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Number 11



Measuring Food Security in the United States

Household Food Security in the United States, 2004

Mark Nord
Margaret Andrews
Steven Carlson



*Food Assistance & Nutrition
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Mark Nord
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Abstract

Eighty-eight percent of American households were food secure throughout the entire year in 2004, meaning that they had access, at all times, to enough food for an active, healthy life for all household members. The remaining households were food insecure at least some time during that year. The prevalence of food insecurity rose from 11.2 percent of households in 2003 to 11.9 percent in 2004, and the prevalence of food insecurity with hunger rose from 3.5 percent to 3.9 percent. This report, based on data from the December 2004 food security survey, provides the most recent statistics on the food security of U.S. households, as well as on how much they spent for food and the extent to which food-insecure households participated in Federal and community food assistance programs. Survey responses indicate that the typical food-secure household in the United States spent 31 percent more on food than the typical food-insecure household of the same size and household composition. Just over half of all food-insecure households participated in one or more of the three largest Federal food assistance programs during the month prior to the survey. About 20 percent of food-insecure households—3.5 percent of all U.S. households—obtained emergency food from a food pantry at some time during the year.

Keywords: Food security, food insecurity, hunger, food spending, food pantry, soup kitchen, emergency kitchen, material well-being, Food Stamp Program, National School Lunch Program, WIC

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Summary

Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. But a minority of American households experience food insecurity at times during the year, meaning that their access to enough food is limited by a lack of money and other resources. In about a third of such food-insecure households, one or more household members are hungry at times as a result. The U.S. Department of Agriculture (USDA) monitors the food security of U.S. households through an annual, nationally representative survey and has published statistical reports on household food security in the United States for each year since 1995. This report presents statistics on households' food security, food expenditures, and use of food assistance for 2004.

What Is the Issue?

USDA's domestic food assistance programs increase food security and reduce hunger by providing children and low-income people access to food, a healthful diet, and nutrition education. Reliable monitoring of food security, food insecurity, and hunger contributes to the effective operation of these programs as well as that of private food assistance programs and other government initiatives aimed at reducing food insecurity. USDA's annual food security report provides statistics that guide planning for Federal, State, and community food assistance programs.

What Did the Study Find?

Throughout the year in 2004, 88.1 percent of U.S. households were food secure, down from 88.8 percent in 2003. Food-secure households had consistent access to enough food for active healthy lives for all household members at all times during the year. The remaining 11.9 percent (13.5 million households) were food insecure. These households, at some time during the year, had difficulty providing enough food for all their members due to a lack of resources. About a third of food-insecure households (4.4 million, or 3.9 percent of all U.S. households) were food insecure to the extent that one or more household members were hungry, at least some time during the year, because they could not afford enough food. The prevalence of food insecurity with hunger was up from 3.5 percent in 2003. The other two-thirds of food-insecure households obtained enough food to avoid hunger, using a variety of coping strategies, such as eating less varied diets, participating in Federal food assistance programs, or getting emergency food from community food pantries or emergency kitchens. Children were hungry at times during the year in 274,000 households (0.7 percent of households with children) because the household lacked sufficient money or other resources for food. The prevalence of food insecurity with hunger among children has remained in the range of 0.5 to 0.7 percent (statistically unchanged) since 1999.

The number of people who were hungry because of food insecurity on a given day was a small fraction of those who were hungry at some time during the year. Converting annual into daily statistics takes into account how long those conditions lasted in the typical household. On average,

households that were food insecure with hunger at some time during the year experienced the condition in 9 months out of the past year and for a few days in each of those months. However, some households experienced just a single brief episode of hunger.

On a typical day in November 2004, for example, there were between 614,000 and 854,000 households (0.5-0.8 percent of all U.S. households) in the Nation in which one or more members were hungry because the household could not afford enough food. Children are usually shielded from hunger even when resources are inadequate to provide food for the entire family. Nevertheless, hunger among children occurred in 41,000 to 50,000 households (0.10 to 0.13 percent of all U.S. households with children) on a typical day.

The prevalence of food insecurity varied considerably among households of various types. Rates of food insecurity were substantially higher for households with incomes below the Federal poverty line, households headed by single women with children, and for Black and Hispanic households. Geographically, food insecurity was more common in central cities and rural areas than in suburbs, and in the South and the West than in other areas of the Nation.

Food-insecure households spent less for food than food-secure households. In 2004, the typical (median) U.S. household spent \$40.00 per person for food each week. Weekly food spending by the typical household was about 25 percent higher than the cost of USDA's Thrifty Food Plan—a low-cost food “market basket” that meets dietary standards, taking into account household size and the age and gender of household members. The typical food-insecure household spent 2 percent less than the cost of the Thrifty Food Plan, while the typical food-secure household spent 28 percent more than the cost of the Thrifty Food Plan, or 31 percent more than the typical food-insecure household.

Some food-insecure households turn to Federal food assistance programs or emergency food providers in their communities when the households are unable to buy enough food. Just over half of the food-insecure households surveyed in 2004 said that in the previous month they had participated in one or more of the three largest Federal food assistance programs—the National School Lunch Program, the Food Stamp Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). About 20 percent of food-insecure households obtained emergency food from a food pantry at some time during the year, and 3 percent ate one or more meals at an emergency kitchen.

How Was the Study Conducted?

Data for the ERS food security report come from an annual survey conducted by the U.S. Census Bureau as a supplement to the monthly Current Population Survey (CPS). USDA sponsors the survey, and ERS compiles and analyzes the responses. The food security supplement covers about 50,000 households and is a representative sample of the U.S. civilian population of 113 million households. The food security survey asks households 18 questions about experiences and behaviors that indicate food insecurity. Based on their responses, households are classified as food secure, food insecure without hunger, or food insecure with hunger. Hunger among children is measured by responses to a subset of questions about the conditions and experiences of children. Survey respondents also report the amounts their households spent on food and whether they used public or private food assistance programs.

Introduction

Since 1995, the U.S. Department of Agriculture (USDA) has collected information annually on food spending, food access and adequacy, and sources of food assistance for the U.S. population. The information is collected in yearly food security surveys, conducted as a supplement to the nationally representative Current Population Survey (CPS). A major impetus for this data collection is to provide information about the prevalences of food insecurity and food insecurity with hunger in U.S. households. USDA reports in the *Measuring Food Security in the United States* series have summarized the findings of this research for each year from 1995 to 2003. (See appendix B for background on the development of the food security measures and a list of the reports.)

This report updates the national statistics on food security during 2004, household food spending, the use of Federal and community food assistance by food-insecure households, and the numbers of households using community food pantries and emergency kitchens, using data collected in the December 2004 food security survey. The report also includes information on the prevalence and frequency (number of days) of food insecurity with hunger during the 30-day period prior to the survey—from mid-November to mid-December 2004.

Unless otherwise noted, statistical differences described in the text are significant at the 90-percent confidence level.¹

¹Standard errors of estimates, except for State-level estimates, are based on a design factor of 1.6 due to the complex sampling design of the CPS. That is, the standard error of an estimated proportion is calculated as the square root of $[P \times Q \times 1.6 / N]$, where P is the estimated proportion, Q is 1-P, and N is the unweighted number of households in the denominator. The design factor of 1.6 is consistent with estimates based on more complex balanced repeated replication (BRR) methods (Cohen et al., 2002b; Hamilton et al., 1997b). Standard errors of State-level estimates were calculated using jackknife replication methods with “month-in-sample” groups considered as separate, independent samples (see Nord et al., 1999).

Household Food Security

Food security—access by all people at all times to enough food for an active, healthy life—is one of several conditions necessary for a population to be healthy and well nourished. This section provides information on food security, food insecurity, and food insecurity with hunger in U.S. households based on the December 2004 food security survey—the 10th annual survey in the Nation’s food security monitoring system.

Methods

The results presented in this report are based on data collected in the Current Population Survey (CPS) food security surveys for the years 1995-2004. The CPS includes about 60,000 households² and is representative, at State and national levels, of the civilian, noninstitutionalized population of the United States. About 48,000 households completed the food security section of the survey in December 2004; the remainder were unable or unwilling to do so. Weighting factors were calculated by the Census Bureau so that, when properly weighted, the food security survey, like the full CPS, is representative at State and national levels.³ All statistics in this report were calculated by applying the food security supplement weights to the surveyed households to obtain nationally representative prevalence estimates. Household supplement weights were used to calculate household-level statistics, and person supplement weights were used to calculate statistics for all individuals, for adults, and for children.

The household food security statistics in this report are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors known to characterize households having difficulty meeting basic food needs.⁴ Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies a lack of money or other resources to obtain food as the reason for the condition or behavior. Voluntary fasting or dieting to lose weight are thereby excluded from the measure. The series includes 10 questions about food conditions at the household level and among adults in the household and, if there are children present in the household, an additional 8 questions about their food conditions (see box, “Questions Used to Assess the Food Security of Households in the CPS Food Security Survey”). Responses to the 18 items used to classify households are provided in appendix A.

All interviewed households are classified into one of three categories—food secure, food insecure without hunger, food insecure with hunger—based on the number of food-insecure conditions and behaviors the household reports.⁵ Households are classified as *food secure* if they report no food-insecure conditions or if they report only one or two food-insecure conditions. (Food-insecure conditions are indicated by responses of “often” or “sometimes” to questions 1-3 and 11-13, “almost every month” or “some months but not every month” to questions 5, 10, and 17, and “yes” to the other questions.) They are classified as *food insecure* if they report three or more food-insecure conditions. Households without children are classified as *food insecure with hunger* if they report six or more food-insecure conditions. Households with

²The size of the CPS sample was increased in 2001; it had been around 50,000 households during the 1990s.

³Reweightings of the Supplement takes into consideration income and other information about households that completed the labor force portion of the survey but not the Food Security Supplement. This corrects, to some extent, biases that could result from nonresponse to the Supplement by households that completed only the labor force part of the survey.

⁴The methods used to measure the extent of food insecurity and hunger have been described in several places (Hamilton et al., 1997a, 1997b; Andrews et al., 1998; Bickel et al., 1998; Carlson et al., 1999; Bickel et al., 2000; Nord and Bickel, 2002). Further details on the development of the measure are provided in appendix B.

⁵To reduce the burden on higher income respondents, households with incomes above 185 percent of the Federal poverty line who give no indication of food-access problems on either of two preliminary screening questions are deemed to be food secure and are not asked the questions in the food security assessment series. The preliminary screening questions are as follows:

- People do different things when they are running out of money for food in order to make their food or their food money go further. In the last 12 months, since December of last year, did you ever run short of money and try to make your food or your food money go further?
- Which of these statements best describes the food eaten in your household—enough of the kinds of food we want to eat, enough but not always the kinds of food we want to eat, sometimes not enough to eat, or often not enough to eat?

Questions Used To Assess the Food Security of Households in the CPS Food Security Survey

1. “We worried whether our food would run out before we got money to buy more.”
Was that often, sometimes, or never true for you in the last 12 months?
2. “The food that we bought just didn’t last and we didn’t have money to get more.”
Was that often, sometimes, or never true for you in the last 12 months?
3. “We couldn’t afford to eat balanced meals.”
Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food? (Yes/No)
5. (If yes to Question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn’t eat, because you couldn’t afford enough food? (Yes/No)
8. In the last 12 months, did you lose weight because you didn’t have enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)
10. (If yes to Question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

(Questions 11-18 are asked only if the household included children age 0-17)

11. “We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” Was that often, sometimes, or never true for you in the last 12 months?
12. “We couldn’t feed our children a balanced meal, because we couldn’t afford that.”
Was that often, sometimes, or never true for you in the last 12 months?
13. “The children were not eating enough because we just couldn’t afford enough food.”
Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (Yes/No)
17. (If yes to Question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months did any of the children ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)

children are classified as *food insecure with hunger* if they report eight or more food-insecure conditions, including conditions among both adults and children. Households with children are further classified as *food insecure with hunger among children* if they report five or more food-insecure conditions among the children (that is, in response to questions 11-18).

Thus, households classified as *food insecure without hunger* have reported multiple indications of food access problems, but typically have reported few, if any, indications of reduced food intake. All households classified as *food insecure with hunger* have reported multiple indications of reduced food intake and disrupted eating patterns due to inadequate resources for food, although not all have directly reported that household members were hungry. The methods used to measure households' food security and the language used to describe their food security status are currently being reviewed by the Committee on National Statistics at the request of USDA (see box).

Prevalence of Food Insecurity and Food Insecurity With Hunger—National Conditions and Trends

Eighty-eight percent of U.S. households were food secure throughout the entire year 2004 (fig. 1). “Food secure” means that all household members had access at all times to enough food for an active, healthy life.⁶ The remaining 13.5 million U.S. households (11.9 percent of all households)

Committee on National Statistics Reviews Food Security Measurement Methods

The Committee on National Statistics of the National Academies, is currently conducting an in-depth review of the methods USDA uses to measure household food security. USDA requested the 2-year study to ensure that its measurement methods and the language it uses to describe households' access—and lack of access—to adequate food are conceptually and operationally sound and that they convey useful and relevant information to policy officials and the public. One of the central issues the panel is addressing is whether the concept and definition of hunger and the relationship between hunger and food insecurity that underlie the current measurement methods are appropriate for the policy context in which food security statistics are used. The expert panel that the Committee on National Statistics has assembled to conduct the review includes economists, sociologists, nutritionists, statisticians, and other researchers.

The panel published a preliminary assessment, *Measuring Food Insecurity and Hunger: Phase I Report*, in February 2005. The report presents the panel's preliminary findings on concepts and definitions and the survey questions and methodology for measuring these concepts. It also provides interim recommendations pending completion of the panel's work. A summary of the report and link to the full text are available at: www.ers.usda.gov/Briefing/FoodSecurity/NASsummary.htm.

Following release of the panel's final report, USDA plans to review its methodology for measuring and describing food insecurity at various levels of severity and make changes as appropriate.

⁶Food security and insecurity, as measured for this report, are based on respondent perceptions of whether the household was able to obtain enough food to meet their needs. The measure does not specifically address whether the household's food intake was sufficient for active, healthy lives. Nonetheless, research based on other surveys has found food security, measured as in this report, to be associated with health, nutrition, and children's development in a manner that generally supports the conceptualized link with sufficiency for active, healthy lives.

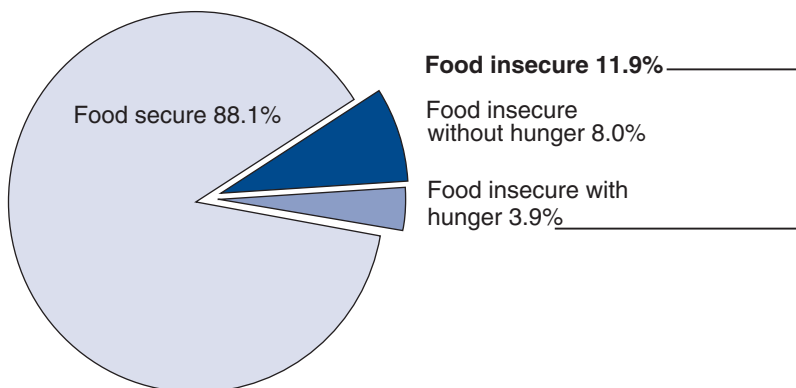
were food insecure at some time during the year. That is, they were, at times, uncertain of having, or unable to acquire, enough food for all household members because they had insufficient money and other resources for food. About two-thirds of food-insecure households avoided hunger, in many cases by relying on a few basic foods and reducing variety in their diets. But 4.4 million households (3.9 percent of all U.S. households) were food insecure to the extent that one or more household members were hungry, at least some time during the year, because they couldn't afford enough food.

In most households, children were protected from substantial reductions in food intake and ensuing hunger. However, in some 274,000 households (0.7 percent of households with children) food insecurity was sufficiently severe that one or more children in each household were also hungry on one or more days during the year because the household lacked money for enough food. In some of these households with more than one child, not all the children experienced hunger. Younger children, in particular, may have been protected from hunger.

When interpreting food security statistics, it is important to keep in mind that households are classified as food insecure or food insecure with hunger if they experienced the condition at any time during the previous 12 months. The rates of food insecurity and hunger on any given day are far below the annual rates. For example, the prevalence of hunger on an average day during the 30-day period from mid-November to mid-December 2004 is estimated to have been about 14-19 percent of the annual rate (see box), or 0.5-0.8 percent of households (614,000-854,000 households).

The prevalence rates of food insecurity and food insecurity with hunger increased somewhat from 2003 to 2004 (table 1). The prevalence of food insecurity increased from 11.2 percent of households in 2003 to 11.9 percent in 2004, and the prevalence of food insecurity with hunger rose from 3.5 percent to 3.9 percent. The prevalence of food insecurity with hunger among children, however, has remained in the range of 0.5 to 0.7 percent of households (with no statistically significant changes) since 1999.

