed to determine respondent comprehension of terms such as "water from a tap," "water fountain," and "bottled water." A picture of a water cooler was given to respondents to understand how they classify and describe this type of water; we wanted to obtain the words respondents use to describe water coolers. We wanted to ascertain whether respondents could distinguish these terms to gain further insights into potential reporting error due to misclassification.

As a result of the Phase 1 cognitive interviews, we found that most respondents could distinguish between tap water and bottled water. Most reported that tap water represents a public source of water and that bottled water is usually bought in a store (e.g., respondents reported spring water, Evian, Snow Valley). Overall, respondents did not make any distinctions between tap water, which was usually defined as water from the sink, and water from a water fountain because both were perceived as originating from a public water source. One respondent was confused because she didn't know if she should report her well water from the tap. We think this may have resulted from the use of Hand Card I5 which lists for the respondent the types of plain drinking water to include--tap water and well water are listed separately and thus may have been perceived by the respondent as being mutually exclusive. We did find that there was some confusion associated with Hand Card I5 during Phase 1.

Also, information obtained from the Phase 1 cognitive interviews suggested "water from a water cooler" and "water from a water fountain" were perceived as being qualitatively different. Four respondents labeled the picture a "water cooler." Others called it "water bottle," "bottled water," and "bottled water fountain." The latter was reported to be a different type of

water fountain, one where the water comes from a bottle; respondents understood that the water source was not the public water supply. Overall, we felt that respondents generally understood what the picture represented, and it was not used in Phase 2.

As a result of these observations, the introductory statement was revised in Phase 2 to obtain greater consistency between it and Hand Card I5. The revision provided further clarification by directly referring the respondent to Hand Card I5, unlike the Phase 1 version, and then by describing what the term "plain drinking water" includes, as follows:

<HAND CARD I5> "Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. This card lists what we mean by plain drinking water. It includes tap water from any source even a well or cistern, spring water, and bottled water that is not carbonated. Do not include water with anything added to it, not even lemon."

We also reordered the first two questions ["Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?" and "Did (you/NAME) drink any bottled water yesterday?"]. We did this because we wanted to ensure that "water from a water cooler" would be distinguished from "water from a water fountain." Some respondents did call water coolers "bottled water fountains," although it was clear that these water sources were being classified differently. Moreover, the "bottled water" question was revised to "Yesterday, did (you/NAME) drink any bottled water or water from a water cooler?" We believed that these changes would serve to minimize reporting errors due to misclassification--"water from a water cooler," when grouped with "bottled water," would help exclude reports of it when the "tap water/water from a water fountain" item was read. Lastly, the term "yesterday" was brought to the beginning of the first item to reinforce the reference period for respondents right at the start of questioning.

We found that the revised introductory statement, questions, and question sequence were not problematic during Phase 2 of the cognitive research.

Our recommendations for these questions are as follows:

- Revise the introduction to the water questions to incorporate a direct reference to the hand card as follows (see Attachment C for entire format including "check boxes"):

<HAND CARD I5> "Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. This card lists what we mean by plain drinking water. It includes tap water from any source even a well or cistern, spring water, and bottled water that is not carbonated. Do not include water with anything added to it, not even lemon."

- Revise Hand Card I5 to match the introductory statement.
- Revise the sequence of the water questions as follows:

"Yesterday, did (you/NAME) drink any bottled water or water from a water cooler?

Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?

Did (you/NAME) drink any plain drinking water from any other source yesterday?

What was the source?

How many fluid ounces of bottled water or water from a water cooler did (you/NAME) drink yesterday?

How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from the tap or water fountain?

How much of this came from (your/his/her) home? Would you say all, most, some or none?

How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from (SOURCES LISTED IN Qxx)?" Note that Qxx refers to "What was the water source?" above.

FOOD LIST

ARS requested us to determine how respondents understand the approach to the food list, which is Question 17 of the Day 2 Intake Questionnaire. This question asks respondents whether they have any of a series of 28 foods in any form during the past 12 months. Issues about the wording of the question stem (specifically "in any form"), the food list options, and comprehension of the reference period were examined. In Phase 1 of our research, the food list was added to the end of the Day 1 Intake Questionnaire so that it could be tested. No changes were made to the wording of the item when we began cognitive testing. The question stem remained as follows: "During the past 12 months, that is, since (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?" Also, no changes were made to the wording or order of the food list (see Attachment A).

Our Phase 1 cognitive interviews uncovered several problems with both the wording of the question stem and with some of the food list options. We found that the majority of respondents did not interpret the phrase "in any form" as intended by ARS. Many respondents understood "in any form" to mean foods which were eaten separately rather than eaten mixed with other foods. Respondents defined "in any form" as different processed forms of food (e.g., apple juice versus apple cider or frozen, fresh, canned, raw), the manner in which a food was cooked (e.g., breaded, fried, baked), or cooked for adults versus prepared for infants. Respondents reported that they did not think of the food as part of mixtures, such as soups or casseroles, although they expressed that this would be another possible way of thinking about the listed food items. In one case, the respondent definitely thought about mixtures as part of her response to one of the listed foods (she reported eating okra as part of Louisiana gumbo), but then defined "in any form" as just those foods

which were either canned, raw, fresh, chopped, or grated. It seemed that thinking about food mixtures wasn't particularly foreign to respondents, and that possibly the inclusion of specific cognitive probes using examples of food mixtures would provide further insights into improving the questionnaire item.

There seemed to be some ambiguity associated with the reference period. This may have been partly due to the focus on children and infants in Phase I of the research. Many of the mothers interviewed were reporting for their infant children who were frequently younger than the 12-month reference period. These respondents usually defined the reference period as that period since the birth of their infant. Others tried to think about the period of time since their infant began to eat solid foods. Other mothers, who were reporting for older toddlers, did not seem to distinguish between the reference year and any year. Sometimes respondents seemed to be reporting on the basis of whether they had ever eaten a food rather than whether they had eaten an item during the reference period. (An issue unrelated to the reference period, but related to infants, is that parents frequently encountered situations where their infants would try a food, eat a very little bit of it, and then spit it out. Parents expressed their confusion to us because they did not know whether these "eating occasions" would be categorized as consumption.)

The list of foods had two problems: (1) some of the food items were not familiar to respondents, and (2) the wording of some of the listed food options was unclear. As regards respondents' familiarity with the food items (problem #1), neither adults nor children (6-11 years of age) seemed to know what some of the listed foods were. The foods associated with the most ambiguity were the summer/winter squashes, swiss chard (described as a kind of cheese by one adult respondent), and kale (thought of as spinach by another adult respondent). Respondents had some idea of what shellfish were and frequently sought clarification from the interviewers--most understood that shrimp were shellfish but had difficulty listing other types of shellfish. Summer and winter squash were the most problematic because respondents couldn't distinguish any differences between them. Most respondents reported that they just had squash. Mothers reported that their infants had squash but that the jarred baby food label did not provide any information about the type of squash used.

As regards the clarity of the listed food options (problem #2), the "chicken liver" and "beef, veal or pork liver" options were ambiguous to respondents. While some respondents understood the intended meaning, others thought the question referred to the type of meat or poultry the liver came from and not liver specifically--respondents didn't really hear the word "liver." This seemed to be more frequent for the "beef, veal, or pork liver" option. Two respondents interpreted this phrase to mean "beef, veal, pork, or liver." Also, some respondents interpreted the fish options incorrectly. Rather than excluding shellfish and canned fish from the fish category, respondents interpreted this option to mean that only shellfish were excluded. The category was then understood to mean "fish, other than shellfish, or canned fish."

We addressed these issues in the first round of Phase 2 by revising the Phase 1 food list options. Changes were made to the wording of those food list options which were problematic. "Summer squash (thin skin)" and "Winter squash (hard skin)" were revised to "thin skinned summer squash" and "thick skinned winter squash", respectively. "Beef, veal, or pork liver" was revised to "Liver from beef, veal or pork." Because many respondents understood shrimp to be a type of shellfish, we revised the "Shellfish" option to "Shrimp" and "Other shellfish" to help clarify the meaning of shellfish to respondents. To simplify "Fish, other than shellfish or canned fish", we revised it to "Canned fish" and "Any other fish." No changes were made concerning the reference period.

After the first round of Phase 2, we evaluated the revisions. We found that the changes to the wording of the food options worked well, with the exception of the squash items. Respondents were still unclear about differences between winter and summer squash. Respondents still did not understand what swiss chard and okra were.

In contrast, respondents understood the reference period in this first round of Phase 2. Many of them reported to us that the reference period meant the past year. They frequently reported that their decision as to whether they ate a food or not during the 12 month reference period was based on how regularly they ate the food--if they hadn't eaten the food recently, within the last six months, then they probably didn't eat the food at all. Respondents mentioned that this decision, whether or not they ate the food during the reference period, was easily made for regularly eaten items because they know what they usually eat. Thus, reflecting on the entire 12-month period wasn't really necessary for them. Respondents placed more emphasis on the entire reference period, however, for those foods which they didn't usually eat. The reference period, in these cases, was a much more relevant factor in the decision-making process. In summary, respondents were conscious of the reference period but reflected on it more for those foods which were infrequently consumed.

At the end of the first round of Phase 2, it still seemed as if respondents needed additional prompting to think about all possible forms of the listed foods. Not all respondents were interpreting the question as intended. As evidence of this, one of the respondents changed her response after the probes were asked. Two respondents reported that they weren't thinking of food as mixed with other foods. Another respondent reported that she would normally think of the food itself but that she had to continually remind herself that we were asking for the food item as part of a mixture.

Therefore, for the second round of Phase 2, additional focus was placed on the definition of "in any form" and examples of mixed foods were included in the question as follows: "Finally, I'm going to read a list of foods. I'd like you to tell me whether or not you have eaten the food in any form. By "any form," I mean either mixed with other foods such as salads, dips, soups or casseroles or eaten plain. During the past 12 months, that is, since last (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?"

The remaining Phase 2 cognitive interviews did not uncover any additional problems. The revised wording of the question seemed more effective in eliciting reports of mixed food items and also seemed less ambiguous to respondents. Yet, food terminology was still problematic (e.g., types of squash, swiss chard). This appears to be linked more to a lack of knowledge rather than errors in memory.

Our recommendations for the food list are as follows:

- Revise the question stem as indicated below:
 "Finally, I'm going to read a list of foods. I'd like you to tell me whether or not you have eaten the food in any form. By "any form," I mean either mixed with other foods such as salads, dips, soups or casseroles or eaten plain.

During the past 12 months, that is, since last (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?"

- Revise the food list to be consistent with Phase 2, round 2, with the exception of "Turnips, other than greens" and "Plums." It is our opinion that "Turnips, other than greens" may not be eliciting thoughts of turnip greens from respondents. Thus, it seems unnecessary to include "other than greens" after "turnips." Because we feel that "turnip greens" and "turnips" may be viewed discretely, we separated them out. We listed "turnip greens" first as we did with some of the other revised options--this format may help respondents exclude "turnips greens" from the "turnip" category when the options are read. We suggest revising this option to one of two formats-- (1) "Turnips" or (2) "Turnip greens" followed by "Turnips." We also suggest revising the "plum" option to "Plums or prunes" to capture all forms of plums. The final revisions are presented below:

Thin skinned summer squash.....

Thick skinned winter squash.....

Turnips.....

OR

Turnip greens.....

Turnips.....

Plums or prunes.....

Chicken liver.....

Liver from beef, veal, or pork....

Shrimp.....

Other shellfish.....

Canned fish.....

Any other fish.....

FOOD INSTRUCTION BOOKLET

This section of the report contains a discussion of the development of the Food Instruction Booklet (FIB) and recommendations for improving it. The section is split into four parts. The first part presents general procedural (that is, not probe-specific) issues. The second part deals with probes that are asked in numerous FIB categories (referred to here as global probes). The third part describes other general issues that we encountered during our interviews. The fourth part addresses specific food items within the FIB.

PROCEDURAL ISSUES

In our cognitive interviews we uncovered four problem areas pertaining to the procedures that are used to elicit information in the FIB. These include reporting of leftovers, asking food preparation and ingredient probes, references to product labels, and reporting of mixtures.

Reporting of Leftovers

A recurring issue during the interviews was how respondents should report the preparation of "leftover" food items that were originally prepared before the reference period and consumed during the reference period. For example, it was unclear whether respondents should report the original preparation of their Thanksgiving turkey or the turkey preparation on the Monday after Thanksgiving, which was the reference period for the interview. In some cases, salt and fat were added in the original preparation, and then again in the 24-hour reference period. In other cases, fat and salt were only added in the original preparation or only during the reference period. There may be nutritional implications of asking questions for one or the other preparation period alone. Since ARS is interested in estimates of fat and salt consumption, it seems that both periods should be included. However, doing so would mean that another question needs to be added to establish that the food was a leftover.

This is a complicated issue for two reasons: 1) there is not a systematic pattern to the kinds of foods that can be expected to be leftovers; and 2) there is not a consistent period of time that respondents would be reporting for. To address the first issue, a question about whether the food was a leftover or not would have to be added before each food and asked of all food items reported. Moreover, all the FIB preparation probes would have to be written in two versions, one referring to the original preparation, and the second referring to the preparation during the reference period.

The implication of the second issue (inconsistent reporting periods) is less concrete. Though it seems that asking about both preparation periods will produce more accurate estimates of fat and salt consumption, it may complicate the response process for respondents so that more error may actually result. Some respondents may report about the original preparation period for foods prepared two days ago, while other respondents may be reporting about foods prepared and frozen several weeks earlier. In addition, respondents who have eaten many leftovers the previous day will be asked to think about several

different points in time. This lack of a single focus in time is likely to confuse respondents. As a result there may not only be reporting errors in the preparation probes, but also in responses to other probes, simply because the period of time they are supposed to answer for is no longer clearly defined.

In light of these factors, we recommend:

- The preparation probes focus only on the 24-hour reference period so that respondents will always be thinking about the same period of time when responding.

- All preparation probes, including the salt/fat used in preparation probes, should specify the reference period. For example, the preparation probe for the Beef, Lamb, Veal and Game Meats category should read:

"How was it prepared yesterday? Was it baked, braised, broiled, fried, pickled, roasted, stewed...?"

- In the same category, the salt in preparation probe should be reworded to read:

"Was salt used in cooking or preparing the (FOOD) yesterday?"

Repeating the reference period should clarify for respondents what preparation period they should be responding for in the case of leftover food items, while also reinforcing the correct reference period for the times when the food is not a leftover. Asking for just one reference period will also eliminate the need for adding a probe to determine whether a food is a leftover item or not.

Preparation and Ingredients Probes

A second procedural issue has to do with the appropriateness of asking preparation probes, particularly probes for salt and fat used in preparation, of those respondents who did not prepare the reported food. In both phases of research we found that in many cases people who did not prepare the food item would answer the salt/fat in preparation probes when asked, even if they had no real basis for providing an answer. Typically they used a heuristic or rule-based response strategy based on their perception of the preparer's "typical" behavior or their sense of how health conscious the preparer was. Children would sometimes answer according to whether the food tasted "salty," though they couldn't use this same kind of judgment to answer the fat-in-preparation probes. Each of these heuristics are prone to response error.

The same behavior is evidenced with other preparation and ingredients probes. Respondents who did not prepare the food item attempt to answer probes about whether it was baked, braised, or stewed, for example, judging by the appearance or the taste of the item. While this is probably an acceptable judgment to make in the case of deep fried food, it may not be so appropriate for other preparation methods. Similarly, respondents who did not prepare their spaghetti and meatballs might answer that the meatballs were made from ground beef based on the brownish color. This could be erroneous given that the meatballs may be browned in a pan, making it hard to differentiate between

several different types of meat (ground pork, veal, etc.). Or a mixture of meats could be used, producing a similar color to that of ground beef alone. Moreover, probes for poultry (for example, "Was it floured, breaded, or battered, or was it without coating?") are very difficult to answer accurately based on how the food looks or tastes at the time of consumption.

There are two ways to address these potentially problematic response behaviors. The first is to explicitly include a "don't know" option in the response alternatives read to respondents. The second option is to only ask preparation probes of those respondents who actually prepared the food.

The first procedure, including an explicit "don't know" option, should decrease the instance of respondents reporting correct information based on their assumptions about the food preparer, although they could still do so if they felt confident about the information they were reporting. In addition, a "don't know" option should increase the likelihood that people who truly do not know the answer will reply "don't know" instead of using a heuristic strategy to provide a response.

However, there is also potential for a negative effect using this approach. Previous cognitive research done by CSMR staff found evidence that, in a series of explicit knowledge questions, a "don't know" option was perceived as offensive or insulting. The negative reaction was intensified the more frequently the "don't know" option was read. Given the length of the CSFII interview, and the number of times the "don't know" response would need to be read, we do not recommend that this option be used. This negative reaction may diminish the rapport of the interview so that respondents become less willing to do the cognitive work necessary to give accurate responses.

