NUTRIENT DATA BASE FOR A SURVEY OF INDIVIDUAL INTAKES: NATIONWIDE FOOD CONSUMPTION SURVEY 1977-78

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Large-scale surveys such as the Nationwide Food Consumption Survey (NFCS) conducted by the U.S. Department of Agriculture (USDA) from April 1977 through March 1978 require a support system that includes several components. They are:

- names and descriptions of foods,
- a system for coding food items,
- conversions for common measures to gram weights (of quantities reported),
- rules for handling inadequately reported information, and
- food composition values for energy and nutrients.

These components are essential for processing the responses obtained in the survey in order to meet survey objectives. They made up the structure of the food/nutrient data base for the survey of individual intakes as used in the NFCS 1977-78. In the NFCS two types of food information were collected--food as used by the household unit and food as ingested by individual members. This paper deals only with the survey of food intakes by individuals. All parts of the food/nutrient data system will be discussed.

Individuals generally reported food items on the questionnaires (a 1-day recall and a 2-day record) in the order in which they were eaten, starting with the first meal or snack of the day and ending with the last. Respondents were not asked to categorize foods in any way other than by time of day each eating occasion began. This was regarded as the best way to get nonconditioned response. Thus, although data were collected in such a way that food items could be identified and classified under specific codes, the data were essentially unstructured. The coding system served as a tool to organize the individual responses for the initial processing steps such as application of the nutrient composition file and later in the execution of tabulations and analyses. Hence, the coding system gives structure which is lacking in the individual intake questionnaire. (This is in contrast to the household food use questionnaire in which foods are organized into categories and precoded.)

The content and organization of a data base are governed by objectives of the survey, characteristics of the survey responses, and plans for use of the data base. Factors considered in organizing the NFCS 1977-78 data base included:

- nutrients of interest for which there were suitable food composition data;
- nonnutritive substances of current or likely future concern (such as caffeine);
- quality and detail of collected food intake information;
- types of tabulations and analyses to be given priority;
- maintenance of linkage to data from the 1965 survey so as to study changes or trends;

- nutrient information to be retained in the basic code and nonnutrient information--such as packaging--that could be retained as a separate variable;
- minimum length of code to store information on factors affecting nutrients yet retaining flexibility for insertion of new codes;
- use of recipes or complete mixtures versus total or partial separation into ingredients or component parts;
- use of brand names versus generic identification only, as for fast foods, TV dinners, ready-to-eat cereals, and candies;
- availability of information on enriched and fortified products versus nonenriched and nonfortified products.

FOOD INTAKES--DATA COLLECTION AND DATA REDUCTION

The quality of responses in a survey materially affects how well the data base or support system will perform, and the quality of responses obtained in surveys is affected by data collection procedures. Respondents must be able and willing to give the information requested; otherwise, survey results will be invalid. The burden on the respondents must be within reasonable limits to prevent loss of interest and fatigue which can lead to poor recall and careless reporting. After data collection, appropriate treatment of the responses by reviewers/editors and coders is vital to the data reduction process in order to retain the integrity of the information about respondents' intakes.

NFCS data were collected by previously experienced interviewers who received 1 week of training in the NFCS methods. After administration of the household food use phase of the questionnaire, the interviewer administered the 1-day food intake recall questionnaire to each eligible household member present. (The day began at midnight, 12:00 a.m., and ended at 11:59 p.m.) Then individuals received instructions for keeping a record of foods and beverages consumed during the day of and the day following the interview. A set of stainless steel measuring cups and spoons and a plastic ruler was given to each household to help estimate portion sizes. A leaflet on how to describe foods and amounts eaten was left with each respondent. The interviewer coached individuals as they recorded the foods and beverages eaten earlier on the interview day. The household respondent usually reported for children under 12 and others unable to answer for themselves. Forms were left for absent members to fill out. Interviewers arranged for a return visit to review and pick up the 2-day records. Households were paid $1 for each completed 2-day record up to a limit of $10 per household.