Figure 1
U.S. households by food security status, 2004



Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Table 1

Prevalence of food security, food insecurity, and food insecurity with hunger, by year

Unit	Total ¹	Food secure		Food insecure					
				All		Without hunger		With hunger	
	<i>1,000</i>	<i>1,000</i>	<i>Percent</i>	<i>1,000</i>	<i>Percent</i>	<i>1,000</i>	<i>Percent</i>	<i>1,000</i>	<i>Percent</i>
Households:									
1998	103,309	91,121	88.2	12,188	11.8	8,353	8.1	3,835	3.7
1999	104,684	94,154	89.9	10,529	10.1	7,420	7.1	3,109	3.0
2000	106,043	94,942	89.5	11,101	10.5	7,786	7.3	3,315	3.1
2001	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
2002	108,601	96,543	88.9	12,058	11.1	8,259	7.6	3,799	3.5
2003	112,214	99,631	88.8	12,583	11.2	8,663	7.7	3,920	3.5
2004	112,967	99,473	88.1	13,494	11.9	9,045	8.0	4,449	3.9
All individuals (by food security status of household): ²									
1998	268,366	232,219	86.5	36,147	13.5	26,290	9.8	9,857	3.7
1999	270,318	239,304	88.5	31,015	11.5	23,237	8.6	7,779	2.9
2000	273,685	240,454	87.9	33,231	12.1	24,708	9.0	8,523	3.1
2001	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3
2002	279,035	244,133	87.5	34,902	12.5	25,517	9.1	9,385	3.4
2003	286,410	250,155	87.3	36,255	12.7	26,622	9.3	9,633	3.4
2004	288,603	250,407	86.8	38,196	13.2	27,535	9.5	10,661	3.7
Adults (by food security status of household): ²									
1998	197,084	174,964	88.8	22,120	11.2	15,632	7.9	6,488	3.3
1999	198,900	179,960	90.5	18,941	9.5	13,869	7.0	5,072	2.5
2000	201,922	181,586	89.9	20,336	10.1	14,763	7.3	5,573	2.8
2001	204,340	183,398	89.8	20,942	10.2	14,879	7.3	6,063	3.0
2002	206,493	184,718	89.5	21,775	10.5	15,486	7.5	6,289	3.0
2003	213,441	190,451	89.2	22,990	10.8	16,358	7.7	6,632	3.1
2004	215,564	191,236	88.7	24,328	11.3	16,946	7.9	7,382	3.4
Households with children:									
1998	38,036	31,335	82.4	6,701	17.6	6,370	16.7	331	.9
1999	37,884	32,290	85.2	5,594	14.8	5,375	14.2	219	.6
2000	38,113	31,942	83.8	6,171	16.2	5,916	15.5	255	.7
2001	38,330	32,141	83.9	6,189	16.1	5,978	15.6	211	.6
2002	38,647	32,267	83.5	6,380	16.5	6,115	15.8	265	.7
2003	40,286	33,575	83.3	6,711	16.7	6,504	16.1	207	.5
2004	39,990	32,967	82.4	7,023	17.6	6,749	16.9	274	.7
Children (by food security status of household): ²									
1998	71,282	57,255	80.3	14,027	19.7	13,311	18.7	716	1.0
1999	71,418	59,344	83.1	12,074	16.9	11,563	16.2	511	.7
2000	71,763	58,867	82.0	12,896	18.0	12,334	17.2	562	.8
2001	72,321	59,620	82.4	12,701	17.6	12,234	16.9	467	.6
2002	72,542	59,415	81.9	13,127	18.1	12,560	17.3	567	.8
2003	72,969	59,704	81.8	13,265	18.2	12,845	17.6	420	.6
2004	73,039	59,171	81.0	13,868	19.0	13,323	18.2	545	.7

¹Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2003, these represented 404,000 households (0.4 percent of all households.)

²The food security survey measures food security status at the household level. Not all individuals residing in food-insecure households are appropriately characterized as food insecure. Similarly, not all individuals in households classified as food insecure with hunger, nor all children in households classified as food insecure with hunger among children, were subject to reductions in food intake or experienced resource-constrained hunger.

Sources: Calculated by ERS using data from the August 1998, April 1999, September 2000, December 2001, December 2002, December 2003, and December 2004 Current Population Survey Food Security Supplements.

How often were people hungry in households that were food insecure with hunger?

When food insecurity with hunger occurs in the United States, it is, in most cases, occasional or episodic, not chronic. The food security measurement approach used in this report is designed to register these occasional or episodic occurrences. Most of the questions used to assess households' food security status ask whether a condition, experience, or behavior occurred at any time in the past 12 months, and households can be classified as food insecure with hunger based on a single, severe episode during the year. It is important to keep this aspect of the scale in mind when interpreting food insecurity and hunger statistics. Analysis of additional information collected in the food security survey on how frequently various food-insecure conditions occurred during the year, whether they occurred during the 30 days prior to the survey, and, if so, in how many days provide further insight into the frequency and duration of hunger in U.S. households. These analyses reveal that in 2004:

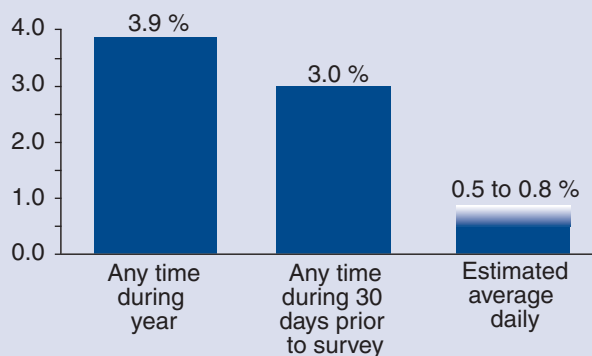
- About one-third of the households that were food insecure with hunger at any time during the year experienced the condition rarely or occasionally—in only 1 or 2 months of the year. For two-thirds, the condition was recurring, experienced in 3 or more months of the year.
- For about one-fifth of households classified as food insecure and 30 percent of those classified as food insecure with hunger, occurrence of the condition was frequent or chronic. That is, it occurred often, or in almost every month.

- On average, households that were food insecure with hunger at some time during the year experienced this condition in 8 or 9 months during the year (see appendix E). During the 30-day period ending in mid-December 2004, 3.0 percent of U.S. households were food insecure with hunger—about 77 percent of the number that were food insecure with hunger at any time during the year.
- Most households that were food insecure with hunger at some time during a month experienced the condition in 1 to 7 days of the month. The average daily prevalence of food insecurity with hunger during the 30-day period ending in mid-December 2004 was probably between 614,000 and 854,000 households (0.5-0.8 percent of all households)—about 14-19 percent of the annual prevalence.
- The daily prevalence of food insecurity with hunger among children during the 30-day period ending in early December 2004 was probably between 41,000 and 50,000 households (0.10-0.13 percent of households with children)—about 15-18 percent of the annual prevalence.

(Appendix A provides information on how often conditions indicating food insecurity and hunger occurred as reported by respondents to the December 2004 food security survey. See Nord et al., 2000, for more information about the frequency of food insecurity and hunger.)

Prevalence of food insecurity with hunger, by reference period

Percent of households



Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Prevalence rates of food insecurity and food insecurity with hunger trended upward from 1999 to 2004, returning to about the same levels at which they were first measured in 1995 (fig. 2).⁷ The year-to-year deviations from a consistent downward trend from 1995-2000 included a substantial 2-year cycle that is believed to result from a seasonal influence on food security prevalence rates (Cohen et al., 2002a). The CPS food security surveys over this period were conducted in April in odd-numbered years and August or September in even-numbered years. Measured prevalence of food insecurity was higher in the August/September collections, suggesting a seasonal response effect. Beginning in 2001, the survey has been conducted in early December. Data collection is planned for December in future years, which will avoid further problems of seasonality effects in interpreting annual changes.⁸

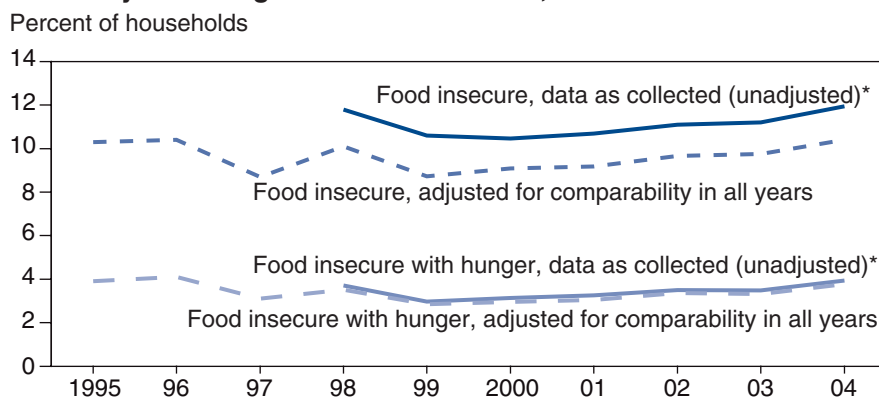
Prevalence of Food Insecurity and Food Insecurity With Hunger—Conditions and Trends, by Selected Household Characteristics

The prevalence rates of food insecurity and food insecurity with hunger varied considerably among household types (table 2). Rates of food insecurity were well below the national average of 11.9 percent for households with more than one adult and no children (6.7 percent) and for households with elderly persons (6.5 percent).⁹ Rates of food insecurity substantially higher than the national average were registered by the following groups:

- Households with incomes below the official poverty line (36.8 percent),¹⁰
- Households with children, headed by a single woman (33.0 percent) or a single man (22.2 percent),
- Black households (23.7 percent), and
- Hispanic households (21.7 percent).

Overall, households with children reported food insecurity at about double the rate for households without children (17.6 vs. 8.9 percent).¹¹ Among households with children, those with married-couple families showed the lowest rate of food insecurity (11.6 percent).

Figure 2
Trends in prevalence of food insecurity and food insecurity with hunger in U.S. households, 1995-2004



*Data as collected in 1995-97 are not directly comparable with data collected in 1998-2004. Source: Calculated by ERS based on Current Population Survey Food Security Supplement data.

⁷Because of changes in screening procedures used to reduce respondent burden, food security statistics from 1995-97 are not directly comparable with those from 1998-2004. Figure 2 presents statistics for the years 1995-2004, adjusted to be comparable across all years, as well as statistics for 1998-2004 based on data as collected. See Andrews et al. (2000) and Ohls et al. (2001) for detailed information about questionnaire screening and adjustments for comparability.

⁸A smaller food security survey was also conducted in April 2001 to provide a baseline for assessing seasonal effects of data collection in December. Comparison of food security statistics from the April 2001 survey with those from April 1999 and December 2001 suggest that seasonal effects in early December were similar to those in April (Nord et al., 2002a).

⁹“Elderly” in this report refers to people ages 65 and older.

¹⁰The Federal poverty line was \$19,157 for a family of four in 2004.

¹¹The higher rate of food insecurity for households with children results, in part, from a difference in the measures applied to households with and without children. Responses to questions about children as well as adults are considered in assessing the food security status of households with children, but for both types of households, a total of three indications of food insecurity is required for classification as food insecure. Even with the child-referenced questions omitted from the scale, however, households with children were 55 percent more likely to be food insecure than were households without children. This measurement issue does not bias comparisons at the hunger threshold because a higher threshold is applied to households with children consistent with the larger number of questions taken into consideration.

Table 2

Prevalence of food security, food insecurity, and food insecurity with hunger by selected household characteristics, 2004

Category	Total ¹	Food secure		Food insecure					
		1,000	Percent	All	Without hunger	With hunger	1,000	Percent	1,000
All households	112,967	99,473	88.1	13,494	11.9	9,045	8.0	4,449	3.9
Household composition:									
With children < 18	39,990	32,967	82.4	7,023	17.6	5,311	13.3	1,712	4.3
With children < 6	17,922	14,606	81.5	3,316	18.5	2,573	14.4	743	4.1
Married-couple families	27,065	23,926	88.4	3,139	11.6	2,509	9.3	630	2.3
Female head, no spouse	9,641	6,459	67.0	3,182	33.0	2,291	23.8	891	9.2
Male head, no spouse	2,693	2,096	77.8	597	22.2	428	15.9	169	6.3
Other household with child ²	592	487	82.3	105	17.7	83	14.0	22	3.7
With no children < 18	72,977	66,506	91.1	6,471	8.9	3,734	5.1	2,737	3.8
More than one adult	43,177	40,278	93.3	2,899	6.7	1,834	4.2	1,065	2.5
Women living alone	17,012	15,010	88.2	2,002	11.8	1,084	6.4	918	5.4
Men living alone	12,788	11,219	87.7	1,569	12.3	816	6.4	753	5.9
With elderly	26,202	24,510	93.5	1,692	6.5	1,227	4.7	465	1.8
Elderly living alone	10,693	9,911	92.7	782	7.3	517	4.8	265	2.5
Race/ethnicity of households:									
White non-Hispanic	81,388	74,383	91.4	7,005	8.6	4,632	5.7	2,373	2.9
Black non-Hispanic	13,509	10,303	76.3	3,206	23.7	2,108	15.6	1,098	8.1
Hispanic ³	12,014	9,404	78.3	2,610	21.7	1,903	15.8	707	5.9
Other	6,056	5,382	88.9	674	11.1	403	6.7	271	4.5
Household income-to-poverty ratio:									
Under 1.00	13,347	8,438	63.2	4,909	36.8	3,098	23.2	1,811	13.6
Under 1.30	18,367	12,118	66.0	6,249	34.0	3,994	21.7	2,255	12.3
Under 1.85	28,081	19,700	70.2	8,381	29.8	5,443	19.4	2,938	10.5
1.85 and over	63,575	60,138	94.6	3,437	5.4	2,443	3.8	994	1.6
Income unknown	21,311	19,636	92.1	1,675	7.9	1,158	5.4	517	2.4
Area of residence: ⁴									
Inside metropolitan area	92,474	81,661	88.3	10,813	11.7	7,246	7.8	3,567	3.9
In principal cities ⁵	30,312	25,650	84.6	4,662	15.4	3,114	10.3	1,548	5.1
Not in principal cities	46,444	42,279	91.0	4,165	9.0	2,865	6.2	1,300	2.8
Outside metropolitan area	20,492	17,811	86.9	2,681	13.1	1,799	8.8	882	4.3
Census geographic region:									
Northeast	21,038	19,006	90.3	2,032	9.7	1,430	6.8	602	2.9
Midwest	25,957	23,126	89.1	2,831	10.9	1,889	7.3	942	3.6
South	41,157	35,693	86.7	5,464	13.3	3,605	8.8	1,859	4.5
West	24,815	21,648	87.2	3,167	12.8	2,121	8.5	1,046	4.2

¹Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2004, these represented 404,000 households (0.4 percent of all households).

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

The prevalence rates of food insecurity for households located in principal cities of metropolitan areas (15.4 percent) and nonmetropolitan areas (13.1 percent) substantially exceeded the rate for households in suburbs and other metropolitan areas outside principal cities (9.0 percent).¹² Regionally, the prevalence of food insecurity was higher in the South and West (13.3 and 12.8 percent, respectively) than in the Northeast and Midwest (9.7 and 10.9 percent).

The prevalence rates of food insecurity with hunger in various types of households followed a pattern similar to that observed for food insecurity. Hunger rates were lowest for married couples with children (2.3 percent), multiple-adult households with no children (2.5 percent), and households with elderly people (1.8 percent). Rates of food insecurity with hunger were higher than the 3.9 percent national average among families with children headed by single women (9.2 percent), men living alone (5.9 percent), Black and Hispanic households (8.1 and 5.9 percent, respectively), households with incomes below the poverty line (13.6 percent), and households living in principal cities of metropolitan areas (5.1 percent).

The prevalence of food insecurity with hunger among children was lowest in married-couple households, White non-Hispanic households, and households with higher incomes (table 3). Children living with a single mother were more likely to be affected by hunger, as were children in low-income households.

The increase in prevalence rates of food insecurity and food insecurity with hunger from 2003 to 2004 appears to have affected most regions and most types of households (figs. 3 and 4). The prevalence of food insecurity increased by statistically significant increments for households with children, households without children, women living alone, men living alone, households with incomes both above and below 185 percent of the poverty line, and for the Midwest and South Census Regions. The prevalence of food insecurity with hunger increased by statistically significant increments for households without children, Black households, "other" race/ethnic groups,¹³ households with incomes higher than 185 percent of the poverty line, and in the South and West Census Regions. Changes in other categories were within a range that could have resulted from sampling variation, but observed changes in almost all categories were upward.

¹²Revised metropolitan statistical areas (MSAs) and principal cities within them were delineated by the Office of Management and Budget in 2003 based on revised standards developed by the U.S. Census Bureau in collaboration with other Federal agencies. Food security prevalence statistics by area of residence are not precisely comparable with corresponding statistics from earlier years. Principal cities include the incorporated areas of the largest city in each MSA and other cities in the MSA that meet specified criteria based on population size and commuting patterns.

¹³This category consists of households in which the reference person was non-Hispanic and either Native American, Hawaiian, Pacific Islander, or reported multiple races.

Table 3

Prevalence of food security, food insecurity, and food insecurity with hunger in households with children by selected household characteristics, 2004

Category	Total ¹	Food secure		Food insecure					
		1,000	Percent	All	Without hunger among children	With hunger among children	1,000	Percent	1,000
All households with children	39,990	32,967	82.4	7,023	17.6	6,749	16.9	274	0.7
Household composition:									
With children < 6	17,922	14,606	81.5	3,316	18.5	3,240	18.1	76	.4
Married-couple families	27,065	23,926	88.4	3,139	11.6	3,036	11.2	103	.4
Female head, no spouse	9,641	6,459	67.0	3,182	33.0	3,037	31.5	145	1.5
Male head, no spouse	2,693	2,095	77.8	598	22.2	577	21.4	21	.8
Other household with child ²	592	487	82.3	105	17.7	100	16.9	5	.8
Race/ethnicity of households:									
White non-Hispanic	25,117	21,929	87.3	3,188	12.7	3,077	12.3	111	.4
Black non-Hispanic	5,653	4,001	70.8	1,652	29.2	1,587	28.1	65	1.1
Hispanic ³	6,708	4,909	73.2	1,799	26.8	1,733	25.8	66	1.0
Other	2,512	2,128	84.7	384	15.3	352	14.0	32	1.3
Household income-to-poverty ratio:									
Under 1.00	5,816	3,138	54.0	2,678	46.0	2,541	43.7	137	2.4
Under 1.30	7,835	4,435	56.6	3,400	43.4	3,229	41.2	171	2.2
Under 1.85	12,334	7,695	62.4	4,639	37.6	4,414	35.8	225	1.8
1.85 and over	21,576	20,037	92.9	1,539	7.1	1,508	7.0	31	.1
Income unknown	6,080	5,235	86.1	845	13.9	827	13.6	18	.3
Area of residence: ⁴									
Inside metropolitan area	33,138	27,435	82.8	5,703	17.2	5,473	16.5	230	.7
In principal cities ⁵	10,277	7,851	76.4	2,426	23.6	2,337	22.7	89	.9
Not in principal cities	17,462	15,194	87.0	2,268	13.0	2,177	12.5	91	.5
Outside metropolitan area	6,852	5,532	80.7	1,320	19.3	1,276	18.6	44	.6
Census geographic region:									
Northeast	7,229	6,179	85.5	1,050	14.5	1,015	14.0	35	.5
Midwest	8,996	7,532	83.7	1,464	16.3	1,411	15.7	53	.6
South	14,563	11,833	81.3	2,730	18.7	2,619	18.0	111	.8
West	9,202	7,422	80.7	1,780	19.3	1,705	18.5	75	.8
Individuals in households with children:									
All individuals in households with children	158,626	130,875	82.5	27,751	17.5	26,696	16.8	1,055	.7
Adults in households with children	85,587	71,703	83.8	13,884	16.2	13,374	15.6	510	.6
Children	73,039	59,171	81.0	13,868	19.0	13,323	18.2	545	.7

¹Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2004, these represented 144,000 households with children (0.4 percent).