The second option, asking the preparation probes only of those people who actually prepared the food, would minimize the situation in which respondents make either correct or incorrect assumptions about food items they have not prepared. We feel that this would greatly improve the quality of the data obtained, since responses to the preparation probes would be answered according to factual knowledge rather than based on a potentially faulty heuristic. With this option, it would be necessary to add an additional question to establish whether or not the respondent prepared the food. This question would be asked after it has been established that the item was home-prepared rather than commercially-prepared.

To minimize the amount of lost information, especially concerning potentially accurate information provided by a non-preparer, we propose to customize the probes for the food preparers and for the non-preparers separately. In other words; once it has been established that a respondent has not prepared the food under discussion, that person will be directed to probes appropriate for someone who had not prepared the food. The non-preparer would be asked questions that can be answered reliably and accurately using visual cues as the basis for a response, making use of the benefits of the visual heuristics observed in our research. On the other hand, if the respondent had prepared the food item under discussion, that person would be asked the complete set of preparation probes, including how the food was prepared, what the ingredients were, and whether salt or fat were used in preparation. Splitting the

respondents in this manner should avoid the pressure on non-preparers to give a substantive response when asked questions about the preparation process that they do not have the knowledge to answer. And it should also avoid the potential for offending respondents by repeatedly asking them if they know the answer (e.g. reading a "don't know" response again and again). (This recommendation reflects our views as questionnaire design experts; statistical means could be used to impute data for non-preparers directly from more knowledgeable respondents. However, this issue is outside of our area of expertise, and we cannot comment on the differential impact of the two methods on total measurement error.)

An example from the Poultry category reflecting the recommended changes for making the non-preparer/preparer distinction follows:

"NAME: Was it chicken, turkey, duck, goose, cornish hen, or something else?

FORM: Was it a part such as a breast, drumstick, thigh, leg, wing, neck, back, Or was it canned, ground, nuggets, tenders, or patties?

(Follow FORM sub-probes as written.)

BRAND: Was it from a restaurant, or was it home prepared?

IF RESTAURANT: What was the name of the restaurant?

IF HOME PREPARED: Did you prepare the (FOOD), or did someone else?

IF PREPARED BY R: How was it prepared yesterday? Was it baked, broiled, panfried, deep-fat fried, smoked, roasted, stewed, rotisserieed, or something else?

Was it cooked with or without the skin?

IF WITH SKIN: Did you eat the skin?

COATING: Was it floured, breaded, battered, or was it without coating?

IF COATED: Did you eat the coating?

SALT: Was salt used in cooking or preparing (FOOD)?

IF YES: What kind of salt was it? Was it ordinary salt, seasoned salt, lite salt, a salt substitute, or something else?

BRAND: What was the brand name?

IF PREPARED BY SOMEONE ELSE:

SKIN: Did it have the skin on it?

IF YES: Did you eat the skin?

COATING: Did it have a coating?

IF YES: Did you eat the coating?

This procedure cannot completely eradicate the issue of respondents feeling as if they should give a substantive response even when they do not have the requested information. In addition, asking all respondents to rely on visual cues is still not guaranteed to be accurate, nor is asking meal preparers about details such as whether or not salt was added to the food. Thus, we also recommend that a statement be added in the introduction which informs the respondent that there may be some questions for which they do not have the information to answer. In such instances, the respondent should respond by saying they "don't know."

In summary, our recommendation for addressing the procedural issue of obtaining information about food preparation involves two changes to the questionnaire.

- Add a statement before the last sentence in the instructions preceding item 2b that communicates to respondents that it is okay for them not to know all the detailed information asked about some foods. A suggested wording is:
"There may be times when I ask for details that you have never needed to pay attention to for a certain food, so you may not know the answer. If that is the case, please just tell me so."

Note that this statement should be added to the instruction pertaining to food descriptions and amounts that we recommend in the previous section on Introduction to Food Descriptions and Amounts.

- Ask respondents whether they had prepared the food item under discussion before asking the probes that deal with the way the food was prepared. Those respondents who did prepare the food item would be asked the current probes, including the preparation probe, salt and fat in preparation probes, and all ingredients probes. Those respondents who had not prepared the food item would be asked an abbreviated set of probes that can be answered using visual information encoded at the point of consumption.

Product Labels

A third procedural issue we encountered in the interviews occurred in several of the probes which request detailed information found on the product labels. These probes include the following: brand names, fat content (e.g., Was it regular, low sodium, lowfat, nonfat...? Was it regular, low calorie, no cholesterol...?), juice content (e.g., Does the label say 100% juice? Does the label give the total percentage of juice?), additional vitamins, (e.g., Does the label say "Vitamin C added?"), sweetened (e.g., Was it sweetened or unsweetened? Was it sweetened with sugar or low calorie sweetener?), alcohol content (e.g., What proof was it?), grain (e.g., Was that 100% whole wheat?), manufacturer (What is the name of the company that made the cereal?), type of cheese (e.g., Was it processed, natural, imitation...?), type of chips (e.g., Were they thick cut?), type of nuts (e.g., Were they unroasted, roasted, dry roasted, honey roasted...?).

For each of these types of probes, in many cases respondents would provide an answer to the probe without checking the label, even for the juice content probes which refer directly to the label on the package. However, when further pressed to actually go get the package and check the label, it was often the case that the original response given was incorrect, though respondents were quite confident that their initial answer had been correct. These detailed probes could be a large source of error. In many instances, we never would have known or even suspected an error. The additional probes from the cognitive interviewer were often what led the respondent to get the package. So in a traditional field interview, the mistakes would probably go undetected.

On some occasions even when the respondent had retrieved the food label, another type of error occurred. Depending on the design of the label, and the respondents' familiarity with the product, there were instances when respondents just were not sure how to read the label, or where to look on the label in order to find the requested information. In these instances, the respondent would get frustrated or embarrassed and would either give a don't know response or guess at a substantive answer based on some incorrect reading of the label. While the "don't know" response in and of itself is not incorrect, the frustration or embarrassment the respondent experienced before answering "don't know" is problematic since it could affect motivation to continue to work hard in responding. Thus, there are two difficulties with the FIB probes which require respondents to use labels to respond accurately. One is that respondents are not always willing or are not aware that they need to get the product label to answer. The second difficulty is contingent on the retrieval of the label. Once respondents have the label, they are not always able to read it correctly.

To minimize the first problem, we recommend that wording be added to each of these probes which instructs respondents to check the package label, if it is still available. Because we are recommending that more emphasis be placed on getting the respondent to check labels, we also suggest that all probes within a food item which request information from the package label be grouped together when possible. For example, the brand name probe and probe about the fat content or salt content should be grouped together. This will allow the interviewer to ask all these probes at one time, minimizing the number of times the respondent will have to retrieve the package. (Our interviews showed that in response to a question that required respondents to read the label, they often would go to the kitchen, check the label, put the food item down and return to the interviewer. Thus, each request to check a package label resulted in a separate trip to the kitchen.) A suggested phrase to add to the beginning of these detailed types of probes could be: "Please check the label of the FOOD and tell me..." (was it regular, low sodium, lowfat, nonfat or something else?)

Addressing the second problem--difficulty in reading the label--is less straightforward. One possible solution would be to "teach" the respondent how to read the label correctly. However, the nature of an interview situation isn't really well suited to educating respondents. Nor does it seem like an

appropriate or viable task to ask of interviewers, especially since across manufacturers, and across products, labeling practices may differ. Trying to teach respondents to read a label correctly could easily become insulting.

Another possible solution would be to intensively train the interviewer on how to read labels, then simply have the interviewer retrieve the correct information from the label instead of asking the respondent to do so. While this might be a good way to collect the most correct information, it would also mean that there are several occasions during the interview where there is no interaction between the interviewer and the respondent. In other words, there may be silence while the interviewer transfers the information on the label to the report form. In this period of silence, respondents may feel uncomfortable or distracted from the task at hand. Thus, once the question/answer interaction resumes, the respondents may have to be reacquainted with the foods under discussion or other aspects of the task in general. This increases the likelihood of confusion in the response task.

Neither of these solutions seems to be optimal, because there is a large potential for negatively affecting the relationship between the interviewer and the respondent. The rapport between the interviewer and respondent is something that is highly individualized; it is dependent on the characteristics of the respondent, the interviewer, and the setting at the time and place of the interview. This makes it hard to standardize a method

for using and reading labels to answer the detailed probes. Given this, we recommend that this portion of the interview not be standardized. Rather, it seems that the best way to "teach" the respondent to get and to use the product labels is to allow the interviewers to select an approach based on the setting they are in, and the cues given by a particular respondent.

For this to be successful, the interviewer needs to be provided with the appropriate tools for negotiating what information should be given to respondents. The first tool for this process is our recommendation to strengthen the language that encourages respondents to get the product labels. The second tool is to incorporate onto the FIB, preferably in the form of interviewer instructions, the appropriate bits of information that should be found on the label to answer the question, as well as clearly identified inappropriate information that is likely to be mistaken as the sought-after information. For example, the grain probe in the Breads and Sweet Breads category should be written as:

Please check the label and tell me whether (FOOD) was 100% whole wheat. (THE INGREDIENT LIST WILL INDICATE WHETHER IT IS 100% WHOLE WHEAT OR NOT. THE TERMS 100% WHOLE-WHEAT OR WHOLE-WHEAT; 100% WHOLE-WHEAT FLOUR (OR MEAL); OR WHOLE-WHEAT FLOUR (OR MEAL) ARE ACCEPTABLE. "CRACKED WHEAT," "STONE-GROUND WHEAT," AND "SPROUTED WHEAT" SHOULD NOT BE INCLUDED.)

With this instruction, the interviewers will have the correct way to read the label in front of them. If a respondent struggles to find the answer, then the interviewer can determine whether or not he/she is receptive to help in reading the label, and act accordingly.

Thus, in summary, our recommendations for improving reporting of information from product labels are as follows:

- Do not standardize a method for interviewers to use with respondents in obtaining information from product labels;
- Place more emphasis on getting respondents to check labels by incorporating a request to check labels into the FIB as follows:
"Please check the label of the FOOD and tell me..."
- Place all probes that request label information for a food item together when possible;
- Include in the FIB information that interviewers can use to review product labels and help respondents to report correct answers.

Mixtures

The final procedural issue that surfaced during the interviews was encountered only in the Pizza, Tacos, Frozen Meals, and Mixed Dishes category. For any of these items that were made from a home recipe (and made by the respondent), respondents seemed to find it easier to go through and list all the ingredients of the dish rather than to list them one at a time as the interviewer asked each ingredient probe. In some cases, respondents would actually read their responses directly from the recipe itself. In other cases, respondents would mentally try to reconstruct the preparation process. For both of these response patterns, the probes asked by the interviewer seemed disruptive to recall. Moreover, the current procedure of asking for the amount of each ingredient as the ingredient is reported was even more disruptive to the recall process. Respondents would have to stop thinking about what they put in the dish, and think about how much they put in the dish. Interrupting the natural recall process increases the chances that the respondent will forget some of the ingredients.

- Thus, we recommend that for Tacos, Burritos, Enchiladas, and Fajitas put together by the respondent, for homemade Macaroni and Cheese, home made Spaghetti, Spaghetti and Sauce, Spaghetti with Meatballs/Meat Sauce, and home made Mixed dishes, Casseroles or Stews, the interviewer first asks a general question about the ingredients in the dish, then follows up with specific ingredient probes, then goes back and gets the amounts of the ingredients once all the ingredients have been listed. For example, for homemade Macaroni and Cheese the probes would be as follows:

"INGREDIENTS: What ingredients did you use to make the Macaroni and Cheese?"

VERIFY THE FOLLOWING AS NECESSARY:

PASTA: Was it made with regular macaroni, egg noodles, or something else?

CHEESE: Was it made with Cheddar, American, Velveeta, or something else?

Please check the label of the cheese and tell me whether it was processed, natural, imitation, or something else?

Does the label say it is regular, low sodium, lowfat, or something else?

MILK: Was it made with milk?

IF YES: Was it made with whole milk, 1%, 2%, skim or something else?

EGG: Was it made with egg?

IF YES: Was it made with a whole egg, the yolk only, the white only, egg substitute, or something else?"

FOLLOW WITH THE AMOUNT PROBES FOR EACH REPORTED INGREDIENT

GLOBAL PROBES

ARS asked us to address several probes within the FIB that are asked across food categories. These include five specific types of probes: 1) whether a food was commercially prepared or not; 2) when applicable, what the brand name was; 3) whether there was any fat added in preparing the food; 4) whether

there was any salt added in preparing the food; and 5) whether there was anything added to the respondent's portion of the food (or to the person's portion for whom the respondent is answering). Some of these have been discussed in the previous section about procedures. In this section we discuss problems related to the question wording.

Commercially prepared, homemade, or something else

The "commercially prepared" probe is asked differently for different foods. For example, in the Bread section of the Breads, Sweet Breads category, the question reads: "Was it commercial, from a bakery, or made from a home recipe?" In the Gravy section of the Sauces, Gravies category it reads: "Was it commercially canned, home made, or something else?" The primary idea is to assess whether the food was something that the respondent purchased or received already prepared, whether the food was home made, or something else. At most, things that are commercially prepared only need to be heated in some way before being consumed. Otherwise, commercially prepared items are ready-to-eat. This distinction between commercially prepared, home made or other allows the interviewer to ask probes in a manner better tailored to the way respondents may have prepared the food. Ideally, this should promote more accurate reporting of the food consumed. The separation allows more probing for specific ingredients when a food is not commercially prepared, and the respondent may (if he/she prepared the food) have knowledge of the ingredients. For foods that are commercially prepared, skipping the respondent out of the specific ingredient probes makes it less likely that ingredients will be inaccurately reported.

Before we began our interviews, we added a version of this probe to several sections of the FIB. It was added in some version to: dry baby cereal, jarred baby foods, and juice baby food in the Baby Foods, Formulas and Juices category; pancakes/flapjacks, waffles and french toast under the Breads and Sweet Breads category; rice (mixtures) under the Cereals, Pasta and Rice category; cookies and brownies under the Desserts, Ice Cream and Frozen Yogurt category; and pies, tarts, strudels, and turnovers also under the Desserts, Ice Cream and Frozen Yogurt category. For some of these foods, the exact wording of the commercially prepared probe differed slightly in order to make it "fit" the food most appropriately.

The version of the probe in the baby food section was as follows: "Was that commercially prepared specifically for infants or was that something else?". Our results of using this probe are discussed in a later section on interviewing infants and children.

The commercially prepared probe was added to the other specific categories because many of these foods can be purchased either already prepared or ready-to-eat. In some cases the food needs to be warmed up, and in other cases no preparation at all is necessary. However, in all cases when the food is commercially prepared, the probes pertaining to food preparation and ingredients should not be asked.

We found during interviewing that the commercially prepared probes we added as part of our research seemed to work fine. However, there were other food items for which the commercially prepared probes originally in the FIB, not targeted as part of our research, did not work as well. In particular the alternate choices to commercially prepared, such as "homemade," or "home recipe," were interpreted differently depending on the food item under discussion. Ideally, the same wording should be consistently used for this probe throughout the FIB. But it became obvious during the interviews that this would not be possible given the variable interpretations of the terms "homemade" and "home recipe" depending on the context. For example, in the cases of macaroni and cheese and mixed dishes, some respondents interpreted the term "home recipe" to refer only to something they made up themselves, which did not follow any particular recipe. Since this interpretation is different from what ARS intends, it would seem that the term "homemade" should be used instead. However, the word "homemade" was not interpreted in the intended manner for baked goods such as brownies. Brownies made from a mix in which only eggs or oil were added were thought of as "homemade," whereas ARS would consider these to be made from a mix rather than homemade. Given these problems, we came up with several different versions of the probe as our recommendations.

● For all food categories in which a commercially prepared probe is asked except for one (the Pizza, Tacos, Frozen Meal, and Mixed Dishes), we recommend the probe:

Was (FOOD) commercially prepared, made from a mix, or made from scratch?

● For the Pizza, Tacos, Frozen Meals, and Mixed Dishes category, we recommend two different probes depending on the food item. For Macaroni and Cheese, for Mixed Dishes, Casseroles, and Stews, and for Tacos, Burritos, Enchiladas, and Fajitas we recommend the probe be worded as:

Was (FOOD) commercially prepared, made from a mix, or homemade?

● For Spaghetti, Spaghetti and Sauce, Spaghetti with Meatballs/Meat Sauce, the wording is slightly more complicated, since the noodles and the sauce can both be commercially prepared, one can be commercially prepared but the other homemade, or they both can be homemade. To allow the respondent a way to answer for any of these possibilities, it is necessary to use several probes (note that this series of probes incorporates our previous recommendations):

WHO MADE FOOD: Did you prepare the (FOOD)?

