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Data in this report from health and demographic surveys present statistics by age and other variables on ambulatory medical care; changes in cigarette smoking practices; fats, cholesterol, and sodium intake in the diet; reproductive impairments among currently married couples; wanted and unwanted births reported by mothers; remarriages of women whose first marriage ended in divorce; and trends in breast feeding. Estimates are based on the civilian noninstitutionalized population of the United States. These reports were originally published in 1979 and 1980.

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National Center for Health Statistics

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Overweight Adults in the United States

This report presents estimates of the percentages and numbers of overweight adults in the U.S. population developed from height and weight measurements obtained as part of the Health and Nutrition Examination Survey (HANES) conducted by the National Center for Health Statistics. Also presented is a profile of selected body measurements of these overweight persons.

Estimates of the prevalence of overweight in this report are estimates of excess body weight above desirable weight (mean weights for men and women aged 20-29 years) by height.

While weight gained after the twenties is presumed to be due to fat, the gross estimates in this report are not true estimates of excess body fat other than what can be inferred from the deviation of observed weight from the desirable weight. Such estimates will not yield information of how much of the weight difference is accounted for by excess fat. However, findings from HANES in which obesity was defined by criteria ranging from measures that included all body components (e.g., body fat, width of skeletal size, and muscle) to those that included only body fat, will be analyzed and discussed in a future report.[1] Only selected data from that report are presented here (tables 1-6 and figures 1 and 2).

HANES is a program in which measures of nutritional status are collected for a scientifically designed sample representative of the civilian noninstitutionalized population of the United States over a broad range of ages, 1-74 years.

These HANES findings are based on the examination of the 13,131 persons aged 20-74 years selected from a total sample of 20,749 examined persons aged 1-74 years. A nationwide probability sample of 28,043 persons was selected to be examined from eligible households in the 65 primary sampling units that were visited between April 1971 and June 1974. The HANES nutrition examination included a general medical examination by a physician to identify indicators of nutritional deficiencies, a skin examination by a dermatologist, and a dental examination by a dentist. Body measurements were taken by a trained technician, dietary information was obtained by the 24-hour recall method, and a food frequency questionnaire was administered. Numerous laboratory tests were performed on whole blood, serum, plasma, and urine. A description of the sampling process and the HANES operation has been published.[2]

The findings in this report are shown as national estimates based on weighted observations, i.e., the data obtained for each examined person were inflated to the level of the total population of which the sample was representative. The appropriate weights were used to account for both sampling fractions and response results.

Method

In this report excess body weight is obtained by comparing the observed height and weight with those shown in the HANES table of desirable weights (table 1). Excess body

[a]This report was prepared by Sidney Abraham and Clifford L. Johnson, M.S.P.H., Division of Health Examination Statistics.

Table 1. Desirable weights[1] for men and women aged 20-74 years by height: United States, 1971-74

Height	Weight in pounds	
	Men	Women
57 inches	---	113
58 inches	---	117
59 inches	---	120
60 inches	---	123
61 inches	---	127
62 inches	136	130
63 inches	140	134
64 inches	145	137
65 inches	150	140
66 inches	155	144
67 inches	159	147
68 inches	163	151
69 inches	168	154
70 inches	173	158
71 inches	178	---
72 inches	182	---
73 inches	187	---
74 inches	192	---

[1]Based on average weights estimated from regression equation of weight on height for men and women aged 20-29 years.

NOTES: Height measured without shoes. Clothing ranged from 0.20 to 0.62 pounds which was not deducted from weights shown. Derived from data of the Health and Nutrition Examination Survey, 1971-74.

weight status is defined as the deviation of observed weight from desirable weight, times 100.

The desirable weight was developed using a regression equation of weight on height measurement for men and women aged 20-29 years as the standard for desirable weight. This method follows the principle of "desirable weight" that the increase in body weight in adulthood with age is undesirable and is based on the concept that after the twenties an individual should not gain weight, presumably fat, with each year of age. The standard, although not exactly ideal for some persons in the age group 20-29 years, minimizes the observed increase in fat in men and women during maturity. This is in contrast to the standard weight that uses the average weight of men and women of each age group as the standard.

We considered the deviation of 10 and 20 percent above desirable weight, more so the latter, as arbitrary estimates that represent a presumption of obesity. There is no universal agreement on this definition. Ten percent above the desirable weight falls in the upper 20 percent of the distribution of relative desirable weight of men and women aged 20-29 years. The corresponding percentage of 20 percent above the desirable weight is 8 percent for men and 11 percent for women. There is little or no question that the markedly overweight individual is obese.

A profile of selected body measurements of overweight persons was made of those persons with observed weight deviation 10 and 20 percent or more above desirable weights. In addition to height and weight data from HANES, skinfold thickness (triceps plus subscapular) and height-weight indices, a power function of height in relation to weight, were used in the profile.

While direct anatomical and chemical methods for the estimation of body fat are not suitable for large-scale epidemiological surveys, an indirect method such as the measurement of skinfold thickness meets the need for a simple test of relative fatness for the estimation of prevalence of obesity. If skinfold measurements are not available, there is general agreement that the most satisfactory measure is the body mass index.[3,4]

During the HANES, two measurements were made of skinfolds plus subcutaneous tissue: One was made over the triceps midway between the elbow and the shoulder, and the other was made over the tip of the scapular. These measurements were recommended by the Committee on Nutritional Anthropometry (Food and Nutrition Board) for the general population.[5] The two measurements were added into a single measure of leanness-fatness. This method obtained normative values based on the distribution of added measurements.

The power function of height in relation to weight avoided the use of population reference standards by calculating a power function of height in a height-weight index, W/H^p (in kg/meter^p). Using the formula of Benn, we computed the optimal power value from the HANES data and obtained a value of p=2 for men and p=1.5 for women.[6]

Findings

Table 2 presents body weight measurements for each examined person whose weight was 10 or 20 percent or more above the desir-

Table 2. Mean of selected body measurements for men and women aged 20-74 years with relative desirable weight measurements 10 and 20 percent or more above desirable weight[1], by age: United States, 1971-74

Sex and age	Weight in pounds		Height in inches		Body mass index[2]		Skinfold thickness in millimeters[3]	
	10 percent or more	20 percent or more	10 percent or more	20 percent or more	10 percent or more	20 percent or more	10 percent or more	20 percent or more
Men								
20-74 years	202	219	69	69	29.97	32.52	39	45
20-24 years	210	225	70	70	29.73	32.52	42	52
25-34 years	212	231	70	69	30.67	33.75	41	49
35-44 years	203	219	69	69	29.78	32.04	37	41
45-54 years	202	217	69	69	30.05	32.52	39	45
55-64 years	198	215	68	68	30.02	32.57	37	42
65-74 years	190	204	67	67	29.54	31.74	37	42
Women								
20-74 years	176	188	64	63	38.91	41.84	58	64
20-24 years	174	195	64	64	37.95	42.57	58	67
25-34 years	183	194	64	64	39.76	42.55	61	67
35-44 years	182	195	64	64	39.76	42.69	60	65
45-54 years	176	187	64	63	38.90	41.55	60	65
55-64 years	172	182	63	63	38.93	41.18	58	62
65-74 years	167	177	62	62	38.15	40.52	53	56

[1]Based on average weights estimated from regression equations of weight on height for men and women aged 20-29 years.
[2](W/H^p) in kg/meter^p, where p=2 for men and p=1.5 for women.
[3]Skinfold thickness = triceps plus subscapular.

able weight for each measurement. The mean values shown in this table are graphically shown in figures 1 and 2.

The mean height for men 10 percent or more above the desirable weight was about 69 inches, and their mean weight ranged from 190 pounds at ages 65-74 to 212 pounds at ages 25-34 years. The mean weight for the age range 20-74 years was about 202 pounds. Comparable data for men 20 percent or more above the desirable weight showed the mean height to be 69 inches and mean weight to range from 204 pounds at ages 65-74 to 231 pounds at ages 25-34 years. The mean weight for ages 20-74 was about 219 pounds. The National Center for Health Statistics has previously reported that the mean weight and height of men in the United States aged 20-74 years was 172 pounds and 69 inches. For men 10 percent or more above desirable weight, the mean observed weight was 30 pounds above that of the general male population. Corresponding data for men 20 percent or more above the desirable weight showed the mean observed weight to be 47 pounds above the mean weight of the general male population.[5]

Table 2 also shows that in terms of the body mass index, W/H^2, the mean height-weight index for all age groups was about 30 $kg/(m^p)$ for men 10 percent or more above desirable weight and 33 $kg/(m^p)$ for those 20 percent or more above desirable weight.

The mean value of skinfold thickness measurement was 39 mm for men 10 percent or more above the desirable weight and 45 mm for those 20 percent or more above the desirable weight in ages 20-74 years.

The mean value of the body mass index (W/H^2) of 33 $kg/(m^p)$ for men of all ages who were 20 percent or more above the desirable weight was about equal to the mean plus 2 times the standard deviation of the distribution of the height-weight indices for men of the same ages in the general population: 25.5 + 2(4.2) = 34.

The mean value of skinfold thickness of 45 mm for men of all ages who were 20 percent or more above the desirable weight was more than the mean plus 1 times the standard deviation of the distribution of the tricep plus subscapular of men of the same ages in the general population: tri + sub = 28.2 + 1(12.5) = 41.

Figure 1. MEAN OF SELECTED BODY MEASUREMENTS OF MEN AND WOMEN AGED 20-74 YEARS WHO ARE 10 PERCENT OR MORE ABOVE DESIRABLE WEIGHT, BY SEX AND AGE: UNITED STATES, 1971-74

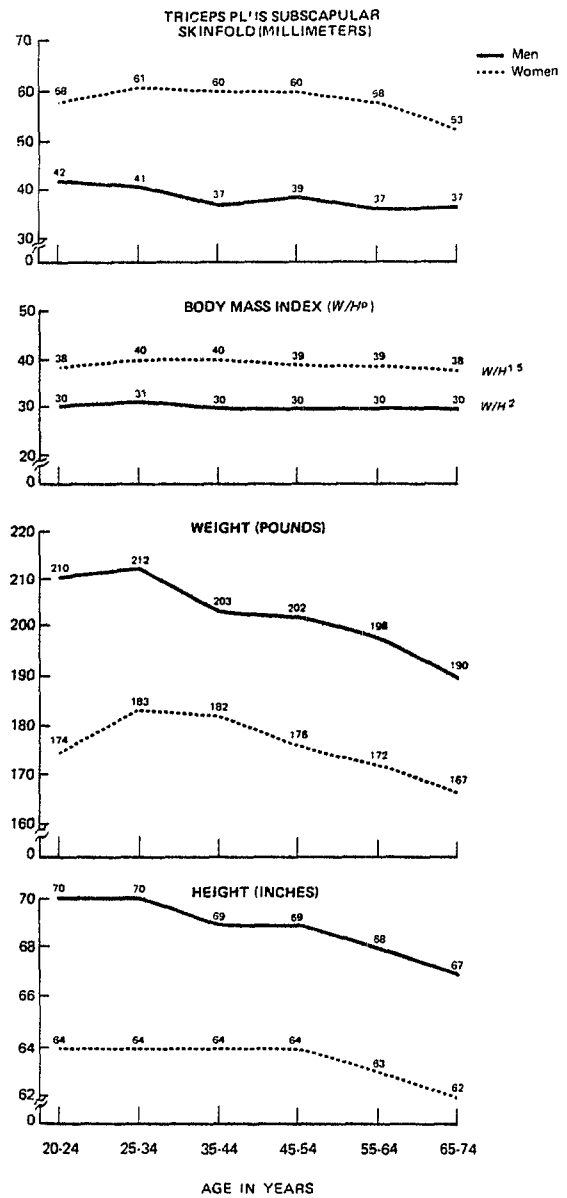
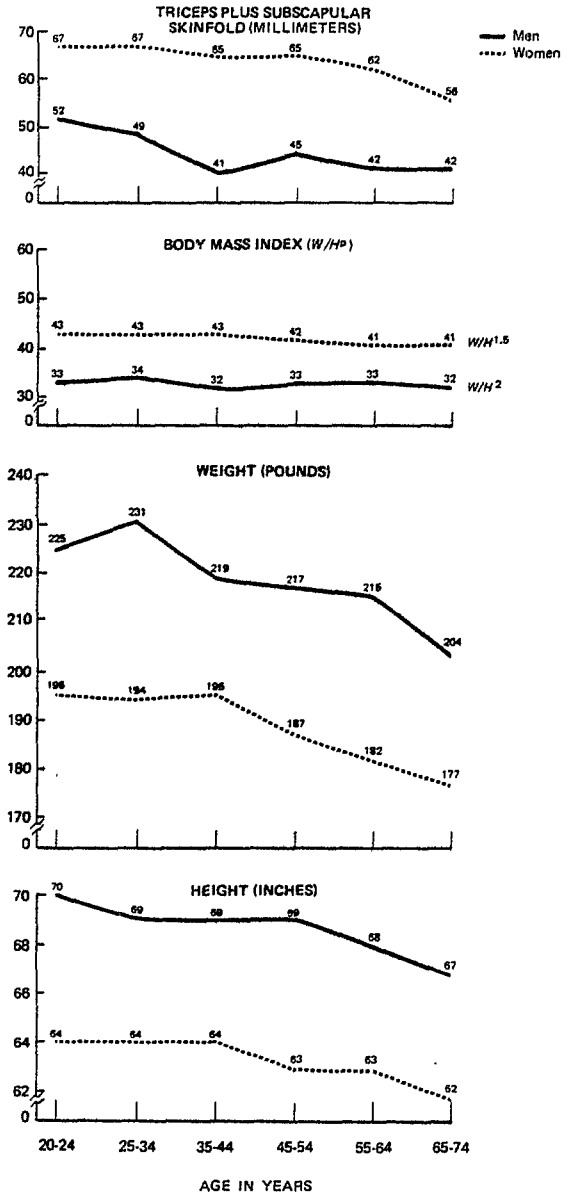


Figure 2. MEAN OF SELECTED BODY MEASUREMENTS OF MEN AND WOMEN AGED 20-74 YEARS WHO ARE 20 PERCENT OR MORE ABOVE DESIRABLE WEIGHT, BY SEX AND AGE: UNITED STATES, 1971-74



A similar profile was made for women of comparable ages. Table 2 shows that the average height of women 10 percent or more above the desirable weight was 64 inches, which was about equal to the average height of women in the general population.[7] Women 10 percent or more above the desirable weight had an average weight of 176 pounds, which was on the average 33 pounds above the reported average weight of 143 pounds for all women aged 20-74 years.[7] For women 20 percent or more above the desirable weight, the average height was about equal to the average reported for women in the general population.[7] Their average weight was 188 pounds, which was on the average 45 pounds above the average weight previously reported for women in the general population.[7]

The mean value of the body mass index ($W/H^{1.5}$) was 39 $kg/(m^p)$ and 42 $kg/(m^p)$, respectively, for women 10 percent or more and 20 percent or more above desirable weights in all age groups. The corresponding skinfold thickness measurements were 58 mm and 64 mm for the two selected criteria of overweight in all age groups.

For the body mass index of women who were 20 percent or more above desirable weight, the mean value (42 $kg/(m^p)$) was more than the mean plus 1 times the standard deviation of the distribution of height-weight index ($W/H^{1.5}$) of women aged 20-74 years in the general population: $W/H^{1.5}$ = 31.8 + 1(6.9) = 39. For the skinfold measurement, the mean value (64 mm) exceeded the mean plus 1 times the distribution of triceps plus subscapular of women aged 20-74 years in the general population: tri + sub = 42.3 + 1(17.4) = 60.

The body mass indices for men and women 10 percent or more above the desirable weight were in the upper 12 and 14 percent, respectively, of the distribution of this index for the general population aged 20-74 years. For men and women 20 percent or more above the desirable weight, the indices were in the upper 4 and 8 percent, respectively, of the distribution. Corresponding percentages for men who were 10 percent or more and 20 percent or more above the desirable weight were in the upper 16 and 10 percent, respectively, of the distribution of skinfold thickness measurements. For women the percentages were in the upper 19 percent for those 10 percent or more above the desirable weight and in the upper 12 percent for those 20 percent or more above the desirable weight.

Table 3 shows that about a third of the men aged 20-74 years in the United States or an estimated 18.4 million were 10 percent or more above the desirable weight. The corresponding value for men 20 percent or more above the desirable weight was 14 percent, or 8.0 million men. Among women of comparable ages, the proportions were higher for each of the selected percents above the desirable weight—36.4 percent, or 23.4 million, for those 10 percent or more above the desirable weight and 23.8, or 15.3 million, for those 20 percent or more above the desirable weight.

The proportions of men above the desir-

Table 3. Number of examined persons and estimated population aged 20-74 years and number and percent of persons 10 and 20 percent or more above desirable weight[1], by sex and age: United States, 1971-74

Sex and age	Number examined	Estimated population in thousands	Percent deviation from desirable weight			
			10 percent or more		20 percent or more	
			Number	Percent	Number	Percent
Men						
20-74 years	5,001	57,431	18,434	32.1	8,041	14.0
20-24 years	513	8,217	1,522	18.5	612	7.4
25-34 years	804	12,766	3,866	30.3	1,742	13.6
35-44 years	665	10,804	4,222	39.1	1,839	17.0
45-54 years	765	11,260	4,023	35.7	1,778	15.8
55-64 years	597	8,888	3,022	34.0	1,339	15.1
65-74 years	1,657	5,496	1,784	32.5	737	13.4
Women						
20-74 years	8,130	64,181	23,394	36.4	15,268	23.8
20-24 years	1,243	8,919	1,729	19.4	859	9.6
25-34 years	1,895	13,996	3,526	25.2	2,390	17.1
35-44 years	1,663	11,772	4,305	36.6	2,864	24.3
45-54 years	836	12,264	5,266	42.9	3,411	27.8
55-64 years	670	9,953	5,001	50.2	3,449	34.7
65-74 years	1,822	7,277	3,565	49.0	2,291	31.5

[1]Based on average weights estimated from regression equations of weight on height for men and women aged 20-29 years.

able weight increased with advancing age and peaked at ages 35-44 years, where about 40 percent were 10 percent above the desirable weight and 17 percent were 20 percent above that weight. For women, the proportions also increased with advancing age and peaked at older ages (55-64 years), than men and then declined.

Women in the youngest age group and at ages 45 years or over showed a larger percent of deviation from desirable weight in the 10 percent or more category than men did. This direction was not evident for ages 25-44 years, where the differences were much smaller between men and women than they were in the older age groups.

Comparison of the relative frequency of men and women above desirable weight from HANES was made with that from the Health Examination Survey (HES), 1960-62. However, since the average weights were higher in HANES than in the HES[7], the desirable weights estimated from regression equations of weight on height for men and women aged 20-29 years obtained from HANES were used as the base for the findings in HES.

Overweight as defined by the percent of persons deviating from desirable weight was as prevalent among U.S. adults aged 20-74 years in 1971-74 (HANES) as it was in 1960-62 (HES) (table 4). The prevalence rate for men 10 percent or more above desirable weight from the two surveys was identical. The prevalence rates for those 20 percent or more above the desirable weight differed no more than expected from sampling variability. A similar pattern in prevalance rates was also evident for women of comparable age range. At these ages the observed differences in proportions were 1.7 percent at 10 percent or more above desirable weight and 1.3 percent at 20 percent or more above desirable weight.

Table 4 also shows that the prevalence rates for men 10 and 20 percent or more above desirable weight in the HES sample were higher than the prevalence rates for men in the HANES sample in the youngest age group and age 45 years and over. The actual differences in prevalence rates are numerically small. At these ages for those 10 percent or more above desirable weight, the HES data range was from 1.0 percent to 3.7 percent

Table 4. Comparison of the percent of men and women aged 20-74 years in HES (1960-62) and HANES (1971-74) 10 and 20 percent or more above desirable weight[1], by sex and age: United States

Sex and age	Percent deviating from desirable weight					
	10 percent or more			20 percent or more		
	HES	HANES	Excess[2]	HES	HANES	Excess[2]
Men						
20-74 years	32.1	32.1		14.5	14.0	-0.5
20-24 years	22.2	18.5	-3.7	9.6	7.4	-2.2
25-34 years	28.7	30.3	+1.6	13.3	13.6	+0.3
35-44 years	31.8	39.1	+7.3	14.9	17.0	+2.1
45-54 years	36.9	35.7	-1.2	16.7	15.8	-0.9
55-64 years	36.4	34.0	-2.4	15.8	15.1	-0.7
65-74 years	33.5	32.5	-1.0	14.6	13.4	-1.2
Women						
20-74 years	38.1	36.4	-1.7	25.1	23.8	-1.3
20-24 years	18.8	19.4	+0.6	9.1	9.6	+0.5
25-34 years	24.3	25.2	+0.9	14.8	17.1	+2.3
35-44 years	34.6	36.6	+2.0	23.2	24.3	+1.1
45-54 years	43.4	42.9	-0.5	28.9	27.8	-1.1
55-64 years	56.2	50.2	-6.0	38.6	34.7	-3.9
65-74 years	56.2	49.0	-7.2	38.8	31.5	-7.3

[1]Desirable weight estimated from regression equations of weight on height for men and women aged 20-29 years, obtained from Health and Nutrition Examination Survey (HANES) and used as the base for the findings in Health Examination Survey (HES).
[2]Excess of HANES over HES.

greater than the HANES data. The corresponding differences for those 20 percent or more above desirable weight range from 0.7 percent to 2.2 percent. In contrast, HANES prevalence rates were higher than HES prevalence rates at ages 25-44 years for both criteria of overweight. The maximum difference is 7.3 percent at ages 35-44 years with the differences ranging from 0.3 percent to 2.1 percent for both criteria of overweight.

A similar pattern was observed for women in each age group with the exception of the youngest age group, where the HANES prevalence rate was higher than that for HES. The maximum differences were 7.2 percent and 7.3 percent, respectively, at the oldest age group for both criteria of overweight.

In HES, the proportion of women 10 percent or more above the desirable weight was less than that for men under 35 years of age and greater than that for men 35 years and over. The corresponding proportion for women in comparison with men in HANES was more for women at the youngest age group 20-24 years, less than that for men at ages 25-44 years, and greater than that for men in the older age groups. The proportion of women 20 percent above the desirable weight in HES was about the same as that for men in ages 20-24 years, and in HES and HANES exceeds that for men beyond this age group.

Table 4 shows that the overweight prevalence rate for both criteria from HES and HANES sets of data increase with advancing years. For men, HES data reach a maximum at ages 45-54 years where 37 percent of the men were 10 percent or more above desirable weight and 17 percent were 20 percent or more above desirable weight. For HANES, the prevalence rates peaked a decade earlier at about the same proportions for 10 and 20 percent or more above desirable weight. For HES and HANES the greatest increase in proportions occurs from the twenties to thirties.

For women, the prevalence rates continued to rise with age and peaked at ages 55-64 years, where more than 50 percent of the women from HES and HANES were 10 percent or more above desirable weight and more than 1 out of every 3 were 20 percent or more above desirable weight.

The proportion of men and women whose relative weight exceed any other specified criteria may be found in tables 5 and 6.

Table 5. Cumulative percent distribution of relative weight (observed weight/desirable weight for height x 100) for men aged 20-74 years in HES (1960-62) and HANES (1971-74), by age: United States

Relative desirable weight in pounds	20-74 years		20-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65-74 years	
	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74
	Cumulative percent distribution													
Under 85	10.5	10.5	18.1	20.2	13.3	9.8	6.7	6.4	6.7	8.6	10.3	9.8	14.1	11.2
Under 90	19.7	18.5	30.6	32.0	23.7	19.0	13.8	12.6	14.5	14.6	19.1	17.4	25.0	18.5
Under 95	31.3	29.9	48.2	48.1	34.4	32.9	24.1	22.9	27.0	23.2	29.7	27.2	34.8	27.9
Under 100	43.9	41.6	60.2	60.4	46.9	46.7	38.5	32.1	39.0	33.9	41.1	38.3	47.2	40.9
Under 105	56.0	54.1	70.9	71.8	58.1	58.5	53.8	45.0	51.2	48.2	53.1	50.1	55.8	53.7
Under 110	67.9	67.9	77.8	81.5	71.3	69.7	68.2	60.9	63.1	64.3	63.6	66.0	66.5	67.5
Under 115	77.6	78.1	86.4	89.0	78.9	78.6	77.9	73.2	72.9	74.4	74.7	77.3	79.4	79.3
Under 120	85.5	86.0	90.4	92.6	86.7	86.4	85.1	83.0	83.3	84.2	84.2	85.0	85.4	86.6
Under 125	91.5	90.8	93.1	94.7	92.3	90.2	90.9	89.8	90.0	89.5	92.9	90.3	90.3	91.9
Under 130	94.7	94.2	95.0	96.6	95.5	93.1	94.8	95.0	93.7	92.9	95.6	93.2	93.7	95.4
Under 135	96.8	96.0	96.3	98.0	96.9	94.9	96.9	96.5	96.5	95.2	97.5	95.3	96.8	97.3
Under 140	98.2	97.4	97.4	98.6	98.2	96.3	98.0	97.7	98.6	97.3	98.4	96.9	98.5	98.4
Under 145	98.7	97.9	97.4	98.6	98.4	97.1	98.8	98.1	99.1	97.9	98.6	97.6	99.1	98.8
Under 150	99.5	98.7	100.0	99.2	99.6	98.2	99.0	99.0	99.6	98.1	99.0	99.0	100.0	99.4
Under 155	99.6	99.1	100.0	99.8	99.7	98.5	99.3	99.0	99.9	98.8	99.0	99.3	100.0	99.7
Under 160	99.7	99.3	100.0	100.0	99.7	98.7	99.5	99.2	99.9	99.0	99.3	99.4	100.0	99.8

Table 6. Cumulative percent distribution of relative weight (observed/desirable weight x 100) for women aged 20-74 years in HES (1960-62) and HANES (1971-74), by age: United States

Relative desirable weight in pounds	20-74 years		20-24 years		25-34 years		35-44 years		45-54 years		55-64 years		65-74 years	
	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74	1960-62	1971-74
	Cumulative percent distribution													
Under 85	10.2	12.7	23.1	23.5	16.2	18.0	8.8	10.1	6.4	7.6	3.8	9.1	4.5	6.4
Under 90	19.7	22.1	38.2	36.8	30.1	31.5	19.0	19.3	13.2	15.0	8.9	14.3	9.2	13.0
Under 95	31.9	34.0	55.8	53.7	47.1	44.3	34.0	31.7	21.5	27.0	14.5	23.2	16.7	20.3
Under 100	42.9	45.2	66.6	65.6	59.6	57.6	46.9	45.1	32.9	36.6	23.4	31.0	23.8	30.3
Under 105	52.8	55.1	75.9	75.3	70.4	66.2	55.3	55.6	42.7	46.5	34.1	40.9	34.8	42.2
Under 110	61.9	63.6	81.2	80.6	75.7	74.8	65.4	63.4	56.6	57.1	43.8	49.8	43.8	51.0
Under 115	69.2	70.3	87.2	87.3	81.1	79.6	72.2	69.8	64.6	64.2	53.1	58.1	52.5	59.7
Under 120	74.9	76.2	90.9	90.4	85.2	82.9	76.8	75.7	71.1	72.2	61.4	65.3	61.2	68.5
Under 125	80.3	80.9	93.1	92.6	88.2	85.8	81.9	80.2	76.5	77.7	68.8	72.4	72.2	75.6
Under 130	84.6	84.6	94.7	93.7	91.4	88.1	85.8	82.8	80.2	83.2	76.3	77.3	78.2	81.5
Under 135	88.1	88.0	96.0	95.1	93.1	90.9	88.6	86.1	85.3	86.6	81.1	83.2	84.4	85.8
Under 140	90.9	90.7	96.2	95.8	94.9	92.5	91.3	88.7	89.3	89.8	85.6	87.4	87.1	89.9
Under 145	93.3	92.8	96.8	96.9	96.0	93.8	93.3	91.1	92.7	92.1	89.1	90.7	91.8	92.4
Under 150	95.0	94.4	97.3	97.2	97.5	95.3	94.3	93.1	94.1	93.4	91.9	93.2	94.6	94.5
Under 160	97.1	96.6	98.5	98.3	98.5	97.0	96.1	95.8	96.7	95.6	95.6	96.5	97.8	97.2
Under 170	98.4	98.0	99.0	99.1	99.0	98.2	98.2	97.5	97.9	97.0	96.8	97.9	99.7	98.5
Under 180	99.2	98.8	99.9	99.3	99.5	98.8	99.2	98.0	98.6	98.8	98.4	98.6	100.0	99.3
Under 190	99.6	99.2	100.0	99.6	99.8	99.4	99.6	98.8	99.1	99.4	99.0	98.8	100.0	99.5

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TECHNICAL NOTES

The sampling plan for the 65 examination locations in the Health and Nutrition Examination Survey (HANES) followed a highly stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the conterminous United States aged 1-74 years was selected. Successive elements dealt with in the process of sampling were the primary sampling unit, census enumeration district, segment (a cluster of households), household, eligible person, and sample person. The sampling design provided for oversampling among persons living in poverty areas, preschool children, women of childbearing age, and the elderly.

The excess weight determinations are shown as population estimates, that is, the findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and poststratified ratio adjustments were also made so that the final sampling estimates of the population size were brought into closer alignment with the independent U.S. Bureau of the Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by race, sex, and age.

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FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service Office of Health Research, Statistics, and Technology | Number 52 • September 19, 1979

Changes in Cigarette Smoking and Current Smoking Practices Among Adults: United States, 1978[1]

Since the 1950's, the prevalence of cigarette smoking among adult males in the U.S. noninstitutionalized population has steadily declined. In contrast, the proportion of female smokers rose from the mid-fifties to the mid-sixties and since then, the rates have only dropped slightly. Furthermore, the smoking rates for men and women are more similar now than in earlier years. The average number of cigarettes consumed daily per smoker has nevertheless increased. Over one-half of the persons who currently smoke cigarettes have made at least one serious attempt to stop. One in 5 smokers who tried to quit smoking in the past year were successful. Over one-fourth of cigarette smokers now use lower tar cigarettes..

Beginning in 1965, the National Center for Health Statistics has periodically included cigarette smoking questions in its household Health Interview Survey (HIS) conducted among the U.S. civilian noninstitutionalized population. The items selected for inclusion have identified the smoking status of the adult population and in some years have also elicited information on their smoking practices and attempts to quit smoking.

This report presents the latest available data on smoking for the 6-month period July 17, 1978, through January 14, 1979. These data were obtained in response to the Department of Health, Education, and Welfare's Office on Smoking and Health's request for current prevalence estimates on cigarette smokers. (Provisional smoking estimates based on 9 weeks of these data appear in *Smoking and Health*, a report of the Surgeon General released earlier this year.) The 1978 HIS questionnaire contained items to identify current and former smokers. It included questions on approximate numbers of cigarettes presently smoked, numbers smoked during the period of heaviest consumption, and quitting attempts. Information needed to identify tar and nicotine levels of cigarettes most frequently smoked was also elicited.

Data presented in this report were obtained from self-respondents. The sample consisted of a one-third subsample of the usual HIS sample of persons 17 years of age and over and included approximately 12,000 persons. Tables 1-5 include data on both regular and occasional smokers; tables 6-11 include data on regular smokers only since these data were not obtained from persons classified as occasional smokers.

The 1978 smoking questions will remain on the HIS questionnaire throughout 1979. This data-collection period is somewhat longer than usual. It will (1) expand the smoking data base, enabling a more detailed breakdown of the estimates into smaller population subgroups, and (2) enable the observation of changes in smoking habits over time, particularly before and after the release of the Surgeon General's report *Smoking and Health* in January 1979.

In this report, summary statistics on smoking status and behavior are shown by sex, certain ages, and for white and black persons.[2] However, these estimates are preliminary since a

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[1] This report was prepared by Abigail Jean Moss, Division of Health Interview Statistics.

[2] Statistics are available for additional age groups, family income, and education of the individual. They will be provided upon request by the Division of Health Interview Statistics.

Table 1. Percent of persons 17 years and over, by cigarette smoking status, sex, and age: United States, 1970, 1974, and 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Sex and age	Present smoker			Never smoked			Former smoker		
	1978	1974	1970	1978	1974	1970	1978	1974	1970
	Percent[1]								
Both sexes									
All ages 17 years and over	33.7	36.8	36.9	45.6	44.1	45.1	20.3	19.2	18.0
17-24 years	32.6	36.2	35.4	58.7	54.6	56.3	8.4	9.2	8.3
25-44 years	39.0	44.5	44.6	41.0	37.1	36.6	19.5	18.4	18.8
45-64 years	36.5	37.7	38.6	36.9	37.5	39.7	26.0	24.8	21.7
65 years and over	16.5	17.3	16.1	55.4	59.4	62.6	28.0	23.3	21.3
Male									
All ages 17 years and over	37.4	42.7	43.5	34.7	30.1	30.9	27.4	27.2	25.6
17-24 years	33.9	40.3	41.2	56.4	48.5	49.3	9.2	11.2	9.5
25-44 years	42.3	50.7	50.9	33.1	26.0	25.8	24.1	23.3	23.3
45-64 years	39.9	42.6	44.8	22.6	21.0	23.1	36.9	36.3	32.2
65 years and over	22.9	24.8	23.1	30.3	33.6	37.3	46.4	41.6	39.6
Female									
All ages 17 years and over	30.4	31.9	31.1	55.3	55.7	57.5	13.9	12.5	11.4
17-24 years	31.4	32.6	30.5	60.8	60.0	62.3	7.5	7.5	7.3
25-44 years	35.9	39.2	38.8	48.5	46.6	46.6	15.2	14.2	14.6
45-64 years	33.4	33.4	33.0	49.7	51.6	54.8	16.2	14.9	12.2
65 years and over	11.9	12.0	11.0	72.9	77.4	81.4	15.2	10.6	7.6

[1] Excludes persons with unknown smoking status.

more complete edit of the data, planned for later this year, may produce slight variations between these figures and final results. A more detailed report in Series 10 of *Vital and Health Statistics*, scheduled for release next year, will include the combined cigarette smoking results from the 1978 and 1979 surveys.

