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Data in this report from health and demographic surveys present statistics by age and other variables on ambulatory medical care; prevalence and impact of urinary problems; use of dental services; impaired senses of sound and light; visits to office-based physicians; and prevalence of known diabetes. Estimates are based on the civilian noninstitutionalized population of the United States. These reports were originally published in 1986 and 1987.

Suggested citation

Contents

Aging in the Eighties,
Prevalence and Impact of Urinary Problems in
Individuals Age 65 Years and Over

Preliminary Data From the Supplement on Aging to the
National Health Interview Survey: United States, January–June 1984

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Introduction

The National Health Interview Survey is the large con-
tinuing survey of the civilian noninstitutionalized population of
the United States conducted by the National Center for Health
Statistics. Each year people in about 42,000 households are
interviewed by U.S. Bureau of the Census interviewers to obtain
information about their health and use of health care. Demo-
graphic information needed to interpret the data is also obtained.
The interviewers have special training on this survey in addition
to their regular training, and response rates are high—about 97
percent. The only item with a relatively low response rate is
family income.

In 1984 a special supplement was added to the question-
naire to obtain information about elderly people living in the
community. This supplement, the Supplement on Aging (SOA),
was designed to collect information about physical limitations,
chronic conditions, housing, retirement status, interactions with
family and organizations, use of community services, and other
health-related information about middle-aged and older people.

All household members aged 65 years and over and a half
sample of those 55–64 years of age were asked the questions
on the supplement themselves where possible. Another house-
hold member was interviewed only when the selected person
was unable to answer either because of physical or mental prob-
lems or was going to be away from the household for a longer
period than the interviewer would be in the area. Response
rates to the SOA were also high. Of the 5,982 people aged 65
years and over who were in interviewed households in January–
June 1984, 95 percent had complete interviews and 92 percent

answered the questions on the SOA for themselves. Of these
5,637 responded to the items regarding urinary problems.

The data in this report are from the 5,637 interviews com-
pleted during the first 6 months of 1984, which contain infor-
mation on urinary problems. The data are preliminary because
only one-half of the year is included and because the data from
the SOA have not been edited. Including the full year will double
the size of the sample and make estimates more reliable. It will
also eliminate any possibility of bias because of seasonality.
Editing will change some of the estimates from the SOA in the
text because information from other parts of the questionnaire
or from other family members will be used to correct missing or
inconsistent information.

The preliminary data about people aged 65 years and over
are being published because the need for information about the
elderly is critical, and 5,637 people is a large enough sample to
make estimates that are reliable for many purposes. The reader
should use the material in the "Technical notes" before deciding
that differences not mentioned in the text are likely to be statis-
tically significant. The number of people in the sample is given
in each table in addition to the national population estimates
that are the base of the percent to make that sample.

The purposes of this report are to provide information about
the prevalence of urinary incontinence in a community-based
population of individuals aged 65 years and older and to delin-
eate the impact of the incontinence on quality of life and utiliza-
tion of medical services.

The information is presented separately for those aged
65–74 years and for those aged 75 years or older. These advance
data should be interpreted cautiously because the number of

individuals with urinary problems is still relatively small. When the full data are available for the SOA, more detailed analyses by age, gender, and severity of urinary problem will be possible.

Background

Surveys in the United Kingdom and the United States have shown urinary incontinence to be a common medical problem among older individuals. Estimates of prevalence vary from 5–15 percent in elderly persons in the community[1] and range to 40–50 percent for hospitalized and institutionalized persons.[2,3] These estimates vary widely depending on whether the definition of incontinence includes aspects of chronicity, frequency, intensity, timing, or costs and whether those whose incontinence is related to immobility are included in the incontinent population. Data from those 65 years of age and over in the SOA were analyzed to provide an estimate of self-reported prevalence of urinary incontinence and to assess whether urinary incontinence may influence health care utilization and quality of life for those individuals in a national sample of community-dwelling elders.

On the SOA, four questions were asked to ascertain continence focused on control of urination and frequency of difficulty controlling urination. These questions were as follows:

1. Do you have difficulty controlling urination?
2. How frequently do you have this difficulty: Daily, several times a week, once a week, or less than once a week?
3. Do you have a urinary catheter or a device to help control urination?
4. Do you need help from another person in taking care of this device?

Of all those aged 65 years and older living in the community, 9 percent had difficulty controlling urination. Of those with difficulty, 74 percent had this difficulty more than once a week and of these 78 percent had this difficulty daily. Less than 1 percent of the population over age 65 years responding to this survey had a catheter or a device to control urination.

For the purposes of this report, the following definitions of urinary problems were used:

- Those with no difficulty controlling urination and without a catheter were considered continent of urine.
- The group with difficulty controlling urination includes those with any degree of difficulty controlling urination as well as those with catheters.

These preliminary analyses are presented for persons in two age groups only: Ages 65–74 and ages 75 years and over.

Demographic characteristics

There were over 15 million noninstitutionalized individuals aged 65–74 years in the United States in 1984; 94 percent had no difficulty controlling urination (table 1). Of the 6 percent who had a problem, 69 percent had a problem more than once a week. For over 9 million noninstitutionalized individuals aged 75 years or over, 87 percent reported no difficulty controlling urination. Of the 13 percent who had a problem, 78 percent had a problem more than once a week. Prevalence of urinary problems increases with age, and the proportion reporting a severe problem increases as well.