NFCS respondents were instructed to describe each food or beverage item in detail--kind, form, preparation, brand name if well known, and any other relevant information. Each food item was recorded on a separate line along with the description and quantity eaten. The description was supposed to indicate details regarding presence of refuse in the quantity reported. Quantities were reported in measures respondents found most convenient. However, respondents were encouraged to use the measuring cups and spoons in measuring fluids and foods commonly measured by cups and spoons. Foods served by the piece were often reported in dimensions or as number of pieces. Package weight was often used for foods that were purchased in packages with weights printed on labels. If the food was a steak, for example, the weight might be for raw meat and it could include bone and uneaten fat.

The description was expected to indicate the nature of the amount reported so that the yield as ingested (cooked, without bone and uneaten fat) could be computed. Interviewers questioned respondents about entries for items suspected to include refuse along with the amounts ingested. Such probing by interviewers enhances the quality of dietary survey data.

Questionnaires were reviewed in the central office. Reviewers/editors checked for clarity, consistency, completeness, and reasonableness and decided if callbacks to the field were necessary. If not, the questionnaires were forwarded to the coders. Coding of food intake information was entered directly onto the questionnaires by trained coders following the coding manual. All food-item codes and amounts were then checked by supervisors. Guidelines were provided to achieve uniformity in the coding operation. The coded food-intake data were keyed and transferred to computer tape and thus became input into the food intake data base for subsequent processing.

The coding manual contained the several types of information which coders needed to code food intakes. These were (1) the name and description of each food item, (2) the code for each food item, (3) common measures of portions as reported, (4) weights in grams of common measures as ingested, and (5) default values to use for imprecisely reported portion sizes.

CONCEPTUALIZATION OF THE CODING SYSTEM

The NFCS coding system was planned to organize foods reported in the survey into a data base that would meet needs of prospective users of the survey results. A major principle guiding formation of the coding system was establishment of several levels of subcategories within major food groups to form hierarchies and permit regrouping on different dimensions to meet special needs. The subgroups could also be collapsed to yield more highly aggregated data. Another principle was that the coding system be flexible so that new codes could be added without disrupting existing food groupings.

A third principle was that the codes for food items should permit extraction of information of nutritional importance. A separate variable would be created to provide ancillary information such as whether the food was a single or multiple component item, and, if multiple, what it was, e.g., a sandwich made up of bread and filling or a salad with ingredients listed separately. Two additional principles:were related to this third principle. The system required that each food item be uniquely identified by its code and be described in sufficient detail that appropriate energy and nutrient values could be assigned. Also, the length of the code should be kept short so as to minimize error. A food code with seven digits was selected. Because people are accustomed to using seven-digit telephone numbers, this length of a code was viewed as practical. It was also decided, after NFCS was underway, that new foods would be added to the data base only if they were reported by respondents.

After identification of principles to guide the organization of the coding system, criteria for classifying foods into subgroups were specified. As the level of subgrouping becomes more detailed, the foods in each subgroup become more homogeneous. Among the criteria underlying formation of food groupings were the following:

- abundant source of a particular nutrient such as calcium in milk and vitamin A in deep yellow vegetables;
- varieties of a food such as varieties of cheese;
- common stage of preparation such as raw vegetables;
- common method of processing such as dried fruits;
- common method of cooking such as baked white potatoes;
- a common form of the food such as juice of citrus fruits;
- preparation or use largely for a particular age group such as commercial baby foods and baby formulas;
- accessory role of items such as pickles, relishes, olives, and table fats;
- traditional role in meals such as desserts (milk desserts);
- similarity in supplying mainly energy in the diet such as fats and oils;
- common usage of an item such as salty snacks;
- imitation, substitute, or formulated foods intended to replace a natural food such as meatless meats or soy-based milk;
- addition of a particular nutrient such as vitamin C to fruit drinks;
- modification of energy content of a type of food such as low-calorie salad dressings and diet beverages;
- common type of mixture such as soups;
- mixtures comprised of several common components such as beef with starch and vegetables;
- presence of a major common component such as alcohol in alcoholic beverages;
- a common cut of meat or poultry such as steaks or chicken breast; and
- presence of inedible parts in portions served that require computation of yield.