Data from this latest survey show that about 1 out of 3 adults (33.7 percent) in the U.S. civilian noninstitutionalized population are cigarette smokers—down slightly from 36.8 percent in 1974 and 36.9 percent in 1970 (tables 1-3). This latest estimate represents the lowest proportion of cigarette smokers, as a group, since the 1950's. The 1974 and 1978 results were obtained from self-respondents while in 1970 proxy respondents were also used. The recent decline in cigarette smokers has occurred primarily among males (from 43.5 percent in 1970 to 37.4 percent in 1978). In contrast, the proportion of female smokers 17 years of age and over has remained about the same (31.1 percent in 1970 and 30.4 percent in 1978).

A person is classified as a present cigarette smoker if he reports that he has smoked at least 100 cigarettes (five packs) during his entire life and that he is presently smoking. Present cigarette smokers are further classified as regular smokers and occassional smokers. A present occasional smoker smokes cigarettes now but volunteers that he has never smoked regularly when asked: "About how old were you when you first started smoking cigarettes fairly regularly?" Present regular smokers are all other present smokers. A similar dichotomy is used to classify former cigarette smokers.

The differences which have occurred in the cigarette smoking habits of men and women from 1970 to 1978 are also apparent in estimates of persons who have never smoked. While the proportion of adult males who have never smoked is increasing—30.9 percent in

Table 2. Number of persons 17 years and over, by cigarette smoking status, race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Total population	All smokers[1]	Present smoker		Former smoker		Never smoked	All occasional smokers
			Regular and occasional smoker	Regular smoker only	Regular and occasional smoker	Regular smoker only		
	Number in thousands							
All races[2]								
Both sexes 17 years and over	155,452	84,524	52,348	51,685	31,547	29,237	70,854	3,165
17-24 years	31,817	13,139	10,386	10,224	2,658	2,372	18,664	488
25-44 years	57,251	33,772	22,337	21,992	11,165	10,306	23,479	1,282
45-64 years	43,463	27,391	15,854	15,723	11,301	10,520	16,025	985
65 years and over	22,921	10,222	3,772	3,746	6,423	6,039	12,687	410
Male 17 years and over	73,381	47,884	27,408	27,151	20,102	18,730	25,471	1,710
17-24 years	15,492	6,741	5,258	5,176	1,427	1,233	8,737	290
25-44 years	27,828	18,621	11,763	11,615	6,697	6,157	9,207	729
45-64 years	20,616	15,952	8,225	8,199	7,597	7,205	4,665	444
65 years and over	9,445	6,570	2,161	2,161	4,381	4,134	2,863	247
Female 17 years and over	82,070	36,641	24,940	24,535	11,445	10,507	45,383	1,455
17-24 years	16,325	6,399	5,127	5,048	1,232	1,139	9,927	198
25-44 years	29,423	15,150	10,573	10,377	4,468	4,148	14,273	553
45-64 years	22,846	11,440	7,629	7,524	3,704	3,315	11,360	541
65 years and over	13,475	3,652	1,610	1,585	2,042	1,905	9,823	163
White								
17 years and over	136,607	75,323	45,761	45,200	28,982	26,849	61,225	2,872
17-24 years	27,168	11,381	8,945	8,810	2,340	2,081	15,787	435
25-44 years	49,726	29,655	19,153	18,861	10,243	9,487	20,071	1,126
45-64 years	38,985	24,874	14,224	14,115	10,451	9,695	14,065	925
65 years and over	20,728	9,413	3,439	3,414	5,947	5,587	11,302	386
Male	64,936	42,655	23,815	23,613	18,492	17,227	22,269	1,535
Female	71,671	32,668	21,946	21,587	10,489	9,623	38,956	1,337
Black								
17 years and over	14,572	7,231	5,278	5,189	1,904	1,762	7,341	243
17-24 years	3,587	1,306	1,068	1,054	239	212	2,281	*41
25-44 years	5,540	3,165	2,520	2,468	634	555	2,375	130
45-64 years	3,633	2,142	1,394	1,371	710	697	1,491	*48
65 years and over	1,812	618	296	296	322	298	1,195	*24
Male	6,256	3,918	2,730	2,675	1,162	1,069	2,338	161
Female	8,316	3,313	2,548	2,515	742	693	5,003	*82

[1] Includes smokers with unknown present smoking status.
[2] Includes all other races, which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

Table 3. Percent distribution of persons 17 years and over by cigarette smoking status, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Total population[1]	All smokers[2]	Present smoker		Former smoker		Never smoked	All occasional smokers
			Regular and occasional smoker	Regular smoker only	Regular and occasional smoker	Regular smoker only		
	Percent distribution							
All races[2]								
Both sexes 17 years and over	100.0	54.4	33.7	33.2	20.3	18.8	45.6	2.0
17-24 years	100.0	41.3	32.6	32.1	8.4	7.5	58.7	1.5
25-44 years	100.0	59.0	39.0	38.4	19.5	18.0	41.0	2.2
45-64 years	100.0	63.0	36.5	36.2	26.0	24.2	36.9	2.3
65 years and over	100.0	44.6	16.5	16.3	28.0	26.3	55.4	1.8
Male 17 years and over	100.0	65.3	37.4	37.0	27.4	25.5	34.7	2.3
17-24 years	100.0	43.5	33.9	33.4	9.2	8.0	56.4	1.9
25-44 years	100.0	66.9	42.3	41.7	24.1	22.1	33.1	2.6
45-64 years	100.0	77.4	39.9	39.8	36.9	34.9	22.6	2.2
65 years and over	100.0	69.6	22.9	22.9	46.4	43.8	30.3	2.6
Female 17 years and over	100.0	44.6	30.4	29.9	13.9	12.8	55.3	1.8
17-24 years	100.0	39.2	31.4	30.9	7.5	7.0	60.8	1.2
25-44 years	100.0	51.5	35.9	35.3	15.2	14.1	48.5	1.9
45-64 years	100.0	50.1	33.4	32.9	16.2	14.5	49.7	2.4
65 years and over	100.0	27.1	11.9	11.8	15.2	14.1	72.9	1.2
White								
17 years and over	100.0	55.1	33.5	33.1	21.2	19.7	44.8	2.1
17-24 years	100.0	41.9	32.9	32.4	8.6	7.7	58.1	1.6
25-44 years	100.0	59.6	38.5	37.9	20.6	19.1	40.4	2.3
45-64 years	100.0	63.8	36.5	36.2	26.8	24.9	36.1	2.4
65 years and over	100.0	45.4	16.6	16.5	28.7	27.0	54.5	1.9
Male	100.0	65.7	36.7	36.4	28.5	26.5	34.3	2.4
Female	100.0	45.6	30.6	30.1	14.6	13.4	54.4	1.9
Black								
17 years and over	100.0	49.6	36.2	35.6	13.1	12.1	50.4	1.7
17-24 years	100.0	36.4	29.8	29.4	6.7	5.9	63.6	*1.1
24-44 years	100.0	57.1	45.5	44.5	11.4	10.0	42.9	2.3
45-64 years	100.0	59.0	38.4	37.7	19.5	19.2	41.0	*1.3
65 years and over	100.0	34.1	16.3	16.3	17.8	16.4	65.9	*1.3
Male	100.0	62.6	43.6	42.8	18.6	17.1	37.4	2.6
Female	100.0	39.8	30.6	30.2	8.9	8.3	60.2	*1.0

[1] Excludes persons with unknown smoking status.
[2] Includes smokers with unknown present smoking status.
[3] Includes all other races, which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

1970 and 34.7 percent in 1978—the proportion of females has remained about the same (37.5 and 35.3 percent, respectively).

Although estimates of male present smokers and smokers 25-44 years of age are declining, the average number of cigarettes consumed daily per smoker is increasing. In 1970, 23.3 percent of all adult cigarette smokers smoked 25 cigarettes or more a day, while in 1978, 27.9 percent of all smokers reported smoking at this level (tables 4 and 5). In addition greater proportions of adults smoked less than 15 cigarettes per day in 1970 than in 1978 (32.9 compared with 29.4 percent). This trend is found among both men and women and in all age groups. These findings probably reflect several phenomena; among them are changes in the cigarette product itself, increased smoking by some smokers who have switched to lower tar cigarettes, and a disproportionate number of persons smoking fewer cigarettes may be quitting.

The 1978 cigarette consumption data also show that persons smoking less than 15 cigarettes daily were more often female, black, and either under 25 years of age or 65 years and over. In contrast, persons smoking 25 cigarettes or more a day were predominantly 25-64 years of age, male, and white.

The Health Interview Survey data from 1978 further show that the majority of people who now smoke cigarettes have made at least one serious attempt to quit during their smoking years. About 60 percent of the over 50 million current adult cigarette smokers have tried to stop smoking at some time, of whom an estimated 13½ million have made an attempt during the past year (table 6). These data were

Table 4. Percent of present smokers 17 years and over by amount smoked daily, sex, and age: United States, 1970, 1974, and 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Sex and age	Amount smoked daily					
	Less than 15 cigarettes			25 cigarettes or more		
	1978	1974	1970	1978	1974	1970
	Percent of present smokers[1]					
Both sexes						
All ages 17 years and over	29.4	32.2	32.9	27.9	24.9	23.3
17-24 years	37.8	43.6	43.4	17.3	14.3	13.9
25-44 years	26.9	28.1	28.3	30.7	29.2	26.7
45-64 years	25.3	27.8	30.8	32.6	27.3	25.7
65 years and over	38.7	44.0	45.5	19.6	17.7	14.7
Male						
All ages 17 years and over	23.4	26.3	27.8	34.1	30.6	27.7
17-24 years	33.1	39.1	39.7	18.9	15.4	15.6
25-44 years	20.3	22.1	22.8	37.3	35.2	30.8
45-64 years	18.5	20.8	24.5	42.4	36.9	32.4
65 years and over	36.0	39.3	44.5	22.3	18.8	16.8
Female						
All ages 17 years and over	36.0	38.7	39.1	21.0	18.5	18.0
17-24 years	42.6	48.5	47.7	15.6	13.0	11.8
25-44 years	34.2	34.7	34.8	23.6	22.5	21.7
45-64 years	32.8	35.3	38.4	22.2	16.9	17.7
65 years and over	42.3	50.7	47.2	15.9	16.2	11.4

[1] Excludes present smokers with unknown amounts smoked.

Table 5. Number of present smokers 17 years and over and percent distribution by number of cigarettes smoked daily, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Number of present smokers in thousands	Number of cigarettes smoked daily				
		Total[1]	Less than 15	15-24	25-34	35 or more
		Percent distribution				
All races[2]						
Both sexes 17 years and over	52,348	100.0	29.4	42.7	13.0	14.9
17-24 years	10,386	100.0	37.8	44.9	10.9	6.4
25-44 years	22,337	100.0	26.9	42.3	14.7	16.0
45-64 years	15,854	100.0	25.3	42.0	12.3	20.3
65 years and over	3,772	100.0	38.7	41.8	11.3	8.3
Male 17 years and over	27,408	100.0	23.4	42.5	15.4	18.7
17-24 years	5,258	100.0	33.1	48.0	12.3	6.6
25-44 years	11,763	100.0	20.3	42.4	16.8	20.5
45-64 years	8,225	100.0	18.5	39.2	15.5	26.9
65 years and over	2,161	100.0	36.0	41.7	14.3	8.0
Female 17 years and over	24,940	100.0	36.0	43.0	10.4	10.6
17-24 years	5,127	100.0	42.6	41.8	9.5	6.1
25-44 years	10,573	100.0	34.2	42.2	12.4	11.2
45-64 years	7,629	100.0	32.8	45.1	8.9	13.3
65 years and over	1,610	100.0	42.3	41.8	*7.1	8.8
White						
17 years and over	45,761	100.0	25.6	44.1	14.1	16.2
17-24 years	8,945	100.0	33.7	47.3	11.8	7.2
25-44 years	19,153	100.0	22.3	44.0	16.3	17.5
45-64 years	14,224	100.0	21.9	42.6	13.4	22.1
65 years and over	3,439	100.0	37.7	42.6	11.4	8.3
Male	23,815	100.0	19.5	43.5	16.5	20.4
Female	21,946	100.0	32.1	44.7	11.5	11.7
Black						
17 years and over	5,278	100.0	57.9	32.9	3.9	5.3
17-24 years	1,068	100.0	68.1	28.0	*4.0	*-
25-44 years	2,520	100.0	56.0	32.7	*3.6	7.7
45-64 years	1,394	100.0	56.0	36.9	*3.0	*4.1
65 years and over	296	100.0	45.6	*33.4	*10.5	*10.5
Male	2,730	100.0	51.4	35.1	5.8	7.6
Female	2,548	100.0	64.7	30.6	*1.9	*2.8

[1]Excludes present smokers with unknown amounts smoked.
[2]Includes all other races which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

Table 6. Number of present regular smokers 17 years and over and percent distribution by never attempting and ever attempting to quit smoking and attempts to quit in past year, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, age, and sex	Number of present regular smokers in thousands	All present regular smokers[1]	Never attempted to quit smoking	Ever attempted to quit smoking			
				Total[2]	Attempts in past year		
					None	1	2 or more
		Percent distribution					
All races[3]							
Both sexes 17 years and over	51,685	100.0	40.7	59.3	32.7	17.8	8.4
17-24 years	10,224	100.0	46.0	54.0	17.3	26.2	10.5
25-44 years	21,992	100.0	38.7	61.3	35.7	18.1	7.3
45-64 years	15,723	100.0	39.7	60.3	38.6	13.3	7.8
65 years and over	3,746	100.0	42.4	57.6	31.9	12.4	11.9
Male 17 years and over	27,151	100.0	39.9	60.1	35.5	16.7	7.7
17-24 years	5,176	100.0	45.7	54.3	17.7	25.4	11.3
25-44 years	11,615	100.0	38.7	61.4	37.6	16.6	7.0
45-64 years	8,199	100.0	38.2	61.8	43.3	12.0	6.0
65 years and over	2,161	100.0	38.7	61.4	37.3	14.0	8.9
Female 17 years and over	24,535	100.0	41.6	58.4	29.5	19.1	9.2
17-24 years	5,048	100.0	46.3	53.7	16.9	27.1	9.7
25-44 years	10,377	100.0	38.7	61.3	33.5	19.8	7.6
45-64 years	7,524	100.0	41.3	58.7	33.6	14.6	9.7
65 years and over	1,585	100.0	47.6	52.4	24.7	10.3	15.8
White							
17 years and over	45,200	100.0	40.3	59.7	34.3	17.5	7.6
17-24 years	8,810	100.0	45.4	54.6	17.9	26.2	10.5
25-44 years	18,861	100.0	37.8	62.2	38.0	17.7	6.3
45-64 years	14,115	100.0	39.7	60.3	39.8	13.0	6.9
65 years and over	3,414	100.0	42.8	57.2	33.1	12.5	10.5
Male	23,613	100.0	38.8	61.2	37.3	16.6	7.0
Female	21,587	100.0	41.8	58.2	30.9	18.5	8.3
Black							
17 years and over	5,189	100.0	42.8	57.2	20.1	22.3	14.3
17-24 years	1,054	100.0	48.4	51.6	*11.6	30.9	*9.1
25-44 years	2,468	100.0	43.3	56.7	19.5	23.0	13.8
45-64 years	1,371	100.0	38.5	61.5	28.0	17.8	15.8
65 years and over	296	100.0	*39.5	60.5	*18.6	*8.4	*29.4
Male	2,675	100.0	46.4	53.6	21.5	19.5	12.1
Female	2,515	100.0	39.1	60.9	18.7	25.2	16.5

[1] Excludes unknown if ever attempted to quit smoking.
[2] Includes unknown number of attempts in past year.
[3] Includes all other races which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

derived from two questions: "Have you ever made a serious attempt to stop smoking cigarettes?" and "During the past 12 months, that is since (date) a year ago, about how many times would you say you made a fairly serious attempt to stop smoking cigarettes entirely?"

About the same percent of black and white present smokers have attempted to quit at some time. However, data show a higher percent of black smokers than of white smokers with one attempt or more within the past year (36.6 and 25.1 percent, respectively). Although a slightly higher proportion of male smokers have ever attempted to quit, proportionately more women than men have made one attempt or more to quit during the year (28.3 and 24.4 percent, respectively). This sex difference is more apparent among black smokers (41.7 compared with 31.6 percent) than among white smokers (26.8 and 23.6 percent).

Young smokers—those 17-24 years of age—more frequently reported attempts to quit smoking cigarettes in the last year than smokers 25 years of age or older did (about 37 compared with about 24 percent).

Respondents who attempted to quit smoking in the past year were asked: "How long did you actually stay off cigarettes the last time?" While this question was designed to elicit a specific number of days, weeks, etc. that persons actually stopped smoking, about 11 percent of the respondents instead said that they did not stay off. Since no followup question was asked to determine specifically what was meant by this response—less than a day, less than a week, or some other interval—persons answering this way are shown in a separate category in table 7.

Almost two-thirds (60.5 percent) of the current smokers who attempted to quit in the past year stopped for 1 week or longer during their last attempt. A slightly higher percent of male than of female smokers (62.9 and 58.2 percent) were able to stay off cigarettes for 1 week or more. The reverse pattern is seen for the interval 1 month or more; 28.5 percent of male smokers and 30.5 percent of female smokers who attempted to quit stayed off cigarettes for this length of time.

Young adults had appreciably greater success (if success is measured by length of time stayed off)—almost 70 percent stayed off cigarettes for 1 week or more—than persons 45-64 years did. For the latter group, about 50 percent stopped for 1 week or more. No appreciable differences were found in the length of time black and white smokers stayed off cigarettes.

For this survey a former smoker is defined as a person who has smoked at least 100 cigarettes during his lifetime but is not smoking now. Overall, about one-third of all adults classified as former smokers reported quitting within the past 3 years (table 8). Perhaps more meaningful statistics are derived when estimates of former smokers who quit smoking during the past 12 months are combined with present smokers.

Data in table 9 show that 30.8 percent of recent smokers—persons who smoke now or smoked sometime during the past year—made an attempt or actually quit smoking during the past year. Of those who tried to quit, 1 in 5 persons was successful. Proportionately more young smokers (41.9 percent) attempted to quit smoking than other persons did. Middle-aged smokers—45-64 years—were least likely to try to quit and were least likely to succeed of all age groups. While a slightly higher proportion of female than of male smokers attempted to quit (32.7 compared with 29.1 percent), male smokers were slightly more likely to succeed (21.5 compared with 18.8 percent). Similarly, while a higher proportion of black smokers than white smokers made an attempt to quit (39.1 and 29.9 percent), the rate of success was higher among white smokers (21.4 and 10.3 percent).

The above estimates represent a crude measure of a "quit rate," as they contain all persons who have recently stopped. Included are persons who quit only several days before the interview and may have resumed smoking. In contrast, excluded are persons who reported at the time of interview that they smoked but actually were in the process of quitting and may have subsequently been successful. The effects of these imprecise inclusions and exclusions may cancel each other out. Further analysis of these data and the results from another smoking survey now being designed should provide further insight regarding the extent of this phenomenon.

This is the first year the HIS questionnaire has contained questions to identify tar and nicotine levels of cigarettes smoked most often (tables 10 and 11).

Since much of the current interest in tar

Table 7. Number of present regular smokers 17 years and over who attempted to quit smoking and percent distribution by length of time off cigarettes, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Number of smokers who attempted to quit in thousands	Length of time off cigarettes						
		Total[1]	Did not stay off	Less than 1 week	7-13 days	2 weeks but less than 1 month	1 month but less than 3 months	3 months or more
		Percent distribution						
All races[2]								
Both sexes 17 years and over	30,434	100.0	10.8	28.8	12.4	18.6	14.9	14.6
17-24 years	5,492	100.0	7.3	23.4	11.9	24.4	17.8	15.3
25-44 years	13,359	100.0	10.7	28.3	10.4	18.5	15.7	16.3
45-64 years	9,449	100.0	14.2	35.3	15.4	13.8	12.4	9.0
65 years and over	2,134	100.0	*12.9	30.0	16.1	*11.9	*7.2	21.7
Male 17 years and over	16,188	100.0	9.2	27.9	13.0	21.4	15.4	13.1
17-24 years	2,788	100.0	6.7	23.6	12.6	31.2	12.6	13.3
25-44 years	7,032	100.0	10.2	28.3	9.2	19.3	18.1	14.9
45-64 years	5,059	100.0	9.1	34.0	19.2	14.8	17.4	*5.6
65 years and over	1,310	100.0	*13.6	*25.2	*16.8	*14.5	*5.5	*24.5
Female 17 years and over	14,246	100.0	12.2	29.5	11.8	15.9	14.5	16.0
17-24 years	2,704	100.0	7.9	23.1	11.1	17.4	23.2	17.2
25-44 years	6,327	100.0	11.2	28.3	11.5	17.8	13.4	17.7
45-64 years	4,390	100.0	18.2	36.3	12.3	13.1	8.4	11.7
65 years and over	824	100.0	*12.1	35.7	*15.3	*9.2	*9.2	*18.4
White								
17 years and over	26,845	100.0	11.0	28.6	13.1	17.8	15.1	14.4
17-24 years	4,793	100.0	7.7	23.0	12.0	24.9	17.5	14.8
25-44 years	11,648	100.0	10.7	28.6	11.4	17.2	16.2	15.9
45-64 years	8,474	100.0	14.1	34.7	16.2	12.5	13.3	9.2
65 years and over	1,930	100.0	*15.1	29.5	17.0	*10.0	*5.0	23.6
Male	14,362	100.0	9.9	27.0	13.3	20.7	15.6	13.4
Female	12,483	100.0	12.0	30.0	13.0	14.9	14.6	15.5
Black								
17 years and over	2,935	100.0	10.7	28.4	9.3	24.3	12.9	14.3
17-24 years	529	100.0	*6.1	*22.7	*10.2	*26.1	*18.5	*16.3
25-44 years	1,384	100.0	*11.2	27.0	*7.1	*23.5	*12.8	18.3
45-64 years	843	100.0	*16.6	34.3	*11.9	*23.3	*5.4	*8.5
65 years and over	179	100.0	*-	*37.5	*11.6	*27.7	*23.2	*-
Male	1,403	100.0	*5.3	32.5	*12.3	27.1	*12.5	*10.5
Female	1,532	100.0	15.0	25.3	*7.0	22.2	13.3	17.3

[1] Excludes smokers with unknown length of time off cigarettes.
[2] Includes all other races which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

Table 8. Number of former regular smokers 17 years and over and percent distribution by length of time since smoked cigarettes, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Number of former regular smokers in thousands	Length of time since smoked cigarettes					
		Total[1]	Less than 1 year	1-3 years	4-7 years	8-11 years	12 years or more
		Percent distribution					
All races[2]							
Both sexes 17 years and over	29,237	100.0	11.7	20.3	18.7	18.6	30.8
17-24 years	2,372	100.0	38.8	43.4	15.3	*2.5	*
25-44 years	10,306	100.0	15.4	25.5	22.9	20.5	15.7
45-64 years	10,520	100.0	6.2	15.3	17.3	21.3	39.8
65 years and over	6,039	100.0	4.1	10.8	15.2	16.8	53.1
Male 17 years and over	18,730	100.0	9.7	18.5	18.3	18.5	35.0
17-24 years	1,233	100.0	36.4	39.7	19.1	*4.8	*
25-44 years	6,157	100.0	12.4	25.9	22.1	21.9	17.7
45-64 years	7,205	100.0	6.1	14.4	18.2	19.7	41.5
65 years and over	4,134	100.0	3.5	8.0	12.5	15.5	60.5
Female 17 years and over	10,507	100.0	15.3	23.4	19.3	18.6	23.3
17-24 years	1,139	100.0	41.4	47.5	*11.2	*-	*
25-44 years	4,148	100.0	19.8	24.8	24.0	18.5	12.9
45-64 years	3,315	100.0	6.5	17.2	15.4	24.7	36.2
65 years and over	1,905	100.0	*5.5	16.7	20.9	19.5	37.4
White							
17 years and over	26,849	100.0	11.5	19.8	18.8	18.3	31.5
17-24 years	2,081	100.0	35.6	44.8	16.7	*2.9	*
25-44 years	9,487	100.0	15.6	24.9	22.2	20.9	16.4
45-64 years	9,695	100.0	6.6	15.1	17.7	20.6	40.1
65 years and over	5,587	100.0	4.0	9.9	15.7	16.1	54.4
Male	17,227	100.0	9.4	18.2	18.6	17.8	36.1
Female	9,623	100.0	15.3	22.6	19.3	19.4	23.4
Black							
17 years and over	1,762	100.0	12.3	25.4	14.9	20.9	26.4
17-24 years	212	100.0	65.1	*34.4	*-	*-	*-
25-44 years	555	100.0	*8.7	29.6	35.4	*18.6	*7.6
45-64 years	697	100.0	*1.8	*18.1	*10.5	25.2	44.2
65 years and over	298	100.0	*4.9	*29.6	*-	*30.0	*35.4
Male	1,069	100.0	*9.7	21.4	*13.1	28.5	27.3
Female	693	100.0	*15.9	31.3	*17.5	*10.0	25.2

[1]Excludes former smokers with unknown length of time since smoked cigarettes.
[2]Includes all other races which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

Table 9. Number of recent smokers (persons smoking in past year) 17 years and over and number and percent who attempted or quit smoking in past year, by present smoking status, race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	All recent smokers	Recent smokers attempting to quit or quitting in past year			Smokers attempting or quitting in past year	Smokers attempting to quit and who succeeded in past year
		Total	Present smokers who attempted to quit	Former smokers who quit		
	Number in thousands[2]				Percent[2]	
All races[1]						
Both sexes 17 years and over	55,106	16,962	13,541	3,421	30.8	20.2
17-24 years	11,144	4,672	3,752	920	41.9	19.7
25-44 years	23,579	7,173	5,586	1,587	30.4	22.1
45-64 years	16,375	3,970	3,318	652	24.2	16.4
65 years and over	3,994	1,158	910	248	29.0	21.4
Male 17 years and over	28,968	8,442	6,625	1,817	29.1	21.5
17-24 years	5,625	2,349	1,900	449	41.8	19.1
25-44 years	12,378	3,504	2,741	763	28.3	21.8
45-64 years	8,639	1,916	1,476	440	22.2	23.0
65 years and over	2,306	640	495	145	27.8	22.7
Female 17 years and over	26,143	8,551	6,943	1,608	32.7	18.8
17-24 years	5,520	2,330	1,858	472	42.2	20.3
25-44 years	11,198	3,664	2,843	821	32.7	22.4
45-64 years	7,739	2,043	1,828	215	26.4	10.5
65 years and over	1,690	519	414	*105	30.7	*20.2
White						
17 years and over	48,288	14,433	11,345	3,088	29.9	21.4
17-24 years	9,551	3,974	3,233	741	41.6	18.6
25-44 years	20,341	6,007	4,527	1,480	29.5	24.6
45-64 years	14,755	3,449	2,809	640	23.4	18.6
65 years and over	3,637	1,008	785	223	27.7	22.1
Male	25,232	7,192	5,573	1,619	28.5	22.5
Female	23,059	7,257	5,785	1,472	31.5	20.3
Black						
17 years and over	5,406	2,116	1,899	217	39.1	10.3
17-24 years	1,192	560	422	138	47.0	24.6
25-44 years	2,516	956	908	*48	38.0	*5.0
45-64 years	1,384	474	461	*13	34.2	*2.7
65 years and over	311	127	*112	*15	40.8	*11.8
Male	2,779	949	845	*104	34.1	*11.0
Female	2,625	1,159	1,049	*110	44.2	*9.5

[1] Includes all other races not shown separately.
[2] Excludes occasional smokers.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error less than 30 percent when the aggregate is at least 125,000.

Table 10. Number of present regular smokers 17 years and over and percent distribution by tar level of cigarettes smoked, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Number of present regular smokers in thousands	Tar level of cigarettes smoked					
		Total[1]	Less than 5 mg	5-9 mg	10-14 mg	15-19 mg	20 mg or more
		Percent distribution					
All races[2]							
Both sexes 17 years and over	51,685	100.0	4.2	7.5	17.1	61.4	9.8
17-24 years	10,224	100.0	1.3	5.9	19.4	71.8	1.6
25-44 years	21,992	100.0	4.1	7.6	18.1	62.6	7.5
45-64 years	15,723	100.0	4.9	7.8	15.2	54.7	17.3
65 years and over	3,746	100.0	9.6	9.5	12.6	53.2	15.1
Male 17 years and over	27,151	100.0	3.3	6.2	13.5	63.5	13.6
17-24 years	5,176	100.0	*0.8	4.9	13.4	78.5	2.4
25-44 years	11,615	100.0	3.4	6.9	14.9	63.6	11.1
45-64 years	8,199	100.0	3.1	5.8	12.2	55.9	23.0
65 years and over	2,161	100.0	9.0	6.8	10.6	55.0	18.7
Female 17 years and over	24,535	100.0	5.2	8.9	21.1	59.1	5.7
17-24 years	5,048	100.0	*1.9	6.9	25.4	65.0	*0.8
25-44 years	10,377	100.0	4.8	8.4	21.7	61.6	3.6
45-64 years	7,524	100.0	6.9	10.0	18.5	53.5	11.2
65 years and over	1,585	100.0	10.5	12.9	15.3	50.8	10.5
White							
17 years and over	45,200	100.0	4.7	8.1	18.0	59.5	9.7
17-24 years	8,810	100.0	1.5	6.5	20.0	70.5	*1.4
25-44 years	18,861	100.0	4.5	8.5	19.3	60.3	7.4
45-64 years	14,115	100.0	5.5	8.2	16.1	53.3	16.9
65 years and over	3,414	100.0	10.5	9.6	13.5	51.9	14.5
Male	23,613	100.0	3.7	6.6	14.4	62.2	13.0
Female	21,587	100.0	5.8	9.6	21.9	56.6	6.0
Black							
17 years and over	5,189	100.0	*0.5	2.8	9.6	76.8	10.3
17-24 years	1,054	100.0	*-	*2.7	12.8	83.2	*1.4
25-44 years	2,468	100.0	*1.0	*1.6	10.2	79.0	8.3
45-64 years	1,371	100.0	*-	*4.5	*7.5	69.0	19.1
65 years and over	296	100.0	*-	*4.6	*4.2	72.2	*19.4
Male	2,675	100.0	*-	*2.7	5.6	74.8	16.9
Female	2,515	100.0	*1.0	*2.8	13.7	78.8	*3.7

[1]Excludes present smokers with unknown tar levels.
[2]Includes all other races which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

Table 11. Number of present regular smokers 17 years and over and percent distribution by nicotine level of cigarettes smoked, according to race, sex, and age: United States, 1978

[Data are based on household interviews of the civilian noninstitutionalized population. The source of data, sampling, and limitations and qualifications of Data are given in the technical notes]

Race, sex, and age	Number of present regular smokers in thousands	Nicotine level of cigarettes smoked					
		Total[1]	Less than 0.5 mg	0.5-0.9 mg	1.0-1.19 mg	1.2-1.39 mg	1.4 mg or more
		Percent distribution					
All races[2]							
Both sexes 17 years and over	51,685	100.0	4.3	26.7	34.6	24.0	10.3
17-24 years	10,224	100.0	1.3	28.5	41.0	26.0	3.1
25-44 years	21,992	100.0	4.3	28.2	35.1	24.5	7.9
45-64 years	15,723	100.0	5.1	24.5	30.0	22.9	17.5
65 years and over	3,746	100.0	10.0	22.8	32.1	20.4	14.7
Male 17 years and over	27,151	100.0	3.3	19.9	36.6	26.2	14.0
17-24 years	5,176	100.0	*0.8	18.3	47.1	29.7	4.1
25-44 years	11,615	100.0	3.6	22.1	37.5	25.6	11.3
45-64 years	8,199	100.0	3.1	18.3	29.3	26.0	23.2
65 years and over	2,161	100.0	9.0	17.4	33.7	21.9	18.0
Female 17 years and over	24,535	100.0	5.5	34.2	32.3	21.6	6.4
17-24 years	5,048	100.0	*1.9	38.9	34.8	22.3	*2.1
25-44 years	10,377	100.0	5.1	34.9	32.6	23.3	4.2
45-64 years	7,524	100.0	7.2	31.0	30.7	19.6	11.5
65 years and over	1,585	100.0	11.3	29.8	30.0	18.5	10.5
White							
17 years and over	45,200	100.0	4.9	28.2	35.1	21.8	10.0
17-24 years	8,810	100.0	1.5	29.8	44.0	22.0	2.6
25-44 years	18,861	100.0	4.8	30.1	35.0	22.4	7.7
45-64 years	14,115	100.0	5.7	25.7	30.2	21.6	16.9
65 years and over	3,414	100.0	10.9	23.8	32.5	18.8	14.1
Male	23,613	100.0	3.7	21.3	37.5	24.1	13.3
Female	21,587	100.0	6.1	35.7	32.5	19.3	6.4
Black							
17 years and over	5,189	100.0	*0.5	15.0	27.7	44.2	12.6
17-24 years	1,054	100.0	*-	16.7	18.2	59.7	*5.4
25-44 years	2,468	100.0	*1.0	15.7	30.2	43.4	9.7
45-64 years	1,371	100.0	*-	13.9	29.8	34.4	22.0
65 years and over	296	100.0	*-	*8.8	*31.0	*41.2	*19.4
Male	2,675	100.0	*-	8.9	25.8	46.7	18.7
Female	2,515	100.0	*1.0	21.2	29.6	41.7	6.6

[1] Excludes present smokers with unknown nicotine levels.
[2] Includes all other races which are not shown separately.

NOTE: When a figure is shown with an asterisk, it is presented only for the purpose of combining with other cells. An estimate has a relative standard error of less than 30 percent when the aggregate is at least 125,000.

levels centers on the use of lower tar cigarettes—defined for this report as those containing less than 15 mg of tar—table 10 includes three lower tar categories. Over one-fourth of adults who currently smoke (28.8 percent) use lower tar cigarettes. A higher proportion of women (35.2 percent) than men (23 percent) smoke these cigarettes. Data also show that lower tar cigarettes are used by a higher proportion of white smokers (30.8 percent) than black smokers (12.9 percent).