IF YES: CONTINUE

IF NO: GO TO NEXT PAGE

IF PREPARED BY R - Were the sauce and pasta commercially canned together, frozen together, or did you prepare them separately?

IF FROZEN TOGETHER: GO TO PAGE 47

IF CANNED TOGETHER: Please check the label and tell me what the brand name was.

Was it flavored with or did it have any meat, poultry, fish, or seafood?

IF COOKED SEPARATELY:

PASTA: What kind of pasta or noodles was it? Was it spaghetti noodles, macaroni, spinach noodles, egg noodles...?

FAT: Was any kind of oil, butter or other fat used in cooking or preparing the (FOOD), yesterday?

IF YES: What kind?

IF BUTTER: Was it real butter, margarine or something else?

IF MARGARINE: Was it margarine, butter or something else?

IF OIL: Was it corn oil, olive oil, peanut oil, or something else?

SALT: Was salt used in cooking or preparing the (FOOD) yesterday?

IF YES: What type of salt was it? Was it ordinary salt, seasoned salt, lite salt, or a salt substitute?

SAUCE: What kind of sauce? Was it spaghetti sauce, alfredo sauce, or something else?

Was it commercial sauce or homemade?

IF COMMERCIAL: Please check the label and tell me the brand name of the sauce?

Was it regular, low sodium, or something else?

MEAT: Was it made with meat, poultry or fish?

IF YES: What kind was it? Was it ground beef, ground turkey, sausage, clams, or something else?

IF GROUND BEEF: Was it regular, lean, extra lean or something else?

SALT: Was salt used in cooking or preparing the (FOOD) yesterday?

IF YES: What type of salt was it? Was it ordinary salt, seasoned salt, lite salt, or a salt substitute?

OTHER INGREDIENTS: Were there any other ingredients?

IF YES: What were they?

IF PREPARED BY SOMEONE ELSE -

PASTA: What kind of pasta or noodles was it? Was it made with spaghetti noodles, macaroni, spinach noodles, egg noodles...?

SAUCE: Did it have a red sauce, white or cream sauce, or something else?

MEAT: Did it have any meat, poultry, fish or seafood?

Brand Name

The use of the brand name probe was expanded for the 1994-96 CSFII. We understand that its intent is to provide information that identifies food items uniquely, to allow for accurate food coding and nutritional content. In this research, we reviewed the response to this probe specifically for ready-to-eat cereals, and also with regard to other food items. Our results pertaining to ready-to-eat cereals are presented in the next section, which deals with probes for specific food items. In this section, we present our findings for the other food items generally. We did not make changes to the brand name question as a general probe.

In general, the apparent success of the brand name probe is dependent on the true intentions of the probe. If our understanding of the probe's purpose is correct, then the current probe probably serves its purpose. However, the specific interpretation of the term "brand name" and thus the information provided in response to this probe changes across food items. For some foods, respondents will provide the actual brand name of the food item, but for other foods they will provide the name of the manufacturer. It seemed that the determining factor for whether they reported the actual brand name or the manufacturer was dependent on which piece of information was more salient to them. This was particularly the case when the respondent was answering from

memory rather than checking a label. Regardless of whether respondents provided the manufacturer's name or the brand name, either piece of information when coupled with the other descriptive information about the food seemed to provide adequate information for uniquely identifying the food. The answer to this probe, whether it be a brand name or a manufacturer's name, in and of itself may not always uniquely identify the food. However, if it does not, then a combination of this answer and the answers to the other descriptive probes will identify the food uniquely. Thus, we do not recommend any further changes.

Fat Used In Preparation

Before we began interviewing, we made two changes to the probe asking whether any fat was used in preparing the food item, to address ARS' request that we investigate the issue of the respondents' reporting of fat. We first changed the wording to more aptly describe the fats to be included when answering. The probe originally was: "Was any kind of fat or oil used in cooking or preparing the (FOOD)?" or "Was fat or oil used?". We felt that either of these wordings may lead respondents to exclude butter or margarine, both of which are significant sources of fat used in preparing foods, from their answer. To make it more obvious to respondents that butter and margarine are also to be included as sources of fat, we reworded the probe to read: "Was any kind of oil, butter, or other fat used in cooking or preparing the (FOOD) yesterday?"

The second change had to do with the three versions of the original probe that ARS had added to several places in the FIB. (For example, the probe "Was fat or oil used?" was included in the Cornbread, Corn Muffins, Corn Pone section of the Breads, Sweet Breads category; "Was fat or oil used in the (FOOD)?" was added in the Cakes, Cupcakes, Snack Cakes section of the Desserts, Ice Cream, Frozen Yogurt category; "Did the (FOOD) contain fat or oil?" was added in the Pies, Tarts, Strudels, Turnovers section of the Desserts, Ice Cream, Frozen Yogurt category.) As a general questionnaire design principle, when possible, the wording of a question should remain consistent within an instrument. Changes in the wording of the probe are likely to communicate to respondents that the alternate version of the probe must be asking for something different than the first version they heard. In order to avoid this possible misinterpretation, we made the wording of the probe consistent throughout the FIB.

There was no evidence of difficulty with the revised probe in the interviews. There was some variance to the interpretation of the term "other fat" across respondents, but all interpretations were within the range of appropriate answers. In addition, respondents often reported butter or margarine as an answer to this probe, indicating that the probe clearly communicated that these were acceptable responses.

ARS also wanted some additional information about the type of fat used. So a follow up question was added, asking about the type of oil, and a question was added to verify that when "butter" was reported, it was butter and not margarine that was actually used. The sequence and wording of the fat used in preparation probes developed that we used in our interviews are:

"FAT: Was any kind of oil, butter or other fat used in cooking or preparing the (FOOD)?

IF FAT USED - What kind?

IF BUTTER: Was it 100% real butter, margarine or something else?

IF MARGARINE: Was it margarine, butter or something else?

IF OIL: Was it corn oil, olive oil, peanut oil or something else?"

In our cognitive interviews, we found that people often use the terms butter and margarine interchangeably, despite the nutritional differences between the two products. Thus, potential errors could be corrected by asking the probes verifying that the margarine reported was actually margarine, and that the butter was actually butter. There was one difficulty that occurred with the probe verifying that butter was the fat used. The point of the probe was to make sure that respondents were really talking about butter and not margarine when they said butter. Since "butter" is a well-accepted and frequently-used term for margarine, it seemed that simply using the term "butter" might not be enough to make the distinction salient. To address this concern we used the term with the phrase "100% real butter" to make the distinction more salient. What we witnessed in the interviews, however, was that this term was too precise. Some respondents would look at the package label for the phrase "100% real." If they did not see it, then they assumed that their butter must be the "something else" referred to in the probe for fat used in preparation. The most straightforward fix to this was to simply modify the phrase and then test it. The more moderate wording of this probe worked as intended.

- Thus, our recommendation for the series of fat used in preparation probes is the same as what is given above but the follow-up question for butter is:
"IF BUTTER: Was it real butter, margarine, or something else?"

Salt Used in Preparation

Prior to interviewing, the only change we made to the salt used in preparation probe was to add a follow-up question asking what kind of salt was used. The follow-up question was simply: "What type was it?" The first probe, which asked whether salt was used in preparation at all, seemed to work fine in both phases of interviews. However, the follow-up question was not as successful. Respondents were unclear as to what information was being requested, and as a result were confused as to how they should respond.

When the "what type" probe was asked as part of the interview, often the cognitive interviewer would wait to see how the respondent responded on their own, and then give respondents the salt types from the current Q13 as answer choices. Though this was not done as an experimental manipulation, the results indicate that respondents are able to answer the question when offered response choices. (Note though that this is not a validation study, and we cannot tell whether accurate responses were given. We can only determine whether responses were given without evidence of cognitive burden.)

- The recommended wording for the follow-up question is:
"TYPE: What type of salt was it? Was it ordinary salt, seasoned salt, lite salt, a salt substitute, or something else?"

Additions

In all phases of interviewing, this probe ("Did you add anything to the (FOOD)?") caused problems for many respondents, both adults and children. In general, it was not clear whether an addition referred to something added to the respondents' own portion of a food, or something added "at the table." Specifically, in the case of a home recipe (whether or not the respondent prepared the food), many respondents thought that the additions probe was asking for other ingredients added when preparing the food.

A second difficulty with this probe is specific to ARS's interest in salt intake. It was unclear from responses to cognitive probes whether respondents thought about salt when answering the additions probe, regardless of how they interpreted it. Most people did not volunteer that salt was something they thought about as a possible addition to a food, even for foods that are commonly salted. But when asked specifically about whether they thought salt would be an appropriate response to the question, almost all respondents said yes. A legitimate reason for some of our respondents not to think about or report salt in response to this probe is that they do not use salt at all, or use it only on rare occasions. For these people, it seems quite reasonable that salt wasn't something that they thought about when answering the additions probe, simply because salt is not a part of their diet.

- To address these issues, we recommend that the current additions probe be modified, and that a second probe asking directly about adding salt be added to the FIB. Specifically, the current probe should be reworded to indicate that the respondent should only think about things added to their portion, or things added at the table. Specifying the reference period again will also minimize the potential for confusion in the case of leftovers as noted earlier. The suggested wording is:

"ADDITIONS: Did you add anything to (your/NAME's) portion of the (FOOD) yesterday?"

- As noted above, respondents typically did not think about adding salt to their food when answering this probe. To remind respondents, especially the people who use salt, to think about whether or not they may have added salt to their portion, we recommend the following probe be asked of everyone:

"SALT ADDITION: Did you add any type of salt to (your/NAME's) portion of the (FOOD), yesterday?"

IF YES: Did you add ordinary salt, seasoned salt, lite salt, a salt substitute, or something else?"

OTHER GENERAL ISSUES

While we were conducting our interviews, we came across several general issues that were unrelated to our original assignment. We would like to note them and raise them for future consideration in revisions of the FIB. They include 1) the format of the FIB probes; 2) interpretation of the word "regular;"

3) problems in reporting coatings and fillings; and 4) microwaving as a preparation method.

Format of the FIB Probes

The FIB contains a number of different kinds of probes. Many are easily interpreted as requiring a yes/no answer (e.g., was salt used in cooking or preparing the food?) or an open-ended response (e.g., what kind was it? was it a popsicle, snow cone, frozen fruit bar, ...?). However, for some of the probes, the type of response required is not clear to respondents. We noted several different circumstances where respondent confusion resulted because the question on the surface could be either yes/no or open-ended. In most cases, the questions were intended to be yes/no. However, respondents tended to interpret them as open-ended questions, and become perturbed because the response that pertained to them was not included.

The following list includes instances of this kind of problem that we encountered:

1) the FORM probe in the Ice Cream, Ice Milk, Sherbet, Tofu Desserts, Frozen Dairy Desserts, Frozen Yogurt section reads "Was it a bar, stick, or cone?" Respondents answered "scoop" when their ice cream did not fit into the available options;

2) one of the TYPE probes in the Cookies, Brownies section reads "Did it have a filling, icing, nuts, or raisins?" Respondents thought they had to give one and only one answer to this question. Sometimes none applied, and sometimes more than one applied;

3) the SOURCE probe in the French Fries, Tater Tots section asks "Were these (FOODS) from a restaurant, school, or fast food place?" This does not allow reporting by respondents whose french fries were purchased frozen at the grocery store and cooked at home.

There may be other probes with problems similar to these, but these are the ones we encountered in our research.

- We recommend that ARS review all the probes in the FIB with an eye towards making them less ambiguous, and revise them accordingly. One solution would be to make the yes/no questions all-inclusive by adding "or something else" to the probe. Other solutions will no doubt be required for specific other types of ambiguities.

Interpretation of the Word "Regular"

The term "regular" is used as a response category in the TYPE probe for a number of different food items. For example, "Was (the pudding) regular, low calorie, ...?" and "Was (the cheese) regular, low sodium, lowfat, nonfat, ...?". These probes seek to obtain information about nutritional aspects that relate to salt and fat. (Except that in the Chips, Puffs, Twists, Potato

Sticks section, regular is used to mean not ruffled as well as unsalted or lowfat.) However, the term "regular" is not always interpreted in the intended manner by respondents. Rather, they used the term to refer to physical characteristics of the food. These problems occurred with adults as well as child respondents.

The following list includes instances of this kind of problem that we encountered:

- 1) one respondent thought her hot dog must be regular because there was nothing in it like cheese;
- 2) one respondent noted that her peanut butter was regular because it was not crunchy or mixed in the jar with jelly;
- 3) one respondent said that Oreo cookies were not regular because they had orange filling especially for Halloween, so he chose "something else;"
- 4) two respondents thought regular bread referred to white bread;
- 5) one respondent thought regular jelly was grape flavored.

- We recommend that ARS try to find terminology that describes the concept being measured in each probe that includes "regular" as a response option and incorporate it into the question. This will leave respondents less freedom for constructing alternative definitions of the word "regular." Alternative wordings could be tested in additional research to determine the best solution.

Problems in Reporting Coatings and Fillings

The issue of whether food items had coatings or fillings was not always an easy one for respondents. One respondent's son had oreo cookies but she wasn't sure if the cookies would be considered as having icing or filling. Similarly, for pop tarts, a respondent was not sure how to classify the ingredients. He thought they had both a coating and a filling, but he was not sure.

For candies, this was frequently a problem because respondents didn't know how specific they should be. Respondents would try and explain the coating and filling of items such as M & M's or the filling of a Snicker's bar.

- We recommend that ARS delete this question in cases where a brand name or other uniquely identifying information has been provided. While this would not eliminate the problem altogether, it might decrease the frequency of its occurrence.

Microwaving as a Preparation Method

Most of the PREPARATION probes in the FIB do not include microwaving as a preparation method. (Popcorn seems to be an exception to this pattern.) This

seems to be a glaring omission, since almost any type of food these days can be prepared in a microwave oven.

- We recommend that consideration be given to adding this to the PREPARATION probes.

SPECIFIC PROBES

In addition to the global issues, there were several specific foods which ARS asked us to address: juice, doughnuts, pancakes, cereals, rice/pasta mixtures, cake icing, sandwiches, soups, and meat cuts, and chicken. In this section, we discuss the FIB probes that are specific to these food items. More general probes which may relate to these specific foods, (such as salt and fat in preparation) are discussed in the previous section.

Juice

The issue we were asked to address was whether or not respondents could provide information from the label about whether it said 100% juice. This probe wasn't problematic if we define this only as respondents' comprehension of the question. However, label information was not always clear to respondents, and this caused problems when they were trying to answer the question. Some respondents possessed adequate knowledge of food products and nutrition but became confused over label terminology and guidelines. One respondent reported that the label did say the package contained 100% juice but that the label also said that it was juice made from concentrate. The FIB probe was confusing to her because the juice couldn't be 100% juice if it was made from concentrate--the juice had to have been diluted with water. Other respondents reported that the juice labels weren't providing adequate information about the percent of juice. When we asked "Does the label give the total percentage of juice?", many respondents were confused because they couldn't find any statements about the percent juice on the label. Respondents would claim that the label just said that the product was artificially flavored.

This basically reflects problems in reading a product label. Consequently, we refer the reader to the general recommendations for the labeling issue, which are presented in the Global Probes section of this report.

Doughnuts

The issue we were asked to address in this section was whether information on cake- and yeast-type doughnuts could be obtained. The TYPE probe in the FIB was changed from "Was it yeast, cake, ...?" to "Was it a cake-type or yeast raised doughnut?".

We cannot make any recommendations about this because none of our respondents reported eating doughnuts. However, based on our expertise we think that this is a difficult distinction for respondents to make. We do not think that respondents will be able to answer this question.

Pancakes

As part of ARS's focus on improving the reporting of ingredient information, we specifically addressed the issue of whether respondents could provide further descriptive information for pancakes, such as the type of flour, use of eggs, milk, fruit, nuts, etc.

Only one of our respondents reported eating pancakes, so we cannot make recommendations based on our observations. However, based on our expertise we do have a recommendation.

- We recommend asking the FORM probe (whether they were commercially prepared, made from scratch, or made from a mix?) before the KIND probe (which asks about the kind of flour or milk used in the pancakes). This would allow the respondent to first think about the general characteristics of the product, rather than thinking about responses to specific probes such as whether the pancakes are whole-wheat-flour- or buckwheat-based. In line with our general recommendations about "commercially prepared, homemade, or something else" presented in the previous section, we would reword the FORM probe as follows: **"Were the (FOOD) commercially prepared, made from a mix, or made from scratch?"**

Overall, the key factor determining whether respondents are able to report ingredient information is whether he/she prepared the food. Our recommendations regarding this issue are discussed previously in the Preparation and Ingredients Probes section. As they specifically relate to pancakes, only respondents who prepared the pancakes would be asked the KIND probe.