OPERATIONALIZING THE CODING SYSTEM

Several of the above criteria were applied in selecting the key categories of the coding system. Nine basic food commodity groups were identified by the first digit in the seven-digit food code. They were:

(1) milk and milk products;
(2) meat, poultry, and fish;
(3) eggs;
(4) legumes, nuts, and seeds;
(5) grain products;
(6) fruits;
(7) vegetables;
(8) fats and oils; and
(9) sweets, sugars, and beverages.

A tenth category, identified by 0, was created to include substances for which no nutritive values were prided in the nutrient data base. Substances such as flavorings, seasonings, and nonfood supplements were placed in this category.

The next two digits in the food code organized foods into subgroups formulated in accordance with the criteria just noted. The second digit identified major subgroupings within commodity or major food groups, and the third digit sorted foods in the major subgroupings into minor subgroups.

For example, the second digit organized fruits into citrus fruits and juices (1), dried fruits (2), fruits and berries excluding citrus and dried (3), noncitrus fruit juices and nectars (4), and baby-food fruits and juices (7); the third digit organized citrus fruits and juices into citrus fruits (1) and citrus fruit juices (2). The fourth and fifth digits were also used for this purpose in large food groups as, for example, in the fruits group. The sixth and seventh digits were reserved to carry information unique to a food item; for example, for peaches (coded 631-3562) the sixth digit indicated "frozen" and the seventh digit indicated "unsweetened."

The types of information coded in the fourth through seventh positions varied from one food subgroup to another in order to reflect the characteristics peculiar to each subgroup and depending on the size of the food group. The use of the digits in the food code to subgroup and to provide unique identification is illustrated by the fruit group's codes in Table 1.

Generally, the more nonzero digits in the fourth through seventh positions, the more detailed the description is. The more zeros in these positions, the more general is the description provided by the code. To denote the absence of detailed information, such a food within a food group was assigned a code defined as NFS for "Not Further Specified." Each NFS food item was usually assigned an identity based on the form of the food that was most frequently consumed, had the largest market share, or was representative of several such items. Respondents might not be able to describe adequately foods eaten away from home, but they could usually provide enough information to code at least the first two digits.

Information on new or unusual foods was obtained by visiting or calling stores and restaurants; from food industry fact sheets, newspapers, magazines, and cookbooks; by phone calls to foreign embassies, Government agencies such as the National Marine Fisheries Administration for fish and the Fish and Wildlife Service for game. Information on school lunch foods was found in the list of menu items supplied by the Food and Nutrition Service. Cooperative Extension Service agents provided information about unusual local foods. Nutritionists of particular ethnic backgrounds, for example, Puerto Rican, were also valuable resource people.

Some foods could be organized into more than one subgroup, depending upon the common element selected. Because only one element could be used, some arbitrary decisions about grouping foods had to be made. Mixtures were assigned to the food groups of the primary component or ingredient. Meat was usually considered to be a primary component, but sometimes it was not the largest ingredient in quantitative terms. If only small amounts of meat were included, the mixture was assigned to the food group of the major ingredient. For example, pizza was put in the grain products group. Insofar as possible, recipes were used for mixtures. But there were also instances where the components of a mixture were coded individually, especially if reported separately. If this was done for a sandwich, frozen meal, or salad, the action was documented in a separate variable (or special code) that specified the kind of mixture. Information on salads put together at salad bars could often be more accurately represented by coding each item separately. Sandwiches purchased as a unit were usually reported and coded that way but if the parts were reported separately, they were coded separately.

There are advantages to having basic food items and their "add-ons" coded individually because then they can be assigned to the most appropriate food groups and in the amounts actually eaten.