Women were only slightly more likely to report problems controlling urination than men, even with increasing age, despite

Table 1. Percent distribution of people aged 65 years and over with difficulty controlling urination by severity of problem, according to age and sex

Sample, estimated population, and urinary status	65 years and over			65–74 years			75 years and over		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
	Number								
Sample	[1]5,637	2,291	3,346	3,516	1,522	1,994	2,121	769	1,352
	Number in thousands								
Estimated population	24,738	10,043	14,695	15,289	6,610	8,679	9,449	3,433	6,017
Urinary status	Percent distribution								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No difficulty controlling urination	91.0	93.0	90.0	94.0	94.0	93.0	87.0	89.0	86.0
Difficulty controlling urination	9.0	7.0	10.0	6.0	6.0	7.0	13.0	11.0	14.0
	Number								
Sample with difficulty controlling urination	498	172	326	230	90	140	268	82	186
	Number in thousands								
Estimated population with difficulty controlling urination	2,197	751	1,446	986	390	596	1,212	361	851
Frequency of problem for those with problem	Percent distribution								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Daily, several times a week, or using catheter	74.0	76.0	73.0	69.0	72.0	67.0	78.0	80.0	77.0
Once a week or less	26.0	24.0	27.0	31.0	28.0	33.0	22.0	20.0	23.0

[1]Sample population responding to items on urinary problems.

the fact that the age distribution for women aged 75 years or over was shifted toward older ages in comparison with the men. Of those aged 65–74 years, 6 percent of all men and 7 percent of all women reported having difficulty controlling urination; 72 percent of the men with a urinary problem and 67 percent of the women with a urinary problem had difficulty more than once a week. For those aged 75 years and over, 11 percent of all men and 14 percent of all women reported a problem controlling urination; 80 percent of the men with a urinary problem and 77 percent of the women with a urinary problem had difficulty more than once a week.

With whom did those with urinary problems live? If problems controlling urination reflect increasing frailty in an elder, it is likely that the proportion living with relatives other than a spouse or living with nonrelatives might be higher for these individuals than for those without urinary problem. Fifteen percent of those aged 65–74 years with urinary difficulty versus 11 percent of those in the same age strata with no urinary problems and 29 percent of those aged 75 years or over versus 18 percent of those in the same age strata with no urinary problems (table 2) lived with relatives other than a spouse or nonfamily.

Social activities

Six questions were drawn from the larger pool of material on social activities to estimate social participation among those with and without urinary problems. These questions include making telephone contacts with friends or relatives, getting together with friends or relatives, and getting out to attend religious services or other church-affiliated activities or to participate in a purely recreational activity such as a movie, sporting event, or class.

Within each age strata, those with urinary problems had lower participation in all social activities than those with no urinary problems (table 3). Differences between those with and those without urinary difficulty were least for contact with relatives (either getting together or talking with them on the telephone) with over 70 percent of all individuals aged 65 years or over having some form of contact with relatives in the 2 weeks prior to the survey. Of the continent group aged 65–74 years, 54 percent attended church in the 2 weeks prior to the interview, compared with 42 percent of the group with urinary problems. Although almost half of the continent group aged 75 years or over had attended a church in the prior 2 weeks, only 31 percent

Table 2. Percent distribution of people aged 65 years and over by living arrangement, according to age and difficulty controlling urination

Sample, estimated population, and living arrangement	65–74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
	Number					
Sample...	3,516	3,286	230	2,121	1,853	268
	Number in thousands					
Estimated population	15,289	14,303	986	9,449	8,238	1,212
	Percent distribution					
Total...	100.0	100.0	100.0	100.0	100.0	100.0
Live alone	26.0	25.0	31.0	40.0	41.0	37.0
Live with spouse......................................	63.0	64.0	54.0	40.0	41.0	34.0
Live with someone other than spouse...............	11.0	11.0	15.0	20.0	18.0	29.0

Table 3. Percent of people aged 65 years and over by social participation, age, and difficulty controlling urination

Sample, estimated population, and social participation	65–74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
	Number					
Sample...	3,516	3,286	230	2,121	1,853	268
	Number in thousands					
Estimated population	15,289	14,303	986	9,449	8,238	1,212
Social participation in past 2 weeks	Percent					
Got together with friend..............................	72.0	73.0	62.0	65.0	67.0	57.0
Talked on the phone with friend	83.0	83.0	75.0	78.0	79.0	65.0
Got together with relative	78.0	79.0	72.0	73.0	73.0	70.0
Talked on the phone with relative....................	88.0	89.0	82.0	82.0	84.0	72.0
Went to church..	53.0	54.0	42.0	47.0	49.0	31.0
Attended recreational event such as movie or sporting event.........	31.0	32.0	17.0	21.0	22.0	12.0

of those who were incontinent had attended. The form of social activity least attended by those who were continent was the purely recreational event: 32 percent attending of those 65–74 years and 22 percent attending of those aged 75 years or over without urinary problems. Participation for those who had urinary problems was even less: 17 percent of those aged 65–74 years and 12 percent of those aged 75 years or over.

Even among those who have a problem controlling urination, there is evidence of a relatively high level of social participation. However, this is less than the involvement of the continent population of the same age. Whether this can be attributed to the urinary problems only or to the set of conditions that covary with the incontinence remains to be investigated.

Health status and health care utilization

Those with problems controlling urination in both age strata were more likely to report themselves as being in fair or poor health (61–62 percent) compared with the group that was continent (30–31 percent) (table 4), and those with problems controlling urination were more likely to report their health as deteriorated in the past year. Only one-quarter of those with urinary problems in either age group reported no limitation of activity;

27 percent of those aged 65–74 years and 36 percent of those aged 75 years or over were unable to perform their major activity compared with 10 and 7 percent of those who were continent in each age strata.

Those with urinary problems were more likely to report themselves as being in poor health; health status measures such as number of medical conditions or bed days supported this perception (table 4). Thirty-three percent of those who were continent (aged 65–74 years) had no medical conditions, versus only 7 percent of those of the same age group with urinary problems. Of the group with urinary problems, 57 percent had more than three medical problems. These proportions were similar for those aged 75 years or over. In addition, those with urinary problems had a much lower proportion with no bed days either at home or in hospital for the past year.

Individuals with problems controlling urination were also heavier users of physician services (table 5). Over 50 percent of those with urinary problems in each strata had five or more visits in the past year to physicians versus approximately one-third of those without urinary problems. Interestingly, approximately 10 percent of those with urinary problems had no physician visits in the past year.