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision (more than 30 percent relative standard error)	*

TECHNICAL NOTES

SOURCE OF DATA

The data presented in this report were obtained from household interviews in the Health Interview Survey. These interviews were conducted during the final 2 quarters of 1978 in a probability sample of the civilian noninstitutionalized population of the United States. During that period there were approximately 20,000 interviewed households containing about 55,000 persons. The cigarette smoking questions were asked of each household member 17 years of age and over who was identified as a "sample person." This subsample included approximately 12,000 persons. Sample persons were required to answer the cigarette smoking questions for themselves unless some physical or mental health problem precluded their participation.

SAMPLING

The sampling pattern for sample person selection was based on the total number of related and unrelated household members. Sample persons (approximately a one-third subsample of the Health Interview Survey sample) were selected by the interviewer at the time of interview. To determine which household member to designate as a sample person, the interviewer referred to a preselected flashcard after listing all related and unrelated persons in the household on the questionnaire. The flashcard contained, for each household size, one person number or more that were to be identified as sample persons.

Since the estimates shown are based on a sample rather than on the entire population, they are subject to sampling error. Standard errors appropriate for estimates of the number of persons are shown in table I; standard errors appropriate for estimated percentages are shown in table II.

Table I. Standard errors of estimates of aggregates

Size of estimate in thousands	Standard error in thousands
50	24
70	29
100	35
125	38
300	60
500	77
700	91
1,000	109
5,000	243
10,000	342
20,000	478
30,000	579
50,000	731
100,000	970

Table II. Standard errors, expressed in percentage points, of estimated percentages

Base of percentage in thousands	Estimated percentage				
	2 or 98	5 or 95	10 or 90	20 or 80	50
50	6.8	10.7	14.7	19.6	24.4
70	5.8	9.0	12.4	16.5	20.7
100	4.8	7.5	10.4	13.8	17.3
300	2.8	4.3	6.0	8.0	10.0
500	2.2	3.4	4.6	6.2	7.7
700	1.8	2.8	3.9	5.2	6.5
1,000	1.5	2.4	3.3	4.4	5.5
5,000	0.7	1.1	1.5	2.0	2.4
10,000	0.5	0.8	1.0	1.4	1.7
20,000	0.3	0.5	0.7	1.0	1.2
30,000	0.3	0.4	0.6	0.8	1.0
50,000	0.2	0.3	0.5	0.6	0.8
100,000	0.2	0.2	0.3	0.4	0.5

LIMITATIONS AND QUALIFICATIONS OF DATA

All the limitations and qualifications that apply in general to Health Interview Survey data apply to the data shown in this report. A full statement of these limitations and qualifications may be found in any report in Series 10 of *Vital and Health Statistics*.

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FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service
Office of Health Research, Statistics, and Technology | Number 53 • September 11, 1979

Office Visits Involving X-rays, National Ambulatory Medical Care Survey: United States, 1977[1]

Based on findings of the 1977 National Ambulatory Medical Care Survey, this report examines the use of X-rays by office-based physicians. An *X-ray* is defined as any single or multiple X-ray examination for diagnostic or screening purposes. Radiation therapy is *not* included. When the phrase *X-ray visit* appears in these pages, it applies to any office visit where an X-ray was either provided or ordered.

The National Ambulatory Medical Care Survey (NAMCS) is a continuing sample survey conducted annually by the Division of Health Resources Utilization Statistics of the National Center for Health Statistics. The survey—national in range except for Alaska and Hawaii—is designed to explore the provision and utilization of ambulatory care in the offices of non-Federal, office-based physicians. Since the statistics used in this report are based on a sample rather than on the entire universe of office-based physicians, they are estimates only and subject to sampling variability. Along with more information on the survey design and definitions of terms used in NAMCS, the Technical Notes at the end of the report provide guidelines for judging the precision of the estimates presented.

DATA HIGHLIGHTS

In 1977 an estimated 570,052,000 visits were made to office-based physicians within the NAMCS scope. An estimated 7.8 percent (44,662,000) of these were X-ray visits involving the provision or ordering of single or multiple X-ray examinations for diagnostic or screening purposes.

Table 1 shows the 15 reasons—that is, symptoms, complaints, or nonsymptomatic problems—most commonly motivating patients to make X-ray visits; the reasons are ranked according to the frequency of X-ray visits associated with each. Note, however, that these were *principal* reasons only. Up to two other reasons could have been given by the patient, often creating symptom clusters, which, though they are not analyzed in this brief report, undoubtedly influenced the physician's choice of diagnostic mechanisms, including the use of X-rays. As a group these 15 principal reasons accounted for 43 percent of all X-ray visits. The importance of the X-ray as a routine screening mechanism is evident from the finding that the largest single block of X-ray visits (an estimated 2,815,000) was associated with patients' requests for general medical examinations—annual physical examinations, routine checkups, etc. As a diagnostic mechanism—clearly their chief role—X-rays were applied most frequently to symptoms or complaints of the musculoskeletal system. Nine of the 15 reasons listed in table 1 center on musculoskeletal problems.

Tables 2 and 3 focus attention on the involvement of X-rays in the physicians' diagnoses of the symptoms presented by patients. As with the principal reasons motivating patients to make X-ray visits, these tabulations are based on the *principal* diagnoses only—that is, the diagnoses most closely linked to the chief problems presented by patients. Up to two other concurrent conditions could have been listed, and it is possible that the use of X-rays was prompted in whole or in part by the presence of these other

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[1]This report was prepared by Hugo Koch and Raymond O. Gagnon, Division of Health Resources Utilization Statistics.

Table 1. Number and percent distribution of X-ray visits; number of all visits and percent involving X-rays, by the 15 leading principal reasons for visits given by patients (ranked according to the frequency of X-ray visits): United States, 1977

Rank	Patient's principal reason for visit and NAMCS code[1]	X-ray visits[2]		All visits	
		Number in thousands	Percent distribution	Number in thousands	Percent involving X-rays
	Total	44,662	100.0	570,052	7.8
1	General medical examination X100.0	2,815	6.3	20,659	13.6
2	Back symptoms (excludes injuries) S905.0	2,194	4.9	10,696	20.5
3	Chest pain and related symptoms (not referable to body system) S050.0	1,801	4.0	8,388	21.5
4	Cough S440.0	1,562	3.5	13,937	11.2
5	Knee symptoms (excludes injuries) S925.0	1,459	3.3	5,309	27.5
6	Abdominal pain, cramps, spasms S550.0	1,425	3.2	8,715	16.4
7	Foot and toe symptoms (excludes injuries) S935.0	1,239	2.8	3,976	31.2
8	Low back symptoms (excludes injuries) S910.0	1,020	2.3	4,594	22.2
9	Shoulder symptoms (excludes injuries) S940.0	944	2.1	4,388	21.5
10	Neck symptoms (excludes injuries) S900.0	830	1.9	4,915	16.9
11	Blood pressure test X320.0	822	1.8	14,990	5.5
12	Hip symptoms (excludes injuries) S915.0	795	1.8	2,144	37.1
13	Headache S210.0	771	1.7	9,458	8.2
14	Leg symptoms (excludes injuries) S920.0	752	1.7	5,161	14.6
15	Ankle symptoms (excludes injuries) S930.0	707	1.6	1,873	37.7
	All other reasons residual	25,526	57.1	450,839	5.7

[1]Based on a classification of patients' reasons for visits developed for use in NAMCS.
[2]An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.

conditions. Table 2 shows the 15 specific diagnoses most commonly assigned to X-ray visits ranked according to the frequency of X-ray visits associated with each diagnosis. The importance of the X-ray as a screening mechanism is again reinforced by the finding that the largest single block of X-ray visits (2,037,000) was associated with preventive examinations. In their chief role of diagnostic mechanism X-rays were, predictably, most often used in association with musculoskeletal disease or injury. Note, for example, that 3 of every 5 visits for fracture of the radius or ulna involved the use of X-rays. Table 3, by gathering all specific diagnoses into diagnostic groups, offers a broader perspective of the use of X-rays throughout the clinical spectrum. The diagnostic groups most commonly associated with X-ray procedures were accidents, poisonings, and violence; diseases of the musculoskeletal system; diseases of the digestive systems; and symptoms and ill-defined conditions.

X-rays are generally applied early in the diagnostic process. This is confirmed by the findings in table 4, which show that most X-ray visits (54 percent) occurred at the *new-condition visit*, that is, when the physician encountered a condition in a patient for the first time. This could be any condition presented by a new patient or any new condition presented by a patient already established as part of the doctor's practice. Evidence for an overall conservatism in the diagnostic use of X-rays lies in the finding that, in the course of 1 year, an average new-condition visit that involved the use of an X-ray or X-rays entailed fewer than 1 (0.9) return visits at which X-rays were used (a rough approximation, obtained by dividing the 20,493,000 return visits involving X-rays by the 24,169,000 new-condition visits involving X-rays).

X-rays were most likely to be applied with new patients referred by other physicians. As table 4 makes evident, the frequency with which X-rays were applied at referred visits—16.2 percent of the total 28,412,000 referred visits—was more than double the average frequency of X-ray use (in 7.8 percent of all visits).

Along the continuum of patient age, the in-

Table 2. Number and percent distribution of X-ray visits; number of all visits and percent involving X-rays, by the 15 leading principal diagnoses assigned by physicians (ranked according to frequency of X-ray visits): United States, 1977

Rank	Principal diagnosis and ICDA code[1]	X-ray visits[2]		All visits	
		Number in thousands	Percent distribution	Number in thousands	Percent involving X-rays
	Total	44,662	100.0	570,052	7.8
1	Medical or special examination Y00	2,037	4.6	41,716	4.9
2	Essential benign hypertension 401	1,665	3.7	24,837	6.7
3	Osteoarthritis and allied conditions 713	1,431	3.2	5,866	24.4
4	Medical and surgical aftercare Y10	1,352	3.0	19,524	6.9
5	Synovitis, bursitis, and tenosynovitis 731	1,078	2.4	5,331	20.2
6	Sprains and strains of ankle and foot 845	1,064	2.4	2,136	49.8
7	Chronic ischemic heart disease 412	911	2.0	11,943	7.6
8	Sprains and strains of other and unspecified parts of back 847	862	1.9	4,981	17.3
9	Bronchitis 490	842	1.9	6,597	12.8
10	Fracture of radius and ulna 813	726	1.6	1,200	60.5
11	Sprains and strains of sacroiliac region 846	661	1.5	2,478	26.7
12	Other ill-defined and unknown causes of morbidity and mortality 796	576	1.3	2,797	20.6
13	Fracture of one or more phalanges of hand 816	565	1.3	1,056	53.5
14	Other nonarticular rheumatism 717	557	1.3	4,027	13.8
15	Acute upper respiratory infection 465	527	1.2	17,925	2.9
	All other principal diagnoses residual	29,808	66.7	417,638	7.1

[1] Based on *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA).
[2] An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.

tensity of X-ray usage showed three conspicuous peaks (table 5). The first is noticeable in the injury-prone period of the teens; X-ray visits composed as much as 8.5 percent of all visits made by patients in this age interval. The second peak—the highest of the three—appears in the 5-year span 55-59 years; here X-ray procedures were applied at 11.1 percent of all visits. A third peak is evident in the interval from 70-74 years. The latter two peaks reflect the onset and X-ray diagnosis of the chronic, musculoskeletal diseases common to advancing years, the second peak being linked in large part to the X-ray diagnosis of rheumatoid arthritis and the third to that of osteoarthritis.

As a group, males were X-rayed at an estimated 9.6 percent of their visits, a proportion half again as high as the proportion of 6.7 percent found among females (table 5). Table 6 and figure 1 reveal that this difference was especially prominent in the age interval 20-50 years; during this period the frequency with which men were X-rayed (at 11.9 percent of visits) was about twice the frequency found for women (5.8 percent of visits).

In the sheer volume of X-ray procedures that they provided or ordered, the primary-care specialties of general, family, and internal medicine accounted for the majority (56 percent) of all the X-ray visits made to office-based practitioners (table 7). However, in the relative frequency with which they employed X-rays, the most visited specialities are in a different order, more closely related to clinical focus than to primary-care function. From this point of view orthopedic surgeons were by far the most active users of X-ray procedures; they were followed at a respectable distance by internists, cardiovascular specialists, urologists, and general surgeons, each of which exceeded the average tendency to use X-rays (at 7.8 percent of visits).

Table 3. Number of visits to office-based physicians, percent involving X-rays, and number and percent distribution of X-ray visits by diagnostic groups: United States, 1977

Diagnostic group and ICDA codes[1]	All visits		X-ray visits[2]	
	Number in thousands	Percent involving X-rays	Number in thousands	Percent distribution
All principal diagnoses	570,052	7.8	44,662	100.0
Infective and parasitic diseases 000-136	22,668	2.8	643	1.4
Neoplasms 140-239	14,286	6.8	970	2.2
Endocrine, nutritional, and metabolic diseases 240-279	24,287	4.4	1,065	2.4
Mental disorders 290-315	24,522	2.4	579	1.3
Diseases of the nervous system and sense organs 320-389	48,291	2.7	1,295	2.9
Diseases of the circulatory system 390-458	54,702	7.8	4,275	9.6
Diseases of the respiratory system 460-519	82,466	5.9	4,879	10.9
Diseases of the digestive system 520-577	18,451	14.5	2,681	6.0
Diseases of the genitourinary system 580-629	36,473	5.1	1,864	4.2
Diseases of the musculoskeletal system 710-738	32,983	20.1	6,633	14.9
Arthritis and rheumatism 710-718	17,665	16.9	2,982	6.7
Symptoms and ill-defined conditions 780-796	25,695	13.2	3,393	7.6
Accidents, poisonings, and violence 800-990	43,761	25.8	11,281	25.3
Fractures 800-829	8,309	54.1	4,493	10.1
Dislocations and sprains 830-848	14,044	29.2	4,105	9.2
Special conditions and examinations without sickness Y00-Y13	96,009	3.9	3,771	8.4
Other diagnoses and diagnosis "none" or unknown residual	45,458	2.9	1,334	3.0

[1]Based on *Eighth Revision International Classification of Diseases, Adapted for Use in the United States*, (ICDA).
[2]An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.

Table 4. Number of visits to office-based physicians, percent involving X-rays, and number and percent distribution of X-ray visits by patient-condition status and referral status: United States, 1977

Patient-condition status and referral status	All visits		X-ray visits[1]	
	Number in thousands	Percent involving X-rays	Number in thousands	Percent distribution
Total	570,052	7.8	44,662	100.0
Condition status				
New patient	87,230	13.2	11,551	25.9
Old patient	482,822	6.9	33,111	74.2
New condition	142,037	8.8	12,618	28.3
Old condition	340,785	6.0	20,493	45.9
New-condition visit[2]	229,267	10.5	24,169	54.1
Return visit	340,785	6.0	20,493	45.9
Whether referred by another physician				
Yes	28,412	16.2	4,600	10.3
No	541,640	7.4	40,062	89.7

[1]An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.
[2]Any visit by a new patient, or any visit by an old patient involving a new condition.

Table 5. Number of visits to office-based physicians, percent involving X-rays, and number and percent distribution of X-ray visits by age and sex of patients: United States, 1977

Age and sex	All visits		X-ray visits[1]	
	Number in thousands	Percent involving X-rays	Number in thousands	Percent distribution
Total	570,052	7.8	44,662	100.0
Age				
Under 6 years	54,913	2.4	1,337	3.0
6-10 years	27,266	5.1	1,393	3.1
11-14 years	21,578	8.5	1,835	4.1
15-19 years	39,507	7.8	3,070	6.9
20-24 years	46,254	5.6	2,568	5.7
25-29 years	46,808	7.0	3,263	7.3
30-34 years	40,185	8.1	3,257	7.3
35-39 years	30,653	8.8	2,690	6.0
40-44 years	28,683	9.2	2,635	5.9
45-49 years	33,280	9.8	3,251	7.3
50-54 years	36,744	9.4	3,443	7.7
55-59 years	37,910	11.1	4,213	9.4
60-64 years	34,229	9.2	3,148	7.0
65-69 years	32,136	10.0	3,209	7.2
70-74 years	25,515	10.5	2,670	6.0
75-79 years	18,385	8.7	1,601	3.6
80 years and over	16,007	6.7	1,078	2.4
Sex				
Female	345,187	6.7	22,975	51.4
Male	224,865	9.6	21,687	48.6

[1]An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.

Table 6. Number of visits to office-based physicians, percent involving X-rays, and number and percent distribution of X-ray visits by sex and age of patients: United States, 1977

Sex and age	All visits		X-ray visits[1]	
	Number in thousands	Percent involving X-rays	Number in thousands	Percent distribution
Total	570,052	7.8	44,662	100.0
Female				
Under 11 years	39,599	3.1	1,221	2.7
11-19 years	34,350	6.4	2,187	4.9
20-29 years	65,436	4.0	2,599	5.8
30-39 years	46,369	6.9	3,177	7.1
40-49 years	38,530	7.5	2,898	6.5
50-59 years	44,312	9.4	4,150	9.3
60-69 years	38,515	8.8	3,398	7.6
70-79 years	27,787	9.6	2,674	6.0
70-74 years	15,945	9.7	1,552	3.5
75-79 years	11,842	9.4	1,122	2.5
80 years and over	10,289	6.5	672	1.5
Male				
Under 11 years	42,579	3.5	1,511	3.4
11-19 years	26,735	10.2	2,718	6.1
20-29 years	27,626	11.7	3,232	7.2
30-39 years	24,470	11.3	2,770	6.2
40-49 years	23,434	12.8	2,988	6.7
50-59 years	30,341	11.6	3,506	7.9
60-69 years	27,851	10.6	2,959	6.6
70-79 years	16,112	9.9	1,596	3.6
70-74 years	9,570	11.7	1,117	2.5
75-79 years	6,542	7.3	*479	*1.1
80 years and over	5,718	*7.1	*406	*0.9

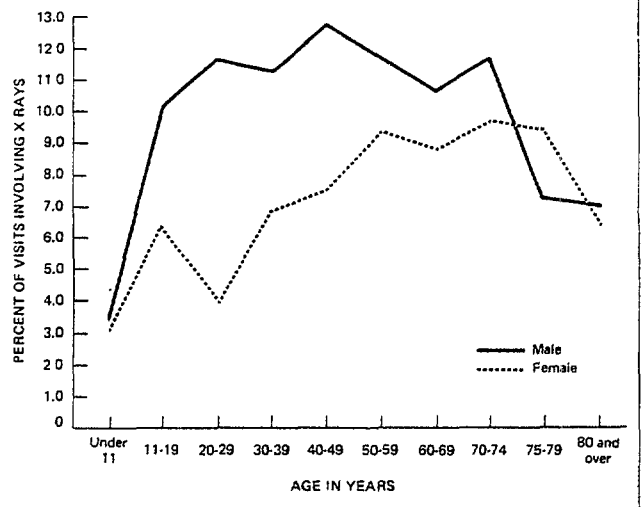
[1]An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.

Table 7. Number of visits to office-based physicians, percent involving X-rays, and number and percent distribution of X-ray visits by physician specialties: United States, 1977

Physician specialty	All visits		X-ray visits[1]	
	Number in thousands	Percent involving X-rays	Number in thousands	Percent distribution
Total	570,052	7.8	44,662	100.0
General and family practice	222,919	6.9	15,331	34.3
Internal medicine	64,959	14.6	9,486	21.2
Orthopedic surgery	20,201	43.2	8,733	19.6
General surgery	36,124	9.5	3,443	7.7
Pediatrics	54,762	2.5	1,390	3.1
Urology	11,205	10.3	1,154	2.6
Obstetrics and gynecology	49,273	1.8	882	2.0
Cardiovascular disease	6,218	12.8	793	1.8
Otolaryngology	15,716	4.1	640	1.4
All other specialties	88,675	3.2	2,810	6.3

[1]An X-ray visit is any visit involving the use of a single or multiple X-ray examination for diagnostic or screening purposes.

Figure 1. PERCENT OF ALL OFFICE VISITS INVOLVING X-RAYS, BY SEX AND AGE OF PATIENTS: UNITED STATES, 1977



TECHNICAL NOTES

SOURCE OF DATA

The information presented in this report is based on data collected by the National Ambulatory Medical Care Survey (NAMCS) from January-December 1977. The target universe of NAMCS is composed of office visits made within the coterminous United States to non-Federal physicians who are principally engaged in office practice and are not in the specialities of anesthesiology, pathology, or radiology. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the survey's field operation.

SAMPLE DESIGN

NAMCS utilizes a multistage probability design that involves samples of primary sampling units (PSU's), physician practices within PSU's, and patient visits within practices. Each year a sample of practicing physicians is selected from master files maintained by the American Medical Association and American Osteopathic Association. For 1977 a total of 3,000 physicians were included in the sample. Of those found eligible for the survey, 77.5 percent participated. Characteristics of the physician's practice—for example, primary specialty and type and location of practice—were obtained or confirmed during an induction interview. Participating physicians were requested to complete encounter forms (Patient Records) for a systematic random sample of their office visits during a randomly assigned weekly reporting period. During 1977, 51,044 Patient Records were completed. The Record contained an item to be checked whenever the use of X-rays was included in the diagnostic procedures ordered or provided at the visit. A total of 4,141 Records indicated the use of single or multiple X-ray procedures.

SAMPLING ERRORS

The standard error is primarily a measure of the sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percentage of the estimate. Relative standard errors of selected aggregate statistics are shown in table I. The standard errors appropriate for estimated percentages of visits are shown in table II.

Table I. Approximate relative standard errors of estimated numbers of office visits, NAMCS 1977

Estimated number of visits in thousands	Relative standard error in percent
500	29.0
600	26.5
1,000	20.7
2,000	14.9
5,000	9.9
10,000	7.6
20,000	6.1
50,000	4.9
100,000	4.5
500,000	4.1

Example of use of table: An aggregate estimate of 75,000,000 visits has a relative standard error of 4.7 percent or a standard error of 3,525,000 visits (4.7 percent of 75,000,000).

Table II. Approximate standard errors of percentages of estimated numbers of office visits, NAMCS 1977

Base of percentage (estimated number of visits in thousands)	Estimated percentage					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
	Standard error in percentage points					
500	2.9	6.3	8.6	11.5	13.2	14.4
600	2.6	5.7	7.9	10.5	12.0	13.1
1,000	2.0	4.4	6.1	8.1	9.3	10.2
2,000	1.4	3.1	4.3	5.7	6.6	7.2
5,000	0.9	2.0	2.7	3.6	4.2	4.5
10,000	0.6	1.4	1.9	2.6	2.9	3.2
20,000	0.5	1.0	1.4	1.8	2.1	2.3
50,000	0.3	0.6	0.9	1.1	1.3	1.4
100,000	0.2	0.4	0.6	0.8	0.9	1.0
500,000	0.1	0.2	0.3	0.4	0.4	0.5

Example of use of table: An estimate of 30 percent based on an aggregate of 15,000,000 visits has a standard error of 2.5 percent. The relative standard error of 30 percent is 8.3 percent (2.5 percent ÷ 30 percent).

ROUNDING OF NUMBERS

Estimates of office visits have been rounded to the nearest thousand. For this reason detailed figures within tables do not always add to totals. Percents were calculated on the basis of original, unrounded figures and will not necessarily agree precisely with percents which might be calculated from rounded data.

DEFINITIONS

Ambulatory patient.—An ambulatory patient is an individual presenting himself for personal health services who is neither bedridden nor currently admitted to any health care institution on the premises.

Office.—An office is a place that the physician identifies as a location for his ambulatory practice. Responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than an institution.

Physician.—A physician is a duly licensed doctor of medicine (M.D.) or doctor of osteopathy (D.O.).

Visit.—A visit is a direct personal exchange between an ambulatory patient and a physician or a staff member working under the physician's supervision for the purpose of seeking care and rendering health services.

X-ray.— An X-ray is any single or multiple X-ray examination for diagnostic or screening purposes. Radiation therapy is *not* included.

X-ray visit.—An X-ray visit is any office visit where an X-ray is either provided or ordered.

SYMBOLS

Data not available	. . .
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

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Fats, Cholesterol, and Sodium Intake in the Diet of Persons 1-74 Years: United States

by Sidney Abraham and Margaret D. Carroll, M.S.P.H., Division of Health Examination Statistics

Introduction

Several dietary components of the current diet in the United States may be risk factors in the development of major diseases, particularly cardiovascular diseases and cancer.[1-12] Because of the importance of the reported relationship between dietary components and disease patterns, this report provides reference data on the consumption patterns and food groups that are the major sources of these components.

The dietary data were obtained during the first National Health and Nutrition Examination Survey NHANES I. The survey is a program in which measures of nutrition status are collected for a scientifically designed sample representative of the civilian noninstitutionalized population of the United States in a broad range of ages.

Of the 28,043 sample persons selected to represent 194 million persons aged 1-74 years in the U.S. population, 20,749 persons, or 74 percent, were examined. This is an effective response rate of 75 percent when adjustment is made for the effect of oversampling among preschool children, women of childbearing age, the poor, and the elderly.

The NHANES I nutrition examination component included a general medical examination by a physician for indicators of nutritional deficiencies, a skin examination by a dermatologist, and a dental examination by a dentist. Body measurements were taken by a trained technician; a dietary interview, consisting of a 24-hour recall of food consumption and a food frequency questionnaire, was administered by professional dietary staff; and numerous laboratory tests were performed on whole blood, serum, plasma, and urine. A description of the sampling process, NHANES I operations, and response rates has been published.[13]

Estimates in this report were based on weighted observations, i.e., data obtained on examined persons are inflated to the level of the total population using appropriate weights to account for both sampling fractions and response results.

Findings on the consumption patterns and sources of food groups from dietary components will be analyzed and discussed in a future report.[14] Selected data from that report are presented in tables 1-8 and figure 1.

Information on food intake was obtained by the 24-hour recall method for the day, midnight to midnight, preceding the interview and accounted for all regular meals eaten as well as for between-meal foods or snacks. Food recall included foods eaten on Monday through Friday but generally excluded foods eaten on weekends which may pertain to unusual food intakes.

Foods reported by individuals were grouped under 18 main headings (figure 1). Eleven of these food groups were major sources of the nutrients, cholesterol, and sodium intake and are shown in tables 1-7. These 11 food groups and the other 7—sources of only small proportions of nutrients, cholesterol, and sodium—are shown in table 8. Contents of food groups 1-18 referred to in this report are presented in figure 1.

Fat intake

NHANES I provided data on dietary intake of total fat and saturated fat. The data did not permit evaluation of total polyunsaturated and monounsaturated fatty acids, but intake data were availabie for linoleic and oleic fatty acids.

The quality and kind of fat in the diet affects the serum lipid concentration. Saturated fat tends to elevate and polyunsaturated tends to decrease the serum cholesterol levels. Polyunsaturated fatty acids considered essential for nutrition are linoleic, linolenic, and arachidonic. Of the three, linoleic is relatively more abundant in foods than the other two. Monounsaturated fat, of which oleic acid is the most

Figure 1. Food or food groups contributing to fat, cholesterol, and sodium intakes

	FOOD OR FOOD GROUP	EXPLANATION OF FOOD ITEMS
1	Milk and milk products	Includes milk drunk as a beverage or used on cereals; flavored milk drinks; cocoa made with milk; skim milk, yogurt, or buttermilk; ice milk; ice cream or puddings made with milk; cheese and cheese dishes. EXCEPTION: CREAM CHEESE
2	Meat	Includes beef, pork, lamb, veal, luncheon meats, canned meats, frankfurters
	Organ meats	Includes liver, kidney, heart, spleen, etc.
3	Fats and oils	Includes butter, margarine, salad oils, salad dressings, bacon, cream cheese, cream, peanut butter, non-dairy cream
4	Desserts and sweets	Includes cake, pie, cookies, fruit puddings, doughnuts (cake-type and yeast-type), sherbert, sweet snacks. EXCEPTIONS: ICE CREAM, ICE MILK
5	Mixed protein dishes with carbohydrates-starches or vegetables	Includes casseroles, pot pies, pizza, spaghetti with meat, etc. EXCEPTIONS: PLAIN CHEESE DISHES
6	Cereals	Includes breakfast cereals either dry such as cornflakes or cooked such as oatmeal.
7	Poultry	Includes chicken, turkey, duck, game birds, cornish hen, etc.
8	Fish or shellfish	Includes all varieties of fish and shellfish regardless of whether canned, fresh, frozen, dried or salted.
9	Eggs	Includes eggs eaten e.g., fried, boiled, poached, deviled, or egg salad. EXCEPTIONS: EGGS IN COOKED OR BAKED DISHES SUCH AS CUSTARDS, AND PUDDINGS
10	Fruits and vegetables	Includes: a. All kinds: fresh, canned, frozen, cooked or raw; juices, including fruit drinks b. Fruits and vegetables rich in Vitamin A c. Fruits and vegetables rich in Vitamin C
11	Salty snacks	Includes potato chips, corn chips, puffed snacks, cheese snacks, salted popcorn, salted pretzels, etc.
12	Grain products	Includes bread, rolls, biscuits, muffins, cornbread, crackers, unsalted pretzels.
13	Alcoholic beverages	Includes a) beer, b) wine, c) distilled liquors
14	Sugar free and low calorie beverages	Includes coffee (regular, and decaffeinated), tea, bouillion, consomme and diet carbonated drinks
15	Soups	Includes milk and water-based; gravies and sauces (meat and vegetable based)
16	Legumes and nuts	Includes dry beans and peas such as pinto beans, red beans, black-eyed peas, peanuts, soybeans, soy products, etc.
17	Miscellaneous	Includes mustard, gelatin, malt, beverage powders, chili powders, seeds, low fat salad dressings, etc.
18	Sugar and primarily sugar products	Includes candy, soft drinks, lemonade, limeade.

Table 1. Mean daily fat intake and percent of calories provided by fat, by sex and age: United States, 1971-74

Age	Both sexes		Male		Female	
	Mean fat intake (gram)	Percent of calories from fat	Mean fat intake (gram)	Percent of calories from fat	Mean fat intake (gram)	Percent of calories from fat
1-74 years	83	37	100	37	66	36
1-5 years	63	36	65	36	60	37
6-11 years	83	36	89	37	77	36
12-17 years	96	37	115	37	77	37
18-44 years	90	37	114	37	68	36
45-64 years	75	37	93	37	60	36
65-74 years	61	35	74	36	51	35

common fatty acid, does not elevate or lower the serum lipids.

Findings from NHANES I showed that the average reported consumption of fat was 83 grams on the day of recall. Fat represented 37 percent of the calories consumed daily (table 1). Males reported a higher fat intake, a mean of 100 grams per day, than females (66 grams) did. The percent of calories from fat was 37 percent for males and 36 percent for females.

The daily mean fat intake of females increased with age from 60 grams at the youngest age group (1-5 years) to a maximum of 77 grams at the age group (6-17 years) and then declined in each successively older age group (table 1).

A somewhat similar pattern was found for males. However, the mean fat intake was higher in each age group than that for females (an expected occurrence since the reported food intakes of males provided more calories than the diets of females did).

The major souces of fat in the diet for both males and females aged 1-74 years, in descending order of their percent contribution, were meat, milk and milk products, fats and oils, desserts and sweets, and grain products. These five food groups provided more than 70 percent of the fat for each sex and age group in the population (table 2).

Meat

The meat group includes beef, pork, lamb, veal, luncheon meats, canned meats, frankfurters, and organ meats. For both males and females the percent contribution of meat to the fat value of the diet increased with age from the youngest ages (1-5 years), peaked at the adult ages (18-44 years), and then de-

Table 2. Mean daily fat intake and percent of fat provided by selected major food groups, by sex and age: United States, 1971-74

Sex and age	Mean fat intake (gram)	Source of fat					
		Meat	Milk and milk products	Fats and oils	Desserts and sweets	Grain products	Other
Male				Percent			
1-74 years	100	25	19	15	8	6	26
1-5 years	65	16	30	14	9	6	25
6-11 years	89	17	28	13	10	7	25
12-17 years	115	21	25	12	10	6	26
18-44 years	114	28	16	15	7	6	27
45-64 years	93	27	14	19	7	7	26
65-74 years	74	24	15	20	8	7	25
Female							
1-74 years	66	21	20	16	8	7	28
1-5 years	60	16	31	13	9	5	25
6-11 years	77	17	29	13	9	7	26
12-17 years	77	21	23	12	9	6	28
18-44 years	68	23	16	17	8	7	29
45-64 years	60	24	15	19	8	7	27
65-74 years	51	21	16	22	8	8	26

clined slightly. Adult males consumed larger percents of fat from meat than adult females did. There was no difference in the percent contributions of meat to total fat intake for males and females ages 1-17 years.

Milk and milk products

The milk and milk products group includes whole milk, skim milk, or buttermilk reported as a beverage or used on cereal, flavored milk drinks, cocoa made with milk, yogurt, ice milk, ice cream, puddings made with milk, and cheese and cheese dishes. Foods from this group supplied more of the fat in the diets of children 1-11 years of age than any other food group did, accounting for roughly 30 percent of the total fat consumed by young boys and girls. The percent contribution of milk and milk products to fat intake for males and females generally declined with age, with the lowest percents falling in the older age groups. This pattern for children was the opposite of that found for the meat group.

Fats and oils

The fats and oils group includes butter, margarine, salad oils and dressings, bacon, cream cheese, creamy peanut butter, and nondairy cream. Gravies and low calorie salad dressings are not included. The largest percent contribution of fats and oils to fat intake was at the oldest age group (65-74 years) of males and females where it accounted for 20 and 22 percent, respectively. However, a smaller percent contribution of fats and oils was in the intakes of children and adolescents.

Desserts, sweets, and grain products

The desserts and sweets and the grain products groups were less important as sources of fat in the U.S. diet. Desserts and sweets, excluding candy, contributed 7-10 percent of the daily fat intake, with the percent contribution about the same in each age group and for both sexes.

Grain products generally contributed a slightly smaller percent of fat to the diet than the desserts and sweets groups did. By age, values ranged from 6-7 percent for males and 5-8 percent for females.

Saturated fat

Table 3 shows that the age patterns described for total fat consumption of males and females were also observed for saturated fat. Table 3 also shows the seven food groups that were the major sources of saturated fat. Altogether, these groups provided 85 percent or more of the saturated fat for each age-sex group. As with total fat intake, the milk and milk products group is the major source of saturated fat for children and adolescents of both sexes. For adults the meat group was the major source.

Other sources of saturated fat were fats and oils, mixed protein dishes, grain products, desserts and sweets, and eggs.