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

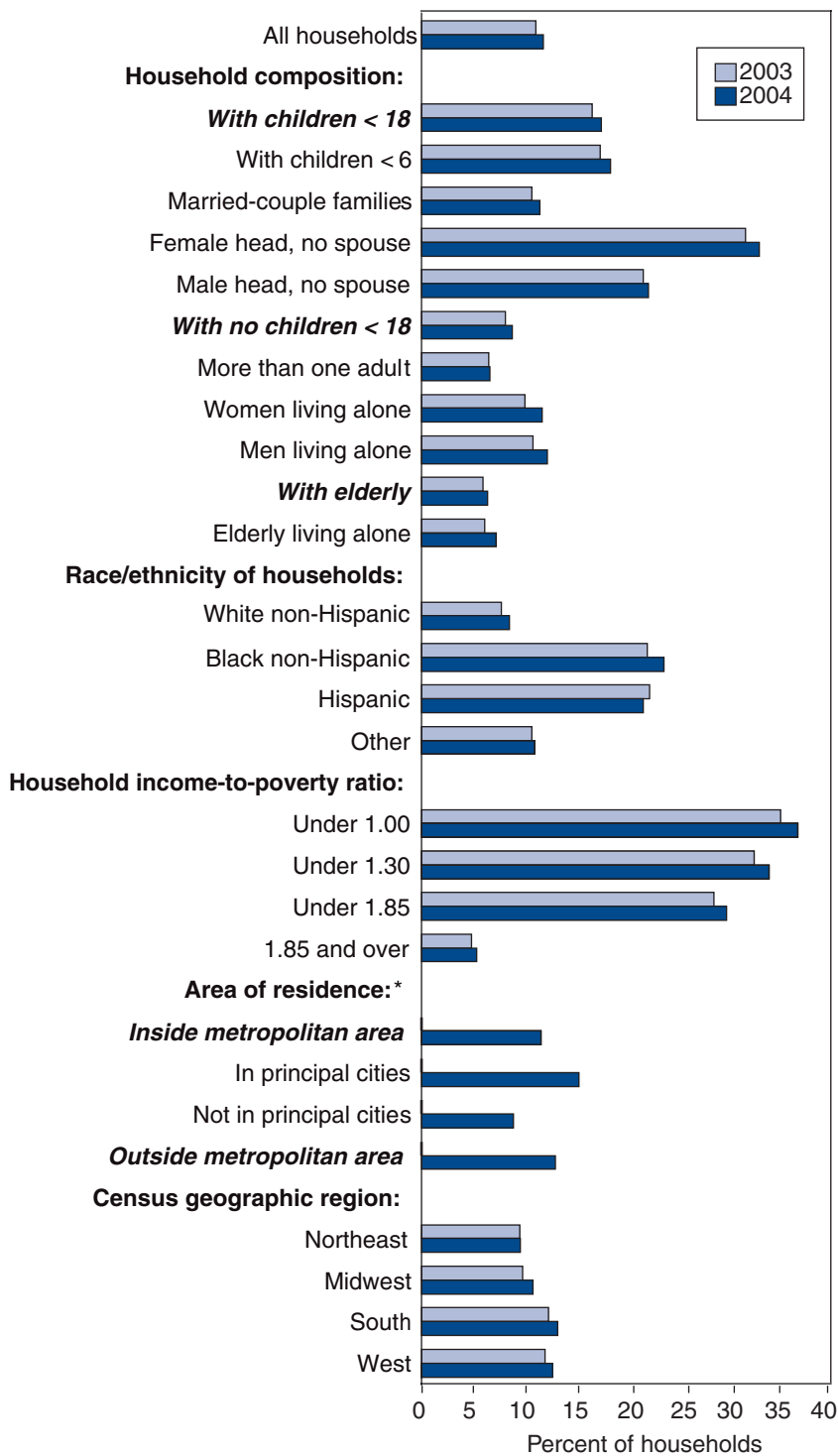
⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Figure 3

Prevalence of food insecurity, 2003 and 2004

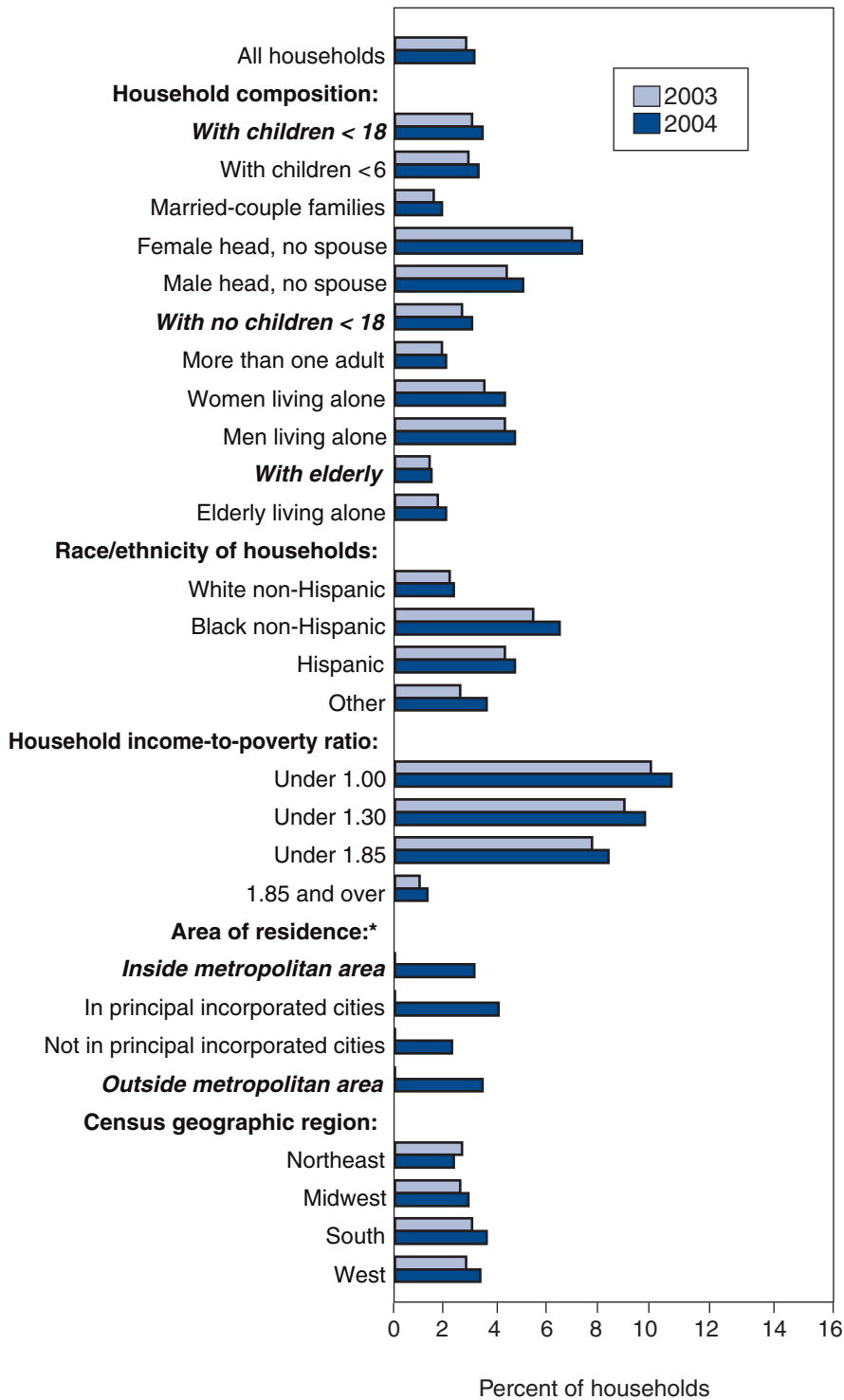


*Prevalence rates by area of residence in 2004 are not comparable with those for 2003 and earlier years because they represent somewhat different geographic areas. The 2004 survey classified metropolitan area residence based on revised metropolitan statistical areas delineated by the Office of Management and Budget in 2003.

Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, December 2003 and December 2004.

Figure 4

Prevalence of food insecurity with hunger, 2003 and 2004



*Prevalence rates by area of residence in 2004 are not comparable with those for 2003 and earlier years because they represent somewhat different geographic areas. The 2004 survey classified metropolitan area residence based on revised metropolitan statistical areas delineated by the Office of Management and Budget in 2003.

Source: Calculated by ERS based on Current Population Survey Food Security Supplement data, December 2003 and December 2004.

Food Insecurity and Food Insecurity With Hunger in Low-Income Households

Food insecurity and food insecurity with hunger, as reported here, are, by definition, conditions that result from insufficient household resources. In 2004, food insecurity was more than five times as prevalent in households with annual incomes below 185 percent of the poverty line as in households with incomes above that range (table 2). However, many factors that might affect a household's food security (such as job loss, divorce, or other unexpected events) are not captured by an annual income measure. Some households experienced episodes of food insecurity, or even hunger, even though their annual income was well above the poverty line (Nord and Brent, 2002; Gundersen and Gruber, 2001). On the other hand, many low-income households (including almost two-thirds of those with incomes below the official poverty line) were food secure.

Table 4 presents food security and hunger statistics for households with annual incomes below 130 percent of the poverty line.¹⁴ One in three of these low-income households was food insecure, and in 12.3 percent, household members were hungry at times during the year. Low-income households with children were more affected by food insecurity than low-income households without children (43.4 percent vs. 27.1 percent), although the prevalence of food insecurity with hunger was about the same in the two groups. Low-income single mothers with children were especially vulnerable to both food insecurity and hunger; 47.9 percent of these households were food insecure, including 14.2 percent in which one or more people, usually the mother, was hungry at times during the year because of lack of money or other resources for food.

¹⁴Households with income below 130 percent of the poverty line are eligible to receive food stamps, provided they meet other eligibility criteria. Children in these households are eligible for free meals in the National School Lunch and School Breakfast Programs.

Table 4

Prevalence of food security, food insecurity, and food insecurity with hunger in households with income below 130 percent of the poverty line by selected household characteristics, 2004

Category	Total ¹	Food secure		Food insecure					
			Percent	All	Without hunger	With hunger			
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All low-income households	18,367	12,118	66.0	6,249	34.0	3,994	21.7	2,255	12.3
Household composition:									
With children < 18	7,835	4,435	56.6	3,400	43.4	2,465	31.5	935	11.9
With children < 6	4,213	2,448	58.1	1,765	41.9	1,325	31.5	440	10.4
Married-couple families	3,243	2,013	62.1	1,230	37.9	939	29.0	291	9.0
Female head, no spouse	3,825	1,994	52.1	1,831	47.9	1,289	33.7	542	14.2
Male head, no spouse	637	335	52.6	302	47.4	211	33.1	91	14.3
Other household with child ²	131	94	71.8	37	28.2	27	20.6	10	7.6
With no children < 18	10,532	7,682	72.9	2,850	27.1	1,529	14.5	1,321	12.5
More than one adult	3,887	2,878	74.0	1,009	26.0	595	15.3	414	10.7
Women living alone	4,256	3,149	74.0	1,107	26.0	610	14.3	497	11.7
Men living alone	2,390	1,656	69.3	734	30.7	324	13.6	410	17.2
With elderly	5,070	4,147	81.8	923	18.2	660	13.0	263	5.2
Elderly living alone	3,152	2,637	83.7	515	16.3	340	10.8	175	5.6
Race/ethnicity of households:									
White non-Hispanic	9,557	6,769	70.8	2,788	29.2	1,713	17.9	1,075	11.2
Black non-Hispanic	3,952	2,211	55.9	1,741	44.1	1,070	27.1	671	17.0
Hispanic ³	3,781	2,374	62.8	1,407	37.2	1,018	26.9	389	10.3
Other	1,077	763	70.8	314	29.2	193	17.9	121	11.2
Area of residence: ⁴									
Inside metropolitan area	13,817	9,030	65.4	4,787	34.6	3,101	22.4	1,686	12.2
In principal cities ⁵	6,089	3,872	63.6	2,217	36.4	1,449	23.8	768	12.6
Not in principal cities	4,884	3,325	68.1	1,559	31.9	1,038	21.3	521	10.7
Outside metropolitan area	4,550	3,089	67.9	1,461	32.1	892	19.6	569	12.5
Census geographic region:									
Northeast	2,783	1,949	70.0	834	30.0	579	20.8	255	9.2
Midwest	3,776	2,523	66.8	1,253	33.2	765	20.3	488	12.9
South	7,720	5,059	65.5	2,661	34.5	1,679	21.7	982	12.7
West	4,088	2,588	63.3	1,500	36.7	970	23.7	530	13.0
Individuals in low-income households (by food security status of household):									
All individuals in low-income households	48,124	30,125	62.6	17,999	37.4	12,500	26.0	5,499	11.4
Adults in low-income households	31,695	20,906	66.0	10,789	34.0	7,202	22.7	3,587	11.3
Children in low-income households	16,429	9,219	56.1	7,210	43.9	5,298	32.2	1,912	11.6

¹Totals exclude households whose income was not reported (about 19 percent of households), and those whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale (0.9 percent of low-income households).

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Number of People by Household Food Security Status and Selected Household Characteristics

The food security survey is designed to measure food security status at the household level. While it is informative to examine the number of people residing in food-insecure households, these estimates should not be used to characterize the number of individuals affected by food insecurity and hunger. Not all people in food-insecure households are necessarily food insecure. Similarly, people who live in households classified as food insecure with hunger are not all subject to reductions in food intake and do not all experience hunger. Young children in particular are usually protected from hunger in these households

In 2004, 38.2 million people lived in food-insecure households (table 1). They constituted 13.2 percent of the U.S. population and included 24.3 million adults and 13.9 million children. Of these individuals, 7.4 million adults and 3.3 million children lived in households where someone experienced hunger during the year. The number of children living in households classified as food insecure with hunger among children was 545,000 (0.7 percent of the children in the Nation; table 1). Tables 5 and 6 present estimates of the number of people and the number of children in the households in each food security status and household type.

Table 5

Number of individuals by food security status of households and selected household characteristics, 2004

Category	Total ¹	Food secure		Food insecure					
				All		Without hunger		With hunger	
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All individuals in households	288,603	250,407	86.8	38,196	13.2	27,535	9.5	10,661	3.7
Household composition:									
With children < 18	158,626	130,875	82.5	27,751	17.5	21,281	13.4	6,470	4.1
With children < 6	74,401	60,271	81.0	14,130	19.0	11,149	15.0	2,981	4.0
Married-couple families	114,646	100,335	87.5	14,311	12.5	11,448	10.0	2,863	2.5
Female head, no spouse	32,624	21,669	66.4	10,955	33.6	8,026	24.6	2,929	9.0
Male head, no spouse	9,167	7,081	77.2	2,086	22.8	1,479	16.1	607	6.6
Other household with child ²	2,188	1,789	81.8	399	18.2	328	15.0	71	3.2
With no children < 18	129,977	119,533	92.0	10,444	8.0	6,254	4.8	4,190	3.2
More than one adult	100,177	93,304	93.1	6,873	6.9	4,354	4.3	2,519	2.5
Women living alone	17,012	15,010	88.2	2,002	11.8	1,084	6.4	918	5.4
Men living alone	12,788	11,219	87.7	1,569	12.3	816	6.4	753	5.9
With elderly	49,775	46,006	92.4	3,769	7.6	2,922	5.9	847	1.7
Elderly living alone	10,693	9,911	92.7	782	7.3	517	4.8	265	2.5
Race/ethnicity of households:									
White non-Hispanic	196,967	179,023	90.9	17,944	9.1	12,734	6.5	5,210	2.6
Black non-Hispanic	34,832	26,164	75.1	8,668	24.9	6,104	17.5	2,564	7.4
Hispanic ³	39,654	30,251	76.3	9,403	23.7	7,261	18.3	2,142	5.4
Other	17,150	14,969	87.3	2,181	12.7	1,436	8.4	745	4.3
Household income-to-poverty ratio:									
Under 1.00	35,066	21,055	60.0	14,011	40.0	9,643	27.5	4,368	12.5
Under 1.30	48,124	30,125	62.6	17,999	37.4	12,500	26.0	5,499	11.4
Under 1.85	74,896	50,715	67.7	24,181	32.3	17,041	22.8	7,140	9.5
1.85 and over	162,073	152,897	94.3	9,176	5.7	6,887	4.2	2,289	1.4
Income unknown	51,634	46,795	90.6	4,839	9.4	3,607	7.0	1,232	2.4
Area of residence: ⁴									
Inside metropolitan area	237,911	207,111	87.1	30,800	12.9	22,148	9.3	8,652	3.6
In principal cities ⁵	75,102	62,029	82.6	13,073	17.4	9,456	12.6	3,617	4.8
Not in principal cities	124,002	111,681	90.1	12,321	9.9	8,985	7.2	3,336	2.7
Outside metropolitan area	50,692	43,297	85.4	7,395	14.6	5,387	10.6	2,008	4.0
Census geographic region:									
Northeast	53,705	48,026	89.4	5,679	10.6	4,162	7.7	1,517	2.8
Midwest	64,610	56,923	88.1	7,687	11.9	5,458	8.4	2,229	3.4
South	103,753	88,638	85.4	15,115	14.6	10,743	10.4	4,372	4.2
West	66,535	56,818	85.4	9,717	14.6	7,173	10.8	2,544	3.8

¹Totals exclude individuals in households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2004, these represented 986,000 individuals (0.3 percent of all individuals).