Those with urinary incontinence used hospital services more

Table 4.   Percent distribution of people aged 65 years and over by health status, according to age and difficulty controlling urination and percent with no bed days in past year by age and difficulty controlling urination

Sample, estimated population, and health status	65–74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
	Number					
Sample.	3,516	3,286	230	2,121	1,853	268
	Number in thousands					
Estimated population	15,289	14,303	986	9,449	8,238	1,212
	Percent distribution					
Total.	100.0	100.0	100.0	100.0	100.0	100.0
Perceived health status						
Very good or excellent	36.0	37.0	16.0	35.0	37.0	17.0
Good	33.0	33.0	23.0	31.0	32.0	21.0
Poor or fair.	31.0	30.0	61.0	34.0	31.0	62.0
Health better or worse in past year[1]						
Better.	13.0	13.0	15.0	10.0	10.0	8.0
Worse	13.0	12.0	26.0	18.0	17.0	31.0
Same	74.0	75.0	59.0	72.0	73.0	61.0
Limitation of activity						
None	61.0	63.0	27.0	57.0	62.0	25.0
Outside activities only	15.0	14.0	23.0	17.0	16.0	17.0
Kind or amount of activity	13.0	12.0	23.0	15.0	15.0	22.0
Unable to perform usual activity	11.0	10.0	27.0	11.0	7.0	36.0
Reported number of conditions						
None	32.0	33.0	7.0	26.0	29.0	6.0
1–2	43.0	44.0	36.0	43.0	44.0	38.0
3 or more.	25.0	23.0	57.0	31.0	27.0	56.0
	Percent					
No bed days in past year	64.0	66.0	45.0	62.0	65.0	39.0

[1] Based only on self respondents.

Table 5. Percent of people aged 65 years and over by health care utilization, age, and difficulty controlling urination

Sample, estimated population, and health care utilization	65–74 years			75 years and over		
	Total	No urinary difficulty	Any urinary difficulty	Total	No urinary difficulty	Any urinary difficulty
	Number					
Sample.	3,516	3,286	230	2,121	1,853	268
	Number in thousands					
Estimated population	15,289	14,303	986	9,449	8,238	1,212
	Percent					
No physician visits past year	19.0	20.0	10.0	17.0	18.0	11.0
At least 5 physician visits past year.	32.0	30.0	54.0	34.0	32.0	50.0
No hospitalizations reported past year	82.0	83.0	73.0	76.0	78.0	62.0
At least 2 hospitalizations reported past year.	5.0	5.0	10.0	7.0	5.0	17.0
Of those hospitalized, percent with at least 8 hospital days	52.0	50.0	74.0	52.0	50.0	62.0

frequently and had a higher proportion with longer stays than those who were continent. However, even among those who were incontinent, hospital use was relatively low. Of those who were continent, over 76 percent reported no hospitalization in the past 12 months, compared with 73 percent of those aged 65–74 years who had a urinary problem or 62 percent of those aged 75 years or over with urinary problems. Of those with a urinary problem who were hospitalized, 74 percent of those aged 65–74 years and 62 percent of those 75 years or over had more than eight hospital days in the past year compared with 50 percent of those with no urinary problems.

Discussion

Nine percent of community-dwelling persons aged 65 years or over have problems controlling urination as ascertained by the SOA. These problems were relatively severe with urinary difficulty occurring at least several times a week in more than 70 percent of those with urinary problems. These problems appear to increase with age and are more common in women.

Although those with urinary problems had lower levels of social participation than did those who were continent, many remain active. Over 57 percent had had contact with friends or relatives by telephone or in person in the 2-week period prior to the interview. However, they were less likely to participate in other activities outside the home, such as church activities or other social events.

The group with urinary problems was more likely to report their health as fair to poor and to report that their health had deteriorated over the past year. They were more likely to suffer activity limitations and had more medical conditions on average than their peers. Despite a large percent who used no hospital services (greater than 60 percent in both age groups), those with urinary problems who had used hospital services had a distribution skewed toward more use and longer stays in hospitals.

These data suggest a mixed picture. Urinary problems appear to delineate a group with higher health care use and poorer health status as evidenced by the number of medical conditions, hospital use, and personal ratings of health status. Despite this, a substantial proportion of the group with urinary problems had no hospitalizations during the previous year and one quarter had no limitation in any activity. These findings suggest that those with self-reported urinary problems are a heterogeneous group with deficits ranging from severely disabling to none, and point to a need for further information on the types of incontinence and impact of these types. This suggests that the impact of urinary incontinence should be examined in the framework of the other medical illnesses and limitations of the individual. The problem of urinary incontinence needs to be identified, diagnosed and treated[4] as per current standards of practice. Further research should be directed toward assessing whether urinary incontinence itself acts as a marker for medical or functional problems that may be amenable to intervention if recognized earlier.

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[6] M. G. Kovar: Health of elderly people living in the community in 1980. *Milbank Memorial Fund Quarterly* Vol. 64(1), Feb. 1986.

[7] National Center for Health Statistics, J. Lubitz and R. Prihoda: Use and costs of Medicare services in the last years of life. *Health, United States.* 1983. DHHS Pub. No. (PHS) 84–1232. Public health Service. Washington. U.S. Government Printing Office, 1983.

Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision
#	Figure suppressed to comply with confidentiality requirements

Technical notes

Each week a probability sample of households in the United States is visited by U.S. Bureau of the Census interviewers to obtain a wide range of information about the health and health care characteristics of the people living in those households. A description of the survey design, methods used to make the national estimates, and general qualifications of the data are provided in Series 1, No. 18.[5]

During January–June 1984 there were about 21,000 households in the sample. The total noninterview rate was about 3 percent—mostly because the interviewer was unable to locate an eligible respondent despite repeated calls.

The rules for the survey are that all adults who are in the household when the interviewer calls are asked to join in the interview and to respond for themselves. People aged 65 years and over are likely to be at home and are, thus, more likely to respond for themselves to the questions on the basic, or core, questionnaire. During the first 6 months of 1984, 84 percent answered the questions themselves.

The estimates in this report are based on a sample rather than on the entire population of people aged 65 years and over in the civilian noninstitutionalized population. Therefore, the estimates are subject to sampling error. In addition, the sample had a complex design that has the effect of making the sampling errors somewhat larger than they would be from a simple random sample of the same size using the same procedures.

A conservative estimate is that, on the average, the variance for estimated proportions from this sample is 20 percent larger than it would have been from a simple random sample of the same size using the same procedures.