Milk and milk products (table 3) supplied 29 percent of the saturated fat in the food intakes of males and females ages 1-74 years. The age patterns found in percent contributions of these foods to total fat intake for males and females were also found for saturated fat. The largest percent was observed in the lowest age group (1-5 years). After these ages the

Table 3. Mean daily saturated fat intake and percent of saturated fat provided by major food groups, by sex and age: United States, 1971-74

Sex and age	Mean saturated fat intake (gram)	Source of saturated fat							
		Milk and milk products	Meat	Fats and oils	Mixed protein dishes	Grain products	Desserts and sweets	Eggs	Other
					Percent				
Male									
1-74 years	37	29	28	12	5	5	5	4	12
1-5 years	25	43	17	10	5	4	5	5	11
6-11 years	34	41	19	9	6	5	5	3	12
12-17 years	42	36	24	10	6	4	5	2	13
18-44 years	42	24	33	12	6	5	5	4	13
45-64 years	34	21	32	16	4	5	4	5	12
65-74 years	27	23	27	17	4	5	5	7	11
Female									
1-74 years	24	29	25	13	6	5	5	4	13
1-5 years	23	45	17	9	5	4	5	5	11
6-11 years	30	42	19	9	6	4	5	2	13
12-17 years	29	34	24	9	5	4	6	2	15
18-44 years	25	24	27	13	6	5	6	4	14
45-64 years	22	23	28	17	5	5	5	6	12
65-74 years	18	24	25	18	5	6	6	6	12

Table 4. Mean daily linoleic fatty acid intake and percent of linoleic fatty acids provided by major food groups, by sex and age: United States, 1971-74

Sex and age	Mean linoleic fatty acids intake (gram)	Source of linoleic fatty acids							
		Fats and oils	Salty snacks	Fruits and vegetables	Meat	Desserts and sweets	Grain products	Poultry	Other
					Percent				
Male									
1-74 years	10	38	9	12	10	6	5	4	16
1-5 years	6	38	11	10	8	7	5	4	17
6-11 years	8	37	14	10	7	7	6	4	16
12-17 years	11	31	16	14	7	7	6	3	15
18-44 years	12	38	8	12	11	6	5	4	16
45-64 years	9	44	2	10	11	5	5	5	16
65-74 years	7	45	1	9	11	7	5	5	17
Female									
1-74 years	7	39	9	10	8	6	5	5	17
1-5 years	5	37	14	9	7	6	4	5	17
6-11 years	7	34	17	8	7	6	6	5	17
12-17 years	8	32	18	11	7	7	5	3	17
18-44 years	8	40	7	12	8	6	5	5	16
45-64 years	6	44	3	10	9	6	5	5	17
65-74 years	5	49	2	7	8	6	5	7	16

share of saturated fat from the milk group declined with increased age, falling from 41 and 42 percent, respectively, for males and females ages 6-11 years to about 23 percent in the oldest age group (65-74 years) for both sexes.

The meat group (table 3) supplied 28 and 25 percent, respectively, of the saturated fat in the food intakes of males and females ages 1-74 years. The percent contribution increased from the younger ages for both sexes, peaked at ages 18-44 years for males and at ages 45-64 years for females and then declined.

In the younger ages, both sexes showed a relatively larger share of saturated fat from milk and milk products than from meat products. After ages 12-17 years, the share from meat was relatively higher than that from milk and milk products.

The contribution of fats and oils to saturated fat intake ranged from 9 to 17 percent for males; older males reported the largest percent of their saturated fat from fats and oils. A similar pattern was generally observed for females. The contributions of mixed protein dishes, desserts and sweets, grain products, and eggs to this dietary component were relatively smaller. For each food group, the percents by each sex-age group were fairly constant with no observable age pattern.

Linoleic acids

Fats and oil products were the major sources of linoleic acids for males and females in all age groups (table 4). The largest percent intake from this fatty acid occurred after age 44 years—more than 40 percent for both males and females. At the younger ages this food group contributed more than 30 percent of the daily linoleic acid.

Salty snacks were the second major contributor to linoleic acid for both males and females ages 1-17 years. The percent contribution of salty snacks to linoleic acid decreased rapidly after ages 12-17 years for both males and females. Fruits and vegetables were the second major contributors to linoleic acid for males ages 18-44 years and for females ages 18-64 years, while meat was the second major contributor to linoleic acid for males ages 45-74 years and females ages 65-74 years.

Other major contributors to linoleic acid were desserts and sweets, grain products, and poultry. Generally, the share of linoleic acids from these food groups remained fairly stable with age.

Oleic acids

Meat, milk and milk products, fats and oils, desserts and sweets, grain products, and mixed protein dishes were the major sources of oleic fatty acids, providing about 80 percent of the oleic acids in the intakes of most sex-by-age groups (table 5).

For the population aged 1-74 years, meat was the major source of oleic acids. The percent contributed by those foods peaked at ages 18-44 years for males and at ages 18-64 years for females and then declined slightly.

The share of oleic acids reported from the milk and milk products group was largest among children and adolescents, the pattern previously observed for

Table 5. Mean daily oleic fatty acid intake and percent of oleic fatty acids provided by major food groups, by sex and age: United States, 1971-74

Sex and age	Mean oleic fatty acids intake (gram)	Source of oleic fatty acids						
		Meat	Milk and milk products	Fats and oils	Desserts and sweets	Grain products	Mixed protein dishes	Other
					Percent			
Male								
1-74 years	37	28	15	15	9	8	6	19
1-5 years	24	18	24	16	10	8	6	18
6-11 years	33	19	23	15	10	9	7	17
12-17 years	41	24	20	13	10	8	7	18
18-44 years	43	31	13	14	8	8	7	19
45-64 years	36	30	11	18	8	9	4	20
65-74 years	29	25	12	20	10	9	4	20
Female								
1-74 years	25	24	16	16	10	8	6	19
1-5 years	22	18	25	15	9	7	6	18
6-11 years	28	20	24	14	9	8	7	17
12-17 years	28	24	19	13	10	8	7	20
18-44 years	26	26	13	16	10	8	7	20
45-64 years	23	26	12	19	9	8	5	20
65-74 years	20	23	12	22	10	9	4	19

other sources of fat. After age 18 the percent contribution of oleic acids from this food group decreased most rapidly with age, declining to about 12 percent in the older age groups.

The third source of oleic acids, the fats and oils group, contributed 13-20 percent of the oleic acids in the daily intake of males with a slight increase for the oldest age group. A similar narrow range of 13-22 percent was noted for females of comparable ages, with a slight increase also noted for the oldest age group.

Desserts and sweets and grain products each contributed about the same percent of oleic acids with no noticeable differences between sex and age groups.

Cholesterol intake

Eggs, meat, and milk and milk products were the major sources of cholesterol, contributing 77 percent of the daily intake of cholesterol for males and 74 percent for females (table 6). The desserts and sweets group and the fats and oils group contributed 3-6 percent and 2-4 percent, respectively, of the cholesterol for all the sex and age groups.

Eggs were the major source of cholesterol for children aged 1-5 years and for adults of both sexes. Each of these subgroups reported more than a third of their cholesterol from this source.

Adolescents aged 12-17 years reported relatively more cholesterol intake from the meat food group—more than one-fourth of their daily intake—than the other major food sources.

Milk and milk products and eggs were the major sources of cholesterol reported by boys ages 6-11 years (about 28 percent) but only milk and milk products were the major sources of cholesterol reported by girls of similar ages (30 percent).

The percent contribution of eggs to cholesterol intake generally declined with age after ages 1-5 years for both sexes to a low at ages 6-11 years for females and at ages 12-17 years for males and then increased with age.

The largest percent of cholesterol intake from meat occurred at ages 18-44 years for males and at ages 12-17 years for females. The share of cholesterol intake from meat then decreased with age, declining to 21 percent for males and 23 percent for females in the oldest age group. The percent contribution of cholesterol from milk and milk products peaked at ages 6-11 years for both sexes with the foods from this group supplying least of the cholesterol intake in the older age groups (table 6).

The mean cholesterol consumption of males increased from age group 1-5 years, peaked at age group 18-44 years, and then declined. The mean cholesterol consumption of females increased with age, peaked at age group 45-64 years, and then declined; the average cholesterol consumption for females was the same for the youngest age group (1-5 years) and the oldest age group (65-74 years).

Sodium intake

NHANES I data on sodium intake were converted to salt intake, assuming a ratio of 1 gram of salt to 400 mg. of sodium. The salt data from NHANES I

Table 6. Mean daily dietary cholesterol intake and percent of cholesterol provided by major food groups, by sex and age: United States, 1971-74

Sex and age	Mean cholesterol intake (mg)[1]	Source of cholesterol					
		Eggs	Meat	Milk and milk products	Desserts and sweets	Fats and oils	Other
		Percent					
Male							
1-74 years	445	35	26	16	4	4	16
1-5 years	301	40	15	25	4	3	14
6-11 years	347	28	19	27	5	3	18
12-17 years	410	23	26	25	5	4	17
18-44 years	521	35	28	13	4	3	16
45-64 years	465	39	27	11	3	4	16
65-74 years	411	45	21	11	4	4	14
Female							
1-74 years	303	34	24	16	5	4	18
1-5 years	274	40	15	26	4	2	13
6-11 years	277	21	20	30	5	3	20
12-17 years	291	25	26	23	6	3	18
18-44 years	311	34	25	13	5	4	19
45-64 years	327	40	25	11	4	4	17
65-74 years	274	40	23	11	5	4	17

[1]Milligram

are incomplete because the values cover only naturally occurring sodium in foods and sodium added by processors. Table salt is not included in these data. Males reported an average daily consumption of 2,701 mg. of sodium or about 7 grams of salt and females reported an average daily consumption of 1,850 mg. of sodium or about 5 grams of salt. Among age groups, the differences in reported percent by source of sodium were small (table 7).

Table 7 also shows the seven food groups that supplied 78 percent or more of sodium for all sex and age groups. Foods such as mustard, ketchup, worcestershire sauce, and other condiments, the major sources of sodium, accounted for only 0.2 percent in

Table 7. Mean daily sodium intake and percent of sodium provided by major food groups, by sex and age: United States, 1971-74

Sex and age	Mean sodium intake (mg)[1]	Source of sodium							
		Grain products	Milk and milk products	Mixed protein dishes	Soups	Meat	Fruits and vegetables	Fats and oils	Other
		Percent							
Male									
1-74 years	2,701	24	13	12	10	9	7	6	19
1-5 years	1,886	20	18	11	12	7	6	6	20
6-11 years	2,532	23	16	13	9	7	6	5	22
12-17 years	2,965	23	15	14	8	8	6	5	21
18-44 years	3,032	23	12	13	9	10	8	6	18
45-64 years	2,540	25	11	8	11	10	8	8	19
65-74 years	2,229	26	11	6	13	9	8	7	21
Female									
1-74 years	1,850	23	14	11	10	8	8	6	19
1-5 years	1,721	20	19	12	11	7	6	6	20
6-11 years	2,238	23	16	12	10	7	7	5	20
12-17 years	2,001	23	16	12	9	8	8	5	19
18-44 years	1,863	23	13	13	10	9	8	7	18
45-64 years	1,702	24	12	8	11	10	9	7	18
65-74 years	1,526	27	13	5	11	7	8	8	21

[1]Milligram

NOTE: HANES sodium intake values converted to salt intake values assuming a ratio of 1 gram of salt to 400 mg of sodium.

Table 8. Percent distribution of dietary components provided by food groups appearing in the 24-hour recall of food consumption and mean intake of dietary components of persons aged 1-74 years: United States, 1971-74

Food or food group	Calories	Protein (gram)	Fat (gram)	Sodium (mg)[1]	Saturated fatty acid (gram)	Oleic acid (gram)	Linoleic acid (gram)	Cholesterol (mg)[1]
				Percent distribution				
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Skim milk or buttermilk	1.2	2.5	0.4	1.3	0.1	0.1	-	0.2
Cheese and cheese products	1.9	3.5	3.4	4.1	4.9	2.9	1.0	2.4
Milk and milk products excluding cheese	12.9	15.9	15.8	8.2	23.9	12.5	-	13.6
Meat	13.6	29.5	22.9	8.7	26.5	25.7	8.7	22.9
Poultry	2.0	6.6	2.3	0.2	1.9	2.5	4.6	4.1
Organ meats	0.2	0.6	0.4	0.1	0.3	0.4	0.3	2.0
Fish or shellfish	1.1	3.6	1.2	0.7	0.8	1.1	1.4	2.5
Eggs	2.5	4.2	4.6	3.1	4.1	4.9	3.0	34.2
Soups	1.6	1.1	2.0	9.9	1.7	1.7	2.6	0.6
Fats and oils	6.3	2.0	15.6	6.3	12.3	15.5	38.8	3.6
Legumes and nuts	1.7	2.1	1.6	2.0	1.2	1.7	2.2	0.2
Cereals	1.8	1.2	0.4	3.3	0.1	0.1	0.5	-
Grain products	14.7	10.8	6.4	23.4	4.7	8.2	5.1	3.6
Fruits and vegetables	10.8	5.0	5.1	7.6	3.3	3.5	11.1	1.1
Sugar and primarily sugar products	8.8	0.6	1.9	0.5	1.9	2.2	1.6	0.1
Desserts and sweets	8.4	2.9	8.2	6.5	5.0	9.1	6.4	4.3
Miscellaneous	0.6	0.4	0.3	0.3	0.1	0.1	1.2	-
Mixed protein dishes	5.0	6.7	5.4	11.4	5.4	6.3	2.7	4.5
Alcoholic beverages	3.3	0.4	-	0.3	-	-	-	-
Sugar free and low calorie beverages	0.4	0.1	-	0.6	-	-	-	0.1
Salty snacks	1.5	0.5	2.2	1.5	1.6	1.4	8.8	-
Mean	1,989	79	83	2,262	30	31	9	372

[1]Milligram

the 24-hour recall data because of minimal volume consumption. NHANES I data indicate that grain products are the major contributing source of sodium in the 24-hour recall data. Grain products contributed about one-quarter of the sodium intake in all sex and age subgroups, providing 20-27 percent in all groups. The percents are fairly stable throughout the age groups.

The milk and milk products group was generally the second major source of sodium intake. Younger males and females showed a higher percent of sodium intake from milk and milk products than adults did. This pattern is expected because of the higher consumption of milk and milk products by the younger groups. Other major sources of sodium were mixed protein dishes and soups.

Mixed protein dishes contributed 6-14 percent of the daily sodium intake for males and 5-13 percent for females. Both sexes aged 45-74 years showed smaller shares of sodium from this group of foods than those in the younger age group.

The percent contribution of soups to sodium remained fairly stable with age ranging from 8-13 percent for males and from 9-11 percent for females.

Other food groups contributing smaller amounts of sodium in the diets of the U.S. population were meats, fruits and vegetables, and fats and oils. These food groups generally contributed less sodium to the daily intake in all population subgroups than grain products, milk and milk products, and mixed protein dishes did. The differences between sexes in percent of sodium intake were small. For each sex, age was not a factor. The percent of dietary components provided by all food groups appearing in the 24-hour recall of all persons aged 1-74 years in the United States is presented in table 8.

Discussion

Reference data on dietary components implicated in increased risk to disease have been presented and analyzed by sex and age because of the medical interest in such data. These estimates are generalized for the U.S. population and provide cross-sectional data on the consumption of selected dietary components as reported by persons representing different age groups in the U.S. population. The limitations of cross-sectional data should be recognized in considering age group changes. The use of 24-hour recall to estimate dietary habits is also a limitation. Recent food intakes do not necessarily reflect lifetime dietary habits. Since the disease processes of those cited are long-term, it is questionable to relate recent dietary habits to the risk of these diseases. The esti-

mates in this report will be compared with NHANES II data on food consumption patterns which will be available in 1981.

There are limitations to the dietary estimates obtained from NHANES I. The major source of data for the basic nutritional values of food items is from the U.S. Department of Agriculture Handbook No. 8.[15] Because of the introduction of new food items in the market, updated and added values for new foods are made according to information provided by the U.S. Department of Agriculture (USDA), food processors, and manufacturers. With the exception of cholesterol, all nutrient values for chicken, steak, pork chops, and meat loaf were calculated using USDA Handbook No. 456.[16] Cholesterol values were calculated using an article by R.F. Feeley, P.E. Criner and B.K. Watts.[17] However, despite the considerable data on the nutrient composition of foods, information is less than optimal in those areas of the macronutrients whose importance is of immediate interest.

More of the data used in NHANES I, obtained from the USDA data bank, are for commodities than for brand name convenience foods.

Another problem is lack of information on the lipid content of food served by institutions, restaurants, and fast food outlets;[18] the main sources of compiled data have covered only food eaten in the home. The present dietary data bank was compiled mainly for nutrients—e.g., vitamins A and C, calcium, and iron—whose deficiency led to the classical nutritional diseases.

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Technical notes

The sampling plan for the 65 examination locations in the National Health and Nutrition Examination Survey (NHANES) followed a highly stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the conterminous United States aged 1-74 years was selected. Successive elements used in the sampling process were the primary sampling unit, census enumeration district, segment (a cluster of households), household, eligible person, and sample person. The sampling design provided for oversampling among persons living in poverty areas, preschool children, women of childbearing age, and the elderly.

The dietary component values are shown as population estimates, i.e., the findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and post-stratified ratio adjustments were also made so that the final sampling estimates of the population size are brought into closer alignment with the independent U.S. Bureau of the Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by race, sex, and age.

Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than 0 but less than 0.05
*	Figure does not meet standards of reliability or precision

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Reproductive Impairments Among Currently Married Couples: United States, 1976[1]

INTRODUCTION

This report presents preliminary estimates of fecundity impairments—that is, involuntary conditions that make it difficult or impossible to have additional children—among currently married couples in the United States in 1976. These are the latest national estimates of fecundity impairments and the first since those reported from the 1960 Growth of American Families Study.[2] The data are based on Cycle II of the National Survey of Family Growth (NSFG) conducted in 1976 by the National Center for Health Statistics.

In 1976 about 6.9 million couples, or 25 percent of all married couples with the wife of childbearing age, had fecundity impairments (figure 1). Most of these couples had one child or more and did not want additional children (figure 2). A substantial minority of couples with impaired fecundity—about 2.7 million—wanted to have a baby or another baby. About 848,000 of these couples were childless and 688,000 had only one child. In all, couples with impaired fecundity who wanted to have a baby or another baby made up about 10 percent of the married couples with the wife of childbearing age.

Statistics on couples with fecundity impairments may be of interest in determining the degree of need for appropriate medical services, in assessing the demand for adoption, and in deter-

Figure 1. PERCENT OF ALL CURRENTLY MARRIED COUPLES WITH WIFE 15-44 YEARS OF AGE, BY FECUNDITY STATUS: UNITED STATES, 1976

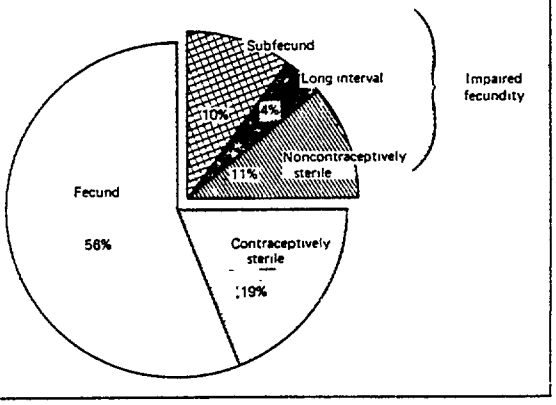
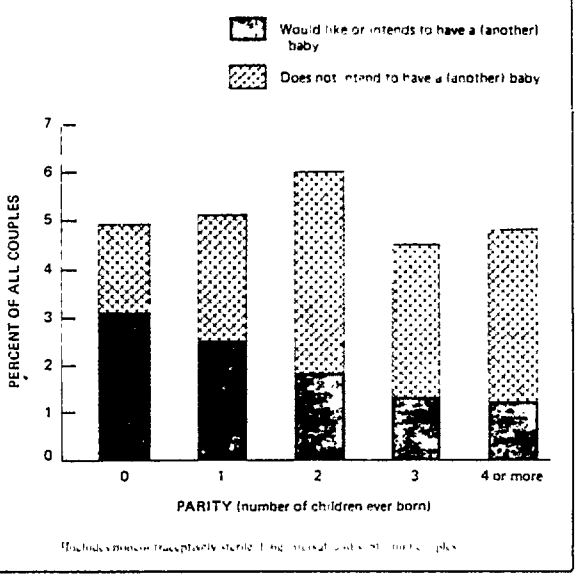


Figure 2. PERCENT OF ALL COUPLES WHO HAVE IMPAIRED FECUNDITY[1] AND ARE AT GIVEN PARITIES: UNITED STATES, 1976



[1]This report was prepared by William D. Mosher, Ph.D., Division of Vital Statistics.

[2]Whelpton, P. K., Campbell, A. A., and Patterson, J. E.: *Fertility and Family Planning in the United States.* Princeton, N.J. Princeton University Press, 1966, Chapter 4.

mining the potential effects of fecundity impairments on birth rates.

The NSFG is based on personal interviews with a multistage area probability sample of women 15-44 years of age in the household population of the conterminous United States. Women were eligible for inclusion in the sample if they were currently married, previously married, or were never married but had offspring presently living in the household.

The interview focused on the respondents' marital and pregnancy histories, their use of contraception and the planning status of each pregnancy, their use of maternal care and family planning services, fecundity impairments, and a wide range of social and economic characteristics. Between January and September of 1976, 3,009 black women and 5,602 women of other races were interviewed. Because the estimates of statistics in this report are based on a sample, they are subject to sampling variability. Further discussion of the survey design, definition of terms, and sampling variability can be found in the Technical Notes.

Statistics in this report refer to women who were currently married at the time of the survey. Characteristics reported, such as age, race, number of years since first marriage, and parity (number of children ever born), all refer to the wife. Fecundity impairments were reported in response to questions on whether respondent couples had trouble having children.

CLASSIFICATION BY FECUNDITY STATUS

For this report, fecundity is a characteristic that was measured for all currently married couples by a series of questions. All currently married couples were classified into one of five categories of fecundity status: contraceptively sterile, noncontraceptively sterile, long interval, subfecund, or fecund.

Data on fecundity impairments were obtained by asking respondents whether it was possible or impossible, or difficult or not difficult, for them to have a baby or another baby. If the respondent said it was difficult or impossible, she was asked why. With a few exceptions (explained below), respondents who said that it was impossible for them to have a baby or another baby were classified as sterile, and those who said it was difficult were classified subfecund. The first question on fecundity impairments was the following:

> "It is *physically* impossible for some couples to have children. As far as you know, is it *possible* or *impossible* for you and your husband to conceive a(nother) baby, that is, to get pregnant (again)?"

Respondents who replied that it was impossible for them to have a baby or another baby were asked:

> "What is the reason you are unable to have a(nother) baby?"

If the response was that they were sterile because of a surgical procedure, they were then asked:

> "What kind of operation was it?"
> "Was *one* reason for the operation because you had all the children you wanted?"

Contraceptively Sterile

This category consisted of women or their current husbands who had sterilizing operations at least partly because they had all the children they wanted. In 1976, 18.6 percent of the couples in which the wife was 15-44 years of age were contraceptively sterile. (This percent differs slightly from a preliminary estimate published in *Advance Data* Number 36, because of revisions made in the data. See "Definition of Terms.") For this report, these couples are not classified as having fecundity impairments because they have ended their fecundity voluntarily—that is, as a method of family limitation (table 1 and figure 1).

Noncontraceptively Sterile

Of those couples with fecundity impairments, the noncontraceptively sterile was the largest group. Eleven percent of the currently married couples in 1976, or about 3.0 million, were noncontraceptively sterile (table 1 and figure 1). These couples knew of specific reasons why they were sterile. Noncontraceptively sterile women replied to the above questions that it was impossible for them to have a baby

Table 1. Number of all currently married women[1] 15-44 years of age and percent distribution by fecundity status, according to selected characteristics: United States, 1976

Selected characteristic	Number of women in thousands	Total	Fecund[2]	Contraceptively sterile	Impaired fecundity			
					All impaired	Noncontraceptively sterile	Long interval	Subfecund
		Percent distribution						
Age								
All ages	27,488	100.0	56.1	18.6	25.3	11.0	3.9	10.4
15-24 years	6,020	100.0	85.3	3.5	11.3	*0.6	*0.8	9.8
15-19 years	1,043	100.0	90.1	*0.8	9.1	*2.2	*0.1	8.8
20-24 years	4,977	100.0	84.3	4.0	11.7	7.3	*1.0	10.0
25-34 years	12,179	100.0	58.7	19.1	22.2	8.1	2.6	11.5
25-29 years	6,443	100.0	68.7	12.5	18.8	5.4	2.3	11.1
30-34 years	5,736	100.0	47.5	26.5	26.1	11.1	2.9	12.0
35-44 years	9,288	100.0	33.8	27.7	38.5	21.5	7.7	9.3
35-39 years	4,814	100.0	36.3	28.9	34.9	18.8	6.2	9.9
40-44 years	4,474	100.0	31.2	26.4	42.4	24.5	9.3	8.7
Parity								
0	5,235	100.0	73.0	*1.5	25.5	7.8	5.0	12.7
1	5,571	100.0	70.9	3.8	25.2	5.9	4.1	15.3
2	7,638	100.0	55.1	23.3	21.5	9.7	2.6	9.2
3	4,744	100.0	43.2	30.7	26.1	15.5	3.3	7.3
4 or more	4,300	100.0	32.3	36.6	31.0	18.8	5.5	5.5
Years since wife's first marriage								
Less than 5 years	7,039	100.0	86.5	1.8	11.7	2.0	*0.8	9.0
5-9 years	6,389	100.0	66.7	13.7	19.5	3.8	2.1	13.6
10-14 years	4,972	100.0	43.2	28.3	28.6	13.4	4.8	10.4
15 years or more	8,750	100.0	31.8	30.2	38.0	21.8	7.2	9.0
Hispanic origin[3]								
Hispanic	1,699	100.0	63.5	10.7	25.7	8.7	4.1	13.0
Other	25,726	100.0	55.6	19.1	25.3	11.2	3.9	10.2

[1] Includes races other than white and black.
[2] Fecund is used in a different way in this report than in previous reports. See "Definition of Terms."
[3] Women of Hispanic origin are included in the figures for white and black women if they were identified as such by the interviewer.

or another baby because (1) the wife or husband had a sterilizing operation (such as a hysterectomy) that was *not* done because they had all the children they wanted, but for health reasons; or (2) that it was impossible for her to have a baby or another baby because of accident, illness, or some other reason.

A future report in Series 23 of *Vital and Health Statistics* will focus on the surgically sterile by type of operation and on those who intend to have sterilizing operations.

Long Interval

This category consists of currently married couples who, during the 3 years of continuous marriage before the interview, did not use contraception and did not have a pregnancy. Many

of these couples are sterile, but some might conceive in the future.[3] In 1976, 1.1 million, or 3.9 percent, of currently married couples were classified as having a long interval (table 1 and figure 1).

Subfecund

For women in this category, it may be possible for them to conceive and/or carry a pregnancy to term, but there are specific difficulties in doing so. Most women classified subfecund responded affirmatively to the following question:

> "Some people are able to have a(nother) baby, but they have *difficulty* getting pregnant or holding onto the baby. As far as you know, is there any problem or difficulty for you and your husband to conceive or deliver a(nother) baby?"

Women who answered this question affirmatively were then asked the following question:

> "What is the reason it would be difficult for you to have a(nother) baby?"

An estimated 2.9 million couples, or about 10.4 percent, were classified as subfecund in 1976 (table 1 and figure 1). Of the subfecund couples, an estimated 908,000 were aware of a "physical difficulty getting pregnant," while an estimated 638,000 women had difficulty carrying the pregnancy a full 9 months.

All Fecundity Impairments

This category includes noncontraceptively sterile couples, those with long intervals, and subfecund couples. In 1976, 25.3 percent, or 6,954,000 couples, were classified as having a fecundity impairment. As stated previously, this category does *not* include couples who have used a sterilizing operation as a method of family limitation. Those couples are called "contraceptively sterile."

Fecund

In this report, fecund means that there was no evidence as of the date of the interview that the couple had a problem in conceiving or delivering a baby. These women reported no impairments and stated that it was possible for them to have a baby, that they did not have any difficulty conceiving or carrying to term, and they did not have a 3-year (or longer) interval of nonuse of contraception without pregnancy immediately before the interview. About 15.4 million, or 56.1 percent, of the currently married couples were classified as fecund in 1976. As explained in the "Definition of Terms," this definition differs from the use of the term fecund in some other reports where the subfecund and long-interval couples, for whom it may still be possible to have children or additional children, were not classified separately.

The passage of time, nonuse of contraception, or an attempt to have children increase the likelihood that couples will discover fecundity impairments. (For example, couples who have ended their fecundity by contraceptive sterilization or who have always used contraception without a pregnancy occurring may have undiagnosed impairments that would prevent, or make difficult, their having children or additional children if they later decided they wanted more.) Some effects of the passage of time and attempts to have children are indicated by age, parity, and number of years since the wife's first marriage (tables 1-3).

FINDINGS

Table 4 distinguishes between fecundity impairments and the desire for children or additional children by showing the number and percent of women in each fecundity status-parity category who would like or intend to have a baby or another baby in the future.

A majority of couples with fecundity impairments would not like, or do not intend, to have additional children. But a substantial minority did express a desire to have a baby or another baby—39.3 percent of wives with impaired fecundity (an estimated 2.7 million women) said they would like to have a baby or another baby. This was 9.9 percent of the 27,488,000 wives 15-44 years of age in 1976.

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[3] Potter, R. G. and Parker, M. P.: Predicting the time required to conceive. *Population Studies.* 18(1):99-116, July, 1964.

Table 2. Number of currently married white women 15-44 years of age and percent distribution by fecundity status, according to selected characteristics: United States, 1976

Selected characteristic	Number of women in thousands	Total	Fecund[1]	Contraceptively sterile	Impaired fecundity			
					All impaired	Noncontraceptively sterile	Long interval	Subfecund
		Percent distribution						
Age								
All ages	24,795	100.0	56.1	19.3	24.6	11.0	3.5	10.1
15-24 years	5,412	100.0	86.5	3.5	10.0	*0.6	*0.6	8.9
15-19 years	918	100.0	90.7	*0.8	8.5	*0.0	*0.1	8.4
20-24 years	4,493	100.0	85.6	4.0	10.4	0.7	*0.7	9.0
25-34 years	10,993	100.0	58.1	20.1	21.8	8.1	2.3	11.4
25-29 years	5,806	100.0	68.2	13.1	18.6	5.2	2.0	11.3
30-34 years	5,187	100.0	46.7	27.9	25.4	11.4	2.6	11.5
35-44 years	8,390	100.0	33.8	28.5	37.7	21.5	7.0	9.2
35-39 years	4,339	100.0	36.2	30.0	33.9	18.2	5.7	10.0
40-44 years	4,051	100.0	31.3	26.9	41.8	25.0	8.5	8.3
Parity								
0	4,874	100.0	73.9	*1.5	24.6	7.7	4.9	12.0
1	4,922	100.0	71.5	4.2	24.3	5.7	3.5	15.0
2	6,939	100.0	54.6	24.9	20.5	9.5	2.1	8.9
3	4,330	100.0	41.8	31.8	26.4	15.7	3.3	7.4
4 or more	3,729	100.0	31.6	37.5	30.9	19.7	4.7	6.5
Years since wife's first marriage								
Less than 5 years	6,253	100.0	87.2	1.8	11.1	2.0	*0.7	8.4
5-9 years	5,740	100.0	67.4	14.6	18.0	3.4	1.5	13.1
10-14 years	4,512	100.0	42.6	29.4	27.9	13.3	4.4	10.2
15 years or more	8,048	100.0	31.7	30.7	37.6	22.0	6.5	9.0

[1] Fecund is used in a different way in this report than in previous reports. See "Definition of Terms."

However, a majority of *childless* couples with fecundity impairments (63.5 percent, or about 848,000) would like to have a baby, and 49.0 percent (688,000) of couples with fecundity impairments who have one child (parity one) would like to have another (table A). The percent of couples wanting a baby or another baby declined with parity in each category of fecundity impairments. The one exception, in the long interval category, is not statistically significant.

Since noncontraceptively sterile couples are not able to bear a child or another child, these wives were asked: "Do you intend to adopt any children?" Overall, 12.2 percent responded affirmatively, including 39.1 percent of noncontraceptively sterile wives at parity zero, 14.8 percent at parity one, 7.0 percent at parity two, and 6.5 percent at parity three or more.

Subfecund wives were asked: "In the past 3 years, have you talked with a doctor or other trained person about *increasing* your chances of having a baby?" About 1 in 4, or 26.2 percent, responded affirmatively; this represents about 749,000 women. This percent also declined with parity, from 50.7 percent of subfecund wives at parity zero to 34.9 percent at parity one, 11.1 percent at parity two, and 5.5 percent at parity three or more.

Calculations based on table 1 (but not shown here) showed that couples with impaired fecundity were older than fecund couples. Fecund wives, of whom about 38 percent were 30-44 years of age, were the youngest of the

Table 3. Number of currently married black women 15-44 years of age and percent distribution by fecundity status, according to selected characteristics: United States, 1976

Selected characteristic	Number of women in thousands	Total	Fecund[1]	Contraceptively sterile	Impaired fecundity			
					All impaired	Noncontraceptively sterile	Long interval	Subfecund
		Percent distribution						
Age								
All ages	2,169	100.0	55.9	12.6	31.4	11.1	8.2	12.2
15-24 years	509	100.0	74.8	*4.0	21.2	*1.5	*4.0	15.7
15-19 years	99	100.0	82.6	*1.2	*16.2	*2.3	*0.0	13.9
20-24 years	410	100.0	72.9	*4.7	22.4	*1.3	*5.0	16.2
25-34 years	912	100.0	64.9	9.6	25.5	8.5	5.6	11.4
25-29 years	484	100.0	72.8	6.8	20.4	8.4	*4.2	7.8
30-34 years	428	100.0	56.0	12.8	31.2	8.6	*7.1	15.4
35-44 years	749	100.0	32.1	22.2	45.7	20.7	14.2	10.8
35-39 years	368	100.0	36.7	22.0	41.3	19.8	11.8	9.7
40-44 years	381	100.0	27.6	22.4	50.0	21.5	16.5	12.0
Parity								
0	242	100.0	57.4	*0.8	41.8	14.8	*9.7	17.2
1	526	100.0	66.0	*0.7	33.3	7.4	8.5	17.4
2	565	100.0	63.3	9.1	27.6	10.1	6.4	11.2
3	312	100.0	54.7	20.1	25.2	12.3	*5.0	*7.9
4 or more	524	100.0	37.8	29.4	32.7	13.4	10.9	8.4
Years since wife's first marriage								
Less than 5 years	585	100.0	81.6	*2.6	15.8	2.4	*2.1	11.3
5-9 years	503	100.0	62.5	7.0	30.5	6.8	7.9	15.8
10-14 years	368	100.0	48.5	15.4	36.1	17.1	*4.9	14.1
15 years or more	627	100.0	32.5	25.1	42.4	17.5	15.4	9.5

[1] Fecund is used in a different way in this report than in previous reports. See "Definition of Terms."

fecundity status categories. Subfecund wives, with about 54 percent at 30-44 years of age, were somewhat older. Noncontraceptively sterile wives, of whom 87 percent were 30-44 years of age, were the oldest of the fecundity status groups.