Cereals

ARS wanted us to examine the reporting of ready-to-eat cereal brand names. We substituted two different, but complementary, probes for the brand name probe prior to interviewing. The intent of the brand name probe is to uniquely identify the food. For example, the brand name "Chips Ahoy" uniquely identifies a chocolate chip cookie made by Nabisco. However, there is not such a clean distinction for cereals. For example, Raisin Bran is the brand name for Kellogg's Raisin Bran, Post Raisin Bran and probably a brand name for other manufacturers of raisin bran. Thus, for cereal, simply asking for the brand name would not help uniquely identify the specific cereal in all cases. So for cereals we changed the brand name probe to be two probes, a TYPE probe and a COMPANY probe. These two probes worked well during both phases of interviewing, so we recommend these two probes be added to the FIB. The two probes are:

"TYPE - What type of cereal was it? (Was it corn flakes, raisin bran, granola...?)

COMPANY - Please check the label on the box and tell me what the name of the company is that made the cereal? (IF LABEL NOT AVAILABLE: Was it Kellogg's, Post, General Mills...?)"

These probes (read without the language directing respondents to check the package label) were correctly interpreted through all phases of interviews. However, without the additional phrase encouraging respondents to get the cereal box, there were occasions when respondents would provide a company name without looking at the cereal box. In some instances this company name was found to be wrong once the respondent was further urged to get the cereal box. Thus we added the phrase leading respondents to get the cereal box.

At ARS' request, we include here the final responses to the cereal TYPE and BRAND NAME probes for all respondents who reported eating ready-to-eat cereals.

Name of company	Type of cereal
Kellogg's	Frosted mini-wheats
General Mills	Cheerios
Post	Honeycomb
Food Lion	Frosted flakes
Kellogg's	Rice Krispies
Kellogg's	Shredded Wheat
Kellogg's	Frosted Flakes
General Mills	Cinnamon Toast Crunch
DK (General Mills or Post)	Fruit Loops
General Mills	Raisin Nut Bran
DK	Cinnamon Toast Crunch

Our recommendations for brand name probes for ready-to-eat cereal are as follows:

- Use the following probes to obtain information about the type of cereal and the company that manufactures it:
 "What type of cereal was it? (Was it corn flakes, raisin bran, granola or something else?)"

Please check the label on the box and tell me what the name of the company is that made the cereal? (IF NOT AVAILABLE: Was it Kellogg's, Post General Mills, or something else?)"

Rice

ARS wanted us to examine whether rice mixes made from dry boxed mixes should be classified with rice or with mixed dishes. In the FIB for the 1994-96 survey, rice mixtures were placed with rice; however, this is inconsistent with the way pasta/noodle mixtures are treated. They are placed under mixed dishes.

We made minor revisions to the rice section. We felt that boxed rice mixtures should be included with rice, since there are basically no ingredients other than spices contained in the box. Therefore following the TYPE probes ("Was it regular long cooking, instant, converted ...? Was it plain or a mixture?"), we added a probe to identify whether the directions were followed in preparing the rice mixtures. We added a question for respondents who

reported that the rice was a mixture. They were asked "Was it made from a commercial mix?". If it was not made from a mix, interviewers were directed to the section on mixed dishes. If it was made from a mix, interviewers asked "Did you add anything in addition to what the directions called for?". If additional ingredients were used, interviewers were directed to the section on mixed dishes. If no additional ingredients were used, interviewers asked "What were the ingredients?".

This revised probe proved confusing. One respondent reported eating a rice mixture which she called a commercial mix, prepared according to the directions. When we asked "What were the ingredients?", she said the only ingredients were the rice and seasoning packet.

During our interviews, we also observed that some of the original probes in the rice section were problematic. Respondents weren't always familiar with the different types of rice listed under TYPE, such as "regular long cooking", "instant", or "converted." Some respondents are separating the phrase "regular long cooking" to "regular, long cooking." To deal with these problems, we recommend that respondents be referred to check the label and that, as explained earlier, the interviewer work with the respondent in answering these probes.

Based on our observations and our conviction (similar to ARS) that rice and pasta dishes should be treated similarly, we recommend the following changes to both the rice and the pasta sections of the FIB. We feel that these changes will provide consistent information. Information about rice, either plain or mixed only with spices, will be captured in the "rice" section, while dishes that contain additional ingredients other than spices will be captured in the "mixed dishes" section. Similarly, information about pasta, either plain or mixed only with butter or similar dressings, will be captured in the "pasta" section, while dishes that contain additional ingredients will be captured in the "mixed dishes" section.

Our recommendations are as follows:

- Ask the following series of rice questions:
"COMMERCIAL: Was the (FOOD) commercially prepared, made from a mix, or was it made from scratch?

If Commercially Prepared:

KIND: What kind of rice was it? Was it white rice, wild rice, rice pilaf...?

MIXTURE: Was the (FOOD) a mixture or was it plain?

IF MIX - go to Mixed Dishes, pg 52

IF PLAIN -

Was it from a restaurant?

IF NO - What was the brand name of the (FOOD)?

ADDITIONS: Did you add anything to your portion of the (FOOD) yesterday?

If made from a Mix:

PREPARER: Did you or did someone else prepare the (FOOD) yesterday?

IF R PREPARED -

Did you add anything else to the (FOOD) besides what the directions called for?

IF YES - go to mixed dishes, pg 52

IF NO -

Please look at the label and tell what the name of the company is that made the mix.

What was the name of the mix? Was it rice pilaf, rice and vegetables, fried rice...?

IF R DID NOT PREPARE -

ADDITIONS: Did you add anything to your portion of the (FOOD), yesterday?

If Made From Scratch:

KIND: What kind of rice was it? Was it white rice, brown rice, rice pilaf, wild rice...?

PREPARED: Did you or did someone else prepare the (FOOD) yesterday?

IF R PREPARED -

Was this a mixture or was it plain?

IF MIX - go to mixed dishes, pge XXX

IF PLAIN -

TYPE: Please look at the label and tell me what type of rice it was. Was it regular long cooking, instant, converted...?

BRAND: Looking at the label, what is the brand name of the (FOOD)?

SALT: Was any salt used in cooking or preparing the (FOOD)
IF YES: What kind of salt was it? Was it ...

FAT: Was any kind of oil, butter or other fat used in cooking or preparing the (FOOD?)

ADDITIONS: Did you add anything to your portion of the (FOOD) yesterday?

IF R DID NOT PREPARE -

Was this a mixture or was it plain?

IF MIX - go to mixed dishes, pg 52

IF PLAIN -

Was it from a restaurant?

IF NO:

BRAND: Looking at the label, what is the brand name of the (FOOD)?

ADDITIONS: Did you add anything to your portion of the (FOOD) yesterday?"

- Ask the following series of pasta questions:

"Did the (FOOD) have any meat, poultry, fish or seafood?

IF YES - Go to Spaghetti, Spaghetti and Sauce, etc., pg 50.

Did the (FOOD) have any red or white sauce?

IF YES - Go to Spaghetti, Spaghetti and Sauce, etc., pg 50

Did the (FOOD) have any vegetables?

IF YES - Go to Spaghetti, Spaghetti and Sauce, etc., pg 50

IF NECESSARY: Was it macaroni and cheese?

IF YES - Go to Macaroni and Cheese, pg 48

Did the (FOOD) have a meat or cheese filling?

IF YES - Go to Spaghetti, Spaghetti and Sauce, etc., pg 50

KIND: What kind was it? (Was it noodles, macaroni, couscous...?)

PREPARER: Did you or did someone else prepare the (FOOD) yesterday?

IF R PREPARED -

TYPE: Was it regular, egg, spinach, rice, transparent, whole wheat...?

SALT: Was any salt used in cooking or preparing the (FOOD)?

IF YES: What kind of salt was it? Was it ...?

FAT: Was any kind of oil, butter or other fat used in cooking or preparing the (FOOD)?

ADDITIONS: Did you add anything to your portion of the (FOOD) yesterday?

IF R DID NOT PREPARE -

ADDITIONS: Did you add anything to your portion of the (FOOD) yesterday?"

Cake Icing

ARS wanted us to examine whether respondents consider cake icing when estimating the amount of cake consumed. We added the probe "Did you eat the icing?" as part of Q5 ("How much of the food did you actually eat/drink?").

During our interviews, we encountered two respondents who reported eating cake. Neither one seemed to have a problem with this new probe. One ate the icing and included it in his judgment about the dimensions of the cake. The other volunteered that the cake had no icing during the description of the cake.

Based on our observations as well as our questionnaire design expertise, we recommend revising the placement of the icing probe so it is asked as part of Q4. This allows the interviewer to ask about whether the icing was eaten when questions about icing are first presented to the respondent. Also, it would seem that ARS would only want to obtain further descriptive information (e.g., reduced calorie, lowfat...) about the icing if it were eaten. This placement eliminates asking the question about the type of icing when the respondent reports that the icing was not eaten.

Our recommended wording is as follows:

"TYPE: Was the cake regular, reduced calorie, lowfat...?

Did it have an icing or filling?

If yes - Did you eat the icing/filling?

If yes - Was the icing/filling regular, reduced calorie or lowfat?"

Sandwiches

ARS wanted us to examine modifications made to standard fast food items. They also wanted any recommendations concerning the general reporting of sandwiches. Also, they were interested in specific information about respondents' understanding of the term "standard item" as it is used in this section. No revisions were made to the FIB before interviewing began.

Two adult respondents reported eating fast food sandwiches. There were no problems with the term "standard item." Both respondents interpreted the question correctly; one reported that food had been removed from the standard item and the other reported that food had not been removed from the standard item. Both respondents recognized that the question was asking whether things had been removed from the fast food sandwich.

While we acknowledge that this question works as worded, we feel that ARS is not getting complete information for fast food sandwiches. The STANDARD probe is designed to elicit positive responses in two situations--when the fast food place removes things from the sandwich, and when the person him/herself removes things from the sandwich. However, the ADDITIONS probe only asks

whether the person added anything to the sandwich. To have a complete reporting, there should also be a question that asks whether the fast food place added anything to the sandwich. Therefore, we recommend that the following probe be added before the additions probe: "Did the fast food place add anything to the standard item?"

It is also our opinion that the first probe asked for any sandwich reported should be whether the sandwich was a fast food item or not. The purpose of this would be to ensure a more complete reporting of fast food sandwiches, since so many varieties of sandwiches are served at fast food places. We recommend adding a probe at the beginning of each of the sandwich sections except for peanut butter. (To our knowledge, fast food places have not yet expanded into the peanut-butter-and-jelly business.) Some of the sandwich sections, for example, egg and egg salad sandwiches, already have an implicit instruction for interviewers to ask this question, since the instructions refer to knowledge that assumes this probe has been asked. We would like to ensure that this question be asked consistently by adding it to each relevant section of the sandwich category.

We ran into a different problem that affects the structure of several of the sandwich sections. When interviewers ask "Was anything spread on the bun?", respondents report meat/fish salad mixtures because this probe is asked before respondents have had a chance to report the main ingredients of the sandwich.

The interviewer skips down to the appropriate salad mixture probes to capture details of the salad mixtures reported incorrectly, and the probes about spreadable fats may be missed. To eliminate this problem, we recommend changing the order of these probes, to ask the SALAD MIXTURE probes before the SPREAD probes.

Our recommendations are as follows:

- Add a probe at the beginning of each sandwich section (except peanut butter sandwich) that asks whether the food was a fast food sandwich:
"Did the FOOD come from a fast food place?"
- Add a probe to the fast food sandwich sections that asks
"Did the fast food place add anything to the standard item?"
- Ask the SALAD MIXTURE probe before the SPREAD probes.

Cuts of Meat

ARS wanted us to determine whether respondents could report the cut of meat. We added probes for the Beef, Lamb, Veal, Game Meats section and the Ham or Pork section to explicitly ask respondents for the cut of meat after they answered the FORM probe. In the Beef, etc., section after the "Was it a steak, chop, roast or rib, ground, ...?" probe, respondents who reported the

first four response options were asked "What cut of steak/chop/roast/rib was it? (Was it sirloin, t-bone, round, ...?)" In the Ham or Pork section, respondents who reported eating pork roasts were asked "What cut was it? (Was it shoulder, loin, ...?)"

We cannot make any recommendations about the term "cut of meat" based on our observations, because too few respondents reported eating the relevant foods. However, our sense is that respondents don't understand this term, although they did seem to understand that this information was available from the label. We feel that the ability to report "cut" is more likely if the package label was available or if the respondent prepared the item. Therefore, based on our expertise, we have two suggestions.

- We recommend adding a reference to the package label for the cut of meat probe (i.e., "Please check the package label and tell me what cut of steak/chop/roast/rib it was.") If the label is available, respondents' natural reaction will probably be to read whatever information is presented on the label, allowing the interviewer then to sift through the listed information. If no label is available, then the interviewer should be instructed to accept whatever the respondent says--either "don't know" or the cut of meat.

- As noted in the previous section, we recommend that this question be asked only if the respondent prepared the item.

Chicken

ARS wanted us to examine how to facilitate reporting of the "roasted" chicken products that are becoming widely available in fast food restaurants. We began by revising the PREPARATION probe in the FIB before we started our interviews. We added the term "rotisserieed."

In our cognitive interviews, we asked respondents to elaborate on the terms "roasted" and "rotisserieed." They did make a distinction between the two terms. Generally, differences were due to how the chicken was cooked--respondents believed that "rotisserieed" chicken was cooked on a skewer or spit whereas this was not the case for "roasted" chicken. Many respondents also considered "roasted" to be another term for "baked." Of those respondents who answered the probes about "roasted" or "rotisserieed chicken" from a fast food restaurant or grocery store, none provided any new terms. Although respondents perceived a difference between "rotisserieed" and "roasted" chicken, this difference was related to how the food was cooked, not where the chicken came from (e.g., fast food restaurants vs. grocery stores). While this may be useful information for ARS, we cannot use it to make recommendations. We learned about how respondents consider these terms in the abstract. However, since none of our respondents had reported eating chicken from fast food restaurants, we do not know how they would have reported it during a food intake interview.

We also examined respondents' understandings of the term "home prepared" especially as it relates to chicken--that is, whether home prepared chicken includes chicken that is partially or fully cooked when purchased at the

grocery store. Respondents reported that home prepared chicken was purchased raw from the grocery store and completely cooked in the home. Home didn't necessarily have to be the respondent's home but could be another person's home as well. These findings reflect the respondents' thoughts in the abstract, since none of our respondents reported eating chicken that was fully or partially cooked at the grocery store. Nevertheless, this suggests that "home prepared" chicken is not being overreported.

Other Specific Issues in the FIB

During our experiences with the FIB, we came across two problems related to specific food items that were not included in our research assignment.

- The term "jelly" was frequently reported as "jam" or "preserves" in the Jam, Jelly, Fruit Spreads section. We recommend that whenever jelly is reported, a probe should be added to clarify whether it was jelly, jam or preserves. This would be consistent to the approach we described earlier in this report for handling respondent reports of butter versus margarine.

- There are no questions about "additions" with the FIB probes on "dip" in the Dip section. If respondents forget to report chips (as one of ours did), there is no chance to pick these food items up. We recommend that an ADDITIONS probe be added in the Dip section.

INTERVIEWING INFANTS/CHILDREN

ADULT/CHILD INTERACTION

One of the goals of this research was to examine the interaction between the child and the adult during our Phase 1 interviews. Currently, proxy interviews are conducted for children under 6 years of age. Children from 6-11 years old are asked to provide their own data assisted by an adult household member.

As stated earlier, we interviewed 7 children between the ages of 6 and 11. Two of them were 6 (both female), one was 7 (male), two were 9 (male and female), one was 10 (male) and one was 11 (male).

With our children respondents, we found that the 10-year-old and the 11-year-old were able to provide information for the Quick List about what they ate with only minor prompting by the adult. Time and occasion name were more difficult. They could give some details of the food items, but portion size was extremely difficult. Both respondents thought about amounts in one dimension. That is, they chose to measure foods with a ruler (a bowl was so many inches high) when measuring cups would have been more appropriate. By the time we got to the review question in the interview, their attention span was completely exhausted.

The quality and quantity of data given by the other children decreased with age. Neither of our 6-year-old respondents could even report the foods for

the Quick List without intense probing by the parent or interviewers. At most, their attention lasted through the Quick List.

During the debriefing, all adults said that the children should be the ones that the interview is directed toward and they would help as necessary. A couple of people mentioned specifically that it was good for the child to interact with adults. However, at least one adult questioned several times during the interview what his role should be. If he thought the child reported incorrectly, he wanted to correct him, but yet he didn't want to undermine his son. This was clearly a struggle for him.