Perhaps more important for interpretation than sampling errors, however, is a thorough understanding of what data from this, or any other, cross-sectional survey can provide. There are two issues—one important for any cross-sectional analysis and the other of special importance for older people.

The National Health Interview Survey is a point-in-time study. Associations at one point in time should not be interpreted as causality. The differences among the age groups, for example, could be the result of aging or, alternatively, they could be the result of different cohorts moving through time. Based on external knowledge, one could interpret a difference in health status as the result of aging and a difference in educational status as the result of cohort differences, but the data from a cross-sectional survey do not enable one to make that distinction.

The second is that this is a study of people who were living in the community at the time they, or proxy respondents, were interviewed. All of the elderly people who had left the population, either through death or institutionalization, are excluded. Thus, the estimate that 20 percent of the elderly people had been hospitalized during the preceding year should not be interpreted to mean that only 20 percent of all elderly people had been hospitalized during the year. Hospitalization rates are high during the year preceding death or institutionalization,[6,7] and the experience of those people is not included in these estimates.

To estimate the sampling errors, convert the percent to a proportion, calculate the variance of a proportion assuming simple random sampling, multiply that variance by 1.2 to allow for the complex sample, then compute standard errors, confidence intervals, or significance tests.

For example, the estimate is that 10 percent of the 14,695,000 women aged 65 years and over have difficulty controlling urination. There were 3,346 women in the sample aged 65 years and over. Therefore,

$$\text{Variance (simple random sample)} = \frac{pq}{n}$$

$$= \frac{(0.9)(0.1)}{3,346}$$

$$= 0.00002$$

$$\text{Variance (complex sample)} = (0.00002)(1.2)$$

$$= 0.00003$$

$$\text{Standard error} = (0.00003)^{1/2}$$

$$= 0.0055$$

$$\text{95 percent confidence interval} = 10 \pm (1.96)(0.55)$$

$$= 10 \pm 1$$

Because the estimation procedure includes poststratification to independent U.S. Bureau of the Census estimates, there is no sampling error for the number of people aged 65 years and over—either for the total or for either sex.[5] The only sampling error is in the numerator. Therefore, the sampling errors for those groups are somewhat smaller than estimated by this method.

NOTE: A list of references follows the text.

Use of Dental Services: United States, 1983

by Susan S. Jack, M.S., Division of Health Interview Statistics

In 1983 Americans went to dentists more than 400 million times, an average of almost two visits per person. Nearly one-half of all Americans, however, did not visit a dentist in 1983. Persons having higher family incomes were much more likely to have seen a dentist than those with lower incomes (see figure).

These data are from the 1983 National Health Interview Survey (NHIS), which contained special questions on the dental visits of the civilian noninstitutionalized population. This report contains selected statistics based on those questions. The complete questionnaire is published in "Current Estimates from the National Health Interview Survey: United States,
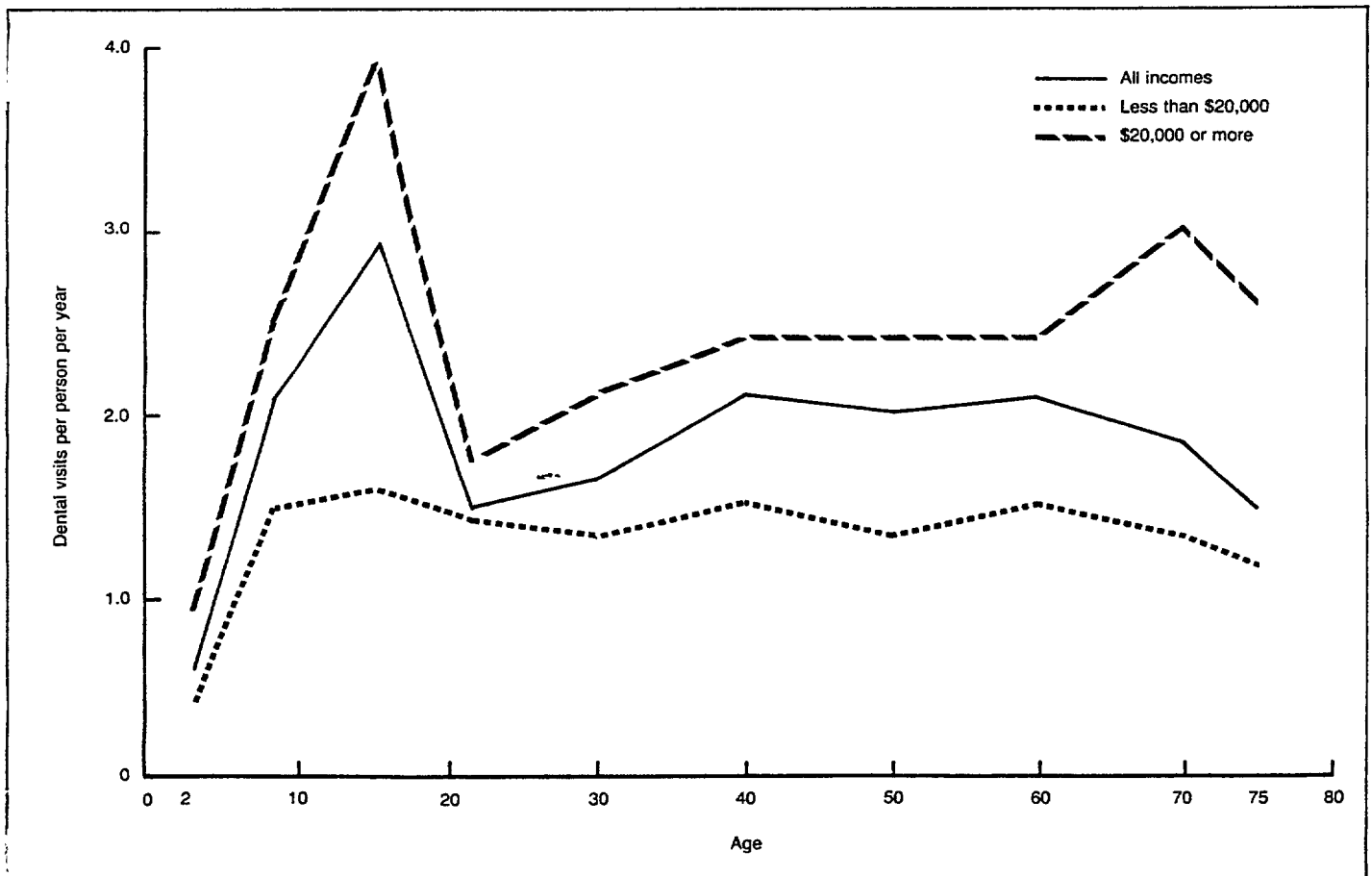