Among those with fecundity impairments, the distribution of the types of impairments changes over time. For example, for those married less than 5 years before the interview, subfecund couples accounted for about three-fourths of all couples with fecundity impairments (table 1). However, for those married 15 years or more subfecundity accounted for about one-fourth. These observations suggest that some couples may discover, as well as develop, impairments as they grow older, thereby moving from subfecund to noncontraceptively sterile.

Tables 1, 2, and 3 show the distribution of currently married couples of reproductive age in 1976, by fecundity status and selected characteristics of the wife. The prevalence of fecundity impairments increases with the age of the wife. Table 1 shows that for couples of all races the percent with impairments increased from 11.7 percent at ages 20-24 years to 42.4 percent at ages 40-44. The percent fecund decreased from 84.3 percent to 31.2 percent at the same ages, but much of that decrease was due to contraceptive sterility, which is not classified as a fecundity impairment.

The estimated number of couples in which the wife had no children (was of zero parity) and a fecundity impairment was about 1,335,000, or 4.9 percent of all couples in 1976. Of these, about 408,000, or 1.5 percent of all

Table 4. Number and percent of currently married women 15-44 years of age with fecundity impairments who intend or would like to have a future baby, by fecundity status and parity: United States, 1976

Parity	Total	Non-contra-ceptively sterile	Long interval	Sub-fecund
	Number who would like or intend a future baby in thousands			
All parities	2,733	1,270	239	1,224
0	848	238	118	490
1	688	176	*46	468
2	506	324	*37	145
3	347	264	*12	*71
4 or more	343	267	*27	*40
	Percent who would like or intend a future baby			
All parities	39.3	42.0	22.3	42.8
0	63.5	58.4	45.2	73.7
1	49.0	53.4	26.3	55.1
2	30.8	43.8	18.8	20.6
3	28.0	35.9	7.8	20.5
4 or more	25.7	33.0	11.4	16.8

NOTE: Numbers may not add to the totals due to rounding. Denominators of these percents were calculated from the numbers and percents in table 1.

couples, were noncontraceptively sterile and had no children.

The fecundity status of couples was associated with the number of years between the wife's first marriage and the interview date (table 1). For wives married less than 5 years before the interview date, 11.7 percent of the couples had fecundity impairments; this percent increased about 10 percentage points for each 5 years to 38.0 percent for women first married 15 years or more before the interview.

For wives of Hispanic origin, 25.7 percent reported fecundity impairments compared with 25.3 percent for other wives; this difference is not statistically significant. Noncontraceptive sterility was reported by 8.7 percent of Hispanic wives compared with 11.2 percent of other wives, not a statistically significant difference.

Tables 2 and 3 show data for white couples and black couples, respectively. Among black couples, 31.4 percent reported fecundity impairments compared with 24.6 percent of white couples. However, most of this 6.8 percentage point difference is due to the larger percent of black couples with long intervals (8.2 percent compared with 3.5 percent of white couples). The rest of the difference is due to a slightly (but not significantly) higher percent of black couples classified as subfecund (12.2 percent compared with 10.1 percent). The percent of couples reporting noncontraceptive sterility was not significantly different by race (11.1 percent of black couples and 11.0 percent of white couples).

The percent of white and black couples who were noncontraceptively sterile was not significantly different in any of the 10-year age groups (tables 2 and 3). (To reduce sampling variability, the comparisons by race are discussed here in 10-year age groups.) The main differences between black and white couples are in the subfecund and long interval categories. At 15-24 years of age, the principal difference is that black couples have a higher percent subfecund than white couples do—15.7 percent compared with 8.9 percent. In the age group 35-44 years, the percent of black couples with long intervals was 14.2 compared with only 7.0 percent of white couples.

Finally, the percent of wives reporting fecundity impairments was 11.2 percentage points higher for black couples than for white couples at 15-24 years of age, and 8.0 percentage points higher at 35-44 years of age, but only 3.7 percentage points higher at 25-34 years of age. This difference at ages 25-34 years was almost entirely due to a higher percent of black couples with long intervals.

The percent of all currently married couples who had no children (were of parity zero) and were noncontraceptively sterile was not significantly different by race. In 1976, the estimated number was about 375,000, or about 1.5 percent, of the 24,795,000 white couples, and about 36,000, or approximately 1.7 percent, of the 2,169,000 black couples.

The percent of white and black couples who reported a fecundity impairment and had no children (parity zero) was not significantly different—4.8 percent of white couples and 4.7 percent of black couples. Thus black couples were no more likely than white couples to be childless *and* have fecundity impairments.

The percent of couples with one or more children who were noncontraceptively sterile was slightly (but not significantly) lower for black couples than for white couples—11.8 percent of the 19,920,000 white couples with one child or more compared with 10.6 percent of the 1,927,000 black couples with one child or more.

Black wives 15-44 years of age had a larger average number of children than white wives in 1976. For example, 11 percent of black couples had no children (were at parity zero), compared with 20 percent of white couples; and 24 percent had 4 or more children compared with 15 percent of white couples. Further, the percent of couples at parity one or more with impairments was higher for black couples than for white couples—30.2 percent of the 1,927,000 black couples with one child or more compared with 24.7 percent of the 19,920,000 white couples with one child or more. Thus the higher percent of all black couples with impairments (31.4 percent compared with 24.6 percent of white couples) appears to be due to a higher percent of black couples with children who are subfecund or have long intervals.

The prevalence of impairments was higher for black wives than for white wives in each 5-year interval since the wife's first marriage, although the differences at less than 5 years and 15 years or more are not statistically significant. In each case at least half of the difference was due to the long interval and subfecund categories.

A detailed report on fecundity impairments is planned to appear in Series 23 of *Vital and Health Statistics*. That report will present findings on the relation of fecundity status to other characteristics of couples with special emphasis on parity and the desire for additional children.

TECHNICAL NOTES

Cycle II of the National Survey of Family Growth (NSFG) was based on interviews with a multistage area probability sample of women 15-44 years of age in the household population of the United States. The interviews were conducted between January and September of 1976. The sampling and estimation procedures for Cycle I, conducted in 1973, are described in preceding reports based on the NSFG, and described in detail in "National Survey of Family Growth, Cycle I: Sample Design, Estimation Procedures, and Variance Estimation," Series 2, No. 76, of *Vital and Health Statistics*. A similar report is planned for Cycle II.

Since the estimates in this report are based on a sample of the population rather than on the entire population, they are subject to sampling error.

Sampling error, or the extent to which samples may differ by chance from a complete count, is measured by a statistic called the standard error of estimate. Approximate standard errors for estimated numbers and percents from Cycle I are shown in tables I and II for white women and women of all races combined and in tables III and IV for the black population. Provisional estimates of standard errors for Cycle II for white women and women of all races combined can be obtained by multiplying the standard errors for these women from Cycle I by factors of 1.09 for the latter and 1.06 for white women. Similarly, provisional estimates of standard errors for Cycle II for black women can be obtained by multiplying the standard errors for black women from Cycle I by a factor of 1.14.

Table I. Approximate standard errors for estimated numbers for white women and women of all races combined: 1973 National Survey of Family Growth

Size of estimate	Relative standard error	Standard error
50,000	30.0	15,000
100,000	21.2	21,000
200,000	15.0	30,000
500,000	9.5	47,000
1,000,000	6.7	67,000
2,000,000	4.8	95,000
5,000,000	3.0	151,000
10,000,000	2.2	216,000
20,000,000	1.5	311,000

Table II. Approximate standard errors for estimated percents expressed in percentage points for white women and women of all races combined: 1973 National Survey of Family Growth

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
100,000	3.0	4.6	6.4	8.5	9.7	10.4	10.6
500,000	1.3	2.1	2.8	3.8	4.3	4.6	4.7
1,000,000	0.9	1.5	2.0	2.7	3.1	3.3	3.3
3,000,000	0.5	0.8	1.2	1.5	1.8	1.9	1.9
5,000,000	0.4	0.6	0.9	1.2	1.4	1.5	1.5
7,000,000	0.3	0.5	0.8	1.0	1.2	1.2	1.3
10,000,000	0.3	0.5	0.6	0.8	1.0	1.0	1.1

Table III. Approximate standard errors for estimated numbers for black women: 1973 National Survey of Family Growth

Size of estimate	Relative standard error	Standard error
25,000	25.3	6,000
50,000	17.9	9,000
100,000	12.7	13,000
150,000	10.3	16,000
250,000	8.0	20,000
350,000	6.8	24,000
500,000	5.7	28,000
750,000	4.7	35,000
1,000,000	4.0	40,000

Table IV. Approximate standard errors for estimated percents expressed in percentage points for black women: 1973 National Survey of Family Growth

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
5,000	7.9	12.3	17.0	22.6	25.9	27.7	28.3
10,000	5.6	8.7	12.0	16.0	18.3	19.6	20.0
50,000	2.5	3.9	5.4	7.1	8.2	8.8	8.9
100,000	1.8	2.7	3.8	5.1	5.8	6.2	6.3
300,000	1.0	1.6	2.2	2.9	3.3	3.6	3.6
500,000	0.8	1.2	1.7	2.3	2.6	2.8	2.8
700,000	0.7	1.0	1.4	1.9	2.2	2.3	2.4
1,000,000	0.6	0.9	1.2	1.6	1.8	2.0	2.0

The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the differences between the sample estimate and a complete count would be less than twice the standard error. The relative standard error is the ratio of the standard error to the statistic being estimated. In this report, numbers and percents which have a relative standard error that is more than 25 percent of the estimate itself are considered unreliable. They are marked with an asterisk to caution the user but may be combined to make other types of comparisons of greater precision.

For Cycle II of the NSFG, missing data items were not imputed, and percent distributions are based on cases with known data. The fecundity status of about 15,000 women out of an estimated 31,847,000 total ever-married women (less than 0.1 percent) was not ascertained.

More extensive "Technical Notes" and "Definition of Terms" can be found in any of the earlier NSFG reports—for example, *Advance Data* Numbers 36, 43, and 45.

DEFINITION OF TERMS

Fecundity.—In this report, fecundity is a characteristic of a currently married couple. It refers to the ability of the couple to reproduce, that is, to have live-born children, at the date of the interview. Fecundity was measured using a series of questions. The responses to these questions permit the classification of couples into 5 categories: contraceptively sterile, noncontraceptively sterile, long interval, subfecund, or fecund.

Fecundity status.—This refers to the category of fecundity in which a couple is classified.

Fecundity impairment.—A fecundity impairment, or reproductive impairment, is any medical, physical, or behavioral condition that damages or diminishes a couple's ability to have children. Contraceptive sterilization operations, that is, operations done for purposes of contraception (family limitation) are not classified as fecundity impairments. The conditions discussed, except for the long interval category, were limited to conditions reported by women in response to the questions quoted in the text.

In a survey of women in the childbearing years, success in measuring fecundity impairments depends on the amount of medical information respondents have about themselves, on their interest in having children in the future,

and on the opportunities they have had to detect that a problem exists. Nonetheless, most respondents do know the answers to the questions asked in the NSFG interview: whether or not they have had a sterilizing operation, accident, illness, or congenital problem; whether or not they have been trying to get pregnant and have not used contraception for a substantial period of time; and whether or not a doctor has told them they have medical conditions that would make having a(nother) child difficult or dangerous. Data of this kind can be grouped into categories such as those used in this report, with which to make comparisons between population groups, and for use in making estimates of needed services such as infertility services.

Fecund.—In this report a couple was classified as fecund if the respondent reported that (1) it was possible to have a baby or another baby, (2) there was no difficulty having a(nother) baby, and (3) the couple had used contraception sometime in the 3 years before the interview or the wife had been pregnant in that period of time. This is a more restricted use of the term fecund than in previous NSFG reports,[4] which used a 2-category classification—"sterile" and "fecund." In those reports, "fecund" (meaning not sterile) included all women classified in this report as fecund and subfecund, and most of those with long intervals.

Fecundity may be viewed as a characteristic of a couple that ranges from zero to high (or unimpaired). Couples classified as fecund have no reported impairments and no 3-year interval of nonuse of contraception without conception. As shown in the text, the likelihood that a couple will be classified as fecund is partly a function of the amount of time since the wife's first marriage, whether and how many times she has attempted to have a child, whether contraception has been used, etc.

Subfecund.—Women (or couples) classified as "subfecund" reported that they were not sterile but that they had a problem or difficulty in conceiving or delivering a(nother) baby for some specific reason; or that a pregnancy in the future would be so dangerous to the woman, or the baby, or both that she would have a sterilizing operation or abortion if another pregnancy occurred. Thus subfecund couples are not sterile, but they have some reason to believe that their ability to reproduce is diminished or impaired.

Long interval.—Currently married couples are classified "long interval" if they have been continuously married for 3 years or more immediately before the interview, have not used contraception, and have not conceived. About three-fourths of these women reported that it was possible for them to have a baby or another baby. Most of the couples with long intervals are sterile, but a small proportion might conceive in the future.[5]

Noncontraceptively sterile.—Women were classified as "noncontraceptively sterile" if they indicated that it was impossible for them to have a baby or another baby for some specific reason other than family limitation—such as a medically necessary operation, or a nonsurgical reason such as accident, illness, or natural menopause. For a few respondents, the contraceptive intent of their sterilizing operation was not ascertained.

Contraceptively sterile.—Couples classified as "contraceptively sterile" are *not* included among those with fecundity impairments because they have had a sterilizing operation at least partly as a method of contraception or family limitation. As noted in the text, the number and percent of currently married couples classified as contraceptively and noncontraceptively sterile in this report differs slightly from numbers and percents given in *Advance Data* Number 36, because data on sterilizations of married couples in which both husband and wife had been surgically sterilized were recoded to give priority to the wife's operation. This procedure provides a complete count of surgical sterilizations among ever-married women. A complete estimate of vasectomies cannot be obtained from this survey because not all ever-married men are represented. Where both spouses had been sterilized, the husband's sterilization generally occurred first and for contraceptive (family limitation) reasons; the wife's operation followed some time later for therapeutic reasons. Consequently, giving priority to the wife's operations has lowered somewhat the percent of couples with con-

[4] *Advance Data* Numbers 36 and 45.

[5] See reference cited in footnote 3.

traceptive sterilizations compared with the previously published figures.

Would like (or intend) to have a(nother) baby.—Noncontraceptively sterile women were asked: "even though it is unlikely or impossible for you to have a(nother) baby, would you *like* to have a(nother) baby?" Subfecund women and women with long intervals were asked: "Do you and your husband intend to have a(nother) baby?" It is assumed that these questions ascertain a desire for additional children in reasonably comparable ways.

Parity.—Parity refers to the number of live births the respondent has had.

Years since wife's first marriage.—This refers to the number of years between the wife's first marriage and the interview date.

Marital status.—This report is based only upon currently married women. Couples who are temporarily separated for reasons other than marital discord, such as vacation, illness, or Armed Forces, are classified as married.

SYMBOLS

Data not available	---
Category not applicable	...
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service Office of Health Research, Statistics, and Technology | Number 56 • January 24, 1980

Wanted and Unwanted Births Reported by Mothers 15-44 Years of Age: United States, 1976[1]

According to results from the 1976 National Survey of Family Growth, an estimated 8.1 million, or 12.0 percent, of a total of 67.8 million live births that had occurred to mothers 15-44 years of age were unwanted. Of an average 2.5 births per mother, 2.0 were wanted at the time of conception, 0.3 were unwanted at that time, and 0.2 births were classified as "undetermined." More than four-fifths of the births to white women were reported as wanted compared with only three-fifths of the births to black women. The proportion of unwanted births for black women (25.8 percent) was almost 3 times that for white women (9.5 percent). The wantedness of another 13.8 percent of births to black women and 7.0 percent to white women was undetermined because the women's feelings at the time of conception were not known.

These and other figures in this report indicate a modest, statistically nonsignificant decrease in the proportion of unwanted births since the 1973 National Survey of Family Growth.[2] However, the summary data in this report do not provide the best basis for examining trends in wanted and unwanted fertility in recent years because changes in these proportions between 1973 and 1976 might be obscured by the large overlap of births occurring in 1973 and earlier years reported in both surveys. An analysis of trends in wanted and unwanted childbearing based on more detailed data will be the subject of a later report.

The data for Cycle II of the National Survey of Family Growth, which was conducted by the National Center for Health Statistics, were collected by means of personal interviews with a multistage probability sample of women 15-44 years of age in the household population of the conterminous United States. Women were eligible for inclusion in the sample if they were currently married, previously married, or never married but with offspring presently living in the household. From January through September 1976, 3,009 black women and 5,602 women of other races were interviewed for Cycle II of the survey. Further discussion of the survey design, sampling variability, and definition of terms appears in the "Technical Notes."

THE CONCEPT OF WANTEDNESS

For each pregnancy ending in a live birth, a series of questions was asked to determine whether or not the woman, at the time of conception, had wanted that pregnancy. If contraception had not been used or had been stopped prior to a specified pregnancy, the woman was asked: "Was the reason you (were not/stopped)[3] using any methods because you, yourself, wanted to become pregnant?" If she had avoid-

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[1]This report was prepared by Eugenia Eckard, M.S., Division of Vital Statistics.

[2]National Center for Health Statistics: Wanted and unwanted births reported by mothers 15-44 years of age: United States, 1973, by M. L. Munson. *Advance Data From Vital and Health Statistics*, No. 9. DHEW Pub. No. (HRA) 77-1250. Health Resources Administration. Hyattsville, Md. Aug. 10, 1977.

[3]Parentheses indicate that the interviewer chose the appropriate wording for respondent.

ed or stopped using contraception for some other reason, or if she had become pregnant while using a method, she was asked: "At the time you became pregnant . . . , did you, yourself, actually want a(nother) baby at some time?" To emphasize the importance of her feelings at the time of conception, each woman was asked: "As you recall, is that how you felt before you became pregnant, or did you come to feel that way later?" Finally, women who reported that they did not know or remember how they had felt at the time of conception were asked whether they had "probably wanted a(nother) baby sometime or probably not."

The pregnancy was classified as wanted at conception if the respondent had stopped or was not using contraception in order to become pregnant, if she had wanted a(nother) child at some time and had felt that way before she became pregnant, or if she probably wanted a(nother) child sometime. The pregnancy was classified as unwanted if she had not wanted a(nother) child sometime and felt that way before she became pregnant or if she probably had not wanted a(nother) child sometime. The wantedness of a pregnancy was classified as undetermined if the woman said she wanted a(nother) child sometime but she came to feel that way after conception, if she did not want a(nother) child sometime and felt that way after conception, or if her feelings about the pregnancy at the time of conception were unknown altogether. It is important to emphasize that interest is focused on wantedness of a pregnancy at the time of conception rather than wantedness of a particular child. For this reason the present analysis treats multiple births as a single birth outcome.

As may be seen in table 1, 79.9 percent of births were wanted at conception and another 5.3 percent were wanted after conception, while 12.0 percent were unwanted at conception and another 1.6 percent were unwanted after conception. The substantial proportion of births which became wanted after conception (5.3 percent) is evidence that an unwanted or unintended pregnancy does not necessarily mean an unwanted child. At the same time, these births represent a sizable proportion of births that would not have occurred or would have occurred at a later time if these mothers had had only the births that were wanted at conception.

HIGHLIGHTS OF FINDINGS

Table 1 shows that the proportion of births that were wanted either at or after conception decreased with age from about 90 percent among mothers aged 20-29 years to about 81 percent among mothers aged 40-44. Teenage mothers were an exception. In fact, the proportion of births wanted at conception by teenage mothers, who had had an average of only 1.2 births, was as low as that among mothers in their early forties, who had had 3 times as many births on the average (3.5 births).

The proportion of births that were unwanted at the time of conception was low among mothers in their twenties (7 percent) and rose to almost 16 percent among those 40-44 years of age. Again the teenage mothers were an exception, reporting a higher proportion of their births as unwanted at conception (9 percent) than women in their twenties did.

There is a need to take a closer look at the reporting of births unwanted at the time of conception among mothers under age 25, especially among teenage mothers. Because these are largely first and second births, these mothers appear to have said that at the time of conception they wanted no births at all or no more than one. Although this may be true, another plausible view is that some births reported as unwanted at conception actually were wanted, but they were wanted at a later time because of the circumstances under which they occurred. For instance, the birth may have been the result of a premarital conception or may have occurred during the dissolution of a marriage. In any case, these early unwanted births suggest that when a woman has more births over her childbearing years than she wanted, the number unwanted may have occurred at the beginning rather than the end of her childbearing experience. In other words, some of the unwanted births reported by older mothers and by mothers with more than one child were their first births.

Table 1 also reveals that the proportion of births wanted at conception decreases with increasing numbers of children already born (parity) among mothers with more than two children. The proportions of births unwanted at conception correspondingly increase dramatically from 1 in 25 (3.9 percent) among mothers

Table 1. Number of mothers 15-44 years of age, number of live births, and percent distribution of births by whether wanted, unwanted, or undetermined, according to race, age, and parity: United States, 1976

Race, age, and parity	Number of mothers in thousands	Number of births in thousands[1]	Total	Wanted at conception	Unwanted at conception	Undetermined		
						Wanted after conception	Unwanted after conception	Unknown
RACE AND AGE			Percent distribution					
All races[2]								
All ages	27,055	67,849	100.0	79.9	12.0	5.3	1.6	1.2
15-19 years	811	972	100.0	75.2	*9.3	*11.9	*2.1	*1.7
20-24 years	3,653	5,384	100.0	83.2	7.2	*6.9	*1.2	*1.5
25-29 years	6,075	11,574	100.0	85.6	7.4	5.2	*0.9	*0.8
30-34 years	6,146	15,863	100.0	82.1	10.7	4.6	*1.5	*1.3
35-39 years	5,313	16,168	100.0	77.8	14.2	5.1	*1.8	*1.1
40-44 years	5,057	17,888	100.0	75.4	15.7	5.3	*2.1	*1.6
White								
All ages	22,837	56,238	100.0	83.4	9.5	4.7	1.1	1.2
15-19 years	507	586	100.0	80.9	*8.0	*8.5	0.0	*2.5
20-24 years	2,896	4,128	100.0	87.8	*3.9	*6.3	*0.5	*1.5
25-29 years	5,160	9,637	100.0	88.9	5.5	4.5	*0.4	*0.8
30-34 years	5,281	13,411	100.0	84.9	8.6	4.3	*1.0	*1.2
35-39 years	4,612	13,657	100.0	81.2	11.5	4.6	*1.4	*1.2
40-44 years	4,380	14,818	100.0	79.5	12.7	4.7	*1.8	*1.3
Black								
All ages	3,726	10,525	100.0	60.4	25.8	8.1	*4.0	*1.7
15-19 years	298	380	100.0	65.8	*11.4	*17.2	*5.3	*0.3
20-24 years	707	1,193	100.0	66.7	*18.5	*9.6	*3.9	*1.4
25-29 years	763	1,670	100.0	66.9	18.9	*9.7	*3.7	*0.8
30-34 years	740	2,158	100.0	63.3	24.1	*6.5	*4.5	*1.7
35-39 years	591	2,240	100.0	55.4	31.9	*8.3	*3.6	*0.8
40-44 years	628	2,885	100.0	55.0	31.3	*6.5	*4.1	*3.1
RACE AND PARITY								
All races[2]								
All ages	27,055	67,849	100.0	79.9	12.0	5.3	1.6	1.2
1	7,218	7,218	100.0	88.3	*3.9	6.0	*0.8	*1.0
2	8,979	17,891	100.0	90.1	4.4	4.1	*0.6	*0.7
3	5,617	16,637	100.0	80.2	12.3	5.1	*1.3	*1.2
4	2,515	9,921	100.0	77.9	13.1	5.7	*2.0	*1.3
5	1,399	6,922	100.0	70.1	20.5	6.0	*1.7	*1.6
6 or more	1,326	9,260	100.0	62.4	24.7	6.3	4.3	*2.2
White								
1	5,890	5,890	100.0	90.7	*2.4	*5.3	*0.4	*1.2
2	7,860	15,665	100.0	92.0	3.4	3.6	*0.4	*0.7
3	4,887	14,473	100.0	82.1	11.0	4.7	*1.0	*1.2
4	2,153	8,496	100.0	80.0	11.6	5.4	*1.7	*1.4
5	1,164	5,754	100.0	72.8	18.9	*5.9	*1.1	*1.3
6 or more	883	5,960	100.0	72.1	16.9	*5.3	*3.6	*2.1

See footnotes at end of table.

Table 1. Number of mothers 15-44 years of age, number of live births, and percent distribution of births by whether wanted, unwanted, or undetermined, according to race, age, and parity: United States, 1976—Con.

Race, age, and parity	Number of mothers in thousands	Number of births in thousands[1]	Total	Wanted at conception	Unwanted at conception	Undetermined		
						Wanted after conception	Unwanted after conception	Unknown
RACE AND PARITY—Con.			Percent distribution					
Black								
1	1,159	1,159	100.0	75.3	*11.3	*10.3	*2.9	*0.2
2	967	1,922	100.0	74.3	*13.4	*8.5	*2.4	*1.4
3	616	1,829	100.0	65.6	22.6	*7.9	*3.0	*0.9
4	331	1,298	100.0	62.3	23.8	*8.6	*4.6	*0.8
5	223	1,106	100.0	54.4	30.4	*7.1	*4.8	*3.3
6 or more	431	3,211	100.0	45.0	39.5	*7.3	*5.6	*2.6

[1] Multiple births are counted only once.
[2] Includes white, black, and other races.

of parity one to almost 1 in 4 (24.7 percent) among mothers of parity six or higher.

One of the largest differences observed in table 1 is between white mothers, 83.4 percent of whose births were reported as wanted at conception, and black mothers, who reported 23 percentage points fewer wanted births (60.4 percent). One-fourth of births to black mothers (25.8 percent) were reported as unwanted at conception. This is almost 3 times the proportion of births unwanted at conception by white mothers (9.5 percent). The differences between black and white mothers in the proportions of wanted births are seen in all age groups, reaching 25.1 percentage points fewer wanted births by black mothers 35 years and older, and are statistically significant in all but the teenage group. Although black mothers had borne a greater average number of children and had nearly twice the proportion of women at parity five or more, the differences between black and white mothers within the same parity groups remained and were statistically significant in three out of the six comparisons by parity. Furthermore, the proportion of wanted births to white mothers at parity six or more was only 3 percentage points lower than that for black mothers at parity one.

Table 2, unlike table 1, shows only one combined figure for the three different components of the undetermined category and thus indicates only the percent of births that were wanted or unwanted at the time of conception. The wantedness of births to women of Hispanic origin (regardless of race) was about the same as that for all white women—83.1 percent compared with 83.4 percent of births wanted, 10.2 percent compared with 9.5 percent of births unwanted, and 6.8 percent compared with 7.0 percent undetermined among Hispanic women and all white women, respectively.

There is no significant difference in the proportion of wanted births to women of different geographic regions, although women in the South reported a smaller proportion of their births as wanted than women of all other regions combined did. This may be attributed partly to the fact that a higher proportion of black and high-parity families live in the South.

The highest proportion of wanted births was among those women whose level of education was highest. For example, women with 4 or more years of college reported 90.7 percent of their births as wanted at the time they were conceived, while women with an elementary school education (8 years or less) reported only 72.5 percent wanted. The proportion of unwanted births among women with an elementary school education (17.4 percent) was nearly 4 times that among college graduates (4.7 percent). These educational differences are very likely associated with the parity differences noted above, since women with 4 or more years of college had borne an average of 1.2 children, almost two-thirds less than women with only an elementary

Table 2. Number of mothers 15-44 years of age, number of live births, and percent distribution of births by whether wanted, unwanted, or undetermined, according to selected characteristics: United States, 1976

Characteristic	Number of mothers in thousands	Number of births in thousands[1]	Total	Wanted at conception	Unwanted at conception	Undetermined
			Percent distribution			
Total	27,055	67,849	100.0	79.9	12.0	8.1
Origin						
Hispanic	1,799	4,516	100.0	83.1	10.2	*6.8
All other	25,208	63,202	100.0	79.6	12.1	8.3
Geographic region						
Northeast	5,513	13,784	100.0	80.7	10.3	9.0
North Central	7,688	19,654	100.0	79.6	12.7	7.7
South	9,237	22,661	100.0	78.8	12.5	8.8
West	4,616	11,750	100.0	81.5	11.8	6.7
Woman's education						
Elementary school, 8 years or less	2,187	7,274	100.0	72.5	17.4	10.1
High school, 1-3 years	5,478	15,543	100.0	73.0	15.5	11.5
High school, 4 years	12,651	30,405	100.0	81.4	11.2	7.4
College, 1-3 years	3,763	8,391	100.0	85.4	9.3	5.3
College, 4 years or more	2,925	6,114	100.0	90.7	*4.7	*4.6
Husband's education						
Elementary school, 8 years or less	2,498	8,800	100.0	72.6	15.7	11.7
High school, 1-3 years	4,248	11,427	100.0	74.7	15.8	9.5
High school, 4 years	9,246	22,362	100.0	81.8	10.2	8.0
College, 1-3 years	4,446	10,295	100.0	85.3	9.6	5.1
College, 4 years or more	4,807	10,940	100.0	89.0	6.1	5.0
Woman's labor force status						
Not in labor force	14,588	37,213	100.0	81.1	10.5	8.3
In labor force	12,409	30,442	100.0	78.4	13.7	7.9
Working full time	8,392	20,114	100.0	77.3	15.0	7.7
Working part time	3,221	8,262	100.0	81.6	10.3	8.1
Not working	795	2,066	100.0	77.0	*14.9	*8.0
Poverty level income						
Below 100 percent	2,840	8,892	100.0	66.3	21.6	12.1
100-149 percent	2,501	6,968	100.0	77.3	13.9	8.8
150 percent and above	18,279	42,845	100.0	84.2	9.2	6.6
Religion						
Catholic	7,379	19,147	100.0	83.0	9.6	7.4
Protestant	17,554	44,026	100.0	78.3	13.1	8.6
Jewish	611	1,366	100.0	88.8	*5.2	*6.0
Other	354	796	100.0	88.0	*5.1	*6.9
None	1,090	2,296	100.0	77.5	16.1	*6.4

[1] Multiple births are counted only once.

Table 2. Number of mothers 15-44 years of age, number of live births, and percent distribution of births by whether wanted, unwanted, or undetermined, according to selected characteristics: United States, 1976—Con.

Characteristic	Number of mothers in thousands	Number of births in thousands[1]	Total	Wanted at conception	Unwanted at conception	Undetermined
			Percent distribution			
Previous marriages						
One or more	4,111	11,395	100.0	76.1	15.1	8.9
None	21,858	54,614	100.0	81.5	10.8	7.7
Never married	1,071	1,785	100.0	55.1	27.2	*17.8
Fetal losses						
No losses	19,956	47,545	100.0	80.3	11.3	8.5
1 loss	4,842	13,342	100.0	79.5	12.9	7.6
2 losses or more	2,257	6,963	100.0	78.0	15.0	7.1
Desired family size at time of interview						
No children	725	1,842	100.0	56.9	33.7	*9.4
1 child	1,412	2,176	100.0	75.5	*15.2	*9.3
2 children	11,865	25,528	100.0	79.3	13.0	7.7
3 or 4 children	10,222	27,472	100.0	81.7	10.0	8.4
5 or 6 children	1,963	7,183	100.0	81.8	10.5	7.7
7 children or more	590	2,656	100.0	81.5	*10.3	*8.2

[1] Multiple births are counted only once.

education. The pattern for wantedness of births by husbands' education was the same as that found with women's education.

Mothers not in the labor force or working only part time had a higher proportion of wanted births (81.2 percent) than mothers working full time or not at work because of vacation, illness, or being between jobs (77.3 percent), despite the fact that they had borne slightly more children on the average.

Differences in the proportions of wanted births between the income groups shown in table 2 were as marked as the differences between educational groups. Mothers with a family income below the poverty level had wanted only two-thirds of their births at conception compared with more than four out of five births wanted among mothers whose family income was 150 percent of the poverty level or more. These differences by income may also be reflected in the decreasing proportions of wanted births among mothers of increasingly higher parities; those with incomes below the poverty level had borne almost one child more, on the average, than mothers with the highest family incomes had.

The proportion of wanted births reported by Catholics (83.0 percent) was higher than that reported by Protestants (78.3 percent), and the proportion of unwanted births was correspondingly lower among Catholic than among Protestant mothers. The proportion of undetermined births was also lower for Catholic women than for Protestant mothers, but the difference is not statistically significant. Jewish mothers and mothers of "other" religions combined had an even larger proportion of wanted births (88.5 percent), although not significantly larger than the proportion for Catholic mothers. Mothers with no religious affiliation had a nonsignificantly higher proportion of unwanted births (16.1 percent) than any of the religious groups.

Mothers who had been married only once had proportionately more wanted births (81.5 percent) than mothers who had been married more than once (76.1 percent), and both had higher proportions of wanted births than mothers who had never been married (55.1 percent). The wanted births to never-married mothers should not necessarily be interpreted to mean that these women wanted the births to occur before marriage; mothers responded to the

question as to whether or not they, at the time of conception, had wanted a baby sometime. It is likely that these mothers also responded positively to a later question on whether they became pregnant sooner than they had wanted to.