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Table 6

Number of children by food security status of households and selected household characteristics, 2004

Category	Total ¹	Food secure		Food insecure					
				All		Without hunger among children		With hunger among children	
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All children	73,039	59,171	81.0	13,868	19.0	13,323	18.2	545	0.7
Household composition:									
With children < 6	36,240	28,776	79.4	7,464	20.6	7,284	20.1	180	.5
Married-couple families	51,108	44,466	87.0	6,642	13.0	6,407	12.5	235	.5
Female head, no spouse	17,117	10,993	64.2	6,124	35.8	5,860	34.2	264	1.5
Male head, no spouse	4,015	3,051	76.0	964	24.0	924	23.0	40	1.0
Other household with child ²	799	662	82.9	137	17.1	131	16.4	6	.8
Race/ethnicity of households:									
White non-Hispanic	44,759	38,948	87.0	5,811	13.0	5,636	12.6	175	.4
Black non-Hispanic	10,882	7,492	68.8	3,390	31.2	3,246	29.8	144	1.3
Hispanic ³	12,980	9,134	70.4	3,846	29.6	3,694	28.5	152	1.2
Other	4,418	3,598	81.4	820	18.6	747	16.9	73	1.7
Household income-to-poverty ratio:									
Under 1.00	12,085	6,396	52.9	5,689	47.1	5,386	44.6	303	2.5
Under 1.30	16,429	9,219	56.1	7,210	43.9	6,836	41.6	374	2.3
Under 1.85	24,940	15,459	62.0	9,481	38.0	9,013	36.1	468	1.9
1.85 and over	37,094	34,435	92.8	2,659	7.2	2,620	7.1	39	.1
Income unknown	11,005	9,277	84.3	1,728	15.7	1,690	15.4	38	.3
Area of residence: ⁴									
Inside metropolitan area	60,826	49,453	81.3	11,373	18.7	10,905	17.9	468	.8
In principal cities ⁵	19,096	14,130	74.0	4,966	26.0	4,797	25.1	169	.9
Not in principal cities	32,195	27,688	86.0	4,507	14.0	4,293	13.3	214	.7
Outside metropolitan area	12,213	9,719	79.6	2,494	20.4	2,418	19.8	76	.6
Census geographic region:									
Northeast	12,836	10,954	85.3	1,882	14.7	1,824	14.2	58	.5
Midwest	16,238	13,380	82.4	2,858	17.6	2,751	16.9	107	.7
South	26,459	21,127	79.8	5,332	20.2	5,099	19.3	233	.9
West	17,505	13,710	78.3	3,795	21.7	3,648	20.8	147	.8

¹Totals exclude children in households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2003, these represented 267,000 children (0.4 percent).

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Prevalence of Food Insecurity and Food Insecurity With Hunger by State, Average 2002-04

Prevalence rates of food insecurity and food insecurity with hunger varied considerably from State to State. Data for 3 years, 2002-04, were combined to provide more reliable statistics at the State level (table 7). Measured prevalence rates of food insecurity during this 3-year period ranged from 6.3 percent in North Dakota to 16.4 percent in Texas; measured prevalence rates of food insecurity with hunger ranged from 1.8 percent in Delaware to 5.6 percent in Oklahoma.

The margins of error for the State prevalence rates should be taken into consideration when interpreting these statistics and especially when comparing prevalence rates across States. Margins of error reflect sampling variation—the uncertainty associated with estimates that are based on information from only a limited number of households in each State. The margins of error presented in table 7 indicate the range (above or below the estimated prevalence rate) within which the true prevalence rate is 90 percent likely to be. In some States, margins of error were nearly 2 percentage points for estimated prevalence rates of food insecurity and larger than 1 percentage point for estimated prevalence rates of food insecurity with hunger. For example, considering the margin of error, it is not certain (statistically significant) that the rate of food insecurity was higher in Texas than in the States with the next nine highest prevalence rates of food insecurity.

Taking into account the margins of error of the State and U.S. estimates, the prevalence of food insecurity was higher than the national average in 10 States and lower than the national average in 20 States. In the remaining 20 States and the District of Columbia, differences from the national average were not statistically significant. The prevalence of food insecurity with hunger was higher than the national average in 11 States, lower than the national average in 18 States, and not significantly different from the national average in 21 States and the District of Columbia.

The 2002-04 State-level food security statistics are compared with those for 1999-2001 and 1996-98 in appendix D. The 1996-98 statistics originally published by ERS in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) cannot be compared directly with those for later years because of changes over the years in screening procedures used to reduce respondent burden in the food security surveys. The 1996-98 statistics presented in appendix D have been adjusted for these screening differences.

Table 7

Prevalence of household-level food insecurity and food insecurity with hunger by State, average 2002-04¹

State	Number of households		Food insecure (with or without hunger)		Food insecure with hunger	
	Average 2002-04 ²	Interviewed	Prevalence	Margin of error ³	Prevalence	Margin of error ³
	<i>Number</i>	<i>Number</i>	<i>Percent</i>	<i>Percentage points</i>	<i>Percent</i>	<i>Percentage points</i>
U.S. total	111,260,000	144,829	11.4	0.29	3.6	0.14
AK	234,000	1,893	11.7	1.73	4.6*	.86
AL	1,844,000	2,048	12.2	1.27	2.9*	.65
AR	1,095,000	1,789	14.8*	1.37	5.3*	1.18
AZ	2,046,000	1,953	12.7	1.55	3.5	.56
CA	12,722,000	9,373	12.4*	.56	3.9	.33
CO	1,768,000	2,938	11.3	.85	3.5	.56
CT	1,309,000	2,486	8.6*	.81	3.0*	.57
DC	275,000	1,839	10.2	1.25	2.9	.75
DE	311,000	1,924	6.8*	.96	1.8*	.62
FL	6,754,000	6,128	10.8	.62	3.6	.39
GA	3,323,000	2,273	12.3	1.63	3.8	.89
HI	420,000	1,625	8.5*	1.39	2.6*	.69
IA	1,191,000	2,681	10.2	1.16	3.1	.68
ID	512,000	1,825	14.6*	1.58	3.7	.74
IL	4,879,000	5,016	9.0*	.58	3.0*	.42
IN	2,442,000	2,835	10.1*	1.13	3.6	.56
KS	1,072,000	2,576	12.3	1.38	4.8*	.62
KY	1,667,000	2,057	12.2	1.49	3.3	.61
LA	1,698,000	1,507	11.8	1.34	2.6*	.88
MA	2,535,000	2,736	7.1*	1.21	2.7*	.51
MD	2,102,000	2,462	8.6*	1.19	3.2	.63
ME	539,000	2,877	9.8*	.97	3.1*	.48
MI	3,916,000	3,909	11.3	.76	3.8	.58
MN	1,953,000	2,922	7.2*	1.11	2.5*	.75
MO	2,312,000	2,371	11.3	1.26	3.9	.70
MS	1,078,000	1,408	15.8*	1.42	4.5*	.74
MT	383,000	1,784	12.2	1.41	4.7*	.88
NC	3,288,000	3,113	13.8*	1.14	4.9*	.63
ND	263,000	2,290	6.3*	.94	1.9*	.43
NE	678,000	2,403	10.7	1.36	3.7	.71
NH	503,000	2,517	6.4*	.78	2.4*	.56
NJ	3,161,000	3,200	8.5*	1.09	2.9*	.54
NM	716,000	1,592	15.8*	1.74	4.9*	.92
NV	811,000	2,662	8.5*	.73	2.9*	.50
NY	7,332,000	6,685	10.5*	.61	3.2	.42
OH	4,489,000	4,564	11.4	.90	3.4	.58
OK	1,404,000	1,927	15.2*	1.38	5.6*	.77
OR	1,405,000	2,276	11.9	1.01	3.8	.65
PA	4,813,000	5,219	10.2*	.93	2.9*	.47
RI	414,000	2,535	12.1	1.11	4.2	.58
SC	1,601,000	1,909	14.8*	1.43	5.5*	.97
SD	306,000	2,436	9.2*	1.17	2.8*	.60
TN	2,345,000	1,833	11.5	1.40	3.5	.91
TX	8,004,000	5,943	16.4*	.91	4.9*	.43
UT	761,000	1,800	14.8*	1.51	4.6	1.16
VA	2,781,000	2,475	8.5*	.64	2.6*	.51
VT	255,000	2,221	9.0*	1.01	3.6	.66
WA	2,421,000	2,690	12.0	1.25	4.3*	.55
WI	2,191,000	3,077	9.0*	1.06	2.8*	.53
WV	733,000	2,138	8.8*	.81	2.9*	.49
WY	205,000	2,089	11.0	1.17	4.2	.89

*Difference from U.S. total was statistically significant with 90-percent confidence ($t > 1.645$).

¹Prevalence rates for 1996-98 reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) are not directly comparable with the rates reported here because of differences in screening procedures in the CPS Food Security Supplements from 1995-98. Comparable statistics for the earlier period are presented in appendix D.

²Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. These represented about 0.3 percent of all households in each year.

³Margin of error with 90-percent confidence (1.645 times the standard error of the estimated prevalence rate).

Source: Prepared by ERS using data from the December 2002, December 2003, and December 2004 Current Population Survey Food Security Supplements.

Household Spending on Food

This section provides information on how much households spent on food, as reported in the December 2004 food security survey. Food insecurity is a condition that arises specifically from lack of money and other resources to acquire food. In most households, the majority of food consumed by household members is purchased—either from supermarkets or grocery stores, to be eaten at home, or from cafeterias, restaurants, or vending machines to be eaten outside the home. The amount of money that a household spends on food, therefore, provides insight into how adequately it is meeting its food needs.¹⁵ When households reduce food spending below some minimum level because of constrained resources, various aspects of food insecurity such as disrupted eating patterns and reduced food intake may result.

Methods

The household food expenditure statistics in this report are based on *usual* weekly spending for food, as reported by respondents after they were given a chance to reflect on the household's actual food spending during the previous week.¹⁶ Respondents were first asked to report the amounts of money their households had spent on food in the week prior to the interview (including any purchases made with food stamps) at (1) supermarkets and grocery stores; (2) stores other than supermarkets and grocery stores, such as meat markets, produce stands, bakeries, warehouse clubs, and convenience stores; (3) restaurants, fast food places, cafeterias, and vending machines; and (4) any other kind of place.¹⁷

Total spending for food, based on responses to this series of questions, was verified with the respondent, and the respondent was then asked how much the household *usually* spent on food during a week. Earlier analyses by ERS researchers found that food expenditures estimated from data collected by this method were consistent with estimates from the Consumer Expenditure Survey (CES)—the principal source of data on U.S. household expenditures for goods and services (Oliveira and Rose, 1996).

Food spending was adjusted for household size and composition in two ways. The first adjustment was calculated by dividing each household's usual weekly food spending by the number of persons in the household, yielding the "usual weekly food spending per person" for that household. The second adjustment accounts more precisely for the different food needs of households by comparing each household's usual food spending to the estimated cost of the Thrifty Food Plan for that household in December 2004. The Thrifty Food Plan—developed by USDA—serves as a national standard for a nutritious, low-cost diet. It represents a set of "market baskets" of food that people of specific ages and genders could consume at home to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households.¹⁸ Each household's reported usual weekly food spending was divided by the cost of the Thrifty Food Plan for that household, based on the age and gender of each household member and the number of people in the household (see table C-1).¹⁹

¹⁵Food spending is, however, only an indirect indicator of food consumption. It understates food consumption in households that receive food from in-kind programs, such as the National School Lunch and School Breakfast Programs, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), meal programs for children in child care and for the elderly, and private charitable organizations. (Purchases with food stamps, however, are counted as food spending in the CPS food security survey.) Food spending also understates food consumption in households that acquire a substantial part of their food supply through gardening, hunting, or fishing, as well as in households that eat more meals at friends' or relatives' homes than they provide to friends or relatives. (Food spending overstates food consumption in households with the opposite characteristics.) Food spending also understates food consumption in geographical areas with relatively low food prices and overstates consumption in areas with high food prices.

¹⁶In CPS food security surveys that asked about both actual food spending in the week prior to the survey and usual food spending per week, median food spending in the previous week was higher than median usual food spending. This finding was consistent across the various years in which the survey was conducted and across different household types. The reasons for this difference are under study. Pending outcomes of this research, analysts should be aware of a possible downward bias on food spending statistics based on "usual" food spending data.

¹⁷For spending in the first two categories of stores, respondents were also asked how much of the amount was for "nonfood items such as pet food, paper products, detergents, or cleaning supplies." These amounts are not included in calculating spending for food.

¹⁸The Thrifty Food Plan, in addition to its use as a research tool, is used as a basis for setting the maximum benefit amounts of the Food Stamp Program. (See appendix C for further information on the Thrifty Food Plan and estimates of the weekly cost of the Thrifty Food Plan and three other USDA food plans for each age-gender group.)

¹⁹Thrifty Food Plan costs are estimated separately for Alaska and Hawaii using adjustment factors calculated from USDA's Thrifty Food Plan costs for those States for the second half of 2003.

The median of each of the two food spending measures was calculated at the national level and for households in various categories to represent the usual weekly food spending—per person and relative to the cost of the Thrifty Food Plan—of the typical household in each category. Medians are reported rather than averages because medians are not unduly affected by the few unexpectedly high values of usual food spending that are believed to be reporting errors or data entry errors. Thus, the median better reflects what a typical household spent.

Data were weighted using food security supplement weights provided by the Census Bureau so that the interviewed households would represent all households in the United States. About 6 percent of households interviewed in the CPS food security survey did not respond to the food spending questions and were excluded from the analysis. As a result, the total number of households represented in tables 8 and 9 is somewhat smaller than that in tables 1 and 2.

Food Expenditures by Selected Household Characteristics

In 2004, the typical U.S. household spent \$40 per person each week for food (table 8). Median household food spending relative to the cost of the Thrifty Food Plan was 1.25. That is, the typical household usually spent 25 percent more on food than the cost of the Thrifty Food Plan for its household type. Median spending for food relative to the cost of the Thrifty Food Plan was statistically unchanged from 2003 (1.26) to 2004.

Households with children under age 18 generally spent less for food, relative to the Thrifty Food Plan, than those without children. The typical household with children spent 11 percent more than the cost of the Thrifty Food Plan, while the typical household with no children spent 37 percent more than the cost of the Thrifty Food Plan. Median food expenditures relative to the Thrifty Food Plan were lower for single females with children (1.00) and for single males with children (1.08) than for married couples with children (1.16). Median food expenditures relative to the Thrifty Food Plan were highest for men living alone (1.51).

Median food expenditures relative to the Thrifty Food Plan were lower for Black households (1.02) and Hispanic households (1.07) than for non-Hispanic White households (1.31). This pattern is consistent with the lower average incomes and higher poverty rates of these racial and ethnic minorities.

As expected, higher income households spent more money on food than lower income households.²⁰ The typical household with income below the poverty line spent about 8 percent less than the cost of the Thrifty Food Plan, while the typical household with income above 185 percent of the poverty line spent 38 percent more than cost of the Thrifty Food Plan.

Median relative food spending of households outside metropolitan areas was 1.10, compared with 1.27 for households inside metropolitan areas. Median spending on food by households in the Midwest (1.17) and South (1.22) was slightly lower than that for households in the other Census regions.

²⁰However, food spending does not rise proportionately with income increases, so high-income households actually spend a smaller *proportion* of their income on food than do low-income households.

Table 8

Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP), 2004

Category	Number of households ¹	Median weekly food spending	
		Per person	Relative to TFP
	<i>1,000</i>	<i>Dollars</i>	<i>Ratio</i>
All households	105,717	40.00	1.25
Household composition:			
With children < 18	38,082	31.25	1.11
At least one child < 6	17,272	28.57	1.10
Married-couple families	25,843	32.50	1.16
Female head, no spouse	9,155	28.33	1.00
Male head, no spouse	2,532	33.00	1.08
Other household with child ²	552	33.33	1.08
With no children < 18	67,635	50.00	1.37
More than one adult	40,084	43.33	1.29
Women living alone	15,685	50.00	1.38
Men living alone	11,866	60.00	1.51
With elderly	23,726	40.00	1.13
Elderly living alone	9,634	45.00	1.23
Race/ethnicity of households:			
White non-Hispanic	76,372	41.67	1.31
Black non-Hispanic	12,344	32.50	1.02
Hispanic ³	11,371	32.50	1.07
Other	5,631	37.67	1.21
Household income-to-poverty ratio:			
Under 1.00	12,698	30.00	.92
Under 1.30	17,505	30.00	.94
Under 1.85	26,844	30.00	.98
1.85 and over	61,080	45.00	1.38
Income unknown	17,794	40.00	1.22
Area of residence: ⁴			
Inside metropolitan area	86,301	40.00	1.27
In principal cities ⁵	27,963	40.00	1.26
Not in principal cities	43,429	41.25	1.32
Outside metropolitan area	19,417	35.00	1.10
Census geographic region:			
Northeast	19,438	40.00	1.29
Midwest	24,174	37.50	1.17
South	38,699	40.00	1.22
West	23,406	41.67	1.32

¹Totals exclude households that did not answer the questions about spending on food. These represented 6.9 percent of all households.

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Food spending statistics by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Food Expenditures and Household Food Security

Food-secure households typically spent more on food than food-insecure households. Median food spending relative to the cost of the Thrifty Food Plan was 1.28 among food-secure households, compared with 0.98 among all food-insecure households, 0.99 among households classified as food insecure without hunger, and 0.96 among households classified as food insecure with hunger (table 9). Thus, the typical food-secure household spent 31 percent more for food than the typical household of the same size and composition that was food insecure and 33 percent more than the typical household of the same size and composition that was food insecure with hunger.

The relationship between food expenditures and food security was consistent across household structure, race/ethnicity, income, metropolitan residence, and geographic region (table 10). For every household type, median food spending relative to the cost of the Thrifty Food Plan was higher for food-secure than food-insecure households. This was true even for households within the same income category. For example, among households with incomes below the poverty line, median food spending relative to the cost of the Thrifty Food Plan was 0.85 for food-insecure households, compared with 0.96 for food-secure households. Furthermore, for food-secure households, median food spending for every household type except those with incomes below 130 percent of the poverty line was higher than the cost of the Thrifty Food Plan.

Although the *relationship* between food expenditures and food security was consistent, the *levels* of food expenditure varied substantially across household types, even within the same food security status. For food-insecure households, food expenditures of typical households in most categories were close to the cost of the Thrifty Food Plan, but there were some notable exceptions. Nonelderly food-insecure individuals living alone spent substantially more on food than the cost of the Thrifty Food Plan for their age and gender. Food-insecure households with incomes above 185 percent of the poverty line also registered median food expenditures substantially higher than the cost of the Thrifty Food Plan.²¹

²¹ERS analysis has found that the experiences of food insecurity of higher and middle-income households are, disproportionately, occasional and of short duration (Nord et al., 2000). Their food expenditures during those food-insecure periods may have been lower than the amount they reported as their “usual” weekly spending for food.