Codes for individual brand name products were used for a few products, but most food codes represented a more broadly based item, e.g., several very similar brands or generic foods. Ready-to-eat cereals were an exception, however, because formulations were often unique for each cereal, and many were highly fortified. In such cases, brand name products were identified with unique codes, although the brand names do not appear on the data tapes. In other cases, brand name products were used as the sources of information for food items because they were representative of similar foods or because they were the best sources of information for particular food items.

Some decisions about whether a food item should be assigned a new food code or be included in a group of similar foods relied on professional judgment. In some cases, the decision was based on the possible benefit from retaining identity of the food item for later reference. If the food item was assigned the food code of an existing item, its identity as a separate item was lost. Liquid protein diet is a good example. There was great concern about use of this product. Unless it were given a unique code, it would be difficult to retrieve information on usage without going back to the original records.

Application of the food coding system was not free of problems. Descriptions of food items were sometimes more detailed than coders wished, especially when respondents supplied "too much" or irrelevant information. However, respondents were more likely to report too little descriptive information than too much. For this reason, NFS food item codes were used. Frequency of use of some well-defined foods, e.g., milk with 2 percent fat, probably understates actual usage because some respondents using the product probably reported only "milk." If so, the food item was assigned an NFS code.

More detailed information can be retained in a data base if the number of food codes is not limited in any way. But with a large number of food codes, coding is more difficult and tedious because the coder must consider more food codes before selecting the code that best matches the respondent's description of the food item.

FREQUENCIES OF CODES USED IN THE 1977-78 CODING SYSTEM

How well did the coding system work for NFCS 1977-78? The total number of food codes in the data base reached by the end of the processing of the basic and supplemental surveys was 4,546 and 25 codes which were discontinued during the course of the survey (total = 4,571). (Supplemental surveys included those in Hawaii, Alaska, Puerto Rico, and special surveys in the 48 states among low-income households and among elderly households.) The number of codes used in the basic survey in the 48 states during the year was 3,702. Thus, 844 of the total codes in the data base were not used in the basic survey. Some of those unused codes were for food items retained from the 1965 survey which were not reported in NFCS 1977-78 and others were used only in the supplemental surveys.

Of the 3,702 food codes used, only 208 (5.6 percent) were assigned 1,000 or more times and only 1,005 food codes were assigned 100 or more times (27.1 percent). (See Table 2.) Of the 3,702 codes, 1,249 (33.7 percent) were used less than 10 times and 281 (7.6 percent) were used but once. The grain products group had the most food codes that were used 1,000 times or more, for 53 items (6.3 percent of the codes used in the grain products group). Of all food groups in the data base, the meat, poultry, and fish group had the largest number of used food codes, 1,069 items, of which 217 (20.3 percent) were used 100 or more times. (When uses were weighted to maintain the representativeness of the survey sample, frequencies were slightly different.)

Not Further Specified (NFS) food codes accounted for 26.2 percent of all foods and beverages reported on questionnaires. There were 572 NFS codes in the data base (15.5 percent of total food codes). The number of NFS food item codes among the 208 food codes which were assigned 1,000 times or more was 62; this was 29.8 percent of those codes used 1,000 or more times. Among those food codes used fewer than 5 times, 61 were NFS food codes (7.8 percent of items used 1 to 4 times). A large number of the seldom-used codes were in the meat group, especially for chicken and fish because many food codes in those subgroups had detailed descriptions. (See Table 3.)

Of the total food items reported in the survey from all food groups, the most belonged to the grain products group, 21.3 percent of all items reported, and the sugar, sweets, and beverage group was next with 19.4 percent. (See Table 4.) Other food groups accounted for fewer items reported. In descending order they were: milk and milk products (15.3 percent), vegetables 15.1 percent), meat group (12.6 percent), fruits (6.5 percent), fats and oils (6.1 percent), eggs (2.2 percent), and legumes and nuts (1.7 percent). Of total reported food items, 73.9 percent were accounted for by the 208 food codes used 1,000 or more times. The meat and legumes groups had the smallest proportion of their total reported items in the list of food codes used 1,000 or more times--49.9 percent and 58.6 percent, respectively.