The proportions of births that were wanted at conception declined with increasing numbers of fetal losses a mother had experienced; the proportions of births that had been unwanted at conception correspondingly increased with the number of fetal losses. However, none of these differences in the proportions wanted and unwanted meet the test of statistical significance.

Women were asked about the total number of children they desired at the time of the survey, that is, the number they would like to have if they were able to begin their childbearing over again. The response categories are shown in table 2. As might be expected, mothers who had already borne more children than they desired had relatively high proportions of unwanted births. For instance, mothers who desired no children at all had already had an average of 2.5 births, one-third of which had been unwanted at conception and another 9 percent of which had been undetermined. Women who desired one or two children had also had, on the average, more than they desired. It is evident that mothers who desired fewer than three children had wanted between one-half and four-fifths of their births at the time of conception, which suggests that the number of children desired is a very changeable number over time. Mothers who desired three and more children, however, had not yet borne this number on the average, but 10 percent of their births were reported as being unwanted at conception. Because these women expressed the desire for more children, it may be that their unwanted births occurred early in their childbearing.

Although the data in this report tell us little about the causes of unintended pregnancies, they reveal the groups experiencing the greatest numbers of unintended pregnancies (unwanted and undetermined combined). In general, they are the very young mothers and the oldest, the mothers who have the largest number of children, those with the least education and income, and the mothers who are without husbands or who have experienced marital disruption. The large differences between white and black mothers in the proportions of wanted and unwanted births probably reflect substantial differences in these social and economic conditions.

TECHNICAL NOTES

The Survey Design

The National Survey of Family Growth (NSFG) was designed to provide data on fertility, family planning, and related aspects of maternal and child health. The NSFG is a cyclic survey; that is, data are collected every few years by means of a sample survey. Fieldwork for Cycle I was carried out by the National Opinion Research Center from June 1973 through February 1974. Fieldwork for Cycle II was carried out by Westat, Inc., from January through September 1976.

A multistage probability sample of women in the household population of the conterminous United States was used in both cycles. Each time, approximately 33,000 households were screened to identify the sample of women eligible for the NSFG, i.e., women aged 15-44 years who were either currently married, previously married, or never married but with offspring presently living in the household. In households with more than one eligible woman, a random procedure was used to select only one to be interviewed. Since the interview was always conducted with the sample person, the term "respondent" is synonymous with "sample person." For Cycle II, interviews were completed with 3,009 black women and 5,602 women of other races. A detailed description of the sample design for Cycle II is in preparation.

The interview was highly focused on the respondent's marital and pregnancy histories, use of contraception, planning status of each pregnancy, intentions regarding the number and spacing of future births, use of maternal and family planning services, and a broad range of socioeconomic characteristics. The time needed to complete interviews varied greatly; interviews in Cycle II averaged about 58 minutes.

Quality control procedures were applied at all stages of the survey. These included a verification of listing completeness that brought unlisted dwelling units into the sample, a preliminary field review of completed questionnaires for possible missing data or inaccurate administration, a 10-percent sample recheck of all households to be screened in the survey, observation of interviews in the field, and an independent recoding of a 5-percent subsample of completed interviews.

Reliability of Estimates

Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaires, instructions, interviewing personnel, and field procedures. This chance difference between sample results and a complete count is referred to as sampling error. In addition, the results are subject to nonsampling error due to respondent misreporting, processing errors, and nonresponse. It is very difficult, if not impossible, to obtain accurate measures of nonsampling errors. These types of error were kept to a minimum by the quality control procedures and other methods incorporated in the survey design and administration.

Sampling error, or the extent to which samples may differ by chance from a complete count, is measured by a statistic called the standard error of estimate. Approximate standard errors for estimated numbers and percents from Cycle I for all pregnancies, regardless of their outcome, are shown in tables I and II. Provisional estimates of standard errors for Cycle II for white women and women of all races combined can be obtained by multiplying the standard errors for these women from Cycle I by factors of 1.09 for the latter and 1.06 for white women. Similarly, provisional estimates of standard errors for Cycle II for black women can be obtained by multiplying the standard errors for black women from Cycle I by a factor of 1.14.

Table I. Approximate standard errors for estimated numbers for pregnancies: 1973 National Survey of Family Growth

Size of estimate	Relative standard error	Standard error
100,000	46.4	46,000
250,000	29.3	73,000
500,000	20.7	104,000
1,000,000	14.6	146,000
2,500,000	9.2	230,000
5,000,000	6.4	322,000
10,000,000	4.5	445,000
25,000,000	2.6	658,000
50,000,000	1.6	811,000

Table II. Approximate standard errors expressed in percentage points for estimated percents for pregnancies: 1973 National Survey of Family Growth

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
700,000	2.5	3.8	5.3	7.0	8.0	8.6	8.8
1,000,000	2.1	3.2	4.4	5.9	6.7	7.2	7.3
3,000,000	1.2	1.8	2.5	3.4	3.9	4.1	4.2
7,000,000	0.8	1.2	1.7	2.2	2.5	2.7	2.8
10,000,000	0.6	1.0	1.4	1.9	2.1	2.3	2.3
30,000,000	0.4	0.6	0.8	1.1	1.2	1.3	1.3
70,000,000	0.2	0.4	0.5	0.7	0.8	0.9	0.9

The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the differences between the sample estimate and a complete count would be less than twice the standard error. The relative standard error is the ratio of the standard error to the statistic being estimated. In this report, numbers and percents which have a standard error that is more than 25 percent of the estimate itself are considered unreliable. They are marked with an asterisk to caution the user but may be combined to make other types of comparisons of greater precision.

In this report, terms such as "similar" and "the same" mean that any observed difference between two estimates being compared is not statistically significant. Similarly, terms such as "greater," "less," "larger," and "smaller" indicate that the observed differences are statistically significant. The normal deviate test with a .05 level of significance was used to test all comparisons discussed in the text. A statistically significant difference is one large enough that in repeated samples of the same size and type as this one such a large difference would be expected to be found in less than 5 percent of the

samples. Lack of comment in the text between any two statistics does *not* mean the difference was tested and found not to be significant.

Adjustment for nonsampling error due to nonresponse was made in two ways. Nonrespondent cases, as distinct from missing data items, were imputed by weighting for nonresponse within each primary sampling unit, stratum, and age-race category. Cases with missing data were allocated among the cells of a table in proportion to the distribution of known cases with the same characteristics.

Definitions of Terms

Wantedness.—The definition of wantedness is based on direct responses to questions about each pregnancy a woman had conceived. For women reporting that contraceptive use was stopped prior to conception or that no contraceptive method was used in the interval preceding conception (which begins with the end of the preceding pregnancy, if there is one), the question on wantedness was phrased as follows: "Was the reason you (were not/stopped) using any method because you, yourself, wanted to become pregnant?" An affirmative response to this question indicated a "wanted" pregnancy. If the woman answered negatively, she was asked two further questions, which were also asked of all other respondents. These questions are: "At the time you became pregnant (THIS INTERVAL),[4] did you, yourself, actually want to have a(nother) baby at some time?" and "As you recall, is that how you felt before you became pregnant, or did you come to feel that way later?" A subsequent question for those who did not know or care whether or not they wanted to have a(nother) baby was: "It is sometimes difficult to recall these things, but as you look back to just before that pregnancy began, would you say you probably wanted a(nother) baby sometime or probably not?"

A pregnancy is defined as "wanted at conception" if the woman reported that (a) contraception was not used or was stopped prior to conception because she wanted to become pregnant, (b) she wanted to have a(nother) baby at some time and felt that way before becoming pregnant, or (c) she probably wanted a(nother) baby at some time. A pregnancy is defined as "unwanted" if the woman reported that she did not want to have a(nother) baby at some time or probably did not want a(nother) baby and felt that way before becoming pregnant. "Undetermined" pregnancies include those that a woman came to want sometime after conception, those that came to be unwanted sometime after conception, and those for which her feelings at the time of conception could not be reported.

Age.—Age is classified by the age of the respondent at her last birthday before the date of interview.

Race.—Classification by race was based on interviewer observation and was reported as black, white, or other. It refers to the race of the respondent.

Hispanic origin.—A respondent was classified as being of Hispanic origin if she reported her origin or descent as at least partly Mexicano, Chicano, Mexican American, Puerto Rican, Cuban, or other Spanish.

Geographic region.—Region refers to the part of the country where the respondent was living at the time of the survey classified according to U.S. Bureau of the Census definitions.

Marital status.—Persons are classified by marital status as married, widowed, divorced, separated, or never married. Married persons include those who reported themselves as married or as informally married, such as living with a partner or common-law spouse. Persons who were temporarily separated for reasons other than marital discord, such as vacation, illness, or service in Armed Forces, are classified as married. Divorced persons are those whose most recent marriage was legally dissolved and who were free to remarry. The annulled, while having the legal status of never having been married, are classified together with the divorced. The category "separated" includes those who were legally or informally separated from their most recent spouse due to marital discord. Women who were "never married" include those who never had a formal marriage and did not classify themselves in any of the preceding categories. Single women with offspring in the household were included in the NSFG.

Previous marriages.—Women are categorized

[4] "THIS INTERVAL" means that the interviewer inserted the name of the child or dates of the pregnancy which defined the interval in question.

according to their response to a question on whether or not they had been married prior to their current or last marriage.

Education.—The highest year of regular schooling completed is used to define education for the woman and her current or most recent husband.

Labor force status.—A woman is categorized as being in the labor force if she was working full time (35 hours or more per week) or part time; had a job but was not at work because of temporary illness, vacation, or a strike; or was unemployed, laid off, or looking for work.

Poverty level.—The poverty index ratio was calculated by dividing the total family income by the weighted average threshold income of nonfarm families whose head was under 65 years of age based on the poverty levels shown in: U.S. Bureau of the Census, *Current Population Reports,* Series P-60, No. 106, "Money income in 1975 of families and persons in the United States," table A-3. This definition takes into account the sex of the family head and the number of persons in the family. Total family income includes income from all sources for all members of the respondent's family. Due to a high nonresponse rate on items pertaining to the respondent's family income, the figures for poverty level must be interpreted with caution.

Religion.—Women were asked whether they were Protestant, Catholic, Jewish, or something else. "Protestant" includes most Christian groups other than Roman Catholic. The "other" category includes those reporting a religious preference other than Protestant, Catholic, or Jewish.

Parity.—Parity refers to the number of live births the respondent has had.

Fetal losses.—Fetal losses are the number of pregnancies reported by the respondent as ending in miscarriage, stillbirth, or induced abortion.

Desired family size.—A woman was classified according to the number of children she reported she would have if she could start life over again and have exactly the number of children she wanted.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

advancedata
FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service Office of Health Research, Statistics, and Technology | Number 57 • January 25, 1980

Office Visits for Diabetes Mellitus, National Ambulatory Medical Care Survey: United States, 1977[a]

Based on data collected in the 1977 National Ambulatory Medical Care Survey (NAMCS), an estimated 11.0 million office visits were made at which the principal or first-listed diagnosis was diabetes mellitus. The estimates presented in this report are based on data collected in the NAMCS, an annual probability sample survey of approximately 3,000 nonfederally employed physicians who are in office-based practice in the conterminous United States. Excluded from the NAMCS are hospital-based physicians; those specializing in anesthesiology, pathology, or radiology; and those who are principally engaged in teaching, research, or administration. The survey sample is selected with the cooperation of the American Medical Association and American Osteopathic Association from their lists of nonfederally employed doctors of medicine and osteopathy who are principally engaged in office-based practice.

Figure 1 is a facsimile of the 1977 Patient Record used by participating physicians to record information obtained during office visits for a 7-day reporting period and it may be useful as a reference as selected survey findings are discussed.

Caution should be exercised when comparing the 1977 survey results with NAMCS data from previous years. Changes which were made in the 1977 Patient Record that affect comparability between survey years have been discussed in a previous report.[1]

Since the estimates presented in this report are based on a sample rather than on the entire universe of office-based physicians, the data are subject to sampling variability. The "Technical Notes" at the end of this report provide a brief explanation and guidelines for judging the precision of the estimates presented. A more detailed description of the sample design and definitions of certain terms used in NAMCS have been published.[2]

DATA HIGHLIGHTS

Utilization patterns for diabetic patients obtained from the Patient Record form (figure 1) are presented in this report, while data available from the Health Interview Survey (HIS) and the Health and Nutrition Examination Survey (HANES) provide various national prevalence estimates of diabetes by demographic and socioeconomic status variables. A summary of current diabetes-related data available from the National Center for Health Statistics has been published.[3]

Patient Characteristics

Of the 11.0 million office visits for diabetes mellitus, 58 percent were by females (table 1). The annual number of office visits with a principal diagnosis of diabetes tends to increase with age. Approximately 69 percent of the office visits for diabetes were by patients 55 years of age and over; relatively few visits were made by persons under 25 years of age. The majority of office visits for diabetes were made by white persons (86 percent); however, the annual visit rates were similar for white and all other persons. For both males and females the annual visit rate increased with age—with a peak in the 65-74 year age group (figure 2). The visit rate for females was slightly greater than that for males.

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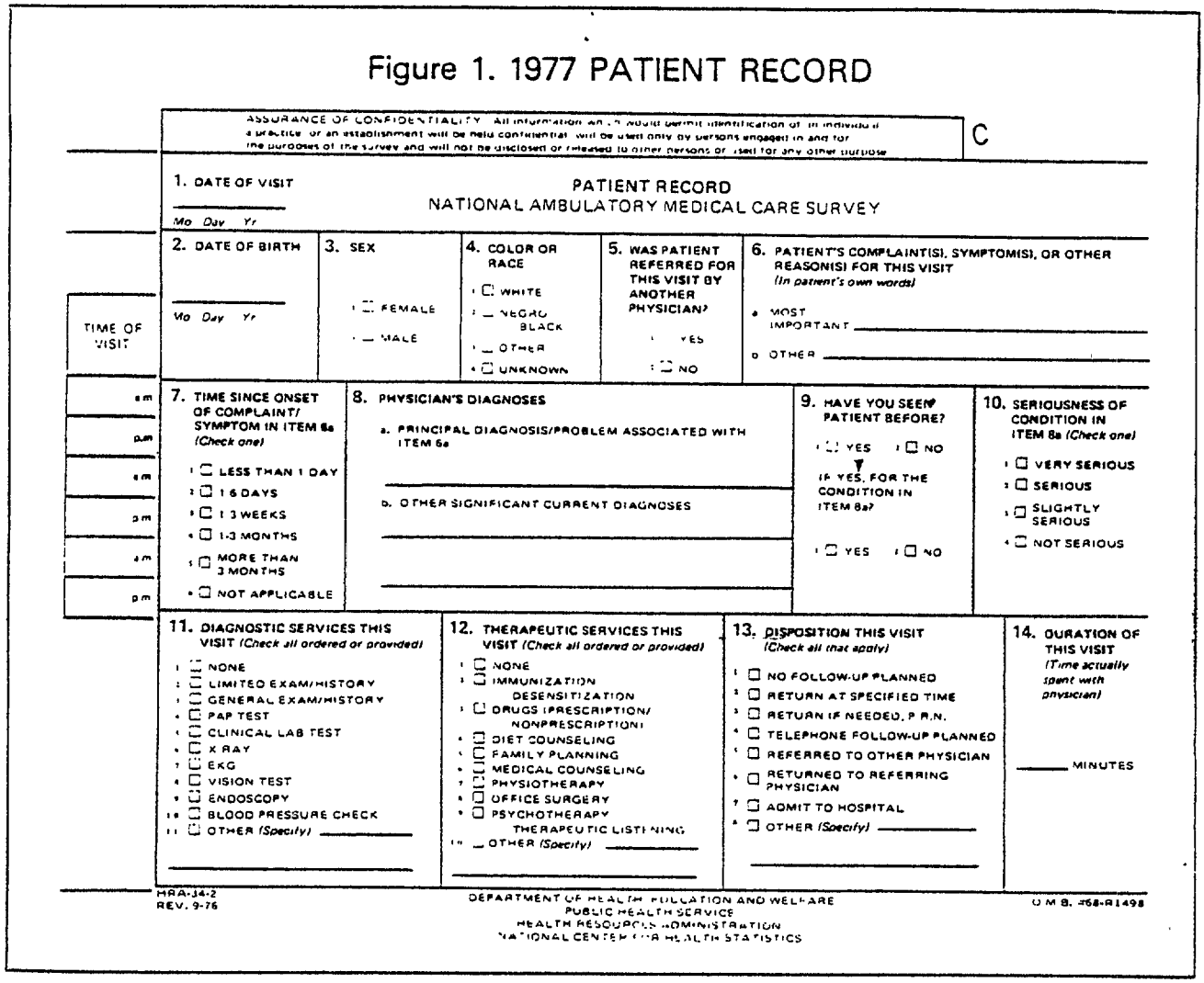
[a]This report was prepared by Trena Ezzati, Division of Health Resources Utilization Statistics.

Figure 1. 1977 PATIENT RECORD



ASSURANCE OF CONFIDENTIALITY: All information which would permit identification of an individual or practice or an establishment will be held confidential, will be used only by persons engaged in and for the purposes of the survey and will not be disclosed or released to other persons or used for any other purpose.

C

1. DATE OF VISIT — Mo Day Yr

PATIENT RECORD
NATIONAL AMBULATORY MEDICAL CARE SURVEY

2. DATE OF BIRTH — Mo Day Yr

3. SEX
1 ☐ FEMALE
2 ☐ MALE

4. COLOR OR RACE
1 ☐ WHITE
2 ☐ NEGRO OR BLACK
3 ☐ OTHER
4 ☐ UNKNOWN

5. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN?
1 ☐ YES
2 ☐ NO

6. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT (In patient's own words)
a. MOST IMPORTANT _____
b. OTHER _____

TIME OF VISIT
a.m.
p.m.
a.m.
p.m.
a.m.
p.m.

7. TIME SINCE ONSET OF COMPLAINT/SYMPTOM IN ITEM 6a (Check one)
1 ☐ LESS THAN 1 DAY
2 ☐ 1-6 DAYS
3 ☐ 1-3 WEEKS
4 ☐ 1-3 MONTHS
5 ☐ MORE THAN 3 MONTHS
6 ☐ NOT APPLICABLE

8. PHYSICIAN'S DIAGNOSES
a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 6a
b. OTHER SIGNIFICANT CURRENT DIAGNOSES

9. HAVE YOU SEEN PATIENT BEFORE?
1 ☐ YES 2 ☐ NO
IF YES, FOR THE CONDITION IN ITEM 8a?
1 ☐ YES 2 ☐ NO

10. SERIOUSNESS OF CONDITION IN ITEM 8a (Check one)
1 ☐ VERY SERIOUS
2 ☐ SERIOUS
3 ☐ SLIGHTLY SERIOUS
4 ☐ NOT SERIOUS

11. DIAGNOSTIC SERVICES THIS VISIT (Check all ordered or provided)
1 ☐ NONE
2 ☐ LIMITED EXAM/HISTORY
3 ☐ GENERAL EXAM/HISTORY
4 ☐ PAP TEST
5 ☐ CLINICAL LAB TEST
6 ☐ X RAY
7 ☐ EKG
8 ☐ VISION TEST
9 ☐ ENDOSCOPY
10 ☐ BLOOD PRESSURE CHECK
11 ☐ OTHER (Specify) _____

12. THERAPEUTIC SERVICES THIS VISIT (Check all ordered or provided)
1 ☐ NONE
2 ☐ IMMUNIZATION DESENSITIZATION
3 ☐ DRUGS (PRESCRIPTION/NONPRESCRIPTION)
4 ☐ DIET COUNSELING
5 ☐ FAMILY PLANNING
6 ☐ MEDICAL COUNSELING
7 ☐ PHYSIOTHERAPY
8 ☐ OFFICE SURGERY
9 ☐ PSYCHOTHERAPY THERAPEUTIC LISTENING
10 ☐ OTHER (Specify) _____

13. DISPOSITION THIS VISIT (Check all that apply)
1 ☐ NO FOLLOW-UP PLANNED
2 ☐ RETURN AT SPECIFIED TIME
3 ☐ RETURN IF NEEDED, P.R.N.
4 ☐ TELEPHONE FOLLOW-UP PLANNED
5 ☐ REFERRED TO OTHER PHYSICIAN
6 ☐ RETURNED TO REFERRING PHYSICIAN
7 ☐ ADMIT TO HOSPITAL
8 ☐ OTHER (Specify) _____

14. DURATION OF THIS VISIT (Time actually spent with physician)
_____ MINUTES

HRA-34-2
REV. 9-76

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH RESOURCES ADMINISTRATION
NATIONAL CENTER FOR HEALTH STATISTICS

O.M.B. #68-R1498

Physician and Specialty Characteristics

Visits to general and family practitioners (53 percent) and internists (28 percent) accounted for four-fifths of all office-based physician visits for diabetes mellitus (table 2). Approximately 70 percent of all visits for diabetes were to solo practitioners. This exceeded the percentage (59 percent) of visits to solo practitioners for all diagnoses. The proportion of visits with a principal diagnosis of diabetes was higher in metropolitan areas (77 percent) than in non-metropolitan areas (23 percent) in about the same proportion as visits for all diagnoses.

Visit Characteristics

About 62 percent of the visits associated with a diagnosis of diabetes had an onset of a complaint or symptom of more than 3 months (table 3). This reflects the chronic nature of diabetes. Data on prior visit status also reflect its chronic nature: 89 percent of the office visits for diabetes were by patients who had seen the physician before for the same problem; only 5 percent were by patients new to the physician's office practice.

Information obtained in item 6 of the Patient Record (figure 1) represents the reasons for

Table 1. Number, percent distribution, and number of office visits per 100 persons per year for principal diagnosis of diabetes mellitus, by selected patient characteristics: United States, 1977

Patient characteristic	Number of visits in thousands	Percent distribution	Number of visits per 100 persons per year
All patients	11,023	100.0	5.2
Age			
Under 25 years	*280	*2.5	*0.3
25-34 years	496	4.5	1.6
35-44 years	816	7.4	3.6
45-54 years	1,894	17.2	8.2
55-64 years	3,125	28.4	15.6
65-74 years	2,950	26.8	20.7
75 years and over	1,462	13.3	18.3
Sex and age			
Female	6,442	58.4	5.9
Under 25 years	*119	*1.1	*0.3
25-34 years	*308	*2.8	*1.9
35-44 years	*381	*3.5	*3.2
45-54 years	932	8.5	7.8
55-64 years	1,745	15.8	16.5
65-74 years	1,957	17.8	24.3
75 years and over	999	9.1	20.0
Male	4,581	41.6	4.5
Under 25 years	*160	*1.5	*0.4
25-34 years	*188	*1.7	*1.2
35-44 years	*435	*3.9	*3.9
45-54 years	962	8.7	8.6
55-64 years	1,381	12.5	14.6
65-74 years	993	9.0	16.1
75 years and over	462	4.2	15.4
Color and age			
White	9,441	85.7	5.2
Under 25 years	*236	*2.1	*0.3
25-34 years	*451	*4.1	*1.6
35-44 years	675	6.1	3.4
45-54 years	1,650	15.0	8.1
55-64 years	2,460	22.3	13.6
65-74 years	2,589	23.5	20.2
75 years and over	1,380	12.5	19.0
All other	1,582	14.4	5.6
Under 25 years	*44	*0.4	0.3
25-34 years	*44	*0.4	*1.1
35-44 years	*141	*1.3	*4.9
45-54 years	*244	*2.2	*9.4
55-64 years	666	6.0	34.4
65-74 years	*361	*3.3	*26.2
75 years and over	*81	*0.7	*11.3

Figure 2. Annual office visit rate per 100 persons for diabetes mellitus by age and sex of patient: United States, 1977

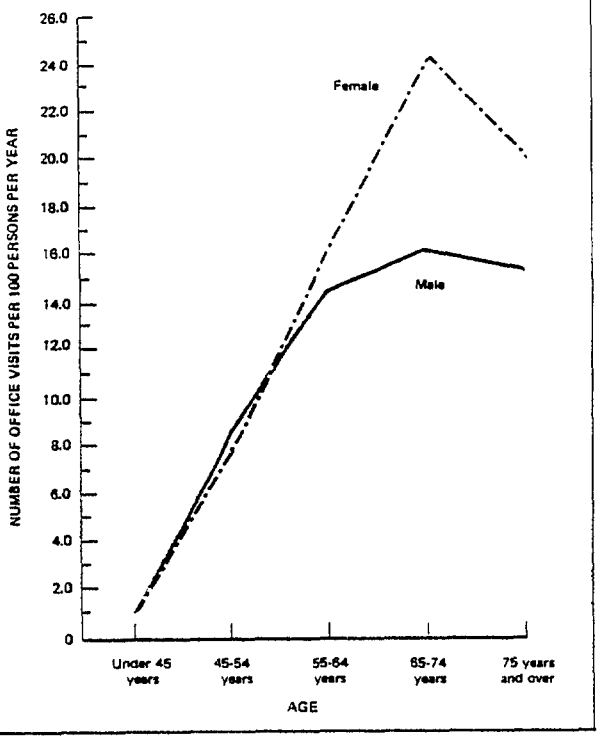


Table 2. Number and percent distribution of office visits for principal diagnosis of diabetes mellitus, by selected physician characteristics: United States, 1977

Physician characteristic	Number of visits in thousands	Percent distribution
All	11,023	100.0
Physician specialty		
General and family practice	5,891	53.4
Internal medicine	3,075	27.9
Other medical specialties	1,125	10.2
Surgical specialties	876	8.0
Other specialties	*56	*0.5
Type of practice		
Solo	7,737	70.2
Other[1]	3,286	29.8
Location of practice		
Metropolitan[2]	8,469	76.8
Nonmetropolitan	2,554	23.2

[1]Includes partnership and group practices.
[2]Located within the standard metropolitan statistical areas (SMSA's).

Table 3. Number and percent distribution of office visits for principal diagnosis of diabetes mellitus, by selected visit characteristics: United States, 1977

Visit characteristic	Number of visits in thousands	Percent distribution
All	11,023	100.0
Time since onset of symptom or complaint		
Less than 1 week	461	4.2
1-3 weeks	576	5.2
1-3 months	895	8.1
More than 3 months	6,803	61.7
Not applicable[1]	2,288	20.8
Prior visit status		
New patient	537	4.9
Old patient	10,486	95.2
New problem	646	5.9
Old problem	9,840	89.3

[1]Chiefly visits not involving a symptom or complaint, e.g., annual or well baby examination.

visiting physicians' offices as expressed by patients in their own words. These data were classified and coded according to *A Reason for Visit Classification for Ambulatory Care.*[4] Table 4 presents reasons for visit associated with a principal diagnosis of diabetes. Diabetes mellitus and glucose level determination accounted for approximately 55 percent of the patients' reasons for visits; general medical examination for 8 percent of the visits; tiredness, general weakness, vision dysfunctions, leg, foot, and toe symptoms for an additional 6 percent of the visits.

A general examination was ordered or provided for approximately 23 percent of all visits for diabetes (table 5). The proportion (69 percent) of visits at which a clinical lab test was ordered or provided was nearly 3 times the proportion (21 percent) provided at visits for all diagnoses. Further, the proportion of diabetes visits involving a blood pressure check (67 percent) nearly doubled that for all diagnoses (34 percent).

About 62 percent of all office visits for diabetes resulted in some type of drug therapy (table 5) being ordered or provided at that visit. About 37 percent of the visits involved diet counseling, compared with 7 percent for all

Table 4. Number and percent distribution of office visits, by principal reasons for visit most frequently associated with a principal diagnosis of diabetes mellitus: United States, 1977

Principal reason for visit and RVC code[1]	Number of visits in thousands	Percent distribution
All reasons	11,023	100.0
Diabetes mellitus D205	4,903	44.5
Glucose level determination X310	1,111	10.1
General medical examination X100	921	8.4
Tiredness, general weakness, vision dysfunctions, leg, foot, and toe symptoms S015, S020, S305, S920, S935	683	6.2

[1] Based on *A Reason for Visit Classification for Ambulatory Care* (RCV).

visits. An additional 32 percent of the visits involved some type of medical counseling.

Seriousness represents the extent of impairment that might result if no care were available. Forty-two percent of all visits involving a principal diagnosis of diabetes mellitus were judged by the physician as serious or very serious (table 6); the comparable proportion for all diagnoses was 18 percent. Nine of every 10 visits for a principal diagnosis of diabetes involved the physician advising the patient to return at a specified time (table 6).

Duration of the visit, as obtained in NAMCS, represents only that amount of time spent by the patient in face-to-face contact with the physician. The mean duration of visits involving a principal diagnosis of diabetes was 15.1 minutes; the mean duration of all visits was 15.4 minutes.

In addition to the principal or first-listed diagnosis recorded in item 8 of the Patient Record, the physician was instructed to record "other significant current diagnoses" (see figure 1) known to exist for the patient at the time of the current visit. The second- and third-listed diagnoses recorded were coded in the same manner as the first-listed, that is according to the *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.*[5]

Table 5. Number and percent of office visits for principal diagnosis of diabetes mellitus by services ordered or provided: United States, 1977

Services ordered or provided	Number of visits in thousands	Percent
Diagnostic Services		
None	*208	*1.9
Limited examination or history	5,839	53.0
General examination or history	2,493	22.6
Clinical lab test	7,635	69.3
X-ray	*379	*3.4
Electrocardiogram	528	4.8
Vision test	*312	*2.8
Blood pressure check	7,382	67.0
Other[1]	569	5.2
Therapeutic services		
None	1,464	13.3
Drugs (prescription or nonprescription)	6,869	62.3
Diet counseling	4,125	37.4
Medical counseling	3,539	32.1
Other[2]	814	7.4

[1] Includes Pap test, endoscopy, and other diagnostic services.
[2] Includes immunization or desensitization, family planning, physiotherapy, office surgery, psychotherapy or therapeutic listening, and other therapeutic services.

Table 6. Number and percent distribution of office visits for principal diagnosis of diabetes mellitus, by selected visit characteristics: United States, 1977

Visit characteristic	Number of visits in thousands	Percent distribution
All visits	11,023	100.0
Seriousness of condition		
Serious or very serious	4,645	42.1
Slightly serious	4,236	38.4
Not serious	2,142	19.4
Disposition of visit[1]		
No followup	*117	*1.1
Return at specified time	9,926	90.1
Return if needed	636	5.8
Telephone followup planned	*365	*3.3
Other[2]	511	4.6
Duration of visit		
0 minutes[3]	*364	*3.3
1-5 minutes	1,079	9.8
6-10 minutes	3,436	31.2
11-15 minutes	3,203	29.1
16-30 minutes	2,580	23.4
31 minutes or more	*361	*3.3

[1] Does not add to 100.0 since more than one disposition was possible.
[2] Includes referred to other physician, returned to referring physician, and admit to hospital.
[3] Represents visits in which there was no face-to-face contact between the patient and the physician.

These data provide additional information about the total number of office visits involving diabetes and also show which conditions most frequently co-occur with a diagnosis of diabetes.

In addition to the 11.0 million visits in which diabetes was the first listed-diagnosis, there were an additional 7.8 million visits in which diabetes was a second- or third-listed diagnosis. The total office visits in which diabetes was a diagnosis, therefore, was 18.8 million (table 7).

The data in table 7 reveal that at nearly 20 percent of the 18.8 million visits involving diabetes mellitus there was a concomitant diagnosis of essential benign hypertension. Other diagnoses frequently associated with diabetes were chronic ischemic heart disease (11 percent) and nonendocrine obesity (6 percent).

Table 7. Number and percent of office visits with diabetes mellitus as first-, second-, or third-listed diagnosis, by most frequent diagnoses associated with a diagnosis of diabetes: United States, 1977

Most frequent diagnosis and ICDA code[1]	Diabetes mellitus as first-, second-, or third-listed diagnosis	
	Number of visits in thousands	Percent of visits
Total	18,838	100.0
Essential benign hypertension . . .401	3,720	19.7
Chronic ischemic heart disease . .412	2,081	11.0
Obesity, not specified as of endocrine origin .277	1,147	6.1

[1]Diagnoses and codes are based on *Eighth Revision International Classification of Diseases, Adapted for Use in the United States* (ICDA).

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[3]American Diabetes Association: Summary of current diabetes-related data from the National Center for Health Statistics. *Diabetes Care.* Vol. 2, No. 2, Mar.-Apr. 1979.

[4]National Center for Health Statistics: A reason for visit classification for ambulatory care, by D. Shneider, L. Appleton, and T. McLemore. *Vital and Health Statistics.* Series 2-No. 78. DHEW Pub. No. (PHS) 79-1352. Public Health Service. Washington. U.S. Government Printing Office, Feb. 1979.

[5]National Center for Health Statistics: *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.* PHS Pub. No. 1693. Public Health Service. Washington. U.S. Government Printing Office, 1967.

TECHNICAL NOTES

SOURCE OF DATA: The information presented in this report is based on data collected in the National Ambulatory Medical Care Survey (NAMCS) during 1977. The target population of NAMCS encompasses office visits within the conterminous United States made by ambulatory patients to physicians who are principally engaged in office practice. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the survey's field operations.

SAMPLE DESIGN: The NAMCS utilizes a multistage probability design that involves samples of primary sampling units (PSU's), physician practices within PSU's, and patient visits within practices. For 1977 a sample of 3,000 non-Federal office-based physicians was selected from master files maintained by the American Medical Association and American Osteopathic Association. The physician response rate for 1977 was 77.5 percent. Sampled physicians were requested to complete Patient Records (figure 1) for a systematic random sample of office visits taking place within their practice during a randomly assigned weekly reporting period. During 1977, 51,044 Patient Records were completed by sampled physicians.

SAMPLING ERRORS: The standard error is primarily a measure of the sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percentage of the estimate. Relative standard errors of selected aggregate statistics are shown in table I. The standard errors appropriate for estimated percentages of visits are shown in table II.

ROUNDING OF NUMBERS: Estimates of office visits have been rounded to the nearest thousand. For this reason detailed figures within tables do not always add to totals. Percents were calculated on the basis of original, unrounded figures and will not necessarily agree precisely with percents which might be calculated from rounded data.

DEFINITIONS: An *ambulatory patient* is an individual presenting himself for personal health services who is neither bedridden nor currently admitted to any health care institution on the premises.