Figure. Number of dental visits per person (2 years to 75 years) per year, by age and family income: United States, 1983

1983," Series 10, Number 154.[1] A microdata public use data tape containing all of the information collected can be purchased from the National Center for Health Statistics, Division of Health Interview Statistics, Computer Systems and Programming Staff.

The 1983 dental questions were an expanded version of the dental questions included regularly in NHIS in earlier years.[2] Additional questions were included in the 1971 NHIS, and some questions are included again in the 1986 NHIS. In 1983 survey questions addressed the issues of the interval since last dental visit, the number of dental visits made in the year prior to the interview, the dental services provided, and the type of dentist seen. Also included were questions on the use of dental fluoride products and on edentulousness (toothlessness).

The National Health Interview Survey is a cross-sectional household interview survey conducted annually by the National Center for Health Statistics. It is based on a multistage area probability sample representing the civilian noninstitutionalized population of the United States. Population statistics estimated from the sample are subject to sampling variability. Tables showing standard errors of estimates are included in the technical notes. (A more complete description of the 1983 NHIS design may be found in Series 10, Number 154.[1])

Interval since last visit

Of primary interest to dental practitioners and health planners are persons with unusually frequent dental visits, indicating dental problems, and those who appear to be underserved by the dental care system. Although dental authorities suggest getting "regular professional care," they do not specify the exact interval. However, many dentists recommend at least one or two dental visits annually for examination and cleaning. For the purposes of this report, one visit per year will be used as the standard.

Table 1 indicates the extent to which this standard may have been met. The proportion of the population 2 years

[1]National Center for Health Statistics: Current estimates from the National Health Interview Survey, United States, 1983. *Vital and Health Statistics*. Series 10. No. 154. DHHS Pub. No. (PHS) 86–1582. Public Health Service. Washington. U.S. Government Printing Office, June 1986.

[2]See National Center for Health Statistics: Current estimates from the Health Interview Survey. 1969–81. *Vital and Health Statistics*. Series 10, Nos. 63, 72, 79, 85, 95, 100, 119, 126, 130, 136, 139, 141. Public Health Service. Washington. U.S. Government Printing Office. National Center for Health Statistics, C. S. Wilder: Dental visits, volume and interval since last visit. United States, 1969. *Vital and Health Statistics*. Series 10. No. 76. DHEW Pub. No. (HSM) 72–1066. Health Services and Mental Health Administration. Washington. U.S. Government Printing Office. July 1972. National Center for Health Statistics, C. S. Wilder: Dental visits, volume and interval since last visit, United States, 1978 and 1979. *Vital and Health Statistics*. Series 10. No. 138. DHHS Pub. No. (PHS) 82–1566. Public Health Service. Washington. U.S. Government Printing Office, Apr. 1982. National Center for Health Statistics, C. E. Burnham: Edentulous persons, United States, 1971. *Vital and Health Statistics*. Series 10, No. 89. DHEW Pub. No. (HRA) 74–1516. Health Resources Administration. Washington. U.S. Government Printing Office, June 1974.

of age and over with one or more dental visits in the year prior to interview varies by age from a high of about two-thirds among children 5–17 years of age, to a low of less than one-third among those 75 years of age and older.

Overall, 45.0 percent of the population (or 100 million persons) had not seen a dentist in over a year and were, by current standards of dental practice, a medically underserved population. A majority of children 2–4 years of age (64.2 percent, or 6,899,000) and a significant proportion of children 5–11 years of age (13.1 percent, or 2,978,000) had never been to a dentist. Even in the older age groups where a substantial proportion of the population was edentulous (22.3 percent of those 55–64 years of age, 34.0 percent of those 65–74 years, and 45.2 percent of those 75 years and over), a substantial number of persons with teeth had not received dental care within the year.

For every age group 12 years and over, females were more likely than males to have seen a dentist in the year before the interview. However, although the levels are different, the overall pattern of dental care is similar in both sexes. The largest percent difference between the sexes in recent (within 1 year) dental visits occurred among persons in the age group 18–34 years, in which 61.9 percent of the females and 51.8 percent of the males had seen a dentist.

In every age group, white people were more likely than black people to have had a recent dental visit. Overall, 57.0 percent of white persons and 41.8 percent of black persons visited dentists within the previous year. The difference between the races was greatest among persons 12–17 years and 55 years and older: 70.2 percent of white adolescents (aged 12–17) and 48.4 percent of black adolescents had recent visits. This is attributable in part to the greater percent of white adolescents receiving orthodontic treatment. In addition, black persons were more likely to report never having seen a dentist.

The proportion of the population with a visit in the previous year increased significantly with higher income. Less than two-fifths (38.8 percent) of persons with a family income below $10,000 had recently visited dentists, compared with about three-fourths (74.0 percent) of those with a family income of $35,000 or more. The positive relationship between the proportion with recent visits and income persists through virtually all age groups.

In terms of the standard of a minimum of one dental visit per year, roughly 25 million persons in each of the three lower income groups and more than 10 million persons in the $35,000 or more category did not meet this standard. (In addition, another 14 million persons whose income was not reported did not have a recent visit.) In the older age groups, some of these people were edentulous, a condition that is also highly associated with income (data not shown), but the proportion of each age and income category without teeth is far lower than the proportion with no visits. Even in the highest income category, of those 65 years and over 20.8 percent were edentulous, but 34.2 percent reported no visits in the previous year.