Table 9

Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2004

Category	Number of households ¹	Median weekly food spending	
		Per person	Relative to TFP
	<i>1,000</i>	<i>Dollars</i>	<i>Ratio</i>
All households	105,717	40.00	1.25
Food security status:			
Food secure	92,494	40.00	1.28
Food insecure	13,004	30.00	.98
Without hunger	8,707	30.00	.99
With hunger	4,297	30.00	.96

¹Total for all households excludes households that did not answer the questions about spending on food. These represented 6.9 percent of all households. Totals in the bottom section also exclude households that did not answer any of the questions in the food security scale.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Table 10

Weekly household food spending relative to the cost of the Thrifty Food Plan (TFP) by food security status and selected household characteristics, 2004

Category	Median weekly food spending relative to TFP ¹	
	Food secure	Food insecure
	<i>Ratio</i>	
All households	1.28	0.98
Household composition:		
With children < 18	1.16	.90
At least one child < 6	1.15	.92
Married couple families	1.19	.93
Female head, no spouse	1.05	.88
Male head, no spouse	1.14	.95
Other household with child ²	1.08	NA
With no children < 18	1.38	1.08
More than one adult	1.34	.98
Women living alone	1.40	1.11
Men living alone	1.63	1.26
With elderly	1.14	.84
Elderly living alone	1.26	.98
Race/ethnicity of households:		
White non-Hispanic	1.36	1.02
Black non-Hispanic	1.06	.93
Hispanic ³	1.12	.95
Other	1.25	.84
Household income-to-poverty ratio:		
Under 1.00	.96	.85
Under 1.30	.98	.86
Under 1.85	1.01	.90
1.85 and over	1.40	1.13
Income unknown	1.26	.96
Area of residence: ⁴		
Inside metropolitan area	1.35	1.00
In principal cities ⁵	1.36	1.01
Not in principal cities	1.37	1.00
Outside metropolitan area	1.12	.90
Census geographic region:		
Northeast	1.35	1.05
Midwest	1.21	.95
South	1.26	.97
West	1.38	.97

¹Statistics exclude households that did not answer the questions about spending on food and those that did not provide valid responses to any of the questions on food security. These represented 6.9 percent of all households.

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation.

Food spending statistics by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

NA = Median not reported; fewer than 100 interviewed households in category.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Use of Federal and Community Food Assistance Programs

Households with limited resources employ a variety of methods to help meet their food needs. Some participate in one or more of the Federal food assistance programs or obtain food from emergency food providers in their communities to supplement the food they purchase. Households that turn to Federal and community food assistance programs typically do so because they are having difficulty in meeting their food needs. The use of such programs by low-income households and the relationship between their food security status and use of food assistance programs provide insight into the extent of their difficulties in obtaining enough food and the ways they cope with those difficulties.

This section presents information about the food security status and food expenditures of households that participated in the three largest Federal food assistance programs and the two most common community food assistance programs. (See box, “Federal and Community Food Assistance Programs.”) It also provides information about the extent to which food-insecure households participated in these programs and about the characteristics of households that obtained food from community food pantries. Overall participation in the Federal food assistance programs, participation rates of eligible households in those programs, and characteristics of participants in those programs are not described in this report. Extensive information on those topics is available from the USDA’s Food and Nutrition Service.²²

Methods

The December 2004 CPS food security survey included a number of questions about the use of Federal and community-based food assistance programs. All households with incomes below 185 percent of the Federal poverty threshold were asked these questions. In order to minimize the burden on respondents, households with incomes above that range were not asked the questions unless they indicated some level of difficulty in meeting their food needs on preliminary screener questions (listed in footnote 5). The questions analyzed in this section are:

- “During the past 12 months...did anyone in this household get food stamp benefits, that is, either food stamps or a food-stamp benefit card?” Households that responded affirmatively were then asked in which months they received food stamp benefits and on what date they last received them. Information from these 3 questions was combined to identify households that received food stamps in the 30 days prior to the survey.
- “During the past 30 days, did any children in the household...receive free or reduced-cost lunches at school?” (Only households with children between the ages of 5 and 18 were asked this question.)
- “During the past 30 days, did any women or children in this household get food through the WIC program?” (Only households with a child age 0-5 or a woman age 15-45 were asked this question.) WIC is the acronym for the Special Supplemental Nutrition Program for Women, Infants, and Children.

²²Information on Federal food and nutrition assistance programs, including participation rates and characteristics of participants, is available from the Food and Nutrition Service website at www.fns.usda.gov. Additional research findings on the operation and effectiveness of these programs are available from the ERS website at www.ers.usda.gov/briefing/foodnutritionassistance.

- “In the last 12 months, did you or other adults in your household ever get emergency food from a church, a food pantry, or food bank?” The use of these resources any time during the last 12 months is referred to in the rest of this section as “food pantry use.” Households that reported using a food pantry in the last 12 months were asked, “How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?” Households reporting that they did not use a food pantry in the last 12 months were asked, “Is there a church, food pantry, or food bank in your community where you could get emergency food if you needed it?”
- “In the last 12 months, did you or other adults in your household ever eat any meals at a soup kitchen?” The use of this resource is referred to as “use of an emergency kitchen” in the following discussion.

Prevalence rates of food security, food insecurity, and food insecurity with hunger, as well as median food expenditures relative to the cost of the Thrifty Food Plan, were calculated for households reporting use of each food assistance program or facility and for comparison groups of nonparticipating households with incomes and household compositions similar to those of program participants. Statistics for participating households excluded households with incomes above the ranges specified for the comparison groups.²³ The proportions of food-insecure households participating in each of the three largest Federal food assistance programs were calculated, as well as the proportion that participated in any of the three programs. These analyses were restricted to households with annual incomes below 185 percent of the poverty line because most households with incomes above this range were not asked whether they participated in these programs.

The numbers and proportions of households using food pantries and emergency kitchens were calculated at the national level, and the proportions of households in selected categories that used food pantries were calculated. Households were assumed not to have used these resources if they had incomes above 185 percent of the poverty line and gave no indication of food insecurity on either of two preliminary screener questions (listed in footnote 5). Analysis (not shown) indicated that this assumption resulted in negligible downward bias on the estimated numbers of households that used these facilities.

Estimates of the proportion of households using emergency kitchens based on the CPS food security surveys almost certainly understate the proportion of the population that actually uses these providers. The CPS selects households to interview from an address-based list and therefore interviews only persons who occupy housing units. People who are homeless at the time of the survey are not included in the sample, and those in tenuous housing arrangements (for instance, temporarily doubled up with another family) also may be missed. These two factors—exclusion of the homeless and underrepresentation of those who are tenuously housed—bias estimates of emergency kitchen use downward, especially among certain subgroups of the population. This is much less true for food pantry users because they

²³Some program participants reported incomes that were higher than the program eligibility criteria. They may have had incomes below the eligibility threshold during part of the year, or subfamilies within the household may have had incomes low enough to have been eligible.

Federal and Community Food Assistance Programs

Federal Food Assistance Programs

USDA's Food and Nutrition Service (FNS) administers 15 domestic food and nutrition assistance programs. The three largest programs are:

- The Food Stamp Program (FSP). The program provides benefits through electronic benefit transfer (EBT) or paper coupons to eligible low-income households. Clients qualify for the program based on available household income, assets, and certain basic expenses. Food stamps can be used to purchase food from eligible retailers. In an average month of fiscal year 2004, the FSP provided benefits to 23.9 million people in the United States, totaling over \$24 billion for the year. The average benefit was about \$86 per person per month.
- The National School Lunch Program (NSLP). The program operates in about 100,000 public and nonprofit private schools and residential child-care institutions. All meals served under the program receive Federal subsidies, and free or reduced-price lunches are available to low-income students. In 2004, the program provided lunches to an average of nearly 29 million children each school day. About 59 percent of the lunches served in 2004 were free or reduced-price.
- The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The program is a federally funded preventive nutrition program that provides grants to States to support distribution of supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and nonbreastfeeding post-partum women, for infants in low-income families, and for children under 5 in low-income families who are found to be at nutritional risk. Most State WIC programs provide vouchers that participants use to acquire supplemental food packages at authorized food stores. In fiscal year 2004, WIC served an average 7.9 million participants per month with an average monthly benefit of about \$38 per person.

Community Food-Assistance Providers

Food pantries and emergency kitchens are the main direct providers of emergency food assistance. These agencies are locally based and rely heavily on volunteers. The majority of them are affiliated with faith-based organizations. (See Ohls et al., 2002, for more information.) Most of the food distributed by food pantries and emergency kitchens comes from local resources, but USDA supplements these resources through The Emergency Food Assistance Program (TEFAP). In 2004, TEFAP supplied 520 million pounds of commodities to community emergency food providers. Over half of all food pantries and emergency kitchens received TEFAP commodities in 2000, and these commodities accounted for about 14 percent of all food distributed by them (Ohls et al., 2002). Pantries and kitchens play different roles, as follows:

- Food pantries distribute unprepared foods for offsite use. An estimated 32,737 pantries operated in 2000 (the last year for which nationally representative statistics are available) and distributed, on average, 239 million pounds of food per month. Households using food pantries received an average of 38.2 pounds of food per visit.
- Emergency kitchens (sometimes referred to as soup kitchens) provide individuals with prepared food to eat at the site. In 2000 an estimated 5,262 emergency kitchens served a total of 474,000 meals on an average day.

need cooking facilities to make use of items from a food pantry.²⁴ Therefore, detailed analyses in this section focus primarily on the use of food pantries.

Finally, proportions were calculated of households participating in the three largest Federal food programs who also obtained food from food pantries and emergency kitchens. This analysis was restricted to households with annual incomes below 185 percent of the poverty line.

Data for all calculations were weighted using food security supplement weights. These weights, provided by the Census Bureau, are based on sampling probabilities and enable the interviewed households to statistically represent all civilian households in the United States.

Food Security and Food Spending of Households That Received Food Assistance

The relationship between food assistance program use and food security is complex. There are reasons to expect that households observed to be using food assistance programs in a one-time survey can either be more food secure or less food secure than low-income households not using food assistance. Since these programs provide food and other resources to reduce the risk of hunger, households are expected to be more food secure after receiving program benefits than before doing so. On the other hand, it is the more food-insecure households, having greater difficulty meeting their food needs, that seek assistance from the programs.²⁵ Nearly half of food stamp households and households that received free or reduced-cost school lunches were food insecure as were 42 percent of those that received WIC (table 11). The prevalence rates of food insecurity with hunger among households participating in the Food Stamp Program (FSP) or receiving free or reduced-cost school lunches were about twice those of nonparticipating households in the same income ranges and with similar household composition. About 70 percent of households that obtained emergency food from community food pantries were food insecure, and nearly one-third were food insecure with hunger. For those who ate meals at emergency kitchens, rates of food insecurity and hunger were even higher.

A possible complicating factor in the preceding analysis is that food insecurity was measured over a 12-month period. An episode of food insecurity or food insecurity with hunger may have occurred at a different time during the year than the use of a specific food assistance program. A similar analysis using a 30-day measure of food insecurity with hunger largely overcomes this potential problem because measured food insecurity with hunger and reported use of food assistance programs are more likely to refer to contemporaneous conditions when both are referenced to the previous 30 days. That analysis (see appendix E and table E-2) found associations between prevalence rates of hunger and the use of food assistance programs that were generally similar to those in table 11.

Households that received food assistance also spent less for food than nonrecipient households (table 12).²⁶ Typical (median) food expenditures of households that received food stamps were 89 percent of the cost of the Thrifty Food Plan.²⁷ The corresponding statistics were 85 percent for households

²⁴Previous studies of emergency kitchen users and food pantry users confirm these assumptions. For example, a nationally representative survey of people who use food pantries and emergency kitchens found that about 36 percent of emergency kitchen clients and 8 percent of households that received food from food pantries were homeless in 2001 (Briefel et al., 2003).

²⁵This “self-selection” effect is evident in the association between food security and food program participation that is observed in the food security survey. Participating households were less food secure than similar nonparticipating households. More complex analysis using methods to account for this self-targeting is required to assess the extent to which the programs improve food security (see especially Gundersen and Oliveira, 2001; Gundersen and Gruber, 2001; and Nelson and Lurie, 1998).

²⁶Food purchased with food stamps is included in household food spending as calculated here. However, the value of school lunches and food obtained with WIC vouchers is not included. Food from these sources supplemented the food purchased by many of these households.

²⁷The maximum benefit for food stamp households is approximately equal to the cost of the Thrifty Food Plan. About 24 percent of the FSP caseload receives the maximum benefit. Households with countable income receive less.

with children who received free or reduced-price school lunches, 90 percent for households receiving WIC, and 84 percent for households that received emergency food from food pantries. Typical food expenditures for nonparticipating households in these income ranges were higher than those of participating households, and were near or slightly below the cost of the Thrifty Food Plan.

Table 11

Prevalence rates of food security, food insecurity, and food insecurity with hunger by participation in selected Federal and community food assistance programs, 2004

Category	Food secure	Food insecure		
		All	Without hunger	With hunger
<i>Percent</i>				
Income less than 130 percent of poverty line:				
Received food stamps previous 30 days	50.6	49.4	30.7	18.6
Did not receive food stamps previous 30 days	71.3	28.7	18.6	10.1
Income less than 185 percent of poverty line; school-age children in household:				
Received free or reduced-price school lunch previous 30 days	52.2	47.8	34.8	13.1
Did not receive free or reduced-price school lunch previous 30 days	75.4	24.6	17.9	6.8
Income less than 185 percent of poverty line; children under age 5 in household:				
Received WIC previous 30 days	57.7	42.3	31.8	10.5
Did not receive WIC previous 30 days	67.9	32.1	25.0	7.0
Income less than 185 percent of poverty line:				
Received emergency food from food pantry previous 12 months	31.4	68.6	36.6	31.9
Did not receive emergency food from food pantry previous 12 months	74.8	25.2	17.3	7.9
Ate meal at emergency kitchen previous 12 months	30.4	69.6	20.2	49.4
Did not eat meal at emergency kitchen previous 12 months	70.7	29.3	19.4	9.9

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Table 12

Weekly household food spending relative to the cost of the Thrifty Food Plan (TFP) by participation in selected Federal and community food assistance programs, 2004

Category	Median weekly food spending relative to cost of the TFP
<i>Ratio</i>	
Income less than 130 percent of poverty line:	
Received food stamps previous 30 days	0.89
Did not receive food stamps previous 30 days	.97
Income less than 185 percent of poverty line; school-age children in household:	
Received free or reduced-price school lunch previous 30 days	.85
Did not receive free or reduced-price school lunch previous 30 days	.98
Income less than 185 percent of poverty line; children under age 5 in household:	
Received WIC previous 30 days	.90
Did not receive WIC previous 30 days	.94
Income less than 185 percent of poverty line:	
Received emergency food from food pantry previous 12 months	.84
Did not receive emergency food from food pantry previous 12 months	1.00

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Participation in Federal Food Assistance Programs by Food-Insecure Households

Somewhat more than half (55.2 percent) of food-insecure households received assistance from at least one of the three largest Federal food assistance programs during the month prior to the December 2004 food security survey (table 13). The largest share of food-insecure households was reached by the National School Lunch Program (36.0 percent), followed by the Food Stamp Program (29.7 percent) and the WIC program (13.6 percent).²⁸ Half of households classified as food insecure with hunger participated in one or more of the three largest Federal food assistance programs, and the largest share of these (32.6 percent) participated in the Food Stamp Program.

Use of Food Pantries and Emergency Kitchens

Some 3.9 million households (3.5 percent of all households) obtained emergency food from food pantries one or more times during the 12-month period ending in December 2004 (table 14). A much smaller number—539,000 households (0.5 percent)—had members who ate one or more meals at an emergency kitchen. Households that obtained food from food pantries included 6.9 million adults and 4.2 million children. Of the households that reported having obtained food from a food pantry in the last 12 months, 47 percent reported that this had occurred in only 1 or 2 months; 24 percent reported that it had occurred in almost every month; and the remaining 29 percent reported that it had occurred in “some months, but not every month” (analysis not shown).

²⁸These statistics may be biased downward somewhat. It is known from comparisons between household survey data and administrative records that food program participation is underreported by household survey respondents, including those in the CPS. This is probably true for food-insecure households as well, although the extent of underreporting by these households is not known. Statistics are based on the subsample of households with annual incomes below 185 percent of the poverty line. Not all these households were eligible for certain of the programs. (For example, those without pregnant women or children and with incomes above 130 percent of poverty would not have been eligible for any of the programs.)

Table 13
Participation of food-insecure households in selected Federal food assistance programs, 2004

Program	Share of food insecure households that participated in the program during the previous 30 days ¹	Share of food-insecure-with-hunger households that participated in the program during the previous 30 days ¹
	<i>Percent</i>	
Food stamps	29.7	32.6
Free or reduced-price school lunch	36.0	28.0
WIC	13.6	9.6
Any of the three programs	55.2	50.3
None of the three programs	44.8	49.7

¹Analysis is restricted to households with annual incomes less than 185 percent of the poverty line because most households with incomes above that range were not asked whether they participated in food assistance programs.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Use of Food Pantries and Emergency Kitchens by Food Security Status

Use of food pantries and emergency kitchens was strongly associated with food insecurity. Food-insecure households were 17 times more likely than food-secure households to have obtained food from a food pantry, and 16 times more likely than food-secure households to have eaten a meal at an emergency kitchen (table 14). Furthermore, among food-insecure households, those registering hunger were about twice as likely to have used a food pantry and four times as likely to have used an emergency kitchen as those that were food insecure without hunger.

A large majority (80 percent) of food-insecure households, and even of households that were food insecure with hunger (71 percent), did not use a food pantry at any time during the previous year. In some cases, this was because there was no food pantry available or because the household believed there was none available. Among food-insecure households that did not use a food pantry, 26 percent reported that there was no such resource in their community, and an additional 19 percent said they did not know if there was. Nevertheless, even among food-insecure households that knew there was a food pantry in their community, only 31 percent availed themselves of it.