While all the adults thought their child gave accurate information, several commented in the debriefing that we needed to provide more guidance when it came to the amounts. When asked how comfortable they thought their child was, only one adult said he thought his child was nervous. The others said their children were fine. One child, however, said she liked having her mom around to help answer.

Procedures for the current survey tell the interviewer to ask the child the Quick List (without help from the adult) and then address the next statement. ("Now I'm going to ask you specific questions...") to both the child and the adult. The adult should be encouraged to help the child report completely and accurately.

A variation of this procedure seemed adequate for our "older" children, but broke down at the youngest ages. That is, the stipulation that the adult not help during the Quick List was not what we found occurred naturally. At all ages, the adults "helped" throughout the entire interview. The level of "help" seemed correlated to age.

The size and representativeness of our sample prohibit us from determining the cutoff age where, in general, the child does more of the reporting of foods with the adult helping versus the adult doing more of the reporting with the child helping. We do feel, however, that 6 years old is too young to direct even the Quick List question to the child.

Our recommendations are as follows:

- An attempt should be made to standardize the introduction to inform both the parent and child that the task is a joint one, and they need to work together to provide the best information. The parent's role is to help the child, and the child should ask for help from his/her parent when necessary. More or less help may be required, depending on the age of the child. Instructions should be read so that both respondents hear them.

- Guidelines should be taken out of the interviewer's manual and placed in instruction form on the questionnaire.

IMPROVING THE REPORTING OF INFANTS' INTAKE

This task was meant to address issues specific to infants. In particular, ARS was interested in: 1) how to better report the time and amount of infant

formula feedings (including the idea of extended consumption); 2) how to distinguish between commercially prepared and home prepared baby foods; and 3) are we getting information about the addition of water to juice for babies. We have also noted other things revealed in our interviews with infants.

Infant formula feedings

Three of our respondents had children who drank bottles. In all cases, it seemed that the parents were very attentive and knew exactly the amount they put in bottles for the infant. They were able to provide the times for each bottle. In one case, the parent reported the bottles for the whole day and then went back through the day and reported the food eaten. During our interviews, the cognitive interviewer totaled the amount reported for each bottle and, at the completion of the FIB, reported this total back to the respondent. In all cases, they agreed that the total was probably correct. Thus, time and amount of formula feedings didn't seem to be problematic.

In only one interview did the mother report something that could be called "extended consumption." That is, it meets the definition of being consumed over a period of time. If, however, we consider a bottle to be one serving, then it doesn't match the part of the definition which says the respondent cannot provide specific times each serving was consumed. In this interview,

the infant got a bottle of formula at 1:00 a.m. and drank it throughout the night and a bottle of water which she carries around and drinks until it is completed. Thus, we did not really see any instances of extended consumption in our interviews.

Where we see a potential difficulty is with the review. Since our suggested revision to the review revolves around meals, this isn't appropriate for "younger" infants who only consume fluids and do not eat "meals." A separate review is needed for these infants. If the respondent reports that the infant does not eat "meals" the interviewer should use this alternate review. Our suggested wording for this review is as follows:

"Now I want to make sure that I haven't missed any bottles (NAME) had or times (NAME) nursed yesterday. I'm going to read all of the times you told me about when (he/she) had a bottle or nursed. As I'm reading these, tell me any other times (he/she) had a bottle or nursed yesterday.

You already told me about (bottles/nursing) at (SLOWLY READ TIMES).
Were there any others?"

We also found when administering the FIB probes (description - item 4 and amount - item 5) that it was difficult to distinguish between eating occasions. For example, the first probe for formula asks for the brand name. If interviewers ask this probe as printed, the respondent may not know which occasion they are referring to. This may not be problematic if all occasions have the same answer.

To clarify the occasion and remove any ambiguity, we recommend a slight change in the FIB probes for formula and breast milk that would add an instruction to the interviewer. The interviewer should be instructed to ask these probes for

the first occasion only and insert the time as the identifier of the occasion. Then, for subsequent feedings, the interviewer should verify the information, again reminding the respondent of the time of the feeding that they are talking about.

We recommend the following:

- Revise the instructions for formula and breast milk to ask the probes for only the first "drinking" occasion. For other occasions, the interviewer should provide the time as reported in the Quick List and verify other information.

- Revise the wording of the review question for children and adults as follows:

"Now I want to make sure that I haven't missed any bottles (NAME) had or times (NAME) nursed yesterday. I'm going to read all of the times you told me about when (he/she) had a bottle or nursed. As I'm reading these, tell me any other times (he/she) had a bottle or nursed yesterday.

You already told me about (bottles/nursing) at (SLOWLY READ TIMES). Were there any others?"

Commercially prepared baby foods

To distinguish between commercially prepared and home prepared baby foods, we added a probe in the FIB at the beginning of each of the baby food sections which asked if the food was commercially prepared specifically for infants or if it was something else. This question was asked of four of our respondents. The explanation that three of them gave seemed to indicate they understood what we were asking. One said the cereal was regular cereal that any child can get. Another said the juice was commercially prepared for children, which she explained meant that it was the same as the "adult" version, except that it is packaged in smaller quantities and the package is reflective of something that would catch a child's eye. The third respondent thought this meant that it was nutritionally just for children; cooked for babies. The respondent who didn't understand the question said that it wasn't specifically for infants, it was "for 3 to 6 month olds." This question was asked about an infant who was 6 months old, whose mother said earlier in the interview that he was just beginning to eat food, and described another food as "baby food beef." It seems reasonable that the respondent thought we knew it was "baby food" and, therefore, interpreted this question as asking if the food was for infants in general as opposed to food for a specific stage.

We recommend the following:

- Add a question to determine if the food was commercially prepared specifically for infants to all sections of the baby food category. The recommended wording is:

"Was that commercially prepared specifically for infants or was that something else?"

- Using previous data, ARS should determine an approximate age at which children no longer eat "baby food." If previous data don't exist, perhaps food labels can be consulted to determine the recommended ages. Given this information, interviewers should be trained to go directly to the baby food category for all food eaten by children under this age.

Water added to juice

To answer the question about whether or not we are getting information about the addition of water to juice for babies, we asked a cognitive probe for infants who had drunk juice. Three of our respondents reported juice consumption; however, none reported adding any water to the infants' juice. Since none of our respondents added water to the juice, we can not tell if they would have reported water as an addition.

Other

In 5 of our 7 interviews with infants and in our interview with the 3 year old, we picked up additional foods and beverages during the review question. In most cases, it was beverages that we picked up--additional nursing occasions, apple juice before breakfast and in the evening, a breakfast bottle, and sips of the mother's Coke. The foods we picked up included a sandwich for lunch, pretzels that the mother was eating that the infant wanted a taste of, popcorn while walking in the park, and Ritz crackers. This prompts us to make two recommendations. First, in order to get a more complete listing of foods before the details are gathered, we recommend adding a probe after the Quick List which asks if the infant had any additional snacks or beverages. Note in the discussion below that we are recommending a similar probe for children. Second, ARS should decide if they are interested in capturing foods that children eat as a "taste" of someone else's food. If so, a statement to this effect should be added to the introduction which explains the adult/child interaction that we are recommending.

During our interviews with infants, there were some points that arose that we note here. First, as mentioned earlier, several respondents did not think the gum question was appropriate. Also, a couple of our respondents were embarrassed that they didn't know their infant's height. They usually could give a reasonable estimate of their weight, but unless they had been to the doctor recently, they knew that what they had been told at an earlier doctor visit was not a reasonable answer. The reference period of one year on the food list was confusing to the parent if the child was less than one year old. Finally, also on the food list, there was some question by respondents as to whether they should include foods that infants had tasted but didn't eat much of because they didn't like the food. We recommend that infants be skipped out of the gum question, and that the wording of the food list be revised for children under the age of 12 months. Instead of "During the past 12 months, that is, since last (NAME OF MONTH), has (NAME) eaten any (FOOD) in any form?", the question should read "Has (NAME) ever eaten (FOOD) in any form?".

IMPROVING THE REPORTING OF CHILDREN'S INTAKE

As mentioned above, the review questions with children picked up additional foods. This happened in 6 of our 7 interviews with children, and seems to indicate a lack of coverage earlier in the interview. The foods that were missed included drinks with meals, snacks after school and while doing homework, snacks after dinner or before bed, and a snack for a birthday celebration at school. This suggests that snacks are often an integral part of a child's diet.

As noted earlier in the report, we recommend revising the introduction to the Quick List and further explaining to both the parent and the child what is expected of them. This may give the children a better idea that we want them to report all of their food intake. However, to stress this again we recommend adding probes after the Quick List and before the introduction to the food descriptions and amounts. Since snacks and drinks are what were missed most often, they should be the focus of the probes. We have developed the following probes that could be used to elicit this information:

"Did you have anything to drink yesterday that you didn't tell me about?" and

"Did you have any snacks yesterday that you didn't tell me about, such as during school or daycare, when you got home from school or daycare, or before you went to bed?"

However, we stress that these probes have not been tested, and testing would be a requirement before they could be added to the questionnaire.

CONCLUSIONS

Throughout this report, we have tried to address the issues that ARS posed to us. Although we have made our comments based on a "paper document" questionnaire, we feel that automating this questionnaire could reduce both the interviewer's and respondent's task.

We feel that the flow of the Day 1 intake portion should be revised to ask where the food was obtained and whether or not it was eaten at home after the details are obtained for the particular food and before the review. The review is meant to be another attempt to have the respondent think about any food or beverage they may have consumed. Since many respondents seemed to use their activities as a cue for this, we think future research on this item which incorporates cuing the respondent by activities may be productive.

Ingredients are a complex issue that are a critical part of the FIB. Whether a respondent can be expected to report details of ingredients is dependent upon the respondent's level of involvement in the preparation. We feel that if the respondent did not prepare the food, the only questions that should be asked are those for which the respondent could likely "see" the answer. There are many procedural issues such as home recipe, commercial preparation, and how to report foods such as rice and chicken that we have addressed. These issues are intertwined and should be carefully reviewed and integrated.

Interviewing children under the age of 12 has its own distinctions. We believe that it is important to unite the child and parent as a team at the beginning of the interview and give them standardized guidelines on what is expected of them.

REFERENCES

DeMaio, T., S. Ciochetto, W. Davis, M. Salo, and P. Beatty, "Report on Cognitive Interviews and Other Recommendations for the Continuing Survey of Food Intakes by Individuals Questionnaires," September 3, 1992.

OMB #: 0586-0014

Expires: October 31, 1996

WHAT WE EAT IN AMERICA: 1994-1996

DAY ONE INTAKE QUESTIONNAIRE

PLACE CASE LABEL HERE

SAMPLE PERSON #: |__|__|

INTERVIEWER NAME: _____

|__|__|:|__|__| AM 1
TIME STARTED PM 2

INTERVIEWER ID: |__|__|

DATE OF INTERVIEW: |__|__| - |__|__| - 19 |__|__|
MO DA YR

|__|__|:|__|__| AM 1
TIME ENDED PM 2

DAY OF INTERVIEW: _____

INTERVIEW CONDUCTED:

IN PERSON ①
BY TELEPHONE 2

FIRST NAME OF
SAMPLE PERSON: _____

DATE OF BIRTH: |__|__| - |__|__| - |__|__|__|__|
MO DA YEAR

OR
AGE: |__|__| YRS 1
MOS 2

SEX: M 1 F 2

FOR HOME OFFICE USE ONLY

DATE RECEIVED: _____

VERIFIER ID: _____

MC: ___ YES ___ NO

BATCH #: _____

Conducted for the United States Department of Agriculture
by Westat Inc., Rockville, MD

DAY 1

1.

HAND
CARD
I1

I'd like you to tell me everything (you/NAME) had to eat and drink all day yesterday, (DAY), from midnight to midnight. Include everything (you/NAME) ate and drank at home and away -- even snacks, coffee, and alcoholic beverages. [DO NOT INTERRUPT RESPONDENT. USE HANDCARD I1 IF NECESSARY.]

[IF INFANT OR CHILD SP:] I'd like you to tell me everything (NAME) had to eat and drink all day yesterday, (DAY), from midnight to midnight. Include everything (he/she) ate and drank at home and away, including snacks and drinks (and bottles or breast milk).

[WHEN RESPONDENT STOPS, ASK: Anything else?]

Now I'm going to ask you for more detail about the foods and beverages you just listed. I will be using this notebook to find the specific questions I need to ask. When you remember anything else (you/NAME) ate or drank as we go along, please tell me.

When I ask about amounts, you can use these measuring guides: the cups and spoons for volume of foods; the ruler for length, width, and height of foods; the sticks for thickness of meat, poultry, and cheese; and the circles on the card for the diameter of round foods. Please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank at home yesterday, or check any package labels that may be helpful.

WHEN ASKING ABOUT FIRST FOOD RECORDED ON QUICK LIST, GO TO 2b.

- 2a. Did (you/NAME) have (NEXT QUICK LIST ITEM) at (TIME) with (your/his/her) (OCCASION) or was that at another time? [CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST. IF SAME TIME AND OCCASION, SKIP TO BOX 1; IF AT ANOTHER TIME, ASK Q2b.]
- 2b. About what time did (you/NAME) begin to (eat/drink) the (FOOD)? [OR CONFIRM IF RECORDED ON QUICK LIST]
- 3. Looking at this card, please tell me what (you/NAME) would call this occasion? [OR CONFIRM IF RECORDED ON QUICK LIST]

HAND
CARD
I2

- | | |
|--------------|-------------------------------|
| 01 BREAKFAST | 06 FOOD AND/OR BEVERAGE BREAK |
| 02 BRUNCH | SNACK |
| 03 LUNCH | ALCOHOLIC BEVERAGE |
| 04 DINNER | OTHER BEVERAGE |
| 05 SUPPER | 07 FEEDING (INFANT ONLY) |
| | 08 OTHER (SPECIFY) |

BOX 1

STEP 1: TRANSFER QUICK LIST FOOD TO THE FOOD/DRINK COLUMN. CHECK OFF FOOD IN QUICK LIST AS IT IS TRANSFERRED.

STEP 2 (Q4): GO TO FIB COLUMN Q4 FOR FOOD PROBES. BE SURE TO REQUEST FOOD LABELS IF RESPONDENT CANNOT ANSWER PROBES IN COLUMN Q4.

STEP 3 (Q5): GO TO FIB COLUMN Q5 HEADING FOR AMOUNT QUESTION.

STEP 4: RETURN TO Q2a FOR NEXT FOOD RECORDED IN QUICK LIST.

REVIEW: Now let's see if I have everything. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about, including anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.

- a. At (EARLIEST TIME) (you/NAME) had (FOODS) for (EARLIEST OCCASION). . . Did (you/he/she) have anything to eat or drink before that, starting at midnight?
- b. Next, at (TIME) (you/he/she) had (FOODS) for (OCCASION). . . Did (you/he/she) have anything to eat or drink between (LAST OCCASION) at (LAST TIME) and (THIS OCCASION) at (THIS TIME)? [REPEAT b FOR EACH OCCASION]
- c. Did (you/he/she) have anything to eat or drink yesterday after (LAST TIME) but before midnight?

Now let's go back to the beginning of the day and find out where (you/NAME), or other people who live here, obtained the food (you/he/she) ate and where (you/he/she) ate it.

7. (Looking at this card) Where did (you/he/she) obtain this (FOOD/MOST OF THE INGREDIENTS FOR THIS FOOD)?



- | | |
|---|---|
| <ul style="list-style-type: none"> 01 STORE, SUCH AS
SUPERMARKET, GROCERY STORE,
OR WAREHOUSE, CONVENIENCE
STORE, DRUG STORE, OR
GAS STATION
SPECIALTY STORE SUCH AS BAKERY,
DELI, SEAFOOD, ETHNIC FOOD,
HEALTH FOOD
COMMISSARY
PRODUCE STAND OR FARMER'S
MARKET 02 RESTAURANT WITH WAITER/WAITRESS
SERVICE 03 FAST FOOD PLACE, PIZZA PLACE 04 BAR, TAVERN, LOUNGE 05 SCHOOL CAFETERIA 06 OTHER CAFETERIA 07 VENDING MACHINE 08 CHILD CARE CENTER, FAMILY DAY
CARE HOME, ADULT DAY CARE | <ul style="list-style-type: none"> 09 SOUP KITCHEN, SHELTER, FOOD PANTRY 10 MEALS ON WHEELS 11 OTHER COMMUNITY FOOD PROGRAM 12 GROWN OR CAUGHT BY YOU OR SOMEONE
YOU KNOW <p>IF FISH OR SEAFOOD, ASK: Did it come from a...</p> <ul style="list-style-type: none"> 71 Freshwater lake, pond, or river 72 The ocean, or 73 A bay, sound, or estuary? 74 DON'T KNOW BODY OF WATER |
|---|---|

8. Did (you/NAME) (eat/drink) this (FOOD) at your home?

IF YES, GO BACK TO Q7 FOR NEXT FOOD.
IF NO, GO TO Q9.