Table 1. Number and percent distribution of persons 2 years of age and over by interval since last dental visit, according to age, sex, race, and family income: United States, 1983

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes.]

			Interval since last dental visit						
			Less than 1 year						
Characteristic	All persons[1]	All intervals[2]	Total[3]	Less than 6 months	6–11 months	1–2 years	2–5 years	5 years or more	Never
All persons	Number in thousands				Percent distribution				
All ages	222,212	100.0	55.0	36.0	17.7	11.3	13.5	12.6	5.8
2–4 years	10,743	100.0	28.4	19.2	8.4	2.8	1.0	...	64.2
5–17 years	44,761	100.0	67.0	45.2	20.1	11.7	8.9	2.1	8.9
5–11 years	22,666	100.0	67.2	44.3	21.2	10.7	6.9	0.9	13.1
12–17 years	22,096	100.0	66.7	46.1	18.9	12.7	11.0	3.4	4.5
18–34 years	67,710	100.0	57.0	34.9	20.6	14.4	16.7	8.1	1.8
18–24 years	28,561	100.0	55.5	33.3	20.8	15.4	16.7	7.7	2.3
25–34 years	39,149	100.0	58.0	36.1	20.5	13.7	16.8	8.4	1.4
35–54 years	51,101	100.0	57.4	37.8	18.4	11.5	15.4	13.3	0.7
35–44 years	28,933	100.0	59.4	39.2	19.0	11.9	15.4	11.0	0.9
45–54 years	22,168	100.0	54.8	36.0	17.6	11.0	15.4	16.4	0.6
55–64 years	22,004	100.0	51.3	35.6	14.7	9.2	14.5	22.4	0.7
65 years and over	25,892	100.0	38.6	26.9	10.9	7.5	13.2	38.0	0.9
65–74 years	16,045	100.0	43.2	30.1	12.2	7.6	13.8	33.1	0.8
75 years and over	9,847	100.0	31.1	21.6	8.9	7.3	12.2	46.1	1.0
Male									
All ages	107,030	100.0	53.0	33.9	17.8	11.6	14.2	13.0	6.3
2–4 years	5,467	100.0	29.1	20.2	8.1	2.6	1.2	...	63.9
5–17 years	22,838	100.0	66.1	43.7	20.7	11.7	9.3	2.4	9.0
5–11 years	11,512	100.0	67.6	43.7	22.0	10.5	6.8	1.0	13.1
12–17 years	11,326	100.0	64.6	43.6	19.3	13.0	12.0	3.9	4.8
18–34 years	33,133	100.0	51.8	30.6	20.0	15.0	18.5	10.1	2.2
18–24 years	13,990	100.0	50.1	28.8	20.1	16.4	18.3	9.4	2.9
25–34 years	19,144	100.0	52.9	32.0	19.8	14.0	18.7	10.6	1.7
35–54 years	24,757	100.0	55.3	35.7	18.5	11.8	15.9	14.5	0.9
35–44 years	14,067	100.0	56.9	36.9	18.8	12.4	15.9	12.3	1.0
45–54 years	10,690	100.0	53.4	34.1	18.0	10.9	15.9	17.4	0.8
55–64 years	10,261	100.0	50.4	34.2	15.2	9.1	14.7	22.8	0.8
65 years and over	10,573	100.0	37.9	26.1	11.0	7.5	13.4	38.3	1.0
65–74 years	6,967	100.0	42.1	28.5	12.5	8.0	13.8	33.6	0.9
75 years and over	3,606	100.0	29.9	21.3	8.2	6.6	12.5	47.3	1.1
Female									
All ages	115,183	100.0	56.9	37.9	17.6	11.0	12.8	12.3	5.3
2–4 years	5,276	100.0	27.8	18.2	8.7	3.0	*0.8	...	64.6
5–17 years	21,923	100.0	67.9	46.8	19.4	11.6	8.4	1.9	8.8
5–11 years	11,154	100.0	66.9	44.9	20.3	10.8	7.1	0.8	13.2
12–17 years	10,770	100.0	68.9	48.7	18.5	12.4	9.9	2.9	4.3
18–34 years	34,577	100.0	61.9	39.0	21.3	13.9	15.0	6.2	1.3
18–24 years	14,572	100.0	60.7	37.6	21.4	14.5	15.1	6.0	1.7
25–34 years	20,005	100.0	62.8	40.0	21.2	13.4	15.0	6.3	1.0
35–54 years	26,344	100.0	59.4	39.8	18.3	11.3	15.0	12.3	0.6
35–44 years	14,866	100.0	61.9	41.4	19.2	11.4	15.0	9.7	0.7
45–54 years	11,478	100.0	56.1	37.7	17.2	11.2	15.0	15.6	0.4
55–64 years	11,743	100.0	52.1	36.8	14.2	9.2	14.3	22.0	0.5
65 years and over	15,319	100.0	39.1	27.4	10.8	7.5	13.1	37.9	0.8
65–74 years	9,078	100.0	44.1	31.4	11.9	7.4	13.8	32.7	0.7
75 years and over	6,241	100.0	31.8	21.7	9.3	7.7	12.1	45.4	0.9

See footnotes at end of table.

Table 1. Number and percent distribution of persons 2 years of age and over by interval since last dental visit, according to age, sex, race, and family income: United States, 1983—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes.]