About 30 percent of households that used food pantries and emergency kitchens were classified as food secure. Just over half (55 percent) of these food-secure households did, however, report some concerns or difficulties in obtaining enough food by responding positively to 1 or 2 of the 18 indicators of food insecurity. (A household must report occurrence of at least three of the indicators to be classified as food insecure; see appendix A). The proportions using food pantries and emergency kitchens were much higher among households that reported one or two indicators of food insecurity than among households that reported none—12 times as high for food pantry use and 9 times as high for use of emergency kitchens.

Table 14

Use of food pantries and emergency kitchens, 2004

Category	Pantries			Kitchens		
	Total ¹	Users	Percent	Total ¹	Users	Percent
All households	1,000	3,919	3.5	1,000	539	0.48
All individuals in households	287,751	11,086	3.9	287,911	1,182	.41
Adults in households	215,025	6,869	3.2	215,111	841	.39
Children in households	72,726	4,217	5.8	72,800	341	.47
Food security status:						
Food secure	99,221	1,215	1.2	99,244	164	.17
Food insecure	13,364	2,694	20.2	13,383	375	2.80
Without hunger	8,955	1,399	15.6	8,976	125	1.39
With hunger	4,409	1,295	29.4	4,407	250	5.67

¹Totals exclude households that did not answer the question about food pantries or emergency kitchens. Totals in the bottom section also exclude households that did not answer any of the questions in the food security scale.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Use of Food Pantries by Selected Household Characteristics

The use of food pantries varied considerably by household structure and by race and ethnicity (table 15). Households with children were nearly twice as likely as those without children to use food pantries (5.0 percent compared with 2.6 percent). Food pantry use was especially high among female-headed households with children (10.7 percent), while use by married couples with children (3.0 percent) and households with elderly members (2.5 percent) was lower than the national average. Use of food pantries was higher among Blacks (7.2 percent) and Hispanics (4.9 percent) than among non-Hispanic Whites (2.6 percent), consistent with the higher rates of poverty, food insecurity, and hunger of these minorities. In spite of their lower use rate, non-Hispanic Whites comprised a majority (54 percent) of food-pantry users because of their larger share in the general population.

About 15 percent of households with incomes below the poverty line received food from food pantries, compared with 0.8 percent of households with incomes above 185 percent of the poverty line.²⁹ Among households with incomes above the poverty line but below 185 percent of the poverty line, 1.0 million (2.98 million less 1.96 million) used food pantries in 2004, comprising 26 percent of all households using food pantries and 7.0 percent of households in that income range.

Use of food pantries was higher in principal cities of metropolitan areas (4.2 percent) and in nonmetropolitan areas (4.7 percent) than in metropolitan areas outside of central cities (2.3 percent). There was not a large regional variation in the use of food pantries, although use was somewhat more common in the West (3.9 percent) and the Midwest (3.8 percent).

Combined Use of Federal and Community Food Assistance

Both Federal and community food assistance programs are important resources for low-income households. To design and manage these programs so that they function together effectively as a nutrition safety net, it is important to know how they complement and supplement each other. The extent to which households that participate in Federal food assistance programs also receive assistance from community food assistance programs provides information about these relationships.

About one-fourth (25.9 percent) of the households that received food stamps in the month prior to the survey also obtained food from a food pantry at some time during the year (table 16). These households comprised 43.8 percent of all households that reported using a food pantry. Food pantry use was somewhat less common among households that participated in the National School Lunch Program (18.0 percent) and the WIC Program (17.7 percent), reflecting the higher income-eligibility criteria of these programs. A sizeable majority of food pantry users (65.1 percent) received food from at least one of the three largest Federal food assistance programs. The remainder of food pantry users (34.9 percent) did not participate in any of these Federal programs.

²⁹Use of food pantries by households with incomes higher than 1.85 times the poverty line was probably slightly underreported by the CPS food security survey. Households in this income range were not asked the question about using a food pantry unless they had indicated some level of food stress on at least one of two preliminary screener questions (listed in footnote 5). However, analysis of the use of food pantries by households at different income levels below 1.85 times the poverty line (and thus not affected by the screen) indicates that the screening had only a small effect on the estimate of food pantry use by households with incomes above that range.

Table 15

Use of food pantries by selected household characteristics, 2004

Category	Total ¹	Pantry users	
	1,000	1,000	Percent
All households	112,680	3,919	3.5
Household composition:			
With children < 18	39,850	2,006	5.0
At least one child < 6	17,844	988	5.5
Married-couple families	27,007	822	3.0
Female head, no spouse	9,574	1,024	10.7
Male head, no spouse	2,675	129	4.8
Other household with child ²	594	31	5.2
With no children < 18	72,830	1,913	2.6
More than one adult	43,126	802	1.9
Women living alone	16,955	699	4.1
Men living alone	12,749	411	3.2
With elderly	26,117	657	2.5
Elderly living alone	10,643	324	3.0
Race/ethnicity of households:			
White non-Hispanic	81,269	2,103	2.6
Black non-Hispanic	13,445	969	7.2
Hispanic ³	11,943	584	4.9
Other	6,022	263	4.4
Household income-to-poverty ratio:			
Under 1.00	13,250	1,957	14.8
Under 1.30	18,225	2,416	13.3
Under 1.85	27,919	2,981	10.7
1.85 and over	63,526	519	.8
Income unknown	21,235	419	2.0
Area of residence: ⁴			
Inside metropolitan area	92,223	2,951	3.2
In principal cities ⁵	30,151	1,268	4.2
Not in principal cities	46,374	1,074	2.3
Outside metropolitan area	20,457	968	4.7
Census geographic region:			
Northeast	20,959	604	2.9
Midwest	25,889	996	3.8
South	41,067	1,342	3.3
West	24,764	977	3.9

¹Totals exclude households that did not answer the question about getting food from a food pantry. They represented 0.6 percent of all households.

²Households with children in complex living arrangements—e.g., children of other relatives or unrelated roommate or boarder.

³Hispanics may be of any race.

⁴Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Food Pantry statistics by area of residence are not precisely comparable with those of previous years.

⁵Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Only small proportions (from 1 to 3 percent) of households that participated in the three largest Federal food assistance programs reported eating at an emergency kitchen during the 12 months prior to the survey. Nevertheless, these households comprised a sizeable share of emergency kitchen users in the housed population. Among households with incomes less than 185 percent of the poverty line who reported that someone in the household ate one or more meals at an emergency kitchen, 40.6 percent received food stamps, 23.5 percent received free or reduced-cost meals in the National School Lunch Program, 7.5 percent received WIC benefits, and 50.6 percent participated in at least one of these three programs. These statistics probably overstate the actual shares of emergency kitchen users who participate in the Federal food assistance programs, however. The households most likely to be underrepresented in the food security survey—those homeless or tenuously housed—are also less likely than other households to participate in the Federal food assistance programs.

Table 16

Combined use of Federal and community food assistance programs by low-income households,¹ 2004

	Share of category that obtained food from food pantry	Share of food pantry users category	Share of category that ate meal at emergency kitchen	Share of emergency kitchen users in category
	<i>Percent</i>			
Received food stamps previous 30 days	25.9	43.8	3.0	40.6
Received free or reduced-price school lunch previous 30 days	18.0	37.7	1.4	23.5
Received WIC previous 30 days	17.7	15.9	1.1	7.5
Participated in one or more of the three Federal programs	19.4	65.1	1.9	50.6
Did not participate in any of the three Federal programs	5.8	34.9	1.0	49.4

¹Analysis is restricted to households with annual incomes less than 185 percent of the poverty line because most households with incomes above that range were not asked whether they participated in food assistance programs.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

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Appendix A. Household Responses to Questions in the Food Security Scale

The 18 questions from which the food security measure is calculated ask about conditions, experiences, and behaviors that characterize a wide range of severity of food insecurity and hunger. One way the range of severity represented by the questions is observed is in the percentages of households that respond affirmatively to the various questions. For example, the condition described by the least severe question, *We worried whether our food would run out before we got money to buy more*, was reported by 16.6 percent of households in 2004 (table A-1). *Adults cutting the size of meals or skipping meals because there wasn't enough money for food* was reported by 6.6 percent of households. The most severe item, *children not eating for a whole day because there wasn't enough money for food*, was reported by 0.1 percent of households with children. (See box on page 3 for the complete wording of these questions.)

The two least severe questions refer to uncertainty about having enough food and the experience of running out of food. The remaining 16 items indicate increasingly severe disruptions of normal eating patterns and reductions in food intake. Three or more affirmative responses are required for a household to be classified as food insecure. Thus, all households with that classification affirmed at least one item indicating disruption of normal eating patterns or reduction in food intake, and most food-insecure households reported multiple indicators of these conditions (table A-2).

A large majority of food-secure households (71.5 percent of all households with children and 84.2 percent of those without children) reported no problems or concerns in meeting their food needs. However, households that reported only one or two indications of food insecurity (10.9 percent of households with children and 6.9 percent of households without children) are also classified as food secure. Most of these households affirmed one or both of the first two items, indicating uncertainty about having enough food or about exhausting their food supply, but did not indicate actual disruptions of normal eating patterns or reductions in food intake. Although these households are classified as food secure, the food security of some of them may have been tenuous at times, especially in the sense that they lacked “assured ability to acquire acceptable foods in socially acceptable ways,” a condition that the Life Sciences Research Office includes in its definition of food insecurity (Anderson, 1990, p. 1598). Research examining health and children’s development in households that affirm just one or two food insecurity indicators is ongoing. Findings to date indicate that outcomes in these households are either intermediate between those in fully food-secure and food-insecure households or more closely resemble those in food-insecure households (Radimer and Nord, 2005; and Winicki and Jemison, 2003).

Table A-1

Responses to items in the food security scale, 2001-04¹

Scale item ²	Households affirming item ³			
	2001	2002	2003	2004
	<i>Percent</i>			
Household items:				
Worried food would run out before (I/we) got money to buy more	15.3	15.6	15.7	16.6
Food bought didn't last and (I/we) didn't have money to get more	12.3	12.4	12.3	13.1
Couldn't afford to eat balanced meals	10.0	10.5	10.8	11.6
Adult items:				
Adult(s) cut size of meals or skipped meals	5.7	6.0	6.2	6.6
Respondent ate less than felt he/she should	5.7	5.9	5.9	6.3
Adult(s) cut size or skipped meals in 3 or more months	4.0	4.2	4.4	4.8
Respondent hungry but didn't eat because couldn't afford	2.4	2.7	2.7	3.1
Respondent lost weight	1.5	1.8	1.7	2.0
Adult(s) did not eat for whole day	1.1	1.2	1.2	1.3
Adult(s) did not eat for whole day in 3 or more months	.8	.8	.9	1.0
Child items:				
Relied on few kinds of low-cost food to feed child(ren)	15.7	16.5	16.1	17.1
Couldn't feed child(ren) balanced meals	8.6	8.9	8.9	9.8
Child(ren) were not eating enough	4.1	4.3	4.7	4.6
Cut size of child(ren)'s meals	1.0	1.2	1.0	1.2
Child(ren) were hungry	.7	.9	.7	1.0
Child(ren) skipped meals	.4	.7	.4	.6
Child(ren) skipped meals in 3 or more months	.3	.5	.3	.4
Child(ren) did not eat for whole day	.1	.1	.1	.1

¹Survey responses weighted to population totals.

²The actual wording of each item includes explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food," or "...because there wasn't enough money for food."

³Households not responding to item are excluded from the denominator. Households without children are excluded from the denominator of child-referenced items.

Source: Calculated by ERS using data from the December 2001, December 2002, December 2003, and December 2004 Current Population Survey Food Security Supplements.

Frequency of Occurrence of Behaviors, Experiences, and Conditions That Indicate Food Insecurity

Most of the questions used to calculate the food security scale also elicit information about how often the food-insecure behavior, experience, or condition occurred. The food security scale does not take all of this frequency-of-occurrence information into account, but analysis of the responses can provide insight into the frequency and duration of food insecurity and hunger.

Frequency-of-occurrence information is collected in the CPS Food Security Supplements using two different methods (see box, “Questions Used To Assess the Food Security of Households in the CPS Food Security Survey,” page 3):

- **Method 1:** A condition is described, and the respondent is asked whether this was often, sometimes, or never true for his or her household during the past 12 months.
- **Method 2:** Respondents who answer “yes” to a yes/no question are asked, “How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?”

Table A-3 presents responses to each food security question broken down by reported frequency of occurrence for all households interviewed in the December 20+04 survey. Questions using method 1 are presented in the top panel of the table and those using method 2 are presented in the bottom panel. Most households that responded affirmatively to method 1 questions reported that the behavior, experience, or condition occurred “sometimes,” while 16 to 24 percent (depending on the specific question), reported that it occurred “often.” For example, 3.8 percent of households reported that in the past 12 months they had often worried whether their food would run out before they got money to buy more, and 12.9 percent reported that this had occurred sometimes (but not often). Thus, a total of 16.6 percent of households reported that this had occurred at some time during the past 12 months, and, of those, 23 percent reported that it had occurred often. (Note that calculations across some rows in table A-3 differ from tabled values because of rounding in each column.)

In response to method 2 questions, 19 to 32 percent of households that responded “yes” to the base question reported that the behavior, experience, or condition occurred “in almost every month;” 37 to 50 percent reported that it occurred in “some months, but not every month;” and 27 to 35 percent reported that it occurred “in only 1 or 2 months.” For example, 6.6 percent of households reported that an adult cut the size of a meal or skipped a meal because there was not enough money for food. In response to the follow-up question asking how often this happened, 2.1 percent said that it happened in almost every month (i.e., 32 percent of those who responded “yes” to the base question), 2.6 percent said it happened in some months but not every month (40 percent of those who responded “yes” to the base question), and 1.9 percent said it happened in only 1 or 2 months (28 percent of those who responded “yes” to the base question).

Table A-4 presents the same frequency-of-occurrence response statistics for households classified as food insecure with hunger. Almost all of these

households responded affirmatively (either “often” or “sometimes”) to the first four questions—questions that are sensitive to less severe aspects of food insecurity—and 39 to 49 percent of those who responded affirmatively reported that these conditions had occurred often during the past year. In response to method 2 questions, 30 to 46 percent of households that affirmed adult-referenced questions and 21 to 28 percent of households that affirmed child-referenced questions reported that the conditions had occurred in “almost every month.”

Table A-2

Percentage of households by food security raw score, 2004

<i>Panel A: Households with children</i>			
Raw score (number of food security questions affirmed)	Percent of households ¹	Cumulative percent of households ¹	Food security status
0	71.53	71.53	Food secure (82.44 percent)
1	6.06	77.59	
2	4.84	82.44	
3	4.05	86.49	Food insecure without hunger (13.28 percent)
4	2.98	89.47	
5	2.61	92.08	
6	2.22	94.30	
7	1.42	95.72	
8	1.07	96.79	Food insecure with hunger (4.28 percent)
9	.95	97.74	
10	.83	98.58	
11	.43	99.01	
12	.32	99.33	
13	.24	99.57	
14	.16	99.73	
15	.16	99.89	
16	.03	99.92	
17	.07	99.99	
18	.01	100.00	
<i>Panel B: Households with no children</i>			
Raw score (number of food security questions affirmed)	Percent of households ¹	Cumulative percent of households ¹	Food security status
0	84.21	84.21	Food secure (91.13 percent)
1	3.95	88.16	
2	2.97	91.13	
3	2.79	93.92	Food insecure without hunger (5.12 percent)
4	1.22	95.14	
5	1.11	96.25	
6	1.36	97.61	Food insecure with hunger (3.75 percent)
7	.93	98.54	
8	.64	99.18	
9	.34	99.51	
10	.49	100.00	

¹Survey responses weighted to population totals.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Monthly and Daily Occurrence of Food-Insecure Conditions

Monthly and daily frequency of occurrence were estimated for a subset of the behaviors, experiences, and conditions that indicate the food security status of households. For 9 of the questions, an affirmative response is followed up with a question as to whether the behavior, experience, or condition occurred during the 30 days prior to the survey. (Responses to these questions are used to assess the food security status of households during the 30-day period prior to the survey, which are reported in appendix E.) For 7 of the questions, if the condition is reported to have occurred during the prior 30 days, respondents are then asked in how many days the behavior, experience, or condition occurred during that period. Responses to these questions are summarized in table A-5.

Most households that reported the occurrence of reduced food intake or hunger during the 30 days prior to the survey, reported that these conditions were of relatively short duration, although some households reported longer or more frequent spells. For example, of the 4.17 percent of households in which adults cut the size of meals or skipped meals during the previous 30 days because there wasn't enough money for food, 62 percent reported that this had occurred in 1 to 7 days, 16 percent reported that it had occurred in 8-14 days, and 22 percent reported that it had occurred in 15 days or more of the previous 30 days. On average, households reporting occurrence of this condition at any time in the previous 30 days reported that it occurred in 8.9 days. The daily occurrence patterns were generally similar for all of the indicators of reduced food intake and hunger. Average days of occurrence (for those reporting occurrence at any time during the month) ranged from 6.3 days for *adult did not eat for whole day* to 9.8 days for *respondent ate less than he/she felt he/she should*.

Average daily prevalence of the various behaviors, experiences, and conditions of reduced food intake and hunger were calculated based on the proportion of households reporting the condition at any time during the previous 30 days and the average number of days in which the condition occurred.³⁰ These daily prevalence rates ranged from 1.23 percent for *adult cut size of meals or skipped meals* to 0.09 percent for *children skipped meals*.

No direct measure of the daily prevalence of food insecurity with hunger based on the data available in the food security survey has yet been developed. However, the ratio of daily prevalence to annual prevalence of the various indicator conditions provides a basis for estimating the likely range for the average daily prevalence of hunger during the reference 30-day period. For the adult-referenced items, daily prevalences (table A-5) ranged from 13.8 to 19.2 percent of their prevalence at any time during the year (table A-3). The corresponding range for the child-referenced items was 15.0 percent to 18.3 percent. These findings are generally consistent with those of Nord et al. (2000), and are used to estimate upper and lower bounds of the daily prevalence of hunger described in the first section of this report.

³⁰Average daily prevalence is calculated as the product of the 30-day prevalence and the average number of days divided by 30.