9. Before (you/NAME) (ate/drank) this particular (FOOD), was it ever at your home?

REPEAT Q7-9 FOR EACH FOOD.

HAND
CARD
15

Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday, regardless of where (you/he/she) drank it. By plain drinking water, I mean tap water or any bottled water that is not carbonated, with nothing added to it, not even lemon.

15. How many ounces of plain drinking water did (you/he/she) drink yesterday?

|_|_|_|
OUNCES

NONE 000 (Q18)

16. How much of this plain drinking water came from your home? Would you say all, most, some, or none?

ALL 1 (Q18)
MOST 2
SOME 3
NONE 4

17. What was the main source of plain drinking water that did not come from your home? Was it tap water, water from a drinking fountain, bottled water, or something else?

TAP WATER AND/OR DRINKING FOUNTAIN 1
BOTTLED WATER 2
OTHER SOURCE 3
(SPECIFY) _____
DON'T KNOW 8

18. (Are you/Is NAME) on any kind of diet either to lose weight or for some other health-related reason?

YES 1
NO 2 (Q22)

DAY 1

1.



Now I'm going to ask you some questions about what (you/NAME) eat and drink. We are interested in everything (you/NAME) ate or drank yesterday, both at home and away. By "yesterday," I mean the period beginning at 12 a.m. midnight on (DAY) and ending last night at midnight.

So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks, (coffee and alcoholic beverages./and drinks (and bottles or breast milk.))
DO NOT INTERRUPT RESPONDENT. USE HAND CARD 11 IF NECESSARY.

WHEN RESPONDENT STOPS, ASK: Anything else?

Now I'm going to ask you specific questions about the foods and beverages we just listed. I will be using this special notebook of questions for the foods you just told me about. When you remember anything else (you/NAME) ate as we go along, please tell me.

When I ask about amounts, you can use these measuring guides: the cups and spoons for volumes of foods; the ruler for length, width, and heights of foods; the sticks for thickness of meat, poultry, and cheeses; and the circles on the card for the diameter of round foods. Please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank at home yesterday, or check any package label that may be helpful.

WHEN ASKING ABOUT FIRST FOOD RECORDED ON QUICK LIST, GO TO Q2b.

- 2a. CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST.
Did (you/NAME) have (NEXT QUICK LIST ITEM) at (TIME) with (your/his/her) (OCCASION) or was that at another time? IF SAME OCCASION, SKIP TO BOX 1; IF AT ANOTHER TIME, ASK Q2b.
- 2b. CONFIRM IF RECORDED ON QUICK LIST.
About what time did (you/NAME) begin to (eat/drink) the (FOOD)?
3. CONFIRM IF RECORDED ON QUICK LIST.
Looking at this card, please tell me what (you/NAME) would call this occasion.



01 BREAKFAST	06 FOOD AND/OR BEVERAGE BREAK
02 BRUNCH	SNACK
03 LUNCH	ALCOHOLIC BEVERAGE
04 DINNER	OTHER BEVERAGE
05 SUPPER	07 FEEDING (INFANT ONLY)
	08 OTHER (SPECIFY)

BOX 1

- STEP 1: TRANSFER QUICK LIST FOOD TO THE FOOD/DRINK COLUMN. CHECK OFF FOOD IN QUICK LIST AS IT IS TRANSFERRED.
- STEP 2 (Q4): GO TO FIB COLUMN Q4 FOR FOOD PROBES. BE SURE TO REQUEST FOOD LABELS IF RESPONDENT CANNOT ANSWER PROBES IN COLUMN Q4.
- STEP 3 (Q5): GO TO FIB COLUMN Q5 HEADING FOR AMOUNT DESIGNATION.
- STEP 4: RETURN TO Q2a FOR NEXT FOOD RECORDED IN QUICK LIST.

REVIEW: Now let's see if I have everything. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about, including anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.

- a. At (EARLIEST TIME) (you/NAME) had (FOODS) for (EARLIEST OCCASION). . .
Did (you/he/she) have anything to eat or drink before that, starting at midnight?
- b. Next, at (TIME) (you/he/she) had (FOODS) for (OCCASION). . .
Did (you/he/she) have anything to eat or drink between (LAST OCCASION) at (LAST TIME) and (THIS OCCASION) at (THIS TIME)?
[REPEAT b FOR EACH OCCASION]
- c. Did (you/he/she) have anything to eat or drink yesterday after (LAST TIME) but before midnight?

Now let's go back to the beginning of the day and find out where (you/NAME), or other people who live here, obtained the food (you/he/she) ate and where (you/he/she) ate it.

7. (Looking at this card) Where did (you/he/she) obtain this (FOOD/MOST OF THE INGREDIENTS FOR THIS FOOD)?

HAND CARD I3

- | | |
|--|---|
| <p>01 STORE, SUCH AS
SUPERMARKET, GROCERY STORE,
OR WAREHOUSE, CONVENIENCE
STORE, DRUG STORE, OR
GAS STATION
SPECIALTY STORE SUCH AS BAKERY,
DELI, SEAFOOD, ETHNIC FOOD,
HEALTH FOOD
COMMISSARY
PRODUCE STAND OR FARMER'S
MARKET</p> <p>02 RESTAURANT WITH WAITER/WAITRESS
SERVICE</p> <p>03 FAST FOOD PLACE, PIZZA PLACE</p> <p>04 BAR, TAVERN, LOUNGE</p> <p>05 SCHOOL CAFETERIA</p> <p>06 OTHER CAFETERIA</p> <p>07 VENDING MACHINE</p> <p>08 CHILD CARE CENTER, FAMILY DAY
CARE HOME, ADULT DAY CARE</p> | <p>09 SOUP KITCHEN, SHELTER, FOOD PANTRY</p> <p>10 MEALS ON WHEELS</p> <p>11 OTHER COMMUNITY FOOD PROGRAM</p> <p>12 GROWN OR CAUGHT BY YOU OR SOMEONE
YOU KNOW</p> <p>IF FISH OR SEAFOOD, ASK: Did it come from a...</p> <p>71 Freshwater lake, pond, or river</p> <p>72 The ocean, or</p> <p>73 A bay, sound, or estuary?</p> <p>74 DON'T KNOW BODY OF WATER</p> <p>13 SOMEONE ELSE/GIFT</p> <p><u>SOME OTHER PLACE (PLEASE DESCRIBE)</u></p> <p>14 MAIL ORDER PURCHASE</p> <p>15 COMMON COFFEE POT OR
SNACK TRAY</p> <p>16 RESIDENTIAL DINING FACILITY</p> <p>17 OTHER (SPECIFY)</p> <p>98 DON'T KNOW</p> |
|--|---|

8. Did (you/NAME) (eat/drink) this (FOOD) at your home?

IF YES, GO BACK TO Q7 FOR NEXT FOOD. IF NO, GO TO Q9.
--

9. Before (you/NAME) (ate/drank) this particular (FOOD), was it ever at your home?

REPEAT Q7-9 FOR EACH FOOD.

10. Was the amount of food that (you/NAME) ate yesterday about usual, less than usual, or more than usual?

-] USUAL (Q13)
-] LESS THAN USUAL (Q11)
-] MORE THAN USUAL (Q12)

11. What is the main reason the amount (you/NAME) ate yesterday was less than usual?

----- (Q13)

12. What is the main reason the amount (you/NAME) ate yesterday was more than usual?

13. Did you chew gum yesterday?

-] YES
-] NO (Q17)

14. What was the brand name?

15. Was it regular, sugar-free, or something else?

16. How many pieces did you chew yesterday?

17. <HANDCARD I4> What type of salt, if any, (do you/does NAME) add to (your/his/her) food at the table? Would you say it is ordinary salt, seasoned salt, or a salt substitute?

-] ORDINARY SALT
-] SEASONED SALT OR OTHER FLAVORED SALT
-] LITE SALT
-] SALT SUBSTITUTE
-] NONE
-] DON'T KNOW

18. How often (do you/does NAME) add (ANSWER in Q.17) to (your/his/her) food at the table? Is it always, frequently, sometimes, or rarely?

-] ALWAYS
-] FREQUENTLY
-] SOMETIMES
-] RARELY

HANDCARD 15 - Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. By plain drinking water, I mean tap water or any bottled water that is not carbonated, with nothing added to it, not even lemon.

19. Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?
 Yes
 No
20. Did (you/NAME) drink any bottled water yesterday?
 Yes
 No
- 21a. Did (you/NAME) drink any plain drinking water from any other source yesterday?
 Yes
 No - GO TO CHECK ITEM 1
- 1b. What was the source? _____

CHECK ITEM 1
Did respondent report drinking any tap water or water from a drinking fountain yesterday (Yes in Q19)?
<input type="checkbox"/> Yes - CONTINUE TO Q22
<input type="checkbox"/> No - GO TO CHECK ITEM 2

2. How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from the tap or water fountain?
_____ Fl. oz.
3. How much of this water came from (your/his/her) home? Would you say all, most, some, or none?
 All
 Most
 Some
 None

CHECK ITEM 2
Did respondent report drinking any bottled water yesterday (Yes in Q20)?
<input type="checkbox"/> Yes - CONTINUE TO Q24
<input type="checkbox"/> No - GO TO CHECK ITEM 3

4. How many fluid ounces of bottled water did (you/NAME) drink yesterday?
_____ Fl. oz.

CHECK ITEM 3
Did respondent report drinking from any other source of water (Yes in Q21a)?
<input type="checkbox"/> Yes - CONTINUE TO Q25
<input type="checkbox"/> No - GO TO Q26

5. How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from (SOURCES LISTED IN Q21b)?
_____ Fl. oz.

20. (Are you/Is NAME) on any kind of diet either to lose weight or for some other health-related reason?
 Yes
 No - GO TO Q30

17. During the past 12 months, that is, since last (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?

	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>
Artichokes	1	2	Grapefruit, other than juice	1	2
Asparagus	1	2	Cantaloupe	1	2
Broccoli	1	2	Honeydew melon	1	2
Brussels sprouts	1	2	Watermelon	1	2
Cauliflower	1	2	Nectarines	1	2
Eggplant	1	2	Pears	1	2
Kale	1	2	Plums	1	2
Swiss chard	1	2	Rhubarb	1	2
Okra	1	2	Chicken liver	1	2
Spinach	1	2	Beef, veal or pork liver	1	2
Summer squash (thin skin)	1	2	Lamb	1	2
Winter squash (hard skin)	1	2	Shellfish	1	2
Sweet potato or yams	1	2	Fish, other than shellfish or canned fish	1	2
Turnips, other than greens	1	2	IF YES: Was any of the fish you ate caught by you or someone you know?	1	2
Avocado or guacamole	1	2			

DAY 1

1.



Now I'm going to ask you some questions about what (you/NAME) eat and drink. We are interested in everything (you/NAME) ate or drank yesterday, both at home and away. By "yesterday," I mean the period beginning at 12 a.m. midnight on (DAY) and ending last night at midnight.

So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks, (coffee and alcoholic beverages./and drinks (and bottles or breast milk.))
DO NOT INTERRUPT RESPONDENT. USE HAND CARD 11 IF NECESSARY.

WHEN RESPONDENT STOPS, ASK: Anything else?

Now I'm going to ask you specific questions about the foods and beverages we just listed. I will be using this special notebook of questions for the foods you just told me about. When you remember anything else (you/NAME) ate as we go along, please tell me.

WHEN ASKING ABOUT FIRST FOOD RECORDED ON QUICK LIST, GO TO 2b.

2a.

CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST.

Did (you/NAME) have (NEXT QUICK LIST ITEM) at (TIME) with (your/his/her) (OCCASION) or was that at another time? IF SAME OCCASION, SKIP TO BOX 1; IF AT ANOTHER TIME, ASK 2b.

2b.

CONFIRM IF RECORDED ON QUICK LIST.

About what time did (you/NAME) begin to (eat/drink) the (FOOD)?

3.

CONFIRM IF RECORDED ON QUICK LIST.

Looking at this card, please tell me what (you/NAME) would call this occasion.



01 BREAKFAST	06 FOOD AND/OR BEVERAGE BREAK
02 BRUNCH	SNACK
03 LUNCH	ALCOHOLIC BEVERAGE
04 DINNER	OTHER BEVERAGE
05 SUPPER	07 FEEDING (INFANT ONLY)
	08 OTHER (SPECIFY)

WHEN ASKING ABOUT FIRST FOOD RECORDED ON QUICK LIST, GO TO Q3a; IF ANOTHER FOOD, GO TO BOX 1.

3a.

When I ask about amounts, you can use these measuring guides: the cups and spoons for volumes of foods; the ruler for length, width, and heights of foods; the sticks for thickness of meat, poultry, and cheeses; and the circles on the card for the diameter of round foods. Please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank at home yesterday, or check any package label that may be helpful.

BOX 1

STEP 1: TRANSFER QUICK LIST FOOD TO THE FOOD/DRINK COLUMN. CHECK OFF FOOD IN QUICK LIST AS IT IS TRANSFERRED.

STEP 2 (Q4): GO TO FIB COLUMN Q4 FOR FOOD PROBES. BE SURE TO REQUEST FOOD LABELS IF RESPONDENT CANNOT ANSWER PROBES IN COLUMN Q4.

STEP 3 (Q5): GO TO FIB COLUMN Q5 HEADING FOR AMOUNT DESIGNATION.

STEP 4: RETURN TO Q2a FOR NEXT FOOD RECORDED IN QUICK LIST.

REVIEW: Now let's see if I have everything. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about, including anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.

- a. At (EARLIEST TIME) (you/NAME) had (FOODS) for (EARLIEST OCCASION)...
Did (you/he/she) have anything to eat or drink before that, starting at midnight?
- b. Next, at (TIME) (you/he/she) had (FOODS) for (OCCASION)...
Did (you/he/she) have anything to eat or drink between (LAST OCCASION) at (LAST TIME) and (THIS OCCASION) at (THIS TIME)?
[REPEAT b FOR EACH OCCASION]
- c. Did (you/he/she) have anything to eat or drink yesterday after (LAST TIME) but before midnight?

Now let's go back to the beginning of the day and find out where (you/NAME), or other people who live here, obtained the food (you/he/she) ate and where (you/he/she) ate it.

7. (Looking at this card) Where did (you/he/she) obtain this (FOOD/MOST OF THE INGREDIENTS FOR THIS FOOD)?

HAND CARD 13

- | | |
|---|---|
| <ol style="list-style-type: none"> 01 STORE, SUCH AS
SUPERMARKET, GROCERY STORE,
OR WAREHOUSE, CONVENIENCE
STORE, DRUG STORE, OR
GAS STATION SPECIALTY STORE SUCH AS BAKERY,
DELI, SEAFOOD, ETHNIC FOOD,
HEALTH FOOD COMMISSARY
PRODUCE STAND OR FARMER'S
MARKET 02 RESTAURANT WITH WAITER/WAITRESS
SERVICE 03 FAST FOOD PLACE, PIZZA PLACE 04 BAR, TAVERN, LOUNGE 05 SCHOOL CAFETERIA 06 OTHER CAFETERIA 07 VENDING MACHINE 08 CHILD CARE CENTER, FAMILY DAY
CARE HOME, ADULT DAY CARE | <ol style="list-style-type: none"> 09 SOUP KITCHEN, SHELTER, FOOD PANTRY 10 MEALS ON WHEELS 11 OTHER COMMUNITY FOOD PROGRAM 12 GROWN OR CAUGHT BY YOU OR SOMEONE
YOU KNOW <p>IF FISH OR SEAFOOD, ASK: Did it come from a...</p> <ol style="list-style-type: none"> 71 Freshwater lake, pond, or river 72 The ocean, or 73 A bay, sound, or estuary? 74 DON'T KNOW BODY OF WATER |
|---|---|

13 SOMEONE ELSE/GIFT

SOME OTHER PLACE (PLEASE DESCRIBE)

- 14 MAIL ORDER PURCHASE
- 15 COMMON COFFEE POT OR
SNACK TRAY
- 16 RESIDENTIAL DINING FACILITY
- 17 OTHER (SPECIFY)
- 98 DON'T KNOW

8. Did (you/NAME) (eat/drink) this (FOOD) at your home?

IF YES, GO BACK TO Q7 FOR NEXT FOOD. IF NO, GO TO Q9.
--

9. Before (you/NAME) (ate/drank) this particular (FOOD), was it ever at your home?

REPEAT Q7-9 FOR EACH FOOD.