			Interval since last dental visit						
			Less than 1 year						
Characteristic	All persons[1]	All intervals[2]	Total[3]	Less than 6 months	6-11 months	1-2 years	2-5 years	5 years or more	Never
White	Number in thousands				Percent distribution				
All ages	190,668	100.0	57.0	37.9	17.8	11.0	12.9	12.4	5.1
2-4 years	8,710	100.0	29.2	20.1	8.3	2.9	0.9	. . .	63.6
5-17 years	36,826	100.0	69.9	48.3	20.0	11.1	8.0	1.8	8.0
5-11 years	18,630	100.0	69.7	46.9	21.2	10.3	6.2	0.8	12.1
12-17 years	18,196	100.0	70.2	49.6	18.8	11.9	9.8	2.8	3.8
18-34 years	57,536	100.0	59.0	36.5	21.2	14.2	16.2	7.5	1.4
18-24 years	24,025	100.0	57.9	35.3	21.2	15.1	16.1	7.0	1.9
25-34 years	33,511	100.0	59.9	37.4	21.1	13.5	16.3	7.9	1.0
35-54 years	44,476	100.0	59.2	39.6	18.4	11.2	14.7	13.0	0.6
35-44 years	25,104	100.0	61.3	41.2	18.9	11.5	14.8	10.6	0.6
45-54 years	19,371	100.0	56.4	37.5	17.7	10.8	14.5	16.2	0.5
55-64 years	19,696	100.0	53.4	37.4	14.9	8.7	14.0	21.5	0.6
65 years and over	23,423	100.0	40.5	28.5	11.1	7.4	12.6	37.2	0.7
65-74 years	14,485	100.0	45.2	31.9	12.4	7.4	13.3	32.3	0.6
75 years and over	8,938	100.0	33.0	23.1	9.1	7.4	11.5	45.2	0.7
Black									
All ages	26,173	100.0	41.8	23.5	16.5	13.7	17.3	14.4	9.6
2-4 years	1,736	100.0	25.4	15.7	8.9	2.5	*1.5	. . .	66.4
5-17 years	6,652	100.0	51.2	29.0	20.0	15.2	13.7	4.1	13.3
5-11 years	3,403	100.0	53.8	30.9	20.5	13.0	10.5	1.8	18.6
12-17 years	3,249	100.0	48.4	27.1	19.5	17.5	17.0	6.6	7.8
18-34 years	8,427	100.0	44.0	24.7	17.3	15.8	20.3	12.3	3.6
18-24 years	3,819	100.0	42.2	22.1	17.8	16.8	20.3	12.5	4.1
25-34 years	4,608	100.0	45.6	26.8	16.9	15.0	20.3	12.1	3.2
35-54 years	5,260	100.0	44.1	24.3	18.1	13.9	20.6	16.8	1.5
35-44 years	2,999	100.0	45.8	24.5	19.7	15.0	19.3	14.7	2.0
45-54 years	2,260	100.0	41.9	24.0	15.9	12.4	22.3	19.5	*0.8
55-64 years	1,964	100.0	33.2	19.3	13.0	14.1	19.0	30.0	*1.2
65 years and over	2,135	100.0	19.0	10.4	8.1	8.8	19.4	46.6	3.1
65-74 years	1,346	100.0	23.6	12.8	10.0	10.4	18.9	41.1	*2.9
75 years and over	789	100.0	11.2	6.2	*4.9	6.2	20.4	56.0	*3.5
Less than $10,000									
All ages	40,694	100.0	38.8	22.9	14.8	11.5	17.0	22.7	8.6
2-4 years	2,356	100.0	23.5	14.0	8.4	3.1	*1.3	. . .	69.7
5-17 years	7,664	100.0	53.1	30.4	21.1	13.4	13.9	3.8	14.7
5-11 years	4,143	100.0	54.8	31.7	21.6	12.9	10.5	1.8	19.1
12-17 years	3,521	100.0	51.1	28.8	20.5	14.0	17.8	6.2	9.6
18-34 years	12,480	100.0	48.1	27.9	19.0	15.3	19.6	11.9	3.5
18-24 years	6,939	100.0	52.0	30.5	20.2	14.8	17.6	10.1	3.5
25-34 years	5,541	100.0	43.1	24.7	17.6	15.9	22.1	——14.1	3.4
35-54 years	5,498	100.0	34.8	20.2	13.6	11.1	24.3	25.9	2.4
35-44 years	3,139	100.0	37.1	21.7	14.5	11.9	23.4	23.1	3.0
45-54 years	2,359	100.0	31.8	18.3	12.3	10.1	25.3	29.7	*1.6
55-64 years	3,615	100.0	28.7	17.9	10.5	9.7	17.8	41.5	1.4
65 years and over	9,081	100.0	24.3	15.4	7.9	7.7	15.3	49.8	1.4
65-74 years	4,965	100.0	26.0	16.1	8.6	7.9	16.6	46.9	1.5
75 years and over	4,116	100.0	22.2	14.5	7.1	7.6	13.7	53.2	1.3

See footnotes at end of table.

Table 1. Number and percent distribution of persons 2 years of age and over by interval since last dental visit, according to age, sex, race, and family income: United States, 1983—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in the technical notes.]