Figures like those just mentioned provide one basis for determining how well the data base performed and how it might be revised for the next survey. Food items that were seldom reported need to be examined to determine whether they should be retained or are sufficiently similar to other food items to be combined with them. However, some food codes will need to be retained despite infrequent usage so that future usage by the population can be measured, e.g., carob.

CONVERSIONS OF MEASURES TO GRAM WEIGHTS

Quantities of food and beverages were reported as ingested in whatever way was most convenient for the respondent, but all were finally converted to the common unit, grams, for analysis. Measures commonly used in reporting each food item were listed in the coding manual along with the weight of each measure in grams. The set of standard measuring cups and spoons and the plastic ruler were expected to aid respondents in estimating amounts ingested.

"Edible portions" and portions "as ingested" can differ in a number of foods, such as meats. An edible portion of meat can be raw; whereas a portion "as ingested" is usually cooked. Also, a portion "as served" may include refuse and differ from the portion "as ingested." If amounts reported included refuse, such as rind or bones, or the amounts were for a food before cooking, e.g., raw steak or a frozen package of spinach, the yield for the amount ingested was provided. The source of information for calculating yields was Agriculture Handbook No. 102. The most frequent source of weights for common measures was Agriculture Handbook No. 456. For new foods, weights of common measures often had to be obtained by store checks, telephone calls to fast food chains or other business firms, food product fact sheets, or by purchasing and actually measuring and weighing the product.

The use of dimensions to describe regularly shaped pieces or portions was usually satisfactory if measured carefully. In such cases, the number of cubic inches in a portion was computed and then converted to grams by means of weight per cubic inch. Such factors are still tentative for a number of food items in the data base. Whenever imprecise terms such as "small," "medium," and "large" were reported, specifications of measurements regarded as small, medium, or large were necessary.

For respondents' dietary records to be acceptable, the guidelines stipulated that at least 9 out of 10 foods had to have amounts reported in measures readily converted to grams. In case portions were inadequately reported (such as "one serving") or not reported at all, a default value called "NS" (Not Specified) was provided. Every use of a default value was documented by use of a special code.

The common measures and the equivalent weight in grams for each food item coded in the data base made up a "gram conversion file" on computer tape. This file was used to compute the gram weights of measures not already in grams. Subsequently, the grams ingested of a food item were used to calculate the food's energy and nutrient content.

ENERGY AND NUTRIENT VALUES IN THE DATA BASE

The nutrient data base for NFCS 1977-78 included food composition values for energy and 14 nutrients per 100 grams for every food code in the data base. The 14 nutrients (and their units of measure) were protein (g), fat (g), carbohydrate (g), calcium (mg), iron (mg), magnesium (mg), phosphorus (mg), vitamin A value (IU), thiamin (mg), riboflavin (mg), preformed niacin (mg), vitamin B6 (mg), vitamin B12 (mcg), and vitamin C (mg). Those energy and nutrient values were supplied by the USDA Nutrient Data Research Branch (NDRB) of the Consumer Nutrition Division. Agriculture Handbook No. 8 and three of its revisions (Nos. 1, 3, and 5) were the basic source of values in the NFCS 1977-78 nutrient data base. Data supplied by food industries were also used. The source of vitamin B6 and vitamin B12 values was Home Economics Research Report No. 36.

Since the data base for individual intakes used in the Household Food Consumption Survey conducted in 1965 was the core for the NFCS 1977-78 data base, all energy and nutrient values were reviewed and most were updated to reflect recent data. The enrichment standards enacted in 1975 for bread and flour were reflected in the updated values for thiamin, riboflavin, and niacin. As new foods were reported in the survey, they were added to the nutrient data base with appropriate values assigned.

As indicated in discussing foods and their descriptions, inadequately described foods (Not Further Specified) were assigned values based on one or more of the most commonly used items in the food subgroup. Energy and nutrient values for recipes were usually based on recipes from popular cookbooks.