Table A-3

Frequency of occurrence of behaviors, experiences, and conditions indicating food insecurity and hunger, all U.S. households, 2004¹

Condition ²	Frequency of occurrence				
	Often or sometimes	Often	Sometimes	Often	Sometimes
	---Percent of all households---			Percent of "often or sometimes"	
Worried food would run out before (I/we) got money to buy more	16.6	3.8	12.9	23	77
Food bought didn't last and (I/we) didn't have money to get more	13.1	2.5	10.6	19	81
Couldn't afford to eat balanced meals	11.6	2.8	8.9	24	76
Relied on few kinds of low-cost food to feed child(ren)	17.1	4.0	13.1	24	76
Couldn't feed child(ren) balanced meals	9.8	1.8	8.0	18	82
Child(ren) were not eating enough	4.6	.7	3.9	16	84

Condition ²	Frequency of occurrence						
	Ever during the year	Almost every month	Some months but not every month	In only 1 or 2 months	Almost every month	Some months but not every month	In only 1 or 2 months
	-----Percent of all households-----					Percent of "ever during the year"	
Adult(s) cut size of meals or skipped meals	6.6	2.1	2.6	1.9	32	40	28
Respondent ate less than felt he/she should	6.3	1.8	2.7	1.8	29	43	28
Respondent hungry but didn't eat because couldn't afford	3.1	1.0	1.2	.9	32	40	28
Respondent lost weight	2.0	NA	NA	NA	NA	NA	NA
Adult(s) did not eat for whole day	1.3	.4	.6	.4	29	44	27
Cut size of child(ren)'s meals	1.2	.3	.5	.4	26	45	29
Child(ren) were hungry	1.0	.3	.4	.4	28	37	35
Child(ren) skipped meals	.6	.1	.3	.2	19	50	30
Child(ren) did not eat for whole day	.1	NA	NA	NA	NA	NA	NA

¹Survey responses weighted to population totals. Households not responding to an item or not responding to the followup question about frequency of occurrence are excluded from the calculation of percentages for that item. Households without children are excluded from the calculation of percentages for child-referenced items.

²The actual wording of each item includes explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food," or "...because there wasn't enough money for food."

NA = Frequency of occurrence information was not collected for these conditions.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Table A-4

Frequency of occurrence of behaviors, experiences, and conditions indicating food insecurity and hunger in households classified as food insecure with hunger, 2004¹

Condition ²	Frequency of occurrence				
	Often or sometimes	Often	Sometimes	Often	Sometimes
	<i>Percent of food-insecure- with-hunger households</i>			<i>Percent of "often or sometimes"</i>	
Worried food would run out before (I/we) got money to buy more	97.8	47.2	50.6	48	52
Food bought didn't last and (I/we) didn't have money to get more	96.8	37.4	59.3	39	61
Couldn't afford to eat balanced meals	94.5	40.9	53.5	43	57
Relied on few kinds of low-cost food to feed child(ren)	97.2	47.9	49.3	49	51
Couldn't feed child(ren) balanced meals	88.1	29.3	58.8	33	67
Child(ren) were not eating enough	60.4	14.4	46.0	24	76

Condition ²	Frequency of occurrence						
	Ever during the year	Almost every month	Some months but not every month	In only 1 or 2 months	Almost every month	Some months but not every month	In only 1 or 2 months
	<i>Percent of food-insecure-with-hunger households</i>				<i>Percent of "ever during the year"</i>		
Adult(s) cut size of meals or skipped meals	96.1	44.1	42.1	9.9	46	44	10
Respondent ate less than felt he/she should	93.6	38.2	43.0	12.3	41	46	13
Respondent hungry but didn't eat because couldn't afford	61.1	23.3	25.5	12.3	38	42	20
Respondent lost weight	44.4	NA	NA	NA	NA	NA	NA
Adult(s) did not eat for whole day	31.6	9.6	14.6	7.4	30	46	23
Cut size of child(ren)'s meals	24.9	6.9	11.6	6.3	28	47	25
Child(ren) were hungry	22.9	6.4	9.0	7.5	28	39	33
Child(ren) skipped meals	13.4	2.8	6.6	4.0	21	49	30
Child(ren) did not eat for whole day	2.8	NA	NA	NA	NA	NA	NA

¹Survey responses weighted to population totals. Households not responding to an item or not responding to the followup question about frequency of occurrence are excluded from the calculation of percentages for that item. Households without children are excluded from the calculation of percentages for child-referenced items.

²The actual wording of each item includes explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food," or "...because there wasn't enough money for food."

NA = Frequency of occurrence information was not collected for these conditions.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Table A-5

**Monthly and daily frequency of occurrence of behaviors, experiences,
and conditions indicating food insecurity with hunger, 2004¹**

Condition ²	Ever during previous 30 days	For households reporting condition at any time during previous 30 days			Monthly average occurrence <i>Days³</i>	Average daily prevalence <i>Percent³</i>
		Number of days out of previous 30 days				
		1-7 days	8-14 days	15-30 days		
		<i>Percent</i>				
Adult(s) cut size of meals or skipped meals	4.17	62	16	22	8.9	1.23
Respondent ate less than felt he/she should	3.69	59	16	26	9.8	1.21
Respondent hungry but didn't eat because couldn't afford	1.82	60	15	25	9.5	.58
Respondent lost weight	1.19	NA	NA	NA	NA	NA
Adult(s) did not eat for whole day	.85	74	13	13	6.3	.18
Cut size of child(ren)'s meals	.70	60	14	26	9.4	.22
Child(ren) were hungry	.57	62	16	21	8.6	.16
Child(ren) skipped meals	.36	72	12	17	7.5	.09
Child(ren) did not eat for whole day	.05	NA	NA	NA	NA	NA

¹Survey responses weighted to population totals. The 30-day and daily statistics refer to the 30-day period from mid-November to mid-December; the survey was conducted during the week of December 12-18, 2004.

²The actual wording of each item includes explicit reference to resource limitation, e.g., "...because (I was/we were) running out of money to buy food;" or "...because there wasn't enough money for food."

³Households without children are excluded from the denominator of child-referenced items.

NA = Number of days of occurrence was not collected for these conditions.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

Appendix B. Background on the U.S. Food Security Measurement Project

This report of household food security in 2004 is the latest in a series of reports on *Measuring Food Security in the United States*. Previous reports in the series are:

- *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project* (Hamilton et al., 1997a)
- *Household Food Security in the United States in 1995: Technical Report* (Hamilton et al., 1997b)
- *Household Food Security in the United States, 1995-1998: Advance Report* (Bickel et al., 1999)
- *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999)
- *Guide to Measuring Household Food Security, Revised 2000* (Bickel et al., 2000)
- *Household Food Security in the United States, 1999* (Andrews et al., 2000)
- *Household Food Security in the United States, 1995-1997: Technical Issues and Statistical Report* (Ohls et al., 2001)
- *Household Food Security in the United States, 1998 and 1999: Detailed Statistical Report* (Cohen et al., 2002b)
- *Household Food Security in the United States, 1998 and 1999: Technical Report* (Cohen et al., 2002a)
- *Household Food Security in the United States, 2000* (Nord et al., 2002b)
- *Measuring Children's Food Security in U.S. Households, 1995-99* (Nord and Bickel, 2002)
- *Household Food Security in the United States, 2001* (Nord et al., 2002a)
- *A 30-Day Food Security Scale for Current Population Survey Food Security Supplement Data* (Nord 2002)
- *Household Food Security in the United States, 2002* (Nord et al., 2003)
- *Household Food Security in the United States, 2003* (Nord et al., 2004)

The series was inaugurated in September 1997 with the three-volume report, *Household Food Security in the United States in 1995* (Hamilton et al., 1997a and 1997b, Price et al., 1997). The advance report of findings for 1995-98 (Bickel, Carlson, and Nord, 1999) was released in July 1999, and a report detailing prevalence rates of food insecurity and hunger by State for the 1996-98 period (Nord, Jemison, and Bickel, 1999) was released in September 1999. Summary reports of findings for 1999 (Andrews et al., 2000), 2000 (Nord et al., 2002b), 2001 (Nord et al., 2002a), 2002 (Nord et al., 2003), and 2003 (Nord et al., 2004) continued the national report series and expanded its scope. Detailed statistical reports for 1995-97 (Ohls et al., 2001) and for 1998-99 (Cohen et al., 2002b) provided additional prevalence statistics along with standard errors for prevalence estimates and explored technical issues in food security measurement.

The estimates contained in all of these reports are based on a direct survey measure developed over several years by the U.S. Food Security Measurement

Project, an ongoing collaboration among Federal agencies, academic researchers, and both commercial and nonprofit private organizations (Carlson et al., 1999; and Olson, 1999.) The measure was developed in response to the National Nutrition Monitoring and Related Research Act of 1990. The Ten-Year Comprehensive Plan developed under the Act specified the following task:

Recommend a standardized mechanism and instrument(s) for defining and obtaining data on the prevalence of “food insecurity” or “food insufficiency” in the U.S. and methodologies that can be used across the NNMRR Program and at State and local levels.³¹

Beginning in 1992, USDA staff reviewed the existing research literature, focusing on the conceptual basis for measuring the severity of food insecurity and hunger and on the practical problems of developing a survey instrument for use in sample surveys at national, State, and local levels.

In January 1994, USDA’s Food and Nutrition Service (FNS) joined with the U.S. Department of Health and Human Services’ National Center for Health Statistics (NCHS), in sponsoring a National Conference on Food Security Measurement and Research. This meeting brought together leading academic experts and other private researchers and key staff of the concerned Federal agencies. The conference identified the consensus among researchers in the field as to the strongest conceptual basis for a national measure of food insecurity and hunger. It also led to a working agreement about the best method for implementing such a measure in national surveys (USDA, 1995).

After extensive cognitive assessment, field testing, and analysis by the U.S. Census Bureau, a food security survey questionnaire was fielded by the bureau as a supplement to the Current Population Survey (CPS) of April 1995.³² The CPS food security survey was repeated in September 1996, April 1997, August 1998, April 1999, September 2000, April 2001, December 2001, December 2002, and December 2003. Minor modifications to the questionnaire format and screening procedures were made over the first several years, and a more substantial revision in screening and format, designed to reduce respondent burden and improve data quality, was introduced with the August 1998 survey. However, the content of the 18 questions upon which the U.S. Food Security Scale is based remained constant in all years.

Initial analysis of the 1995 data was undertaken by Abt Associates, Inc., through a cooperative venture with FNS, the interagency working group, and other key researchers involved in developing the questionnaire. The Abt team used nonlinear factor analysis and other state-of-the-art scaling methods to produce a measurement scale for the severity of deprivation in basic food needs, as experienced by U.S. households. Extensive testing was carried out to establish the validity and reliability of the scale and its applicability across various household types in the broad national sample (Hamilton et al., 1997a, 1997b).³³

Following collection of the September 1996 and April 1997 CPS food security data, Mathematica Policy Research, Inc. (MPR), under a contract awarded by FNS, reproduced independently the results from the 1995 CPS food security data, estimated food insecurity and hunger prevalences for 1996 and 1997, and

³¹Task V-C-2.4, U.S. Department of Health and Human Services and U.S. Department of Agriculture: Ten-Year Comprehensive Plan for the National Nutrition Monitoring and Related Research Program. *Federal Register* 1993, 58:32 752-806.

³²The Current Population Survey (CPS) is a representative national sample of approximately 60,000 households conducted monthly by the U.S. Census Bureau for the U.S. Department of Labor, Bureau of Labor Statistics. Its primary purpose is to monitor labor force participation and employment in the United States and each of the 50 States. Various Federal agencies sponsor collection of specialized supplementary data by the CPS following the labor-force interview. The CPS food security survey has been conducted annually since 1995 as one such CPS supplement, sponsored by USDA. From 1995 to 2000 the food security survey alternated between April and August/September; beginning in 2001, it has been conducted in early December.

³³The food security scale reported here is based on the Rasch measurement model, an application of maximum likelihood estimation in the family of Item Response Theory models (Wright, 1977, 1983). These statistical measurement models were developed in educational testing, where test items vary systematically in difficulty and the overall score measures the level of difficulty that the tested individual has mastered. In the present application, the items vary in the severity of food insecurity to which they refer, and the overall score measures the severity of food insecurity recently experienced by household members.

assessed the stability and robustness of the measurement model when applied to the separate datasets. The MPR findings (Ohls et al., 2001) establish the stability of the food security measure over the 1995-97 period. That is, the relative severities of the items were found to be nearly invariant across years and across major population groups and household types.

In 1998, USDA's Economic Research Service (ERS) assumed sponsorship of the Census Bureau's annual CPS food security data collection for USDA. ERS and IQ Solutions (working under a contract awarded by ERS) analyzed the 1998 and 1999 data, applying and refining the procedures developed for USDA in the Abt and MPR research. These analyses found continuing stability of the measure in those 2 years (Cohen et al., 2002a). Research by ERS and FNS also developed measurement methods for assessing the food security of children (Nord and Bickel, 2002) and for measuring the food security of households during the 30 days prior to interview based on the CPS food security survey data (Nord, 2002).

A large number of independent researchers in the academic and nutrition communities also have used the U.S. food security survey module and food security scale to assess the severity and prevalence of food insecurity in various population groups. One general result of these studies has been to verify the consistency of the measurement construct and the robustness of the measurement method in diverse populations and survey contexts. A summary list of many of these studies is available from the Brandeis University Center on Hunger and Poverty at www.centeronhunger.org.

Nonetheless, the following caveats need to be kept in mind when interpreting the prevalence estimates in this report:

- The Current Population Survey, which carries the food security survey as a supplement, is representative of the noninstitutionalized population of the United States. It is based on a complete address list of sampled areas (counties and metropolitan areas), but does not include homeless persons who are not in shelters. This may result in an underestimate of the number of more severely food-insecure persons.
- Case study and ethnographic research suggests that some parents are reluctant to report inadequate food intake for their children even when it has occurred (Hamilton et al., 1997b, p. 88). This may result in an underestimate of the prevalence of children's hunger based on food security survey data.
- Small, random measurement errors, combined with the nature of the distribution of households across the range of severity of food insecurity, may result in a modest overestimate of food insecurity and hunger. False positives—the incorrect classification of food secure households as food insecure—are more likely than false negatives because there are more households just above the food insecurity threshold than in a similar range just below it. (Most households are food secure, and the number in each range of severity declines as severity increases.) The same is true at the hunger threshold (Hamilton et al., 1997a, p. 65; and Hamilton et al., 1997b, p. 89).

Appendix C. USDA's Thrifty Food Plan

The Thrifty Food Plan—developed by USDA—serves as a national standard for a nutritious diet at low cost. It represents a set of “market baskets” of food that people of specific age and gender could consume at home to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households. The cost of the meal plan for each age/gender category is calculated based on average national food prices adjusted for inflation.³⁴

The cost of the market basket for a household is further adjusted by household size to account for economies of scale. The cost of the Thrifty Food Plan is used in this report to adjust household spending on food so that spending can be compared meaningfully among households of different sizes and age-gender compositions. It provides a baseline that takes into account differences in households' calorie and nutrient requirements due to these differences in household composition. This appendix provides background information on the Thrifty Food Plan and details of how it is calculated for each household.

In 1961, USDA developed four cost-specific, nutritionally balanced food plans: Economy, Low-cost, Moderate-cost, and Liberal. The food plans were developed by studying the food purchasing patterns of households in the United States and modifying these choices by the least amount necessary to meet nutritional guidelines at specific cost objectives. The Economy Food Plan, and the Thrifty Food Plan that replaced it at the same designated cost level in 1975, have been used for a number of important policy and statistical purposes over the years. In the 1960s, a low-income threshold based on the Economy Food Plan was adopted as the official poverty threshold of the United States (Citro and Michael, 1995, p. 110). The cost of the Thrifty Food Plan is used by USDA's Food and Nutrition Service as a basis for determining families' maximum food stamp allotments.³⁵

The Thrifty Food Plan was most recently revised by USDA's Center for Nutrition Policy and Promotion (CNPP) in 1999. This was done to reflect updated dietary recommendations and food composition data and current food prices and consumption patterns, while maintaining the cost at the level of the previous market baskets (USDA, 1999). CNPP updates the cost of each of USDA's four food plans monthly to reflect changes in food prices, as measured by the Consumer Price Index for specific food categories. Table C-1 lists estimated weekly costs of the four USDA food plans for the month of December 2004—the month the 2004 CPS food security survey was conducted.

The cost of the Thrifty Food Plan was calculated for each household in the food security survey, based on the information in table C-1, and was used as a baseline for comparing food expenditures across different types of households.³⁶ The food plan costs in table C-1 are given for individuals in the context of four-person families. For households that are larger or smaller than four persons, the costs must be adjusted for economies of scale, as specified in the first footnote of table C-1. For example, the weekly Thrifty Food Plan cost for a household composed of a married couple with no children, ages 29

³⁴The costs of the Thrifty Food Plan for residents of Alaska and Hawaii are calculated based on State food prices rather than average national food prices.

³⁵The Thrifty Food Plan was revised several times over the years (with major changes in 1983 and 1999) in order to take into account new information about nutritional needs, nutritional values of foods, food consumption preferences, and food prices (Kerr et al., 1984; and USDA, 1999). In these revisions, USDA gave attention both to cost containment—keeping the cost of the Thrifty Food Plan near the food stamp benefit level—and to the buying patterns of households (Citro and Michael, 1995, p. 111).

³⁶For residents in Alaska and Hawaii, the Thrifty Food Plan costs were adjusted upward by 14.6 percent and 43.7 percent, respectively, to reflect the higher cost of the Thrifty Food Plan in those States.

(husband) and 30 (wife), is given by adding the individual Thrifty Food Plan costs for the husband (\$33.20) and wife (\$30.10) and adjusting the total upward by 10 percent. The adjusted total (\$69.60) represents the cost of the Thrifty Food Plan for this type of household.