Table I. Approximate relative standard errors of estimated number of office visits, NAMCS 1977

Estimated number of office visits in thousands	Relative standard error in percent
500	29.0
600	26.5
1,000	20.7
2,000	14.9
5,000	9.9
10,000	7.6
20,000	6.1
50,000	4.9
100,000	4.5
500,000	4.1

Example of use of table: An aggregate estimate of 75,000,000 visits has a relative standard error of 4.7 percent or a standard error of 3,525,000 visits (4.7 percent of 75,000,000).

Table II. Approximate standard errors of percentages of estimated number of office visits, NAMCS 1977

Base of percentage (number of visits in thousands)	Estimated percentage					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
	Standard error in percentage points					
500	2.9	6.3	8.6	11.5	13.2	14.4
600	2.6	5.7	7.9	10.5	12.0	13.1
1,000	2.0	4.4	6.1	8.1	9.3	10.2
2,000	1.4	3.1	4.3	5.7	6.6	7.2
5,000	0.9	2.0	2.7	3.6	4.2	4.5
10,000	0.6	1.4	1.9	2.6	2.9	3.2
20,000	0.5	1.0	1.4	1.8	2.1	2.3
50,000	0.3	0.6	0.9	1.1	1.3	1.4
100,000	0.2	0.4	0.6	0.8	0.9	1.0
500,000	0.1	0.2	0.3	0.4	0.4	0.5

Example of use of table: An estimate of 30 percent based on an aggregate of 15,000,000 visits has a standard error of 2.5 percent. The relative standard error of 30 percent is 8.3 percent (2.5 percent ÷ 30 percent).

An *office* is a place that the physician identifies as a location for his ambulatory practice. Responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than an institution.

A *visit* is a direct personal exchange between an ambulatory patient and a physician or a staff member working under the physician's supervision for the purpose of seeking care and rendering health services.

A *physician* is a duly licensed doctor of medicine (M.D.) or doctor of osteopathy (D.O.) currently in office-based practice who spends time in caring for ambulatory patients. Excluded from NAMCS are physicians who are hospital based; physicians who specialize in anesthesiology, pathology, or radiology; physicians who are Federally employed; physicians who treat only institutionalized patients; physicians employed full time by an institution; and physicians who spend no time seeing ambulatory patients.

SYMBOLS

Data not available	. . .
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service
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Remarriages of Women 15-44 Years of Age Whose First Marriage Ended in Divorce: United States, 1976[1]

INTRODUCTION

In the United States in 1976 there were about 6 million women 15-44 years of age whose first marriage had ended in divorce. About 21 percent of these women had entered a second marriage during the first year following divorce, and about 71 percent had remarried within 5 years after divorce. However, the likelihood of remarriage varied depending on the social and demographic characteristics of these women. The most important of these characteristics were race, age at divorce, and educational attainment. Data provide evidence that during the first 5 years after divorce the likelihood of remarriage was greater for white than for black women, greater for those who were divorced before age 25 than for those who were divorced later, and greater for those with less than a high school education than for those with one or more years of college.

These statistics on remarriage are from the National Survey of Family Growth, Cycle II, conducted by the National Center for Health Statistics in 1976. Data were collected through personal interviews with women who were selected in a multistage probability sample of the household population of the conterminous United States. Women 15-44 years of age who were currently married or previously married or were never married but had offspring living in the household at the time of the survey were eligible for inclusion in the sample.

The interview focused on the respondent's marital and pregnancy histories; use of contraception; planning status of each pregnancy; intentions regarding number and spacing of future births; use of maternal care and family planning services; and a broad range of social, demographic, and economic characteristics. For Cycle II, 3,009 black women and 5,602 women of other races were interviewed from January through September 1976. Further discussion of the survey design and sampling variability is in the Technical Notes.

In this report statistics are presented on the likelihood of second marriage for women whose first marriage ended in divorce and on group differences in the likelihood of second marriage. The basic statistics presented are cumulative probabilities of remarriage for each of the first 5 years following divorce. The probabilities shown for women with each characteristic indicate the approximate proportion of a group of women with that characteristic that remarried by the end of each year since divorce occurred. For example, the .731 probability at the end of 4 years for women who divorced before age 25 (see table 1) indicates that about 73 percent of women who divorced before that age remarried within 4 years. By comparing different groups in terms of their probabilities of remarriage at the end of each year following divorce, group differences in the timing and frequency of remarriage can be determined.

Two types of probabilities are presented in this report. The unadjusted probabilities found in table 1 are calculated, as described in the Technical Notes, directly from the marital experiences of women with each characteristic. The adjusted probabilities for the various subgroups of each characteristic in table 2 are those that would have occurred if the different sub-

[1] This report was prepared by William R. Grady, M.A., Division of Vital Statistics.

Table 1. Number of women, cumulative probabilities of remarriage by number of years after divorce and median years to remarriage, by selected characteristics, with standard errors: United States, 1976

Characteristic	Number of women in thousands	Years after divorce					Median years to remarriage
		1	2	3	4	5	
		Probability					
All women	6,029	.206	.395	.553	.644	.705	2.7
Race and origin							
White	5,244	.221	.414	.578	.668	.731	2.5
Black	710	.097	.231	.342	.445	.485	5.0+
Hispanic[1]	339	.202	.494	.761	*	*	2.0
Age at divorce							
Under 25 years	2,882	.230	.459	.624	.731	.785	2.3
25 years and over	3,147	.182	.328	.478	.545	.611	3.3
Year of divorce							
Before 1970	2,782	.238	.457	.604	.695	.752	2.3
1970 or later	3,247	.177	.331	.498	.577	.628	3.0
Duration of first marriage							
Less than 5 years	2,598	.233	.443	.595	.712	.755	2.4
5 years or more	3,431	.184	.354	.517	.579	.633	2.9
Number of living children at divorce							
No children	1,448	.184	.408	.578	.679	.763	2.5
1 child	1,753	.214	.433	.602	.693	.720	2.4
2 children	1,485	.242	.381	.537	.622	.660	2.8
3 children or more	1,342	.181	.345	.479	.561	.672	3.3
Education							
Less than 12 years	1,964	.268	.507	.622	.731	.804	2.0
12 years	2,756	.201	.392	.570	.658	.715	2.6
More than 12 years	1,309	.137	.253	.426	.487	.532	*4.3
Religion							
Catholic	1,111	.197	.362	.501	.599	.625	3.0
Protestant	4,281	.209	.404	.572	.665	.728	2.6
Other or none	637	*.203	.397	.494	.603	.694	*3.1
Place of residence							
Metropolitan	4,447	.186	.350	.514	.607	.665	2.9
Nonmetropolitan	1,582	.261	.514	.657	.740	.804	1.9
Geographic region							
Northeast	799	.277	.361	.551	.645	.700	2.7
North Central	1,772	.176	.391	.510	.625	.693	2.9
South	2,087	.206	.408	.573	.659	.731	2.6
West	1,371	.213	.399	.580	.649	.683	2.6

See footnote at end of table.

Table 1. Number of women, cumulative probabilities of remarriage by number of years after divorce and median years to remarriage, by selected characteristics, with standard errors: United States, 1976—Con.

Characteristic	Standard error of number of women in thousands	Years after divorce					Standard error of median years to remarriage
		1	2	3	4	5	
		Standard error of probability					
All women	182	.024	.016	.020	.021	.024	.09
Race and origin							
White	164	.026	.020	.021	.022	.027	.09
Black	39	.010	.028	.042	.042	.046	---
Hispanic[1]	43	.088	.099	.109	---	---	.33
Age at divorce							
Under 25 years	145	.038	.035	.030	.060	.051	.19
25 years and over	130	.025	.027	.033	.060	.062	.45
Year of divorce							
Before 1970	123	.035	.026	.024	.023	.025	.14
1970 or later	133	.022	.023	.031	.034	.034	.31
Duration of first marriage							
Less than 5 years	118	.042	.038	.033	.037	.034	.23
5 years or more	136	.025	.018	.027	.028	.030	.17
Number of living children at divorce							
No children	88	.032	.029	.027	.049	.040	.12
1 child	97	.034	.024	.035	.051	.048	.15
2 children	89	.036	.038	.033	.024	.024	.19
3 children or more	84	.029	.030	.048	.055	.053	.60
Education							
Less than 12 years	103	.029	.036	.038	.035	.042	.20
12 years	122	.031	.026	.024	.015	.027	.11
More than 12 years	84	.022	.017	.068	.081	.081	1.31
Religion							
Catholic	77	.043	.052	.036	.039	.041	.31
Protestant	152	.029	.024	.022	.048	.041	.12
Other or none	58	.061	.064	.063	.078	.085	.90
Place of residence							
Metropolitan	155	.028	.014	.027	.025	.029	.15
Nonmetropolitan	92	.028	.038	.036	.042	.045	.15
Geographic region							
Northeast	65	.059	.058	.091	.070	.057	.39
North Central	98	.027	.032	.048	.041	.027	.38
South	106	.029	.032	.043	.041	.041	.22
West	86	.046	.051	.039	.037	.042	.23

[1]Includes all women reporting any Hispanic origin, regardless of race or other ethnic origins reported; estimates for the 4th and 5th years of divorce are not shown because the conditional probabilities produced for those years, from which the cumulative probabilities are calculated, are based on fewer than 10 unweighted cases. Data for women of Hispanic origin are also included in the statistics by race.

Table 2. Number of women, adjusted[1] cumulative probabilities of remarriage by number of years after divorce and median years to remarriage, by selected characteristics, with standard errors: United States, 1976

Characteristic	Number of women in thousands	Years after divorce					Median years to remarriage
		1	2	3	4	5	
		Probability					
All women	6,029	.206	.395	.553	.644	.705	2.7
Race and origin							
White	5,244	.219	.408	.574	.663	.731	2.6
Black	710	.114	.279	.382	.492	.493	5.0+
Hispanic[2]	339	*.213	.461	.757	*	*	2.1
Age at divorce							
Under 25 years	2,882	.204	.433	.615	.710	.758	2.4
25 years and over	3,147	.208	.357	.491	.574	.649	3.1
Year of divorce							
Before 1970	2,782	.223	.432	.577	.665	.720	2.5
1970 or later	3,247	.191	.357	.530	.622	.695	2.8
Duration of first marriage							
Less than 5 years	2,598	.243	.398	.524	.648	.727	2.8
5 years or more	3,431	.181	.397	.580	.644	.689	2.6
Number of living children at divorce							
No children	1,448	.166	.398	.571	.651	.734	2.6
1 child	1,753	.204	.419	.583	.673	.686	2.5
2 children	1,485	.248	.389	.536	.631	.676	2.8
3 children or more	1,342	.206	.369	.517	.616	.736	2.9
Education							
Less than 12 years	1,964	.260	.493	.604	.713	.791	2.1
12 years	2,756	.198	.390	.567	.656	.714	2.6
More than 12 years	1,309	.155	.279	.459	.525	.563	*3.6
Religion							
Catholic	1,111	*.192	.375	.497	.602	.621	3.0
Protestant	4,281	.206	.395	.571	.661	.722	2.6
Other or none	637	*.229	.430	.511	.576	.709	*2.9
Place of residence							
Metropolitan	4,447	.190	.361	.524	.620	.674	2.9
Nonmetropolitan	1,582	.250	.485	.630	.709	.786	2.1
Geographic region							
Northeast	799	.285	.384	.587	.671	.732	2.6
North Central	1,772	.170	.389	.512	.612	.663	2.9
South	2,087	.205	.400	.567	.655	.733	2.6
West	1,371	.219	.403	.570	.659	.698	2.6

See footnotes at end of table.

Table 2. Number of women, adjusted[1] cumulative probabilities of remarriage by number of years after divorce and median years to remarriage, by selected characteristics, with standard errors: United States, 1976—Con.

Characteristic	Standard error of number of women in thousands	Years after divorce					Standard error of median years to remarriage
		1	2	3	4	5	
		Standard error of probability					
All women	182	.024	.016	.020	.021	.024	.09
Race and origin							
White	164	.026	.019	.023	.023	.029	.10
Black	39	.021	.023	.051	.044	.057	---
Hispanic[2]	43	.091	.108	.112	---	---	.35
Age at divorce							
Under 25 years	145	.031	.037	.041	.042	.037	.18
25 years and over	130	.030	.040	.038	.033	.033	.41
Year of divorce							
Before 1970	123	.033	.026	.027	.028	.030	.15
1970 or later	133	.025	.028	.030	.039	.038	.17
Duration of first marriage							
Less than 5 years	118	.050	.060	.059	.053	.051	.48
5 years or more	136	.031	.047	.049	.045	.045	.23
Number of living children at divorce							
No children	88	.028	.029	.037	.048	.046	.16
1 child	97	.039	.025	.043	.052	.048	.16
2 children	89	.040	.043	.035	.024	.030	.23
3 children or more	84	.037	.036	.054	.058	.054	.28
Education							
Less than 12 years	103	.027	.035	.037	.033	.041	.27
12 years	122	.032	.027	.027	.015	.025	.13
More than 12 years	84	.022	.022	.070	.078	.076	1.04
Religion							
Catholic	77	.049	.057	.052	.045	.055	.45
Protestant	152	.030	.022	.024	.026	.032	.11
Other or none	58	.067	.073	.070	.047	.079	.81
Place of residence							
Metropolitan	155	.027	.028	.021	.020	.026	.12
Nonmetropolitan	92	.026	.044	.042	.064	.058	.28
Geographic region							
Northeast	65	.062	.077	.091	.056	.050	.40
North Central	98	.025	.031	.040	.041	.032	.32
South	106	.030	.031	.041	.038	.043	.20
West	86	.049	.052	.040	.036	.034	.25

[1]Probabilities for each characteristic are adjusted for the effects of all other characteristics in the table by means of dummy-variable multiple regression analysis. See the Technical Notes for further discussion of the adjustments.

[2]Includes all women reporting any Hispanic origin, regardless of race or other ethnic origins reported; estimates for the 4th and 5th years of divorce are not shown because the conditional probabilities produced for those years, from which the cumulative probabilities are calculated, are based on fewer than 10 unweighted cases. Data for women of Hispanic origin are also included in the statistics by race.

groups of a particular characteristic had included exactly the same proportions of women with each of the other characteristics in the table. For example, consider the characteristic "duration of first marriage," which has been divided into the two subgroups, "less than 5 years" and "5 years or more." The adjusted probabilities of remarriage for each of these two subgroups are those that would have occurred if both groups of women (those married less than 5 years and those married 5 years or more) had contained exactly the same proportions of white women, black women, and Hispanic women; the same proportions of women who were divorced prior to age 25 and at 25 or older; the same proportions from metropolitan and nonmetropolitan areas; and so on. This adjustment permits comparisons of the effects of each characteristic on the chances of remarriage independent of the effects of all other characteristics. Further discussion of this adjustment procedure can be found in the Technical Notes.

In addition to cumulative probabilities of remarriage, both table 1 and table 2 include the median years to remarriage for each group of women. This statistic represents the number of years it took for the cumulative probability of remarriage to reach .50: the number of years it took for half the women to remarry.

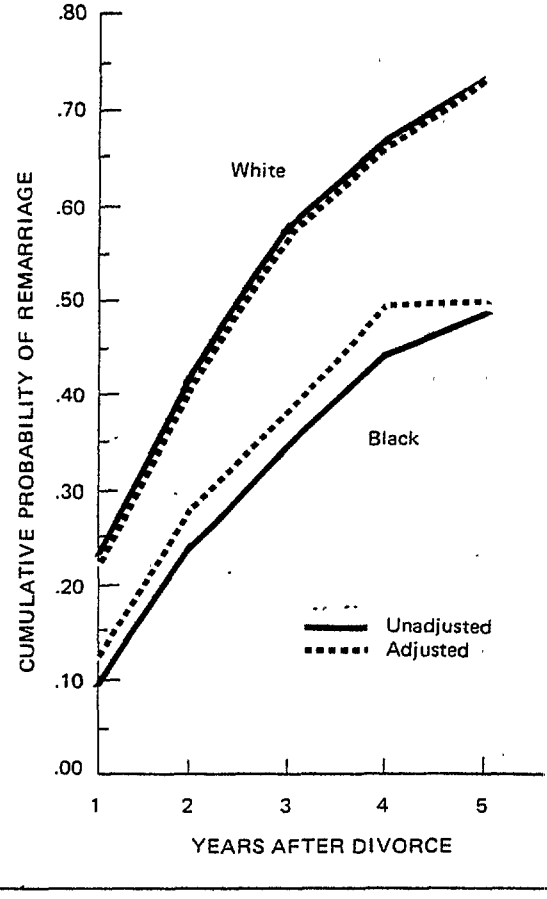
DIFFERENTIALS IN PROBABILITIES OF REMARRIAGE

An examination of table 1 reveals that white women had a higher probability than black women of remarrying within 1 year after divorce; the probability was .221 for white women compared with only .097 for black women. Further, this racial differential increased during the second and third years following divorce, so that by the end of the third year the difference was .236, nearly twice the difference found at the end of 1 year. The difference was then maintained at about this level during the next 2 years following divorce, and by the end of 5 years the probability of remarriage was .731 for white women and .485 for black women.

The magnitude of the racial difference in the likelihood of remarriage is illustrated in the number of years it took for the probability of remarriage to reach .50 (median years to remarriage). For white women this occurred after about 2.5 years, but for black women the probability was still less than .50 after 5 years.

An adjustment for the effects of the other characteristics in the table has little effect on the racial differences shown in table 1 (see figure 1). Although the racial differences in the adjusted probabilities shown in table 2 are somewhat smaller at each duration after divorce, all differences remain statistically significant. That the adjustment has little effect indicates that racial differences in the probability of remarriage are largely unrelated to the other characteristics in the table; that is, the greater probability of remarriage for white women was not due to other characteristics in the table associated with high probabilities of remarriage.

Figure 1. UNADJUSTED AND ADJUSTED CUMULATIVE PROBABILITY OF REMARRIAGE FOR WOMEN AGED 15-44 YEARS WHOSE 1ST MARRIAGE ENDED IN DIVORCE, BY RACE AND NUMBER OF YEARS AFTER DIVORCE: UNITED STATES, 1976



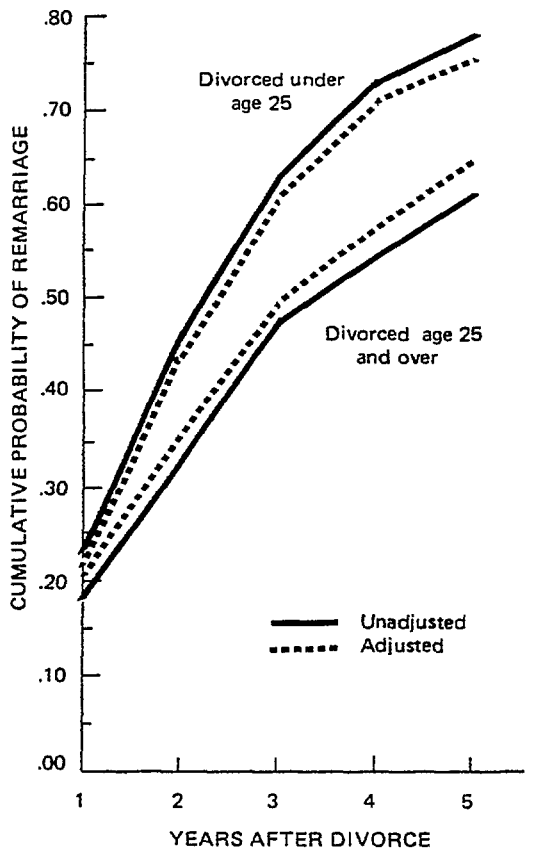
During the first year following divorce the probability of remarriage for Hispanic women was not significantly different from that found for either all white women or all black women. However, their probability of remarriage increased rapidly over the next 2 years following divorce and by the end of the third year had reached .761. Although that probability is not significantly different from the .578 found for all white women, it is greater than the .342 found for black women. Adjustment for the effects of the other characteristics in the table has no effect on these relationships.

Women whose divorce occurred prior to age 25 had higher probabilities of remarriage by the end of both the second and third years after divorce than those whose divorce occurred at an older age. There is also some evidence that the probabilities of remarriage were higher for the younger women at the end of the fourth and fifth years following divorce as well. The difference in probabilities between the two groups of women ranges from a nonsignificant .048 at the end of the first year to .186 at the end of 4 years. When the probabilities are adjusted for the effects of the other characteristics, the differences are reduced, but the relationship persists: The younger women were more likely to have remarried by the end of the third and fourth years after divorce, and there is some evidence they were more likely to have remarried within 5 years as well. However, the difference at the end of the fifth year is reduced from .174 to .109 (see figure 2).

A comparison of women who divorced before 1970 with those who divorced in 1970 or later shows that both groups of women had a similar probability of remarrying within 1 year after divorce, but that at higher durations of divorce (second through fifth years), women who divorced during the earlier time period were more likely to have remarried (see table 1). This does not mean that the probability of remarriage has decreased over time for all groups, however. Year of divorce and likelihood of remarriage are related because women who were divorced before 1970 were more likely to have other characteristics in the table associated with high probabilities of remarriage. The factors probably accounting for most of the difference in the unadjusted probabilities are age at divorce and educational attainment. Women divorced before 1970 were more likely to have divorced prior to age 25 than those divorced after 1970 (about 60 percent compared with about 39 percent) and to have had less than a high school education (about 39 percent compared with about 25 percent). When the effects of these characteristics are removed through the adjustment procedure, no statistically significant differences in the probabilities of remarriage between the two groups of women remain (see table 2).

Similar results were found when the relationship between duration of first marriage and probability of remarriage was examined. By the end of the fourth year following divorce, women whose first marriage lasted less than 5 years had a significantly greater probability of having re-

Figure 2. UNADJUSTED AND ADJUSTED CUMULATIVE PROBABILITY OF REMARRIAGE FOR WOMEN AGED 15-44 YEARS WHOSE 1ST MARRIAGE ENDED IN DIVORCE, BY AGE AT DIVORCE AND NUMBER OF YEARS AFTER DIVORCE: UNITED STATES, 1976



married than women whose first marriage lasted 5 years or longer. This excess was also maintained during the fifth year, and there is some evidence that it had already existed at the end of the second and third years as well. When the probabilities are adjusted, however, only nonsignificant differences remain, and no clear pattern of differences is evident. The effects of the adjustment demonstrate that the duration of a woman's first marriage had little or no effect on the likelihood of her remarrying. Differences in the probability of remarriage by length of first marriage were due to differences in other characteristics in the table that were associated with a high probability of remarrying. The factor probably accounting for most of the differences in the unadjusted probabilities is age at divorce. Women who had first marriages lasting less than 5 years were more likely to have divorced before age 25 than those married 5 years or longer (about 77 percent compared with about 12 percent).

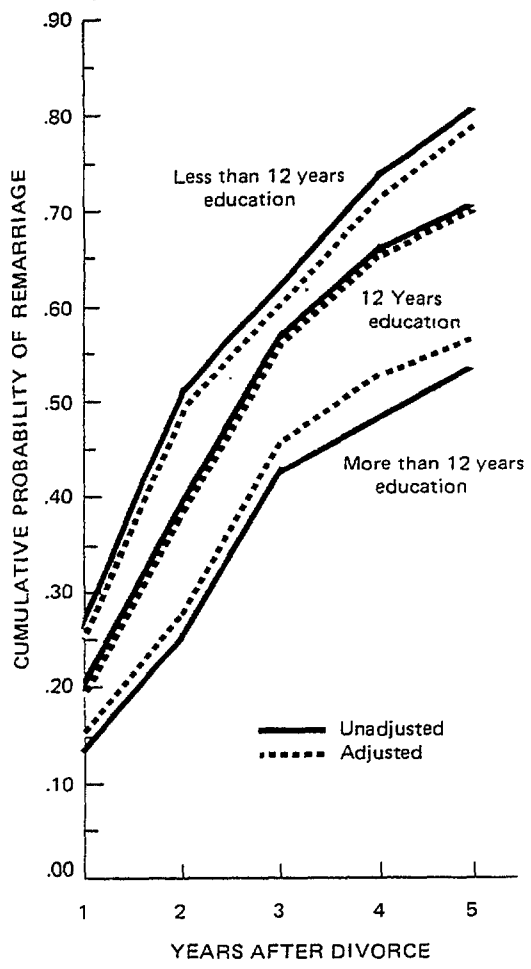
Table 1 shows no statistically significant differences in remarriage probabilities by number of children at any duration of divorce. Women with no living children or only one child did have consistently higher probabilities at each duration than those with two or more living children, but even these nonsignificant differences are reduced by the adjustment procedure. The number of children a woman had when she divorced had little influence on her probability of remarrying during the first 5 years after divorce.

Probabilities of remarriage show a consistent relationship with educational attainment at all durations of divorce: the greater the educational attainment, the lower the probability of having remarried. At the end of the first year following divorce, women with less than 12 years of education were about twice as likely to have remarried as those with more than 12 years. They were also significantly more likely to have remarried by the end of the first, second, and fifth years after divorce, and there is evidence that they were more likely to have remarried by the end of the third and fourth years. The difference between those with less than 12 years of education and those with more than 12 years ranges from .131 at the end of 1 year of divorce to .272 at the end of 5 years.

These substantial educational differences are also reflected in the time it took for the probability of remarriage to reach .50. Although the differences are not statistically significant, the median number of years to remarriage was 2 years for women with less than 12 years of education compared with more than 4 years for women with more than 12 years of education.

The statistical adjustment for the effects of the other characteristics in the table has little influence on the relationship between educational attainment and probability of remarriage (see figure 3). Women with less than 12 years of education remain significantly more likely than

Figure 3. UNADJUSTED AND ADJUSTED CUMULATIVE PROBABILITY OF REMARRIAGE FOR WOMEN AGED 15-44 YEARS WHOSE 1ST MARRIAGE ENDED IN DIVORCE, BY EDUCATION AND NUMBER OF YEARS AFTER DIVORCE: UNITED STATES, 1976



college-educated women to have remarried during the first and second years after divorce, and some evidence of a difference by the end of the fifth year also remains. After adjustment, the difference in remarriage probabilities between the two groups of women ranges from .105 at the end of 1 year to .228 at the end of 5 years.

The religion of a woman appears to have little relationship to her probability of remarrying. Although Catholic women had consistently lower probabilities of remarriage at every duration than Protestant women, no differences by religion are statistically significant.

The probabilities of remarriage shown for residents of metropolitan areas are lower than those shown for residents of nonmetropolitan areas in the second through fifth years following divorce, and there is some evidence of a difference in the first year. When the probabilities are adjusted for the other characteristics in the table, however, a substantial convergence occurs, with statistically significant differences remaining for only the second and third years after divorce. Thus, much of the residential difference in the likelihood of remarriage was due to residential differences in the likelihood of having the other characteristics in the table. In particular, metropolitan residents were more likely than nonmetropolitan residents to be college educated (about 24 percent compared with about 15 percent) and more likely to be black (about 15 percent compared with about 4 percent).

There is no consistent relationship between geographic region of residence and the probability of remarriage. All differences for both unadjusted and adjusted probabilities are statistically nonsignificant.

TECHNICAL NOTES

SURVEY DESIGN

The National Survey of Family Growth (NSFG) was designed to provide data on fertility, family planning, and related aspects of maternal and child health. The NSFG is a cyclic survey; that is, data are collected every few years by means of a sample survey. Fieldwork for Cycle II was carried out by Westat, Inc., from January through September 1976.

A multistage probability sample of women in the household population of the conterminous United States was used in both cycles. Each time, approximately 33,000 households were screened to identify the sample of women eligible for NSFG: women 15-44 years of age who were either currently married, previously married, or never married but with offspring presently living in the household. For Cycle II, interviews were completed with 3,009 black women and 5,602 women of other races. A detailed description of the sample design for Cycle II is in preparation.

RELIABILITY OF ESTIMATES

Since the statistics presented in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaires, instructions, interviewing personnel, and field procedures. This chance difference between sample results and a complete count is referred to as sampling error. In addition, the results are subject to nonsampling error due to respondent misreporting, processing errors, and nonresponse. It is very difficult, if not impossible, to obtain accurate measures of nonsampling errors. These types of errors were kept to a minimum by the quality-control procedures and other methods incorporated into the survey design and administration.

Sampling error, or the extent to which samples may differ by chance from a complete count, is measured by a statistic called the standard error of the estimate. Estimates for standard

errors of estimated numbers, probabilities, and medians, all calculated by pseudoreplication, are shown in tables 1 and 2.

The chances are about 68 out of 100 that an estimate from the sample will differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the differences between the sample estimate and a complete count will be less than 1.8 times the standard error and about 95 out of 100 that the difference will be less than 2.2 times the standard error. The relative standard error is the ratio of the standard error to the statistic being estimated. In this report, numbers, probabilities, and medians having a standard error more than 25 percent of the estimate itself are considered unreliable. They are marked with an asterisk to caution the user when interpreting results involving unreliable estimates.

In this report, terms such as "similar" and "the same" mean that any observed difference between two estimates being compared is not statistically significant. Similarly, terms such as "greater," "less," "larger," and "smaller" indicate that the observed differences are statistically significant at the .05 level. Statements about differences that are qualified in some way (e.g., by use of the phrase "some evidence") indicate that the difference is significant at the .10 level but not the .05 level. Significance at the .05 level means that the difference is large enough that in repeated samples of the same size and type as this one, such a large difference would be expected to be found in less than 5 percent of the samples. Significance at the .10 level means that such a large difference would be expected to be found in less than 10 percent of such repeated samples. The t-test (with 10 degrees of freedom) was used to test all comparisons. Lack of comment in the text does *not* mean that the difference between any two statistics was tested and found not to be significant.

Adjustment for nonsampling error due to nonresponse is made in two ways. Nonrespondent cases, as distinct from missing data items, are imputed by weighting for nonresponse within each primary sampling unit, stratum, and age-race category. Cases with missing data are allocated among the cells of a table in proportion to the distribution of known cases with the same characteristics.

CALCULATION OF REMARRIAGE PROBABILITIES

The basic statistics in this report are unadjusted and adjusted cumulative probabilities of remarriage for selected subgroups of the population of women whose first marriage ended in divorce. They are calculated as follows.

Unadjusted Probabilities

The unadjusted probabilities of remarriage are calculated for each group by

(1) Determining the *conditional* probability of remarriage for each of the first 5 years after divorce (the probability that a woman will remarry during each year *given* that she had not remarried during any of the previous years).

(2) Converting conditional probabilities of remarriage to nonconditional ones (probabilities of remarrying during each year following divorce).

(3) Cumulating nonconditional probabilities to produce cumulative probabilities of remarriage (probabilities of remarrying within a given number of years after divorce).

In algebraic notation, let

x = number of years after divorce occurred;

M_x = number of women whose divorce occurred at least x years ago who remarried during the xth year following divorce;

N_x = number of women whose divorce occurred at least x years ago who had not remarried by the end of the xth year following divorce;

CQ_x = *conditional* probability of remarriage during the xth year following divorce;

Q_x = *nonconditional* probability of remarriage during the xth year following divorce; and

$CUMQ_x$ = cumulative probability of remarriage within x years following divorce.

Then

$$CQ_x = M_x / (M_x + N_x);$$

$$Q_x = CQ_x (1. - \sum_{n=0}^{x-1} Q_n); \text{ and}$$

$$CUMQ_x = \sum_{n=1}^{x} Q_n.$$

The quantity described as the unadjusted probability of remarriage and discussed in detail in this report is $CUMQ_x$, the cumulative probability of remarrying within x years following divorce.

Since CQ_x is based on the marital experiences of women who were divorced at least x years before the survey date, the experiences of women divorced less than 5 years are not represented in all CQ_x values. For example, the experiences of women divorced only 3 years are included in the calculation of CQ_1, CQ_2, and CQ_3, but not in CQ_4 and CQ_5. Thus $CUMQ_x$ is interpreted with the assumption that women not yet divorced for x years have the same probability of remarriage during year x as those divorced x years or longer.

Adjusted Probabilities

The technique used to produce the *adjusted* cumulative probabilities of remarriage for this report is dummy-variable multiple regression analysis. The effects of the adjustment are discussed in detail in the text, and the adjustment procedure is discussed here.

Five separate regressions, one corresponding to each 1-year interval in the first 5 years following divorce, are used to produce the adjusted probabilities. The dependent variable for each interval-specific regression is a dichotomous variable on which all women who remarried during the interval are assigned a score of 1, and all other women are assigned a score of 0. Since all women who remarried during an interval are deleted from all regressions specific to subsequent intervals, and since only women who were exposed to the chances of remarriage for the entire interval are included in the regression for that interval, the mean value of the dependent variable for each regression is the *conditional probability* of remarriage for all women in that interval.

The independent variables representing the characteristics of women are also represented by dichotomous, "dummy," variables. The coefficients of these dummy independent variables can be used to directly calculate *adjusted* conditional probabilities for women of each subgroup. For example, adjusted conditional probabilities for metropolitan and nonmetropolitan residents are calculated as follows.

Let

CQ_x = conditional probability of remarriage for all women during the xth year following divorce;

$\widehat{CQ}_x^n$ = adjusted conditional probability of remarriage for nonmetropolitan residents during the xth year following divorce;

$\widehat{CQ}_x^m$ = adjusted conditional probability of remarriage for metropolitan residents during the xth year following divorce;

A_x = constant for the regression specific to the xth year following divorce;

B_{1x} = coefficient for the dummy independent variable, place of residence;

D_{1x} = mean value of the dummy independent variable, type of residence (where metropolitan = 1 and nonmetropolitan = 0);

B_{ix} = coefficient for the ith independent variable in the regression equation for the xth year following divorce; and

D_{ix} = mean value for the ith independent variable in the regression for the xth year following divorce.