For the limited number of brand name products that appear in the data base, the energy and nutrient values are unique to the individual food item. In most cases, the energy and nutrient values for food items were broader and encompassed consideration of a variety of brands or food from a variety of geographical areas, seasons, stages of maturity, and other factors that affect food composition values.

A number of different food items in the data base have the same energy and nutrient values assigned to them. This happened if some attribute other than nutrient value was being tracked--such as species of fish for toxic contamination--or in the case of coffee, whether it was decaffinated or not. The forms in which foods were marketed--such as cuts of meat (ground versus solid cut)--might have the same nutrient values but their usage was important to know.

A calcium equivalent factor was also included in the nutrient data base for foods in the milk and milk products group. It was an expression (in grams) of the amount of fluid whole cow's milk that has the same quantity of calcium as the reported food. This factor provided a basis for aggregating different forms of milk and milk products into one amount.

UPDATING THE SUPPORT SYSTEM FOR THE NEXT SURVEY

To meet the needs of users of data from the next nationwide survey of individuals' diets, the several types of data in the support system will have to be updated. Some types of desirable updating are already evident from the experiences in analyzing the 1977-78 data and in responding to the large volume of requests from private industry, nutrition and health professionals, researchers, private and government agencies, the media, and many others.

There have been repeated requests for information on nutrients not covered in 1977-78--zinc, sodium, potassium, folacin, and others--as well as on substances such as sugars and fiber. The feasibility of adding nutrients is under consideration. The limitations of available analytical data must not be overlooked. Obviously new foods will be added to the data base--such as low-sodium and diet foods--as their prominence in the marketplace increases.

Users have also expressed interest in having more nonnutrient information about food items such as type of packaging, kind and amount of home preparation, how foods are used in a meal, and brand names. Such information could be retained in separate variables similar to the variable on whether the food is a single or multiple unit.

There is a need for careful review and revision of the data base with the objective of reducing or combining a number of similar food items in several food groups. Seldom-used food codes will be reviewed to determine whether they should be dropped or handled in another manner. However, this has to be balanced against the need for detailed information. Default values (in grams) and guidelines for handling inadequate information also need review.

Some of the criteria to be used in reviewing the current data base of food items include the following:

- Is the food item still used?
- Is the form still sufficiently important to be coded separately?
- Does the identity of the food item need to be retained to show extent of use by the population?
- Are separations of food items grouped under one code necessary if additional nutrients are included in future surveys?
- Can separation of a component (such as "fat added" for vegetables) simplify and reduce necessary codes without losing information?
- Can refuse such as bones and shells be handled as a yield measure and therefore codes "with bone," "with shell," etc., be deleted?
- Are "homemade" items sufficiently used and nutrient values sufficiently different to justify separate codes?
- Should nonnutrient information be carried as a separate variable for food items?
- Should some food items be moved to another food group such as soy sauce from nonnutrient group to soy products group?
- Should brand name foods such as candies be added to data base?

Needless to say, careful planning and preparation of the data base or support system for a survey is of great importance. A well-organized data base contributes to timely release of results and simplifies meeting requests for special information.

Table 1. Use of digits in the food code to subgroup and to uniquely identify items in the fruit group--food intakes of individuals, NFCS 1977-78

1 (Main category)	2 (Major subgroup)	3 (Minor subgroup)	4-5 (Further subgrouping)	6-7 Unique identity of item)
6 Fruits	61 Citrus fruits, juice	611 Citrus fruits		
		612 Citrus juices		
	62 Dried fruits	621 Dried fruits		
	63 Fruits and berries, exclude citrus and dried	631 Fruits, exclude berries	-01 Apples	
			-03 Apricots	
			--	
			-07 Bananas	
			--	
			-23 Grapes	
			--	
			-35 Peaches	3500 NFS
			--	3501 Raw, NFS
				3512 Cooked, canned, unsweetened
				3513 Cooked, canned, heavy sirup
				3514 Cooked, canned, light sirup
				3514 Cooked, canned, drained solids
				3516 Canned, juice pack
				3561 Frozen
				3562 Frozen, unsweetened
				3563 Frozen, sweetened
				3565 Pickled
			-37 Pears	
			--	
		632 Berries		
		--		
		634 Mixtures of fruits		
	64 Fruit juices, nectars	641 Juices		
		642 Nectars		
	67 Baby and junior fruits and juices	671 Fruits and fruit mixtures		
		--	Dashes (--) indicate codes and food items in series are omitted because of space limitation.	
		674 Fruit desserts and puddings		