10. Was the amount of food that (you/NAME) ate yesterday about usual, less than usual, or more than usual?

-] USUAL (Q13)
-] LESS THAN USUAL (Q11)
-] MORE THAN USUAL (Q12)

11. What is the main reason the amount (you/NAME) ate yesterday was less than usual?

----- (Q13)

12. What is the main reason the amount (you/NAME) ate yesterday was more than usual?

13. Did you chew gum yesterday?

-] YES
-] NO (Q17)

14. What was the brand name?

15. Was it regular, sugar-free, or something else?

16. How many pieces did you chew yesterday?

17. <HANDCARD I4> What type of salt, if any, (do you/does NAME) add to (your/his/her) food at the table? Would you say it is ordinary salt, seasoned salt, or a salt substitute?

-] ORDINARY SALT
-] SEASONED SALT OR OTHER FLAVORED SALT
-] LITE SALT
-] SALT SUBSTITUTE
-] NONE
-] DON'T KNOW

18. How often (do you/does NAME) add (ANSWER in Q.17) to (your/his/her) food at the table? Is it always, frequently, sometimes, or rarely?

-] ALWAYS
-] FREQUENTLY
-] SOMETIMES
-] RARELY

MANDCARD 15 - Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. By plain drinking water, I mean tap water or any bottled water that is not carbonated, with nothing added to it, not even lemon.

9. Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?
 Yes
 No
10. Did (you/NAME) drink any bottled water yesterday?
 Yes
 No
- 1a. Did (you/NAME) drink any plain drinking water from any other source yesterday?
 Yes
 No - GO TO CHECK ITEM 1
- 1b. What was the source? _____

<p>CHECK ITEM 1</p> <p>Did respondent report drinking any tap water or water from a drinking fountain yesterday. (Yes in Q19)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q22</p> <p><input type="checkbox"/> No - GO TO CHECK ITEM 2</p>
--

How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from the tap or water fountain?
_____ Fl. oz.

- How much of this water came from (your/his/her) home? Would you say all, most, some, or none?
- All
 Most
 Some
 None

<p>CHECK ITEM 2</p> <p>Did respondent report drinking any bottled water yesterday (Yes in Q20)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q24</p> <p><input type="checkbox"/> No - GO TO CHECK ITEM 3</p>

How many fluid ounces of bottled water did (you/NAME) drink yesterday?
_____ Fl. oz.

<p>CHECK ITEM 3</p> <p>Did respondent report drinking from any other source of water (Yes in Q21a)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q25</p> <p><input type="checkbox"/> No - GO TO Q26</p>
--

How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from (SOURCES LISTED IN Q21b)?
_____ Fl. oz.

- (Are you/Is NAME) on any kind of diet either to lose weight or for some other health-related reason?
- Yes
 No - GO TO Q30

17. During the past 12 months, that is, since last (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?

	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>
Artichokes	1	2	Grapefruit, other than juice	1	2
Asparagus	1	2	Cantaloupe	1	2
Broccoli	1	2	Honeydew melon	1	2
Brussels sprouts	1	2	Watermelon	1	2
Cauliflower	1	2	Nectarines	1	2
Eggplant	1	2	Pears	1	2
Kale	1	2	Plums	1	2
Swiss chard	1	2	Rhubarb	1	2
Okra	1	2	Chicken liver	1	2
Spinach	1	2	Beef, veal or pork liver	1	2
Summer squash (thin skin)	1	2	Lamb	1	2
Winter squash (hard skin)	1	2	Shellfish	1	2
Sweet potato or yams	1	2	Fish, other than shellfish or canned fish	1	2
Turnips, other than greens	1	2	IF YES: Was any of the fish you ate caught by you or someone you know?	1	2
Avocado or guacamole	1	2			

DAY 1

Attachment C
Round 1,
Phase 2

1.



Now I'm going to ask you some questions about what (you/NAME) ate and drank yesterday. We are interested in everything (you/NAME) ate or drank, both at home and away. By "yesterday," I mean the period beginning at 12 a.m. midnight on (DAY) and ending last night at midnight.

So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks, (coffee and alcoholic beverages./and drinks (and bottles or breast milk.))
DO NOT INTERRUPT RESPONDENT. USE HAND CARD 11 IF NECESSARY.

WHEN RESPONDENT STOPS, ASK: Anything else?

Now I'm going to ask you specific questions about the foods and beverages we just listed. I will be using this special notebook of questions to get exact details for the foods you just told me about. When I ask about amounts, you can use these measuring guides. Also, please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank yesterday, or check any package label that may be helpful.

When you remember anything else (you/NAME) ate or drank as we go along, please tell me.

WHEN ASKING ABOUT FIRST FOOD RECORDED ON QUICK LIST, GO TO Q2b.

- 2a. CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST.
Did (you/NAME) have (NEXT QUICK LIST ITEM) with (your/his/her) (OCCASION) or was that at another time? IF SAME OCCASION, SKIP TO BOX 1; IF AT ANOTHER TIME, ASK Q2b.
- 2b. CONFIRM IF RECORDED ON QUICK LIST.
About what time did (you/NAME) begin to (eat/drink) the (FOOD)?
3. CONFIRM IF RECORDED ON QUICK LIST.
Looking at this card, please tell me what (you/NAME) would call this occasion.



01 -BREAKFAST	06 FOOD AND/OR BEVERAGE BREAK
02 BRUNCH	SNACK
03 LUNCH	ALCOHOLIC BEVERAGE
04 DINNER	OTHER BEVERAGE
05 SUPPER	07 FEEDING (INFANT ONLY)
	08 OTHER (SPECIFY)

BOX 1

- STEP 1: TRANSFER QUICK LIST FOOD TO THE FOOD/DRINK COLUMN. CHECK OFF FOOD IN QUICK LIST AS IT IS TRANSFERRED.
- STEP 2 (Q4): GO TO FIB COLUMN Q4 FOR FOOD PROBES. BE SURE TO REQUEST FOOD LABELS IF RESPONDENT CANNOT ANSWER PROBES IN COLUMN Q4.
- STEP 3 (Q5): GO TO FIB COLUMN Q5 HEADING FOR AMOUNT DESIGNATION.
- STEP 4: RETURN TO Q2a FOR NEXT FOOD RECORDED IN QUICK LIST.

REVIEW: Now let's see if I have everything. I'd like you to try to remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about, including anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.

- a. At (EARLIEST TIME) (you/NAME) had (FOODS) for (EARLIEST OCCASION)...
Did (you/he/she) have anything to eat or drink before that, starting at midnight?
- b. Next, at (THIS TIME) (you/he/she) had (FOODS) [for OCCASION]...
Did (you/he/she) have anything to eat or drink between (FOOD if not a meal/LAST OCCASION) as (last time) and (FOOD if not a meal/THIS OCCASION) AT (THIS TIME)?
[REPEAT b for each occasion]
- c. Did (you/he/she) have anything to eat or drink yesterday after (LAST TIME) but before midnight?

Now let's go back to the beginning of the day and find out where (you/NAME), or other people who live here, obtained the food (you/he/she) ate and where (you/he/she) ate it.

7. (Looking at this card) Where did (you/he/she) obtain this (FOOD/MOST OF THE INGREDIENTS FOR THIS FOOD)?

HAND
CARD
13

- | | |
|---|--|
| <ul style="list-style-type: none"> 01 STORE, SUCH AS
SUPERMARKET, GROCERY STORE,
OR WAREHOUSE, CONVENIENCE
STORE, DRUG STORE, OR
GAS STATION
SPECIALTY STORE SUCH AS BAKERY,
DELI, SEAFOOD, ETHNIC FOOD,
HEALTH FOOD
COMMISSARY
PRODUCE STAND OR FARMER'S
MARKET 02 RESTAURANT WITH WAITER/WAITRESS
SERVICE 03 FAST FOOD PLACE, PIZZA PLACE 04 BAR, TAVERN, LOUNGE 05 SCHOOL CAFETERIA 06 OTHER CAFETERIA 07 VENDING MACHINE 08 CHILD CARE CENTER, FAMILY DAY
CARE HOME, ADULT DAY CARE | <ul style="list-style-type: none"> 09 SOUP KITCHEN, SHELTER, FOOD PANTRY 10 MEALS ON WHEELS 11 OTHER COMMUNITY FOOD PROGRAM 12 GROWN OR CAUGHT BY YOU OR SOMEONE
YOU KNOW <p>IF <u>FISH OR SEAFOOD</u>, ASK: Did it come from a...</p> <ul style="list-style-type: none"> 71 Freshwater lake, pond, or river 72 The ocean, or 73 A bay, sound, or estuary? 74 DON'T KNOW BODY OF WATER |
|---|--|

13 SOMEONE ELSE/GIFT
SOME OTHER PLACE (PLEASE DESCRIBE)

- 14 MAIL ORDER PURCHASE
- 15 COMMON COFFEE POT OR
SNACK TRAY
- 16 RESIDENTIAL DINING FACILITY
- 17 OTHER (SPECIFY)
- 98 DON'T KNOW

8. Did (you/NAME) (eat/drink) this (FOOD) at your home?

IF YES, GO BACK TO Q7 FOR NEXT FOOD.
IF NO, GO TO Q9.

9. Before (you/NAME) (ate/drank) this particular (FOOD), was it ever at your home?

REPEAT Q7-9 FOR EACH FOOD.

10. Was the amount of food that (you/NAME) ate yesterday about usual, less than usual, or more than usual?

-] USUAL (Q13)
] LESS THAN USUAL (Q11)
] MORE THAN USUAL (Q12)

11. What is the main reason the amount (you/NAME) ate yesterday was less than usual?

----- (Q13)

12. What is the main reason the amount (you/NAME) ate yesterday was more than usual?

13. Did you chew gum yesterday?

-] YES
] NO (Q17)

14. What was the brand name?

15. Was it regular, sugar-free, or something else?

16. How many pieces did you chew yesterday?

17. <HANDCARD I4> What type of salt, if any, (do you/does NAME) add to (your/his/her) food at the table? Would you say it is ordinary salt, seasoned salt, or a salt substitute?

-] ORDINARY SALT
] SEASONED SALT OR OTHER FLAVORED SALT
] LITE SALT
] SALT SUBSTITUTE
] NONE
] DON'T KNOW

18. How often (do you/does NAME) add (ANSWER in Q.17) to (your/his/her) food at the table? Is it always, frequently, sometimes, or rarely?

-] ALWAYS
] FREQUENTLY
] SOMETIMES
] RARELY

<HANDCARD 15> Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. This card lists what we mean by plain drinking water. It includes tap water from any source even a well or cistern, spring water, and bottled water that is not carbonated. Do not include water with anything added to it, not even lemon.

19. Yesterday, did (you/NAME) drink any bottled water or water from a water cooler?
 Yes
 No
20. Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?
 Yes
 No
- 21a. Did (you/NAME) drink any plain drinking water from any other source yesterday?
 Yes
 No - GO TO CHECK ITEM 1
- 21b. What was the source? _____

<p>CHECK ITEM 1</p> <p>Did respondent report drinking any bottled water or water from a water cooler yesterday (Yes in Q19)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q22 <input type="checkbox"/> No - GO TO CHECK ITEM 2</p>

22. How many fluid ounces of bottled water or water from a water cooler did (you/NAME) drink yesterday?
 _____ Fl. oz.

<p>CHECK ITEM 2</p> <p>Did respondent report drinking any tap water or water from a drinking fountain yesterday (Yes in Q20)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q23 <input type="checkbox"/> No - GO TO CHECK ITEM 3</p>
--

23. How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from the tap or water fountain?
 _____ Fl. oz.

24. How much of this water came from (your/his/her) home? Would you say all, most, some, or none?
 All
 Most
 Some
 None

<p>CHECK ITEM 3</p> <p>Did respondent report drinking from any other source of water (Yes in Q21a)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q25 <input type="checkbox"/> No - GO TO Q26</p>

25. How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from (SOURCES LISTED IN Q21b)?
 _____ Fl. oz.

26. (Are you/Is NAME) on any kind of diet either to lose weight or for some other health-related reason?
 Yes
 No - GO TO Q30

50. During the past 12 months, that is, since last (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?

	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>
Artichokes	1	2	Grapefruit, other than juice	1	2
Asparagus	1	2	Cantaloupe	1	2
Broccoli	1	2	Honeydew melon	1	2
Brussels sprouts	1	2	Watermelon	1	2
Cauliflower	1	2	Nectarines	1	2
Eggplant	1	2	Pears	1	2
Kale	1	2	Plums	1	2
Swiss chard	1	2	Rhubarb	1	2
Okra	1	2	Chicken liver	1	2
Spinach	1	2	Liver from beef, veal, or pork	1	2
Thin skinned summer squash	1	2	Lamb	1	2
Thick skinned winter squash	1	2	Shrimp	1	2
Sweet potato or yams	1	2	Other shellfish	1	2
Turnips, other than greens	1	2	Canned fish	1	2
Avocado or guacamole	1	2	Any other fish	1	2
			IF YES: Was any of the		
			fish you ate caught by		
			you or someone you know?	1	2

DAY 1

1.



Now I'm going to ask you some questions about what (you/NAME) ate and drank yesterday. We are interested in everything (you/NAME) ate or drank, both at home and away. By "yesterday," I mean the period beginning at 12 a.m. midnight on (DAY) and ending last night at midnight.

So, tell me everything (you/NAME) had to eat or drink yesterday, including snacks, (coffee and alcoholic beverages./and drinks (and bottles or breast milk.))
DO NOT INTERRUPT RESPONDENT. USE HAND CARD 11 IF NECESSARY.

WHEN RESPONDENT STOPS, ASK: Anything else?

Now I'm going to ask you specific questions about the foods and beverages we just listed. I will be using this special notebook of questions to get exact details for the foods you just told me about. When I ask about amounts, you can use these measuring guides. Also, please use any of your own cups, mugs, or bowls to estimate the amount of food (you/NAME) ate or drank yesterday, or check any package label that may be helpful.

When you remember anything else (you/NAME) ate or drank as we go along, please tell me.

WHEN ASKING ABOUT FIRST FOOD RECORDED ON QUICK LIST, GO TO Q2b.

- 2a. CONFIRM IF OBVIOUS OR IF RECORDED ON QUICK LIST.
Did (you/NAME) have (NEXT QUICK LIST ITEM) with (your/his/her) (OCCASION) or was that at another time? IF SAME OCCASION, SKIP TO BOX 1; IF AT ANOTHER TIME, ASK Q2b.
- 2b. CONFIRM IF RECORDED ON QUICK LIST.
About what time did (you/NAME) begin to (eat/drink) the (FOOD)?
- 3. CONFIRM IF RECORDED ON QUICK LIST.
Looking at this card, please tell me what (you/NAME) would call this occasion.



- 01 BREAKFAST
- 02 BRUNCH
- 03 LUNCH
- 04 DINNER
- 05 SUPPER
- 06 FOOD AND/OR BEVERAGE BREAK
SNACK
- ALCOHOLIC BEVERAGE
- OTHER BEVERAGE
- 07 FEEDING (INFANT ONLY)
- 08 OTHER (SPECIFY)

BOX 1

STEP 1: TRANSFER QUICK LIST FOOD TO THE FOOD/DRINK COLUMN. CHECK OFF FOOD IN QUICK LIST AS IT IS TRANSFERRED.

STEP 2 (Q4): GO TO FIB COLUMN Q4 FOR FOOD PROBES. BE SURE TO REQUEST FOOD LABELS IF RESPONDENT CANNOT ANSWER PROBES IN COLUMN Q4.

STEP 3 (Q5): GO TO FIB COLUMN Q5 HEADING FOR AMOUNT DESIGNATION.

STEP 4: ASK QUESTIONS 7 THROUGH 9.

7. (Looking at this card,) Where did (you/NAME), or other people who live here, obtain (this food/most of the ingredients for this food)?