Then

$$CQ_x = A_x + B_{1x} \cdot D_{1x} + \sum_{i=2}^{n} B_{ix} \cdot D_{ix}$$

where n = the number of independent variables in the equation;

$$\hat{CQ}_x^n = A_x + \sum_{i=2}^{n} B_{ix} \cdot D_{ix}; \text{ and}$$

$$\hat{CQ}_x^m = A_x + B_{1x} + \sum_{i=2}^{n} B_{ix} \cdot D_{ix}$$

The same general procedure is used to calculate adjusted probabilities for women with other characteristics. After adjusted conditional probabilities are determined for each subgroup and year in the above manner, the conditional probabilities are converted to nonconditional probabilities and then to cumulative probabilities by using the same procedure outlined for unadjusted probabilities.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

advancedata

FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service Office of Health Research, Statistics, and Technology | Number 59 • March 28, 1980

Trends in Breast Feeding[1]

INTRODUCTION

Findings presented in this report from Cycle II of the National Survey of Family Growth (NSFG) confirm a significant reversal of the trends in breast feeding among American mothers described in detail in an earlier report based on Cycle I of the survey.[2] These data show that the downward trend that had been in progress since the 1950's was reversed in the early 1970's.

In 1973 the proportion of babies breast fed was 25 percent; in 1975 it was 35 percent. Breast feeding was more common among white women than black women: 33 percent of the babies born to white women in 1973-75 were breast fed, compared with only 15 percent of the babies born to black women. Also, breast feeding was more common among women with more years of education: 48 percent of babies born in 1973-75 to mothers with more than 12 years of education were breast fed, compared with 24 percent of the babies born to women with 12 years of education or less.

These findings are based on a special analysis of data from Cycle II, conducted in 1976 by the National Center for Health Statistics, and are reported in the Advance Data series because they substantiate the tentative conclusion of the earlier report that breast feeding was increasing. The data were collected by personal interviews with women in a representative sample of households in the conterminous United States. Women were eligible for the interview if they were 15-44 years of age and either married, divorced, widowed, or never married but with offspring living in the household. The statistics in this report are for babies born to women in the sampled population during 1973-75.

The statistics in this report may differ from those which would be obtained from a complete enumeration of the population because of sampling variability. The sample design, sampling variability, and definitions of terms are discussed in the Technical Notes.

To obtain information about breast feeding, mothers were asked about each baby who had lived with them for 2 months or more: "Did you breast feed him (or her) at all?" If she had breast fed at all, she was also asked: "How many weeks old was he (or she) when you quit breast feeding him (or her) altogether?" Table 1 shows the estimated number of babies born in 1973-75 and the percent breast fed at all (wholly or partially), by year of the birth, birth order, baby's sex, mother's race, and mother's education.

FINDINGS

About 25 percent of the babies born in 1973 were breast fed, but that figure increased to nearly 35 percent in 1975 for an average of 30 percent over the period 1973-75. Because these estimates are based on small samples, differences of a few percentage points may reflect chance sampling variation, not true differences in the population. However, the probability is less than 0.10 that the difference between the 1973 and 1975 estimates resulted from chance. It is

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[1]This report was prepared by Gerry E. Hendershot, Ph.D., Division of Vital Statistics.

[2]National Center for Health Statistics: Trends in breast feeding among American mothers, by C. Hirschman and G. Hendershot. *Vital and Health Statistics.* Series 23-No. 3. DHEW Pub. No. (PHS) 79-1979. Public Health Service. Washington. U.S. Government Printing Office, Nov. 1979.

Table 1. Number of babies who lived with their mother for 2 months or more and percent breast fed, by year of baby's birth, baby's birth order, baby's sex, mother's race, and mother's education: United States, 1973-75

Characteristic	Year of baby's birth							
	1973-75	1975	1974	1973	1973-75	1975	1974	1973
	Number in thousands				Percent breast fed			
Total[1]	9,379	2,939	3,269	3,171	29.8	34.5	30.6	24.7
Birth order								
First	3,903	1,176	1,318	1,410	33.2	37.0	37.2	26.3
Second	3,068	960	1,175	934	29.4	35.9	27.9	*24.5
Sex of baby								
Male	4,689	1,424	1,704	1,561	28.1	32.8	29.4	22.5
Female	4,690	1,515	1,564	1,610	31.5	36.1	31.9	26.8
Mother's race								
White	7,743	2,401	2,761	2,581	32.7	37.8	33.6	27.1
Black	1,425	491	458	476	*14.9	*16.8	*15.6	*12.3
Mother's education								
12 years or less	6,978	2,152	2,410	2,416	23.5	28.2	23.6	19.2
More than 12 years	2,383	775	852	755	48.1	51.9	49.9	42.2

[1] Includes third and higher order births, races other than white or black, and unknown education.

likely, therefore, that the difference reflects a true increase in breast feeding. That conclusion is supported by the consistency of the increase in subgroups of the population: in every category of birth order, sex, race, and education shown in table 1 the percent breast fed is greater for 1975 than for 1973, although due to sampling variability none of these individual differences is statistically significant in itself.

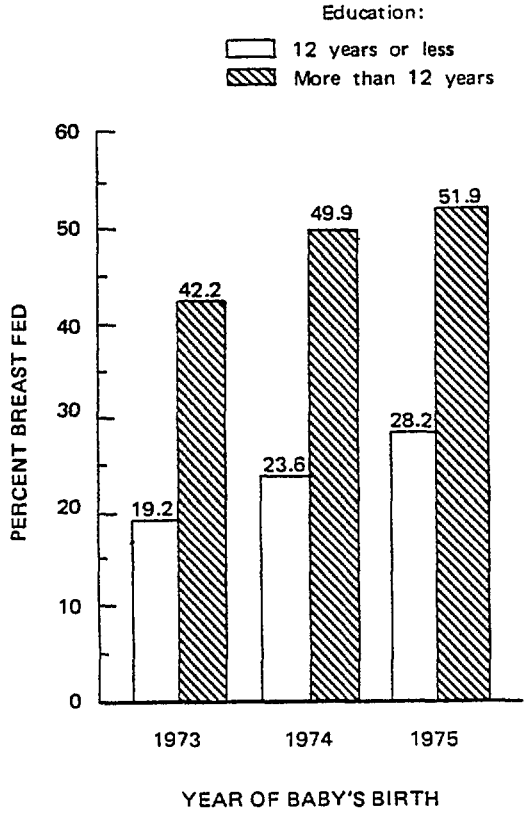
The increase in breast feeding between 1973 and 1975 confirms the tentative observation in an earlier report,[2] based on Cycle I of the National Survey of Family Growth, that the downward trend in breast feeding which had been in progress since the 1950's was reversed in the early 1970's. Although breast feeding still was not as common in 1975 as it was in the 1940's (when more than one-half of babies were breast fed), it was more common in 1975 than in the late 1960's (when less than one-fourth of babies were breast fed).

Breast feeding became more common in the early 1970's, but it continued to be of relatively short duration for most babies. In the Cycle I report cited before it was estimated that about 7 percent of babies born in 1971-73 were breast fed for 3 months or more. The Cycle II estimate of that figure in 1973-75 is about 4 percent. While the difference between these estimates is not large enough to conclude with statistical confidence that there was a decrease in longer term breast feeding, it may be concluded that there was no significant increase. Thus, although the proportion of babies receiving some breast feeding increased in the early 1970's, the proportion breast fed for long periods did not increase. For a large majority of breast-fed babies, breast feeding ended before age 3 months, much younger than the 5-6 months recommended by pediatric authorities.[3]

The large differences between the breast-feeding practices of black and white women which were found in the Cycle I report continued in 1973-75: in each of these years, babies born

[3] Fomon, S. J., et al.: Recommendations for feeding normal infants. *Pediatrics* 63(1):52-59, Jan. 1979.

PERCENT OF BABIES WHO WERE BREAST FED, BY YEAR OF BABY'S BIRTH AND MOTHER'S EDUCATION: UNITED STATES, 1973-75



to white mothers in the sample were more than twice as likely to be breast fed as babies born to black mothers. In fact, the racial difference in breast feeding appeared to be larger in 1975 than in 1973, although the increase was not statistically significant. The difference in breast feeding by educational attainment noted in the earlier report also continued in 1973-75: babies born to women in the sample with more than 12 years of education were more than twice as likely to be breast fed as other babies. By 1974 about one-half of babies born to women with some college education were breast fed (see the figure). Thus breast feeding continued to be more prevalent in relatively advantaged segments of the population.

Differences in the percent breast fed by birth order and sex are not large (table 1), and in no case are they statistically significant. However, the slightly higher percent breast fed among first-born babies than second-born babies also was found in the Cycle I report. This consistency between survey findings is evidence that the difference by birth order for 1973-75 shown in table 1 is probably real.

TECHNICAL NOTES

SAMPLE DESIGN AND RELIABILITY OF ESTIMATES

In Cycle II of the National Survey of Family Growth interviews were conducted with women living in households selected by a multistage area probability design. Sampling and interviewing were done by Westat, Inc., from January through September 1976. About 93 percent of sample households (33,000) were successfully screened for eligible women, and about 88 percent of identified eligible women (8,611) were interviewed, an overall response rate of about 82 percent. The statistics in this report are estimates for the national population and were computed by multiplying each sample case by the number of women she represented in the population. The multipliers, or "weights," ranged from 647 to 43,024 and averaged 3,822.

Because the estimates are based on a sample rather than the whole population, they are subject to sampling variability, chance differences between the sample estimate and the actual population value. Sampling variability is measured by a statistic called the standard error. Provisional approximate standard errors for numbers and percents of babies are shown in tables I and II. Because of different sampling rates for the samples of black women and white women, standard errors for statistics based on these two racial groups are somewhat different. The estimates in tables I and II should be multiplied by 1.05 for black women and by 0.97 for white women. Estimates for numbers and percents not shown in the tables may be approximated by interpolation. In this report statistics whose standard error was 25 percent or more of the estimate itself were considered unreliable, and they are marked with an asterisk. Unreliable estimates should be used only with great caution.

Table I. Provisional approximate standard errors for estimated numbers of babies: National Survey of Family Growth, 1976

Size of estimate	Standard error
500,000	113,000
1,000,000	159,000
2,500,000	251,000
5,000,000	351,000
10,000,000	485,000

Table II. Provisional approximate standard errors expressed in percentage points for estimated percents of babies: National Survey of Family Growth, 1976

Base of percent	Estimated percent				
	10	20	30	40	50
700,000	5.8	7.6	8.7	9.4	9.6
1,000,000	4.8	6.4	7.3	7.8	8.0
3,000,000	2.7	3.7	4.3	4.5	4.6
7,000,000	1.9	2.4	2.7	2.9	3.1
10,000,000	1.5	2.1	2.3	2.5	2.5

The differences between statistics in this report are also subject to sampling variability. All differences mentioned in the text were tested for statistical significance. If a difference is asserted without qualification in the text, it is significant at the 0.05 level—there is less than 1 chance in 20 that the difference resulted from a chance sampling fluctuation. Where a significance level of 0.10 was used—less than 1 chance in 10 that a difference occurred by chance—that is specified in the text. Differences described as "not statistically significant" could have occurred by chance in more than 10 percent of repeated samples. Absence of comment about a difference does not necessarily mean that it was tested and found to be not statistically significant.

Estimates of numbers of babies shown in this report may differ from numbers of births in the same period obtained from the vital registration system for several reasons: (1) These estimates are based on a sample, while the birth registration system is a mechanism for registering all births occurring within the United States; (2) the sample did not include Alaska and Hawaii, military bases, group quarters, or institutions; (3) babies born in the period who did not live with their mother for at least 2 months after birth are not included in this report. For numbers of births, Volume I of *Vital Statistics of the United States* for 1973, 1974, and 1975 should be consulted.

DEFINITIONS OF TERMS

Breast feeding.—Babies who lived with their mothers for at least 2 months after birth and whose mothers reported they had been breast fed "at all" are classified as having been breast fed. Included in this definition are both "long-term" breast feeding (3 months or more) and "short-term" breast feeding (less than 3 months) and both supplemented and unsupplemented breast feeding.

Race.—Classification of the race of the respondent as white, black, or other is based on observation by the interviewer.

Education.—Women are classified according to the highest year of regular schooling they reported having completed.

Birth order.—Babies are classified according to their numerical order among the live births reported by their mother—first, second, and so on. Babies within multiple live births are assumed to have been born in the order reported by their mother.

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision (more than 30 percent relative standard error)	*

advancedata
FROM VITAL & HEALTH STATISTICS OF THE NATIONAL CENTER FOR HEALTH STATISTICS
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service Office of Health Research, Statistics, and Technology | Number 60 • April 23, 1980

1978 Summary: National Ambulatory Medical Care Survey[1]

During 1978 an estimated 584.5 million office visits—an average of 2.8 per person per year—were made to nonfederally employed, office-based physicians in the conterminous United States. These and other estimates presented in this report highlight the findings of the National Ambulatory Medical Care Survey (NAMCS), a probability sample survey conducted yearly by the Division of Health Resources Utilization Statistics of the National Center for Health Statistics. With cooperation from the American Medical Association and the American Osteopathic Association, the survey sample is selected from a list of nonfederally employed doctors of medicine and osteopathy who are principally engaged in office-based practice. In its current scope, NAMCS excludes physicians practicing in Alaska and Hawaii and physicians whose specialties are anesthesiology, pathology, or radiology.

Figure 1 is a facsimile of the 1978 Patient Record used by participating physicians to record information about their office visits.

The body of the report consists of 9 tables designed to supply data on various aspects of office-based ambulatory care, as follows:

Table 1: Physician specialty and type of practice
Table 2: Sex, age, and race of patient
Table 3: Referral information, time since onset of complaint, and prior visit status
Tables 4 and 5: Reason for the visit expressed by the patient
Tables 6 and 7: Diagnosis rendered by the physician
Table 8: Diagnostic and therapeutic services ordered or provided
Table 9: Seriousness of the problem and duration and disposition of visit

Since the estimates presented in this report are based on a sample rather than on the entire universe of office-based physicians, the data are subject to sampling variability. The Technical Notes at the end of this report provide a brief explanation and guidelines for judging the precision of the estimates presented. A more detailed description of the sample and definitions of certain terms used in NAMCS have been published.[2]

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[1]This report was prepared by Hugo Koch and Thomas McLemore, Division of Health Resources Utilization Statistics.

[2]National Center for Health Statistics: The National Ambulatory Medical Care Survey, 1975 Summary, United States, January-December, 1975, by H. Koch and T. McLemore. *Vital and Health Statistics.* Series 13-No. 33. DHEW Pub. No. (PHS) 78-1784. Public Health Service. Washington. U.S. Government Printing Office, Jan. 1978.

Figure 1. 1978 PATIENT RECORD

ASSURANCE OF CONFIDENTIALITY—All information which would permit identification of an individual, a practice, or an establishment will be held confidential, will be used only by persons engaged in and for the purposes of the survey and will not be disclosed or released to other persons or used for any other purpose.

D

1. DATE OF VISIT Mo / Day / Yr

PATIENT RECORD
NATIONAL AMBULATORY MEDICAL CARE SURVEY

TIME OF VISIT

2. DATE OF BIRTH Mo / Day / Yr

3. SEX
1 ☐ FEMALE
2 ☐ MALE

4. COLOR OR RACE
1 ☐ WHITE
2 ☐ NEGRO/BLACK
3 ☐ OTHER
4 ☐ UNKNOWN

5. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN?
1 ☐ YES
2 ☐ NO

6. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT *(In patient's own words)*
a. MOST IMPORTANT _____
b. OTHER _____

a.m. / p.m. / a.m. / p.m. / a.m. / p.m. / a.m. / p.m.

7. TIME SINCE ONSET OF COMPLAINT/SYMPTOM IN ITEM 6a *(Check one)*
1 ☐ LESS THAN 1 DAY
2 ☐ 1-6 DAYS
3 ☐ 1-3 WEEKS
4 ☐ 1-3 MONTHS
5 ☐ MORE THAN 3 MONTHS
6 ☐ NOT APPLICABLE

8. PHYSICIAN'S DIAGNOSES
a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 6a
b. OTHER SIGNIFICANT CURRENT DIAGNOSES

9. HAVE YOU SEEN PATIENT BEFORE?
1 ☐ YES 2 ☐ NO
IF YES, FOR THE CONDITION IN ITEM 8a?
1 ☐ YES 2 ☐ NO

10. SERIOUSNESS OF CONDITION IN ITEM 8a *(Check one)*
1 ☐ VERY SERIOUS
2 ☐ SERIOUS
3 ☐ SLIGHTLY SERIOUS
4 ☐ NOT SERIOUS

11. DIAGNOSTIC SERVICES THIS VISIT *(Check all ordered or provided)*
1 ☐ NONE
2 ☐ LIMITED EXAM/HISTORY
3 ☐ GENERAL EXAM/HISTORY
4 ☐ PAP TEST
5 ☐ CLINICAL LAB TEST
6 ☐ X-RAY
7 ☐ EKG
8 ☐ VISION TEST
9 ☐ ENDOSCOPY
10 ☐ BLOOD PRESSURE CHECK
11 ☐ OTHER *(Specify)* _____

12. THERAPEUTIC SERVICES THIS VISIT *(Check all ordered or provided)*
1 ☐ NONE
2 ☐ IMMUNIZATION/DESENSITIZATION
3 ☐ DRUGS (PRESCRIPTION/NONPRESCRIPTION)
4 ☐ DIET COUNSELING
5 ☐ FAMILY PLANNING
6 ☐ MEDICAL COUNSELING
7 ☐ PHYSIOTHERAPY
8 ☐ OFFICE SURGERY
9 ☐ PSYCHOTHERAPY/THERAPEUTIC LISTENING
10 ☐ OTHER *(Specify)* _____

13. DISPOSITION THIS VISIT *(Check all that apply)*
1 ☐ NO FOLLOW-UP PLANNED
2 ☐ RETURN AT SPECIFIED TIME
3 ☐ RETURN IF NEEDED, P.R.N.
4 ☐ TELEPHONE FOLLOW-UP PLANNED
5 ☐ REFERRED TO OTHER PHYSICIAN
6 ☐ RETURNED TO REFERRING PHYSICIAN
7 ☐ ADMIT TO HOSPITAL
8 ☐ OTHER *(Specify)* _____

14. DURATION OF THIS VISIT *(Time actually spent with physician)*
_____ MINUTES

HRA-34-2
REV. 9-76

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH RESOURCES ADMINISTRATION
NATIONAL CENTER FOR HEALTH STATISTICS

O.M.B. #68-R1498

Table 1. Number and percent distribution of office visits, by physician specialty and type of practice: United States, 1978

Physician characteristic	Number of visits in thousands	Percent distribution
All visits	584,498	100.0
Physician specialty		
General and family practice	211,017	36.1
Medical specialties	170,479	29.2
Internal medicine	68,331	11.7
Pediatrics	60,159	10.3
Other	41,989	7.2
Surgical specialties	179,805	30.8
General surgery	33,099	5.7
Obstetrics and gynecology	55,139	9.4
Other	91,567	15.7
Other specialties	23,196	4.0
Psychiatry	15,316	2.6
Other	7,880	1.4
Type of practice		
Solo	348,143	59.6
Other[1]	236,355	40.4

[1] Includes partnership and group practice.

Table 2. Number and percent distribution of office visits and number of office visits per person, per year, by race, age, and sex of patient: United States, 1978

Patient characteristic	Number of visits in thousands	Percent distribution	Number of visits per person per year
All visits	584,498	100.0	2.8
Race			
White	520,435	89.0	2.8
All other races	64,063	11.0	2.2
Age			
Under 15 years	108,917	18.6	2.2
15-24 years	86,495	14.8	2.2
25-44 years	153,655	26.3	2.7
45-64 years	141,508	24.2	3.3
65 years and over	93,924	16.1	4.1
Sex and age			
Female	349,244	59.8	3.7
Under 15 years	52,102	8.9	2.6
15-24 years	56,181	9.6	3.3
25-44 years	100,736	17.2	4.0
45-64 years	83,996	14.4	4.2
65 years and over	56,230	9.6	4.6
Male	235,254	40.2	2.6
Under 15 years	56,815	9.7	2.7
15-24 years	30,314	5.2	1.8
25-44 years	52,919	9.1	2.2
45-64 years	57,511	9.8	3.1
65 years and over	37,694	6.5	4.5

Table 3. Number and percent distribution of office visits, by patient's referral status, time since onset of complaint or symptom, and patient's prior visit status: United States, 1978

Visit characteristic	Number of visits in thousands	Percent distribution
All visits	584,498	100.0
Referral status		
Referred by another physician	28,568	4.9
Not referred by another physician	555,930	95.1
Time since onset of complaint or symptom		
Less than 1 day	23,706	4.1
1-6 days	126,892	21.7
1-3 weeks	87,808	15.0
1-3 months	75,861	13.0
More than 3 months	199,667	34.2
Not applicable[1]	70,564	12.1
Prior visit status		
New patient	87,386	15.0
Old patient	497,112	85.1
New problem	142,528	24.4
Old problem	354,584	60.7

[1]Includes chiefly visits not involving a symptom or complaint, e.g., annual examination, well-baby examination.

Table 4. Number and percent distribution of office visits, by the patient's principal reason for visit and NAMCS code: United States, 1978

Principal reason for visit and code[1]		Number of visits in thousands	Percent distribution
All reasons for visit		584,498	100.0
Symptom module	S001-S999	330,131	56.5
General symptoms	S001-S099	50,505	8.6
Symptoms referable to psychological and mental disorders	S100-S199	15,605	2.7
Symptoms referable to the nervous system (excluding sense organs)	S200-S259	18,025	3.1
Symptoms referable to the cardiovascular and lymphatic systems	S260-S299	3,438	0.6
Symptoms referable to the eyes and ears	S300-S399	34,570	5.9
Symptoms referable to the respiratory system	S400-S499	64,017	11.0
Symptoms referable to the digestive system	S500-S639	27,528	4.7
Symptoms referable to the genitourinary system	S640-S829	27,509	4.7
Symptoms referable to the skin, nails, and hair	S830-S899	33,567	5.7
Symptoms referable to the musculoskeletal system	S900-S999	55,367	9.5
Disease module	D001-D999	47,424	8.1
Diagnostic, screening, and preventive module	X100-X599	107,246	18.4
Treatment module	T100-T899	55,177	9.4
Injuries and adverse effects module	J001-J999	23,990	4.1
Test results module	R100-R700	3,622	0.6
Administrative module	A100-A140	8,626	1.5
Other[2]	U990-U999	8,282	1.4

[1]National Center for Health Statistics: A reason for visit classification for ambulatory care, by D. Schneider, L. Appleton, and T. McLemore, *Vital and Health Statistics*. Series 2-No. 78, DHEW Pub. No. (PHS) 79-1352, Public Health Service. Washington. U.S. Government Printing Office, Feb. 1979.

[2]Includes blanks, problems and complaints not elsewhere classified, entries of "none," and illegible entries.

Table 5. Number of office visits by the 20 most common principal symptoms and NAMCS code in rank order: United States, 1978

Rank	Most common principal symptom and code[1]		Number of visits in thousands
1	Symptoms referable to throat	S455	17,356
2	Cough	S440	15,122
3	Back symptoms	S905	11,811
4	Skin rash	S860	10,522
5	Head cold, upper respiratory infection	S445	10,111
6	Earache, or ear infection	S355	9,850
7	Chest pain and related symptoms (not referable to body system)	S050	9,693
8	Vision dysfunctions	S305	8,980
9	Headache, pain in head	S210	8,884
10	Abdominal pain, cramps, spasms	S550	8,852
11	Fever	S010	8,558
12	Weight gain	S040	8,237
13	Anxiety and nervousness	S100	5,929
14	Vertigo—dizziness	S225	5,565
15	Knee symptoms	S925	5,500
16	Nasal congestion	S400	5,432
17	Leg symptoms	S920	5,314
18	Acne or pimples	S830	5,226
19	Low back symptoms	S910	5,050
20	Neck symptoms	S900	4,799

[1]National Center for Health Statistics: A reason for visit classification for ambulatory care, by D. Schneider, L. Appleton, and T. McLemore, *Vital and Health Statistics*. Series 2-No. 78, DHEW Pub. No. (PHS) 79-1352, Public Health Service. Washington. U.S. Government Printing Office, Feb. 1979.

Table 6. Number and percent distribution of office visits, by principal diagnosis and ICDA code: United States, 1978

Principal diagnosis and ICDA code[1]	Number of visits in thousands	Percent distribution
All diagnoses	584,498	100.0
Infective and parasitic diseases .000-136	22,964	3.9
Neoplasms .140-239	16,095	2.8
Endocrine, nutritional, and metabolic diseases .240-279	25,224	4.3
Mental disorders .290-315	22,896	3.9
Diseases of the nervous system and sense organs .320-389	54,319	9.3
Diseases of the circulatory system .390-458	55,167	9.4
Diseases of the respiratory system .460-519	83,290	14.3
Diseases of the digestive system .520-577	20,109	3.4
Diseases of the genitourinary system .580-629	34,751	6.0
Diseases of the skin and subcutaneous tissue .680-709	37,519	6.4
Diseases of the musculosketal system .710-738	31,874	5.5
Symptoms and ill-defined conditions .780-796	26,227	4.5
Accidents, poisonings, and violence .800-999	46,896	8.0
Special conditions and examinations without sickness Y00-Y13	85,581	14.6
All other diagnoses[2]	8,201	1.4

[1]National Center for Health Statistics: *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.* PHS Pub. No. 1693, Public Health Service. Washington. U.S. Government Printing Office, 1967.

[2]Includes 280-289, diseases of the blood and blood-forming organs; 630-678, complications of pregnancy, childbirth, and the puerperium; 740-759, congenital anomalies; 760-779, certain causes of perinatal morbidity and mortality; blank diagnosis; noncodable diagnosis; and illegible diagnosis.

Table 7. Number of office visits by the 20 most common principal diagnoses and ICDA code in rank order: United States, 1978

Rank	Most common principal diagnosis and ICDA code[1]	Number of visits in thousands
1	Medical or special examination Y00	41,317
2	Essential benign hypertension 401	24,086
3	Prenatal care Y06	22,610
4	Acute upper respiratory infections of multiple or unspecified sites 465	16,487
5	Otitis media without mention of mastoiditis 381	13,350
6	Neuroses 300	11,556
7	Chronic ischemic heart disease 412	11,295
8	Hay fever 507	11,035
9	Other eczema and dermatitis 692	10,998
10	Medical and surgical aftercare Y10	10,754
11	Refractive errors 370	10,251
12	Acute pharyngitis 462	9,482
13	Diabetes mellitus 250	8,649
14	Diseases of sebaceous glands 706	8,656
15	Bronchitis, unqualified 490	8,184
16	Sprains and strains of other and unspecified parts of back 847	5,777
17	Asthma 493	5,575
18	Synovitis, bursitis, and tenosynovitis 731	5,567
19	Observation, without need for further medical care 793	5,010
20	Other viral diseases 079	4,945

[1]National Center for Health Statistics: *Eighth Revision International Classification of Diseases, Adapted for Use in the United States.* PHS Pub. No. 1693, Public Health Service. Washington. U.S. Government Printing Office, 1967.

Table 8. Number and percent of office visits, by diagnostic and therapeutic services ordered or provided: United States, 1978

Diagnostic and therapeutic services ordered or provided	Number of visits in thousands	Percent of visits
Diagnostic services		
None	53,252	9.1
Limited examination	361,404	61.8
General examination	124,266	21.3
Pap test	28,376	4.9
Clinical lab test	121,823	20.8
X-ray	47,937	8.2
Electrocardiogram	20,075	3.4
Vision test	28,049	4.8
Endoscopy	6,028	1.0
Blood pressure check	194,556	33.3
Other	23,542	4.0
Therapeutic services		
None	114,983	19.7
Immunization or desensitization	45,658	7.8
Drugs (prescription or nonprescription)	302,604	51.8
Diet counseling	43,209	7.4
Family planning	8,354	1.4
Medical counseling	113,285	19.4
Physiotherapy	21,231	3.6
Office surgery	45,197	7.7
Psychotherapy or therapeutic listening	29,300	5.0
Other	14,920	2.6

Table 9. Number and percent distribution of office visits, by seriousness of condition and disposition and duration of visit: United States, 1978

Visit characteristic	Number of visits in thousands	Percent distribution
All visits	584,498	100.0
Seriousness of condition[1]		
Serious and very serious	108,909	18.6
Slightly serious	186,918	32.0
Not serious	288,671	49.4
Disposition of visit[2]		
No followup	65,234	11.2
Return at specified time	353,784	60.5
Return if needed	131,078	22.4
Telephone followup planned	21,627	3.7
Referred to other physician	14,285	2.4
Returned to referring physician	4,226	0.7
Admit to hospital	13,200	2.3
Other	5,032	0.9
Duration of visit[3]		
0 minutes	19,696	3.4
1-5 minutes	89,753	15.4
6-10 minutes	170,829	29.2
11-15 minutes	156,935	26.9
16-30 minutes	114,730	19.6
31 minutes or more	32,496	5.5

[1]The physician's judgment as to the degree of impairment that might result if no treatment were given.

[2]Will not add to 100.0 since more than one disposition was possible.

[3]*0 minutes* represents visits at which there was no face-to-face contact between the patient and the physician. The mean duration of the visits that did involve physician-patient contact was 15.3 minutes.

TECHNICAL NOTES

SOURCE OF DATA AND SAMPLE DESIGN

The information presented in this report is based on data collected in the National Ambulatory Medical Care Survey (NAMCS) during 1978. The target universe of NAMCS encompasses office visits within the conterminous United States made by ambulatory patients to nonfederally employed physicians who are principally engaged in office practice. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the survey's field operations.

The NAMCS utilizes a multistage probability design that involves samples of primary sampling units (PSU's), physicians' practices within PSU's, and patient visits within practices. For 1978 a sample of 3,007 non-Federal, office-based physicians was selected from master files maintained by the American Medical Association and American Osteopathic Association. The physician response rate for 1978 was 72.8 percent. Sampled physicians were asked to complete Patient Records (figure 1) for a systematic random sample of office visits taking place within their practice during a randomly assigned weekly reporting period. During 1978, 47,291 Patient Records were completed by sampled physicians.

SAMPLE ERRORS AND ROUNDING OF NUMBERS

The standard error is primarily a measure of the sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error of the estimate by the estimate itself and is expressed as a percentage of the estimate. Relative standard errors of selected aggregate statistics are shown in tables I and II. The standard errors for estimated percentages of visits are shown in tables III and IV.

Estimates of office visits have been rounded to the nearest thousand. For this reason detailed figures within tables do not always add to totals. Percents were calculated on the basis of original, unrounded figures and will not necessarily agree precisely with percents calculated from rounded data.

Table I. Approximate relative standard errors of estimated number of office visits based on all physician specialties: NAMCS, 1978

Estimated number of office visits in thousands	Relative standard error in percent
500	25.8
1,000	18.4
2,000	13.3
5,000	9.0
10,000	7.0
20,000	5.7
50,000	4.8
100,000	4.4
500,000	4.1

Example of use of table: An aggregate of 75,000,000 visits has a relative standard error of 4.6 percent or a standard error of 3,450,000 visits (4.6 percent of 75,000,000).

Table II. Approximate relative standard errors of estimated number of office visits based on an individual physician specialty: NAMCS, 1978

Estimated number of office visits in thousands	Relative standard error in percent
500	28.5
1,000	21.0
2,000	15.9
5,000	11.9
10,000	10.2
20,000	9.2
50,000	8.6
100,000	8.3
200,000	8.2

Example of use of table: An aggregate of 15,000,000 visits has a relative standard error of 9.7 percent or a standard error of 1,455,000 visits (9.7 percent of 15,000,000).

Table III. Approximate standard errors of percent of estimated numbers of office visits based on all physician specialties: NAMCS, 1978

Base of percent (number of office visits in thousands)	Estimated percent					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
	Standard error in percentage points					
500	2.5	5.5	7.6	10.2	11.7	12.7
1,000	1.8	3.9	5.4	7.2	8.2	9.0
2,000	1.3	2.8	3.8	5.1	5.8	6.4
5,000	0.8	1.8	2.4	3.2	3.7	4.0
10,000	0.6	1.2	1.7	2.3	2.6	2.8
20,000	0.4	0.9	1.2	1.6	1.8	2.0
50,000	0.3	0.6	0.8	1.0	1.2	1.3
100,000	0.2	0.4	0.5	0.7	0.8	0.9
500,000	0.1	0.2	0.2	0.3	0.4	0.4

Example of use of table: An estimate of 30 percent based on an aggregate of 15,000,000 visits has a standard error of 2.2 percent or a relative standard error of 7.3 percent (2.2 percent ÷ 30 percent).

Table IV. Approximate standard errors of percent of estimated numbers of office visits based on an individual physician specialty: NAMCS, 1978

Base of percent (number of office visits in thousands)	Estimated percent					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
	Standard error in percentage points					
500	2.7	6.0	8.2	10.9	12.5	13.7
1,000	1.9	4.2	5.8	7.7	8.9	9.7
2,000	1.4	3.0	4.1	5.5	6.3	6.8
5,000	0.9	1.9	2.6	3.5	4.0	4.3
10,000	0.6	1.3	1.8	2.4	2.8	3.1
20,000	0.4	0.9	1.3	1.7	2.0	2.2
50,000	0.3	0.6	0.8	1.1	1.3	1.4
100,000	0.2	0.4	0.6	0.8	0.9	1.0
200,000	0.1	0.3	0.4	0.5	0.6	0.7

Example of use of table: An estimate of 90 percent based on an aggregate of 7,500,000 visits has a standard error of 2.2 percent, or a relative standard error of 2.4 percent (2.2 percent ÷ 90 percent).

DEFINITIONS

Ambulatory patient.—An ambulatory patient is an individual presenting himself for personal health services who is neither bedridden nor currently admitted to any health care institution on the premises.

Office.—An office is a place that the physician identifies as a location for his ambulatory practice. Responsibility over time for patient care and professional services rendered there generally resides with the individual physician rather than an institution.

Visit.—A visit is a direct personal exchange between an ambulatory patient and a physician or a staff member working under the physician's supervision for the purpose of seeking care and rendering health services.

Physician.—A physician is a duly licensed doctor of medicine (M.D.) or doctor of osteopathy (D.O.) currently in office-based practice who spends time in caring for ambulatory patients. Excluded from NAMCS are physicians who are hospital based; physicians who specialize in anesthesiology, pathology, or radiology; physicians who are federally employed; physicians who treat only institutionalized patients; physicians employed full time by an institution; and physicians who spend no time seeing ambulatory patients.

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Scientific and Technical Information Branch
National Center for Health Statistics
Centers for Disease Control
Public Health Service
6525 Belcrest Road, Room 1064
Hyattsville, Md. 20782

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