Table 2. Number of food codes used designated number of times in Basic NFCS 1977-78, 3-day reports only, 48 States

Food group	Total codes used	Number of times food code was used									
		1,000 and over	500-999	100-499	50-99	10-49	5-9	3-4	2	1	Under 100
		Number of food codes									
Milk and milk products..	280										
Unweighted.....		21	18	59	30	77	29	12	14	20	182
Weighted.....		31	17	62	38	75	20	18	11	8	
Meat group.....	1,069										
Unweighted.....		32	28	157	104	324	154	89	84	97	852
Weighted.....		43	44	182	112	341	138	93	70	46	
Eggs.....	45										
Unweighted.....		5	1	5	4	15	8	3	0	4	34
Weighted.....		5	2	5	6	18	5	0	1	3	
Legumes, nuts, seeds....	123										
Unweighted.....		4	3	23	10	36	20	8	11	8	93
Weighted.....		5	5	23	14	39	20	6	6	5	
Grain products.....	844										
Unweighted.....		53	47	181	97	228	85	70	35	48	563
Weighted.....		77	52	202	95	231	90	48	25	24	
Fruits.....	377										
Unweighted.....		14	13	49	35	113	56	37	21	39	301
Weighted.....		20	19	53	41	117	44	47	15	21	
Vegetables.....	581										
Unweighted.....		39	29	92	71	167	71	45	26	41	421
Weighted.....		50	37	112	71	165	69	32	23	22	
Fats, oils.....	68										
Unweighted.....		8	4	13	10	17	5	5	1	5	43
Weighted.....		10	7	15	9	14	5	5	2	1	
Sugar, sweets, beverages	315[1]										
Unweighted.....		32	15	60	34	76	37	24	18	19	208
Weighted.....		41	18	64	34	84	34	12	14	14	
Total.....	3,702										
Unweighted.....		208	158	639	395	1,053	465	293	210	281	784
Weighted.....		282	201	718	420	1,084	425	261	167	144	

[1] 25 codes discontinued in addition.

Table 3. Use of Not Further Specified (NFS) food codes and number of responses in NFCS 1977-78, 3-day reports only, 48 States

Food group	Total NFS codes used		NFS codes used 1,000 times and over		NFS codes used 1-4 times		Responses for NFS codes	
	Number	Percent[1/]	Number	Percent[2/]	Number	Percent	Number	Percent
Milk, milk products.....	36	12.9						
Unweighted.....			6	28.6	4	8.7	48,214	25.8
Weighted.....			10	32.3	3	8.1	70,828	27.2
Meat group.....	249	23.3						
Unweighted.....			17	53.1	30	11.1	73,306	47.8
Weighted.....			27	62.8	22	10.5	105,644	47.7
Eggs.....	4	8.9						
Unweighted.....			1	20.0	1	14.3	1,943	7.2
Weighted.....			1	20.0	0	0	2,988	7.5
Legumes, nuts, seeds.....	5	4.1						
Unweighted.....			1	25.0	0	0	1,941	9.5
Weighted.....			1	20.0	0	0	2,752	9.8
Grain products.....	83	9.8						
Unweighted.....			14	26.4	4	2.6	48,299	18.6
Weighted.....			24	31.2	1	1.0	68,812	18.8
Fruits.....	54	14.3						
Unweighted.....			3	21.4	8	8.2	15,375	19.3
Weighted.....			4	20.0	9	10.8	22,047	19.1
Vegetables.....	110	18.9						
Unweighted.....			10	25.6	14	12.5	47,806	25.9
Weighted.....			15	30.0	9	11.7	70,579	26.3
Fats, oils.....	5	7.4						
Unweighted.....			2	25.0	0	0	30,810	41.7
Weighted.....			2	20.0	0	0	44,505	40.1
Sugar, sweets, beverages..	26	8.3						
Unweighted.....			8	25.0	0	0	52,713	22.3
Weighted.....			12	29.3	0	0	82,143	22.8
Total.....	572	15.5						
Unweighted.....			62	29.8	61	7.8	320,407	26.2
Weighted.....			96	34.0	44	7.7	470,298	26.6