Table C-1

Weekly cost of USDA food plans: cost of food at home at four levels, December 2004

Age-gender group ¹	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
	<i>Dollars</i>			
Child:				
1 year ²	17.90	22.30	26.30	31.80
2 years	17.80	22.10	26.50	31.80
3-5 years	19.70	24.30	30.10	36.20
6-8 years	24.60	32.70	40.30	47.00
9-11 years	28.80	36.70	47.20	54.80
Male:				
12-14 years	30.10	41.50	51.40	60.80
15-19 years	31.10	42.70	53.60	62.40
20-50 years	33.20	42.90	53.60	65.50
51 years and over	30.50	41.10	50.60	60.90
Female:				
12-19 years	30.00	36.00	43.80	52.80
20-50 years	30.10	37.50	45.80	59.10
51 years and over	29.80	36.50	45.50	54.70
Examples of families				
1. Couple: 20-50 years	69.60	88.40	109.40	137.10
2. Couple, 20-50 years, with 2 children, ages 2 and 3-5 years	100.80	126.70	156.00	192.70

¹The costs given are for individuals in 4-person families. For individuals in other-size families, the following adjustments are suggested: 1-person, add 20 percent; 2-person, add 10 percent; 3-person, add 5 percent; 5- or 6-person, subtract 5 percent; 7- (or more) person, subtract 10 percent.

²USDA does not have official food plan cost estimates for children less than 1-year old. Since the Thrifty Food Plan identifies the most economical sources of food, in this analysis we assume a food plan based on breastfeeding. We arbitrarily set the cost of feeding a child under 1-year at half the cost of feeding a 1-year old child, in order to account for the added food intake of mothers and other costs associated with breastfeeding. While this estimate is rather arbitrary, it affects only 2.5 percent of households in our analysis.

Source: USDA, Center for Nutrition Policy and Promotion. <http://www.usda.gov/cnpp/using3.html>.

Appendix D. Prevalence Rates of Food Insecurity and Food Insecurity With Hunger by State, 1996-98, 1999-2001, and 2002-04

State-level prevalence rates of food insecurity and food insecurity with hunger for the period 2002-04 are compared with three-year average rates for 1999-2001 and 1996-98 in table D-1. The statistics for 2002-04 are repeated from table 7. The statistics for the two earlier periods were reported previously in *Household Food Security in the United States, 2001* (Nord et al., 2002a). The statistics for 1996-98 presented here and in *Household Food Security in the United States, 2001* were revised from those reported in *Prevalence of Food Insecurity and Hunger, by State, 1996-1998* (Nord et al., 1999) to adjust for differences in data collection procedures in the two periods.³⁷

In six States, prevalence rates of food insecurity declined from 1999-2001 to 2002-04 by statistically significant percentages, while 14 States registered statistically significant increases. Only in Oregon did food insecurity with hunger decline by a statistically significant percentage during that period, while 15 States registered statistically significant increases in the prevalence of food insecurity with hunger.³⁸

Statistically significant changes from 1996-98 to 2002-04 were as follows: Prevalence rates of food insecurity declined in 7 States and the District of Columbia and increased in 13 States. Prevalence rates of food insecurity with hunger declined in five States and the District of Columbia and increased in seven States.

³⁷To reduce the burden on survey respondents, households—especially those with higher incomes—that report no indication of any food access problems on two or three “screener” questions are not asked the questions in the food security module. They are classified as food secure. Screening procedures in the CPS food security surveys were modified from year to year prior to 1998 to achieve an acceptable balance between accuracy and respondent burden. Since 1998, screening procedures have remained unchanged. The older, more restrictive screening procedures depressed prevalence estimates—especially for food insecurity—compared with those in use since 1998 because a small proportion of food insecure households were screened out along with those that were food secure. To provide an appropriate baseline for assessing changes in State prevalence rates of food insecurity and food insecurity with hunger, statistics from the 1996-98 report were adjusted upward to offset the estimated effects of the earlier screening procedures on each State’s prevalence rates. The method used to calculate these adjustments was described in detail in *Household Food Security in the United States, 2001* (Nord et al., 2002), appendix D.

³⁸Seasonal effects on food security measurement (discussed in section 1) probably bias prevalence rates for 1996-98 and 1999-2001 upward somewhat compared with 2002-04. At the national level, this effect may have raised the measured prevalence rate of food insecurity in 1996-98 by about 0.8 percentage points and the prevalence rate of food insecurity with hunger by about 0.4 percentage points. Effects for the period 1999-2001 were probably about half as large. However, seasonal effects may have differed from State to State.

Table D-1

**Prevalence rates of food insecurity and food insecurity with hunger
by State, 1996-98 (average), 1999-2001 (average), and 2002-04 (average)¹**

State	Food Insecure (with or without hunger)					Food Insecure with hunger				
	Average	Average	Average	Change	Change	Average	Average	Average	Change	Change
	2002-04	1999-01	1996-98 ¹	1999-01 to 2002-04	1996-98 to 2002-04	2002-04	1999-01	1996-98 ¹	1999-01 to 2002-04	1996-98 to 2002-04
-----Percent-----			Percentage points		-----Percent-----			Percentage points		
U.S. total	11.4	10.4	11.3	1.0*	0.1	3.6	3.1	3.7	0.5*	-0.1
AK	11.7	11.1	8.7	.6	3.0*	4.6	4.3	3.6	.3	1.0
AL	12.2	11.9	12.5	.3	-.3	2.9	3.9	3.3	-1.0	-.4
AR	14.8	12.8	13.7	2.0	1.1	5.3	3.9	4.8	1.4	.5
AZ	12.7	11.6	14.6	1.1	-1.9	3.5	3.6	4.3	-.1	-.8*
CA	12.4	11.8	13.3	.6	-.9	3.9	3.3	4.3	.6*	-.4
CO	11.3	8.6	10.8	2.7*	.5	3.5	2.5	3.8	1.0*	-.3
CT	8.6	6.8	11.0	1.8*	-2.4	3.0	2.6	4.1	.4	-1.1
DC	10.2	9.8	13.7	.4	-3.5*	2.9	2.9	4.7	0.0	-1.8*
DE	6.8	7.3	8.1	-.5	-1.3	1.8	2.1	2.9	-.3	-1.1
FL	10.8	12.2	13.2	-1.4*	-2.4*	3.6	4.0	4.5	-.4	-.9*
GA	12.3	11.6	10.9	.7	1.4	3.8	3.9	3.4	-.1	.4
HI	8.5	10.8	12.9	-2.3*	-4.4*	2.6	3.0	3.1	-.4	-.5
IA	10.2	7.6	8.0	2.6*	2.2*	3.1	2.2	2.6	.9	.5
ID	14.6	13.0	11.3	1.6	3.3*	3.7	4.5	3.3	-.8	.4
IL	9.0	9.2	9.6	-.2	-.6	3.0	2.7	3.2	.3	-.2
IN	10.1	8.5	9.0	1.6	1.1	3.6	2.5	2.9	1.1*	.7
KS	12.3	11.3	11.5	1.0	.8	4.8	3.2	4.2	1.6*	.6
KY	12.2	10.1	9.7	2.1*	2.5*	3.3	3.0	3.4	.3	-.1
LA	11.8	13.2	14.4	-1.4	-2.6*	2.6	3.0	4.4	-.4	-1.8*
MA	7.1	6.7	7.5	.4	-.4	2.7	2.0	2.1	.7	.6
MD	8.6	8.8	8.7	-.2	-.1	3.2	3.1	3.3	.1	-.1
ME	9.8	9.4	9.8	.4	0.0	3.1	3.1	4.0	0.0	-.9
MI	11.3	8.1	9.6	3.2*	1.7*	3.8	2.4	3.1	1.4*	.7*
MN	7.2	7.1	8.6	.1	-1.4	2.5	2.0	3.1	.5	-.6
MO	11.3	8.6	10.1	2.7*	1.2	3.9	2.3	3.0	1.6*	.9
MS	15.8	13.1	14.6	2.7*	1.2	4.5	3.7	4.2	.8	.3
MT	12.2	13.2	11.2	-1.0	1.0	4.7	4.0	3.0	.7	1.7*
NC	13.8	11.1	9.8	2.7*	4.0*	4.9	3.3	2.7	1.6*	2.2*
ND	6.3	8.5	5.5	-2.2*	.8	1.9	2.2	1.6	-.3	.3
NE	10.7	9.9	8.7	.8	2.0*	3.7	2.9	2.5	.8	1.2*
NH	6.4	6.5	8.6	-.1	-2.2*	2.4	1.9	3.1	.5	-.7
NJ	8.5	7.8	8.9	.7	-.4	2.9	2.4	3.1	.5	-.2
NM	15.8	14.6	16.5	1.2	-.7	4.9	4.2	4.8	.7	.1
NV	8.5	10.1	10.4	-1.6*	-1.9	2.9	3.4	4.0	-.5	-1.1
NY	10.5	9.6	11.9	.9	-1.4*	3.2	3.1	4.1	.1	-.9*
OH	11.4	9.1	9.7	2.3*	1.7*	3.4	2.8	3.5	.6	-.1
OK	15.2	12.9	13.1	2.3*	2.1	5.6	3.8	4.2	1.8*	1.4*
OR	11.9	13.7	14.2	-1.8*	-2.3	3.8	5.8	6.0	-2.0*	-2.2*
PA	10.2	8.4	8.3	1.8*	1.9*	2.9	2.2	2.6	.7*	.3
RI	12.1	8.7	10.2	3.4*	1.9*	4.2	2.5	2.7	1.7*	1.5*
SC	14.8	11.3	11.0	3.5*	3.8*	5.5	3.6	3.5	1.9*	2.0*
SD	9.2	7.9	8.2	1.3	1.0	2.8	1.9	2.2	.9*	.6
TN	11.5	11.8	11.8	-.3	-.3	3.5	3.4	4.4	.1	-.9
TX	16.4	13.9	15.2	2.5*	1.2*	4.9	3.6	5.5	1.3*	-.6
UT	14.8	13.8	10.3	1.0	4.5*	4.6	4.6	3.1	0.0	1.5
VA	8.5	7.6	10.2	.9	-1.7	2.6	1.5	3.0	1.1*	-.4
VT	9.0	9.1	8.8	-.1	.2	3.6	1.8	2.7	1.8*	.9
WA	12.0	12.5	13.2	-.5	-1.2*	4.3	4.6	4.7	-.3	-.4
WI	9.0	8.4	8.5	.6	.5	2.8	2.9	2.6	-.1	.2
WV	8.8	10.3	9.5	-1.5*	-.7*	2.9	3.3	3.1	-.4	-.2
WY	11.0	9.9	9.9	1.1	1.1	4.2	3.2	3.5	1.0	.7

*Change was statistically significant with 90 percent confidence ($t > 1.645$).

¹ Statistics for 1996-98 were revised to account for changes in survey screening procedures introduced in 1998.

Source: Prepared by ERS based on Current Population Survey Food Security Supplement data.

Appendix E. Food Insecurity With Hunger During 30 Days Prior to Food Security Survey

The annual food security survey is designed primarily to assess households' food security during the 12-month period prior to the survey. For a subset of the food security questions, however, information is also collected for the 30-day period prior to the survey. Households that respond affirmatively to the 12-month question are asked whether the same behavior, experience, or condition occurred during the last 30 days. Responses to these questions are used to identify households that were food insecure with hunger during the 30 days prior to the survey (see Nord, 2002, for detailed information about the 30-day measure).

The 30-day food security scale identifies households that were food insecure with hunger, but does not measure the less severe range of food insecurity. The questions about less severe conditions of food insecurity are asked only with respect to the previous 12 months and are not followed up to determine whether the reported conditions occurred during the previous 30 days.

About 3.4 million households (3.0 percent) were food insecure with hunger at some time during the 30-day period from mid-November to mid-December 2004 (table E-1), up from 2.6 percent in November/December 2003.³⁹ The 30-day prevalence was just over three-fourths (76.8 percent) that for the entire 12 months prior to the survey, a proportion similar to that observed in previous food security surveys conducted in the month of December (78.5, 76.2, and 74.2 percent in 2001, 2002, and 2003, respectively). The corresponding statistics for other 30-day periods in earlier years' surveys were: 72.8 percent in July/August 1998, 66.1 percent in March/April 1999, and 74.4 percent in August/September 2000. Taken together, these statistics imply that, on average, households that were food insecure with hunger at some time during the year experienced this condition in 8 or 9 months of the year.

The prevalence of food insecurity with hunger during the 30 days prior to the survey varied across household types following the same general pattern as the 12-month measure. The prevalence of food insecurity with hunger was lowest for married-couple families with children, households with two or more adults without children, households that included an elderly person, and households with incomes higher than 185 percent of the poverty line. Prevalences of food insecurity with hunger were highest for single parents, Blacks, and households with incomes below the poverty line. Among households that were food insecure with hunger at any time during the year, single women with children and married couples with children were more likely than other households to have been insecure with hunger during the previous 30 days (89 percent).⁴⁰

The 30-day measure of food insecurity with hunger facilitates a more temporally precise analysis of the relationship between households' food insecurity and their use of Federal and community food assistance programs. That is, measured food insecurity with hunger and reported use of

³⁹The food security survey was conducted during the week of December 12-18 in 2004.

⁴⁰Only 9 interviewed households in the category "Other household with child" registered hunger on the 12-month measure, so comparison of the 30-day and 12-month measures was not considered reliable.

Table E-1

Prevalence of food insecurity with hunger during 12 months and 30 days prior to food security survey, by selected household characteristics, 2004¹

Category	Total ²	Food insecure with hunger				Previous 30 days as percentage of previous 12 months
		Previous 12 months		Previous 30 days ¹		
	<i>1,000</i>	<i>1,000</i>	<i>Percent</i>	<i>1,000</i>	<i>Percent</i>	<i>Percent</i>
All households	112,967	4,449	3.9	3,416	3.0	76.8
Household composition:						
With children < 18	39,990	1,712	4.3	1,402	3.5	81.9
With children < 6	17,922	743	4.1	597	3.3	80.3
Married-couple families	27,065	630	2.3	560	2.1	88.9
Female head, no spouse	9,641	891	9.2	660	6.8	74.1
Male head, no spouse	2,693	169	6.3	151	5.6	89.3
Other household with child ³	592	22	3.7	31	5.2	140.9
With no children < 18	72,977	2,737	3.8	2,013	2.8	73.5
More than one adult	43,177	1,065	2.5	837	1.9	78.6
Women living alone	17,012	918	5.4	649	3.8	70.7
Men living alone	12,788	753	5.9	527	4.1	70.0
With elderly	26,202	465	1.8	355	1.4	76.3
Elderly living alone	10,693	265	2.5	202	1.9	76.2
Race/ethnicity of households:						
White non-Hispanic	81,388	2,373	2.9	1,967	2.4	82.9
Black non-Hispanic	13,509	1,098	8.1	747	5.5	68.0
Hispanic ⁴	12,014	707	5.9	505	4.2	71.4
Other	6,056	271	4.5	197	3.3	72.7
Household income-to-poverty ratio:						
Under 1.00	13,347	1,811	13.6	1,351	10.1	74.6
Under 1.30	18,367	2,255	12.3	1,651	9.0	73.2
Under 1.85	28,081	2,938	10.5	2,186	7.8	74.4
1.85 and over	63,575	994	1.6	850	1.3	85.5
Income unknown	21,311	517	2.4	379	1.8	73.3
Area of residence: ⁵						
Inside metropolitan area	92,474	3,567	3.9	2,736	3.0	76.7
In principal cities ⁶	30,312	1,548	5.1	1,132	3.7	73.1
Not in principal cities	46,444	1,300	2.8	1,021	2.2	78.5
Outside metropolitan area	20,492	882	4.3	679	3.3	77.0
Census geographic region:						
Northeast	21,038	602	2.9	473	2.2	78.6
Midwest	25,957	942	3.6	752	2.9	79.8
South	41,157	1,859	4.5	1,361	3.3	73.2
West	24,815	1,046	4.2	829	3.3	79.3

¹The 30-day prevalence rates refer to the 30-day period from mid-November to mid-December; the survey was conducted during the week of December 12-18, 2004.

²Totals exclude households whose food security status is unknown because they did not give a valid response to any of the questions in the food security scale. In 2004, these represented 404,000 households (0.4 percent of all households.)

³Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

⁴Hispanics may be of any race.

⁵Metropolitan area residence is based on 2003 Office of Management and Budget delineation. Prevalence rates by area of residence are not precisely comparable with those of previous years.

⁶Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 17 percent of households in metropolitan statistical areas.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.

food assistance programs are more likely to refer to contemporaneous conditions when both are referenced to the previous 30 days than when one or both is referenced to the previous 12 months. For households that left the Food Stamp Program during the year, the 30-day measure of food security can also provide information about their food security status after they left the program.

The prevalence of food insecurity with hunger during the 30 days prior to the food security survey among households that left the Food Stamp Program during the year (19.1 percent) was more than twice that of households that did not receive food stamps at any time during the year (7.3 percent) and somewhat higher than that of households that received food-stamps during the 30 days prior to the survey (12.5 percent; table E-2). This implies that not all households that left the Food Stamp Program did so because their economic situations had improved to a level that assured access to enough food without food stamps. Associations of 30-day prevalence rates of hunger with use of other food assistance programs were similar to those of the 12-month measure reported in table 11.

Table E-2

Prevalence rates of food insecurity with hunger during the 30 days prior to the food security survey, by participation in selected Federal and community food assistance programs, 2004¹

Category	Food insecure with hunger
	<i>Percent</i>
Income less than 130 percent of poverty line:	
Received food stamps previous 30 days	12.5
Received food stamps previous 12 months but not previous 30 days (food stamp leavers)	19.1
Did not receive food stamps previous 12 months	7.3
Income less than 185 percent of poverty line; school-age children in household:	
Received free or reduced-price school lunch previous 30 days	9.8
Did not receive free or reduced-price school lunch previous 30 days	5.0
Income less than 185 percent of poverty line; children under age 5 in household:	
Received WIC previous 30 days	8.0
Did not receive WIC previous 30 days	5.4
Income less than 185 percent of poverty line:	
Received emergency food from food pantry previous 30 days	29.1
Did not receive emergency food from food pantry previous 30 days	6.7
Ate meal at emergency kitchen previous 30 days	50.5
Did not eat meal at emergency kitchen previous 30 days	7.4

¹The 30-day prevalence rates refer to the 30-day period from mid-November to mid-December; the survey was conducted during the week of December 12-18, 2004.

Source: Calculated by ERS using data from the December 2004 Current Population Survey Food Security Supplement.