- | | |
|---|---|
| 01 STORE, SUCH AS
SUPERMARKET, GROCERY STORE,
OR WAREHOUSE, CONVENIENCE
STORE, DRUG STORE, OR GAS
STATION
SPECIALITY STORE SUCH AS
BAKERY, DELI, SEAFOOD, ETHNIC
FOOD, HEALTH FOOD
COMMISSARY
PRODUCE STAND/FARMER'S MKT | 10 SOUP KITCHEN, SHELTER, FOOD
PANTRY |
| 02 RESTAURANT WITH WAITER/WAITRESS
SERVICE | 11 MEALS ON WHEELS |
| 03 FAST FOOD PLACE, PIZZA PLACE | 12 OTHER COMMUNITY FOOD PROGRAM |
| 04 BAR, TAVERN, LOUNGE | 13 GROWN OR CAUGHT BY YOU OR
SOMEONE YOU KNOW |
| 05 SCHOOL CAFETERIA | IF <u>FISH OR SEAFOOD</u> , ASK:
Did it come from a... |
| 06 OTHER CAFETERIA | 71. Freshwater lake, pond, or river |
| 07 SOMEONE ELSE | 72. The ocean, or |
| 08 VENDING MACHINE | 73. A bay, sound, or estuary? |
| 09 CHILD CARE CENTER, FAMILY DAY
CARE HOME, ADULT DAY CARE | <u>SOME OTHER PLACE</u> (PLEASE DESCRIBE) |
| | 14. MAIL ORDER PURCHASE |
| | 15. COMMON COFFEE POT OR SNACK
TRAY |
| | 16. RESIDENTIAL DINING FACILITY |
| | 17. OTHER (SPECIFY) |
| | 98. DON'T KNOW |

8. Did (you/NAME) (eat/drink) this (FOOD) at your home?
IF YES, RETURN TO Q2a FOR NEXT FOOD RECORDED ON QUICK LIST
IF NO, CONTINUE WITH Q9.
9. Before (you/NAME) (ate/drank) this particular (FOOD), was it ever at your home?
RETURN TO Q2a FOR NEXT FOOD RECORDED ON QUICK LIST

REVIEW: Now let's go back to the beginning of the day. I'd like you to try remember anything else (you/NAME) ate or drank yesterday, that you haven't already told me about. Include anything (you/he/she) ate or drank while preparing a meal or while waiting to eat.

- A. You said (you/NAME) had (FIRST MEAL) at (TIME). Did you have anything to eat or drink between midnight and (TIME) (besides FOODS FROM NON-MEALS)?
CONTINUE WITH "B"
- B. Did (you/he/she) have anything else with the (FOODS) you had for (MEAL)?
CONTINUE WITH "C"
- C. Did (you/he/she) have anything (else) to drink with (MEAL)?
IF ANOTHER MEAL REPORTED, CONTINUE WITH D.
OTHERWISE SKIP TO E.
- D. You said (you/NAME) had (NEXT MEAL) at (TIME). Did you have anything else to eat or drink between (EARLIER MEAL) at (TIME) and (NEXT MEAL) at (TIME) (besides FOODS FROM NON-MEALS)?
CONTINUE WITH "B"
- E. Did (you/NAME) have anything to eat or drink after (LAST MEAL) at (TIME) but before midnight (besides FOODS FROM NON-MEALS)?

10. Was the amount of food that (you/NAME) ate yesterday about usual, less than usual, or more than usual?

-] USUAL (Q13)
] LESS THAN USUAL (Q11)
] MORE THAN USUAL (Q12)

11. What is the main reason the amount (you/NAME) ate yesterday was less than usual?

----- (Q13)

12. What is the main reason the amount (you/NAME) ate yesterday was more than usual?

13. Did you chew gum yesterday?

-] YES
] NO (Q17)

14. What was the brand name?

15. Was it regular, sugar-free, or something else?

16. How many pieces did you chew yesterday?

17. <HANDCARD I4> What type of salt, if any, (do you/does NAME) add to (your/his/her) food at the table? Would you say it is ordinary salt, seasoned salt, or a salt substitute?

-] ORDINARY SALT
] SEASONED SALT OR OTHER FLAVORED SALT
] LITE SALT
] SALT SUBSTITUTE
] NONE
] DON'T KNOW

18. How often (do you/does NAME) add (ANSWER in Q.17) to (your/his/her) food at the table? Is it always, frequently, sometimes, or rarely?

-] ALWAYS
] FREQUENTLY
] SOMETIMES
] RARELY

<HANDCARD 15> Now I'd like you to think about all of the plain drinking water that (you/NAME) had yesterday. This card lists what we mean by plain drinking water. It includes tap water from any source even a well or cistem, spring water, and bottled water that is not carbonated. Do not include water with anything added to it, not even lemon.

19. Yesterday, did (you/NAME) drink any bottled water or water from a water cooler?
 Yes
 No
20. Did (you/NAME) drink any plain drinking water from a tap or water fountain yesterday?
 Yes
 No
- 21a. Did (you/NAME) drink any plain drinking water from any other source yesterday?
 Yes
 No - GO TO CHECK ITEM 1
- 21b. What was the source? _____

<p>CHECK ITEM 1</p> <p>Did respondent report drinking any bottled water or water from a water cooler yesterday (Yes in Q19)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q22 <input type="checkbox"/> No - GO TO CHECK ITEM 2</p>
--

22. How many fluid ounces of bottled water or water from a water cooler did (you/NAME) drink yesterday?
 _____ Fl. oz.

<p>CHECK ITEM 2</p> <p>Did respondent report drinking any tap water or water from a drinking fountain yesterday (Yes in Q20)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q23 <input type="checkbox"/> No - GO TO CHECK ITEM 3</p>

23. How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from the tap or water fountain?
 _____ Fl. oz.

24. How much of this water came from (your/his/her) home? Would you say all, most, some, or none?
 All
 Most
 Some
 None

<p>CHECK ITEM 3</p> <p>Did respondent report drinking from any other source of water (Yes in Q21a)?</p> <p><input type="checkbox"/> Yes - CONTINUE TO Q25 <input type="checkbox"/> No - GO TO Q26</p>
--

25. How many fluid ounces of plain drinking water did (you/NAME) drink yesterday from (SOURCES LISTED IN Q21b)?
 _____ Fl. oz.

26. (Are you/Is NAME) on any kind of diet either to lose weight or for some other health-related reason?
 Yes
 No - GO TO Q30

50. Finally, I'm going to read a list of foods. I'd like you to tell me whether or not you have eaten the food in any form. By "any form," I mean either mixed with other foods such as salads, dips, soups or casseroles or eaten plain.

During the past 12 months, that is, since last (NAME OF MONTH), (have you/has NAME) eaten any (FOOD) in any form?

	<u>YES</u>	<u>NO</u>		<u>YES</u>	<u>NO</u>
Artichokes	1	2	Grapefruit, other than juice . . .	1	2
Asparagus	1	2	Cantaloupe	1	2
Broccoli	1	2	Honeydew melon	1	2
Brussels sprouts	1	2	Watermelon	1	2
Cauliflower	1	2	Nectarines	1	2
Eggplant	1	2	Pears	1	2
Kale	1	2	Plums	1	2
Swiss chard	1	2	Rhubarb	1	2
Okra	1	2	Chicken liver	1	2
Spinach	1	2	Liver from beef, veal, or pork .	1	2
Thin skinned summer squash .	1	2	Lamb	1	2
Thick skinned winter squash .	1	2	Shrimp	1	2
Sweet potato or yams	1	2	Other shellfish	1	2
Turnips, other than greens . . .	1	2	Canned fish	1	2
Avocado or guacamole	1	2	Any other fish	1	2
			IF YES: Was any of the		
			fish you ate caught by		
			you or someone you know?	1	2

CARD I3

1. Store, such as
 - Supermarket, grocery store, or warehouse
 - Convenience store, drug store, or gas station
 - Specialty store such as bakery, deli, seafood, ethnic food, health food
 - Commissary
 - Produce stand or farmer's market

-
2. Restaurant with waiter/waitress service
 3. Fast food place, pizza place
 4. Bar, tavern, lounge
 5. School cafeteria
 6. Other cafeteria

-
7. Someone else, gift

-
8. Vending machine

-
9. Child care center, family day care home, adult day care
 10. Soup kitchen, shelter, food pantry
 11. Meals on wheels
 12. Other community food program

-
13. Grown or caught by you or someone you know

Some other place (Please describe)

CHANGES MADE TO THE FOOD INSTRUCTION BOOKLET BEFORE PHASE 1 INTERVIEWINGGeneral Changes

Some of the changes listed here reflect handwritten revision to the FIB made by ARS prior to the start of our research. Other changes reflect our attempts to revise the FIB before we began our interviews.

Throughout the FIB, we revised the probes for fat and salt. The FAT probe now asked if any kind of oil, butter or other fat was used in cooking or preparing the (FOOD). If so, the respondent was asked what kind. Then, if butter was used, the respondent was probed to see if it was 100% real butter, margarine or something else. If margarine was used, the respondent was asked if it was margarine, butter or something else. If oil was used, the respondent was asked if it was corn oil, olive oil, peanut oil, or something else.

The SALT probe added a question which asked the type of salt that was used.

(These changes to the existing SALT and FAT probes are not listed individually in the descriptions that follow. Only places where SALT and/or FAT were added to the FIB are listed below.)

Baby Foods, Formulas, Juices

For dry baby cereal, we added a TYPE probe to begin the series which asked if that was commercially prepared specifically for infants or if that was something else. For formula that was mixed with cereal, we also added a FORM probe after BRAND that asked if the formula was ready-to-feed, liquid concentrate, powder, or something else.

For jarred baby food and baby food juice, we began the series with the same TYPE probe as mentioned above. Also, for baby food juice, we added an ADDITION probe that asked if the respondent added anything to the (FOOD).

Beverages, Milk, Cream

For milk shakes, the probes for frozen yogurt were expanded to also include frozen dessert.

For cream, creamers, or cream substitutes, a probe was added for cream substitutes only which asked if it was regular or light. It was asked after the KIND probe.

For fruit flavored drinks, ades, etc., and for water and carbonated water, another TYPE probe was added. It asked if the label gave the total percentage of juice. If the answer was "yes," it also asked what it was.

For nonalcoholic and alcoholic beer, etc., the probe for beer was expanded to include malt. A probe was added for liquor which asked what proof it was-- was it 76, 86, 100, or something else. Also, for mixed drinks or cocktails that respondents made themselves with juice that wasn't 100% juice, a probe was added, which it asked if the label gave the total percentage of juice. If the answer was yes, it also asked what it was.

Breads, Sweet Breads

An additional example was given for ADDITIONS to bread (not sweet). It directed the interviewer to page 69 for peanut butter. Also, the high fiber response option was deleted from the SOURCE probe's follow-up question for commercial breads.

For rolls, buns, etc., another ADDITION example directed the interviewer to page 23 for cream cheese.

For biscuits, if the TYPE was home recipe, then the FAT probe (see above under General Comments) was added.

For tortillas, if the TYPE was whole wheat, a probe was added which asked if the label said that it was 100% whole wheat.

For bread or rice stuffing, etc., the FAT probe was added after the TYPE questions

For cornbread, etc., the FAT probe was added after the SOURCE probe and is intended to be asked only of those respondents who report the cornbread, etc. to be made from a home recipe.

For sweet breads, etc. a reduced fat option was added to the TYPE probe.

Several probes were added to the pancakes, etc. category. First, if KIND indicated they were whole wheat, then the respondent was asked if the label said that it was 100% whole wheat. Then, a FORM question was asked to determine if the (FOOD) were commercially prepared, a home recipe (from scratch) or made from a mix. If they were commercially prepared, the brand name was asked and then the TYPE question from the original FIB was asked. If they were made from a mix, the brand name was asked for. If they were made from a mix or from a home recipe, then a series of PREPARATION questions were asked. This first asked how it was prepared and then got details on liquid, eggs, fruit, nuts, and fat.

For doughnuts, a couple of the examples (cake, raised (yeast)) for KIND were deleted. Instead, these were added as a separate probe as a TYPE question which asked specifically if the doughnut was a cake-type or yeast raised doughnut.

Candies, Syrups, Sweeteners

No changes were made in this section.

Cereal, Pasta, Rice

For ready-to-eat cereals, we replaced the BRAND probe with 2 different probes intended to collect the same information as the original BRAND probe. First we added a TYPE probe which asked what type of cereal it was and gave corn flakes, raisin bran, granola or something else as examples. The second probe was a COMPANY probe which asked the name of the company that made the cereal and gave Kellogg's, Post, General Mills, or something else as examples.

Several changes were made to the TYPE probes for rice. If it was a mixture, previously the FIB asked for the ingredients. The FIB revised prior to our research asked if the rice mixture was made from a commercial mix. If not, it guided the interviewer to the section on mixed dishes. If it was made from a commercial mix, it asked whether the respondent added anything in addition to what the directions called for. If so, it also guided the interviewer to the section on mixed dishes. If not, it asked what the ingredients were.

Cheese, Eggs, Yogurt

A probe was added in the cottage cheese section if the TYPE was lowfat which asked if it was 1% or 2% cottage cheese.

Desserts, Ice Cream, Frozen Yogurt

For cookies and brownies, a FORM probe was inserted between KIND and TYPE. The probe first asked if the (FOOD) were homemade or commercial. Then, if they were homemade, the FAT probes were added.

PREPARATION probes were added when the FORM of cakes, cupcakes, or snack cakes was from a home recipe. They asked how it was prepared and then details about eggs, and fat, and then other ingredients when the name didn't indicate the type of cake. If icing was reported, the amount questions (Q5) for a piece, for cupcakes or snack cakes, and for weight asked if the icing was eaten. If the whole cake was round, square, or rectangular, the order of the amount questions was revised and the probe whether the icing was eaten was added.

For pies, etc., FORM probes were added between KIND and ADDITIONS. The probe first asked if the (FOOD) was commercially prepared, a home recipe (from scratch), or made from a mix. If it was made from a home recipe or mix, the revised FIB asked if the crust contained any kind of oil, butter, or other fat. If so, the detail probes on fat were asked. It also asked if the filling contained any kind of oil, butter, or other fat. Again, if it did, the FAT probes were added.

For ice cream, etc., the TYPE probe was changed to a FLAVOR probe which asked what flavor it was--was it chocolate, vanilla, strawberry or something else. Also, after the FLAVOR probe, a NUTS probe was added which asked if it had nuts.

A LABEL probe was added as the last one in popsicles, etc., which asked if the label gave the percent of juice or fruit in the (FOOD).

Fruits, Vegetables

For fruits and berries, "or something else" was added to the follow-up question for the TYPE probe asked about canned fruit.

For hash browns, the FAT probe was added after the TYPE question.

Meat, Poultry, Fish

For beef, lamb, veal and game meats, an additional FORM probe was added if it was a steak, chop, rib, roast, ground or something else. For all answers besides "ground" or "something else," we asked what cut of steak, etc. it was--was it sirloin, t-bone, round or something else. If it was "ground" we asked -- was it regular, lean, extra lean or something else?

For ham or pork, an additional FORM probe was asked about the cut of the pork roast--was it shoulder, loin or something else.

Several changes were made in the poultry section. First, if it was turkey, a probe was asked if it was cooked from fresh, frozen or something else. If it was a nugget, tender, patty, or ground, a probe was added which asked if it was breast meat, dark meat, light meat or something else. We asked the BRAND probe of all forms of poultry, not just the nuggets, tenders, patties and ground. It was revised to ask if it was from a restaurant, if it had a brand name or if it was home prepared. Then, if it was from a restaurant, the name of the restaurant was asked. If it had a brand name or was home prepared, the brand name was asked. The PREPARATION probe was revised to also include rotisserie as an option, and "fried" was revised to ask about panfried or deep-fat fried.

For fish and shellfish, the TYPE probe was expanded for canned tuna and canned salmon. For canned tuna, the probe asked if it was white, albacore or something else. It also asked if it was canned in water, oil, tomato sauce, mustard or something else and whether it was regular or low sodium. For canned salmon, a probe was added which asked what kind it was - was it pink, red/sockeye or something else.

Pizza, Tacos, Frozen Meals, Mixed Dishes

Two probes were added for tacos, burritos, etc., if the respondent put the item together by him/herself. Specifically, a probe was added asking if the item had cheese, and if so we asked if it was processed, natural, imitation or something else. If it was a spread, we asked if it was regular, low sodium, lowfat, nonfat or something else. A second probe was added for chicken or turkey which asked if it was light or dark meat.

Sandwiches, Salads, Soups

For beef, ham, pork, etc., "soy products" was deleted as a response option in the MEAT probe series.

For peanut butter sandwich, etc., "reduced fat" replaced "reduced sodium" as an option under the PEANUT BUTTER probe.

Sauces, Gravies

No changes were made in this section.

Snacks

There were a couple of probes added to the nuts and seed section. First, if they were nuts (not mixed) that were coated with chocolate, a probe asked what color the chocolate was. Next, a probe was added for trail mix that asked what was in it--were there peanuts, coconut, pineapple or something else. The FIB also instructed that quantities were not needed for the ingredients of the trail mix.

Spreads, Salad Dressings

In this section, the probes discussed earlier for butter and margarine were repeated. Additionally, a category was added for oil which asked what kind it was--was it corn oil, olive oil, peanut oil or something else.

A category was also added for SALT, which asked what type of salt it was.

For peanut butter, the type probe was revised to ask about reduced fat instead of reduced sodium.

A "flavor" probe was added to the jam, jelly, fruit spread section. It asked what flavor it was - was it grape, strawberry or something else.

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A section was also added so that the SALT probe (what type was it) could be noted.

For peanut butter, the type probe was revised to ask about reduced fat instead of reduced sodium.

A "flavor" probe was added to the jam, jelly, fruit spread section. It asked what flavor it was - was it grape, strawberry or something else.