[1/] Percent of total codes in food group. [2/] Percent of codes in food group used 1,000 or more times.

Table 4. Number and percentage of responses for food codes used designated number of times in NFCS 1977-78, 3-day reports only, 48 States

Food group	Total responses[1/]		Number of times food code was used							
			1,000 and over		500-999		100-499		Less than 100	
	Number	Percent[2/]	Number	Percent[3/]	Number	Percent	Number	Percent	Number	Percent
Milk and milk products										
Unweighted	186,549	15.3	156,089	83.7	12,383	6.6	13,638	7.3	4,439	2.4
Weighted	260,090	14.7	228,127	87.7	12,255	4.7	15,018	5.8	4,690	1.8
Meat group										
Unweighted	153,515	12.6	76,674	49.9	17,414	11.3	34,495	22.5	24,932	16.2
Weighted	221,620	12.5	136,248	61.5	26,927	12.2	40,139	18.1	18,306	8.3
Eggs										
Unweighted	26,931	2.2	24,644	91.5	531	2.0	1,104	4.1	652	2.4
Weighted	39,594	2.2	36,147	91.3	1,472	3.7	1,137	2.9	838	2.1
Legumes, nuts, seeds										
Unweighted	20,487	1.7	12,002	58.6	2,049	10.0	4,869	23.8	1,567	7.6
Weighted	28,073	1.6	17,015	60.6	3,342	11.9	5,686	20.3	2,030	7.2
Grain products										
Unweighted	259,828	21.3	170,797	65.7	31,248	12.0	41,755	16.1	16,028	6.2
Weighted	365,103	20.7	267,723	73.3	36,250	9.9	48,124	13.2	13,006	3.6
Fruits										
Unweighted	79,844	6.5	53,749	67.3	9,185	11.5	11,097	13.9	5,813	7.3
Weighted	115,206	6.5	84,752	73.6	13,146	11.4	11,122	9.7	6,186	5.4
Vegetables										
Unweighted	184,265	15.1	133,220	72.3	19,569	10.6	21,797	11.8	9,679	5.3
Weighted	268,092	15.2	206,547	77.0	26,610	9.9	25,202	9.4	9,733	3.6
Fats, oils										
Unweighted	73,947	6.1	67,050	90.7	2,832	3.8	2,881	3.9	1,184	1.6
Weighted	109,095	6.2	99,991	91.7	4,996	4.6	3,001	2.8	1,107	1.0
Sugars, sweets, beverages										
Unweighted	236,806	19.4	209,089	88.3	10,768	4.5	12,374	5.2	4,575	1.9
Weighted	359,607	20.4	329,922	91.7	11,728	3.3	13,113	3.6	4,844	1.3
Total										
Unweighted	1,222,172	100.0	903,314	73.9	105,979	8.7	144,010	11.8	68,869	5.6
Weighted	1,766,480	100.0	1,406,472	79.6	136,726	7.7	162,542	9.2	60,740	3.4

[1/] Individuals in one-person households weighted in same manner as individuals in larger households.
[2/] Percent of total responses from all food groups. Totals may not add to 100 percent because of rounding.
[3/] Percent of total responses from each food group. Totals may not add to 100 percent because of rounding.