Characteristic	All persons[1]	All intervals[2]	Less than 1 year Total[3]	Less than 6 months	6-11 months	1-2 years	2-5 years	5 years or more	Never
$10,000-$19,999	Number in thousands				Percent distribution				
All ages	50,109	100.0	47.5	29.9	16.5	12.5	16.0	15.6	7.2
2-4 years	2,654	100.0	23.3	15.8	7.0	2.6	*0.9	...	69.5
5-17 years	9,684	100.0	56.8	35.8	19.6	15.0	11.2	2.9	13.1
5-11 years	5,298	100.0	57.5	35.6	20.6	13.5	8.8	1.0	18.3
12-17 years	4,386	100.0	55.9	36.1	18.4	16.8	14.1	5.1	6.7
18-34 years	16,829	100.0	51.5	30.6	19.5	15.2	19.9	10.2	1.9
18-24 years	6,872	100.0	50.2	29.6	19.3	15.6	20.6	9.6	2.4
25-34 years	9,956	100.0	52.3	31.2	19.6	14.9	19.5	10.6	1.5
35-54 years	8,831	100.0	44.4	28.6	14.8	13.6	19.7	20.3	1.1
35-44 years	5,131	100.0	46.5	29.9	15.4	14.5	20.5	16.1	1.3
45-54 years	3,699	100.0	41.5	26.8	13.9	12.3	18.5	26.1	*0.8
55-64 years	5,124	100.0	43.2	28.3	13.9	9.6	17.3	27.9	0.9
65 years and over	6,988	100.0	41.4	28.0	12.8	7.4	13.0	36.9	0.9
65-74 years	4,777	100.0	44.6	30.0	13.9	7.6	14.0	32.5	0.9
75 years and over	2,211	100.0	34.6	23.7	10.4	6.8	10.9	46.4	*0.9
$20,000-$34,999									
All ages	61,987	100.0	61.4	40.8	19.2	11.6	12.5	8.5	5.1
2-4 years	3,246	100.0	31.1	21.5	8.8	2.8	*1.0	...	61.8
5-17 years	13,452	100.0	72.8	50.4	20.5	10.9	7.4	1.5	6.7
5-11 years	7,084	100.0	73.9	50.0	21.9	9.3	5.3	0.6	10.2
12-17 years	6,368	100.0	71.6	50.8	18.9	12.7	9.8	2.5	2.9
18-34 years	20,333	100.0	61.3	38.3	21.6	14.6	15.3	6.7	0.9
18-24 years	6,888	100.0	57.3	34.7	21.3	17.6	15.6	6.3	1.7
25-34 years	13,445	100.0	63.3	40.2	21.7	13.0	15.2	6.9	0.6
35-54 years	15,726	100.0	59.8	39.2	19.3	12.2	15.2	11.9	0.3
35-44 years	9,241	100.0	62.7	41.2	20.4	12.2	14.9	9.2	*0.4
45-54 years	6,485	100.0	55.5	36.5	17.8	12.2	15.6	15.7	*0.3
55-64 years	5,705	100.0	58.0	41.1	15.8	9.1	13.8	17.8	*0.4
65 years and over	3,526	100.0	58.8	43.3	15.1	6.7	11.3	22.7	*0.3
65-74 years	2,490	100.0	61.5	45.4	15.7	6.9	12.0	19.0	*0.1
75 years and over	1,035	100.0	52.4	38.5	13.7	6.0	9.5	31.6	*0.7
$35,000 or more									
All ages	42,223	100.0	74.0	51.3	21.3	9.1	8.5	5.0	2.6
2-4 years	1,556	100.0	40.4	28.5	10.3	*2.1	*0.5	...	53.7
5-17 years	9,145	100.0	84.5	62.4	20.4	7.4	4.6	0.7	2.3
5-11 years	4,073	100.0	84.7	60.9	21.9	6.4	3.6	*0.2	4.5
12-17 years	5,071	100.0	84.4	63.7	19.2	8.3	5.4	1.0	*0.5
18-34 years	11,195	100.0	71.2	45.0	24.6	12.1	11.5	4.0	0.4
18-24 years	4,536	100.0	69.3	42.4	25.1	14.0	11.7	3.5	*0.5
25-34 years	6,658	100.0	72.4	46.7	24.2	10.8	11.4	4.3	*0.4
35-54 years	14,397	100.0	74.0	50.6	22.2	9.3	9.7	6.3	*0.1
35-44 years	8,070	100.0	75.1	51.4	22.5	9.7	9.7	5.1	*- - -
45-54 years	6,328	100.0	72.6	49.7	21.8	9.0	9.7	7.8	*0.1
55-64 years	4,107	100.0	74.3	53.8	18.7	7.7	7.8	9.1	*0.2
65 years and over	1,823	100.0	65.8	52.3	12.5	7.1	8.8	17.7	*0.3
65-74 years	1,261	100.0	73.7	59.8	13.0	6.6	7.9	11.6	*0.2
75 years and over	562	100.0	48.0	35.6	11.4	8.2	10.9	31.5	*0.5

[1]Includes other race and unknown income.
[2]Includes unknown intervals.
[3]Includes persons with visit in past year, unknown exact interval.

NOTE: Estimates for which the numerator has a relative standard error of more than 30 percent are indicated with an asterisk.

Number of visits in past year

The distribution of the population by the number of reported dental visits in the previous year is shown in table 2. Among those who did make a visit, most were reported to have had either one or two visits. The proportion with only one visit was highest in the age group 2–4 years, in which over 60 percent of all children with visits had only one. More than 10 percent of the population 12–17 years of age, in contrast, had more than five visits. Of those adolescents with visits, just over 20 percent had five or more visits.

As mentioned earlier, not only were females of almost all ages more likely than males to have had a dental visit in the past year, they were also more likely to have had multiple visits. The highest proportion with multiple visits for both sexes was in the group aged 12–17 years, primarily for orthodonture, where about one-fourth of the girls and one-fifth of the boys had three or more visits.

Not all subgroups of adolescents, however, had an equally high rate of visits. About 25 percent of white adolescents (12–17 years of age) had three or more dental visits, and about 15 percent had five or more visits; in contrast, only about 12 percent of black adolescents had three or more visits in the previous year, about the same proportion as black children 5–11 years of age.

There were also large differences in dental care use frequencies among the various income groups. With increasing income, not only did the proportion of persons with at least one visit in the prior year increase, but the proportion with three or more visits also increased. The usage difference associated with income was particularly great among persons 65–74 years of age. In this age group, only about 8 percent of persons in the lowest income category had three or more visits compared with about 14 percent and 20 percent in the middle income categories, and about 29 percent of those with an income of $35,000 or more. Much, but not all of the difference may be attributed to a substantially greater rate of edentulousness among persons in lower income categories.

Table 2. Percent distribution of persons 2 years of age and over by dental visits in past year according to age, sex, race, and family income: United States, 1983

[Data are based on household interviews of the civilian noninstitutionalized population The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

Characteristic	Total[1]	Number of visits in past year						
		None	1	2	3	4	5–12	13 or more
All persons		Percent distribution						
All ages[2]	100.0	44.6	21.8	17.1	5.7	3.4	5.8	0.9
2–4 years	100.0	71.3	17.7	7.2	1.7	0.6	0.8	*-
5–17 years	100.0	32.7	27.0	20.6	6.2	3.5	7.3	2.0
5–11 years	100.0	32.5	29.9	22.0	6.5	3.4	4.4	0.6
12–17 years	100.0	32.8	24.0	19.2	5.9	3.5	10.3	3.3
18–34 years	100.0	42.7	24.3	17.2	5.6	3.2	5.7	0.7
18–24 years	100.0	44.1	25.2	15.7	5.2	2.9	5.3	0.8
25–34 years	100.0	41.7	23.6	18.3	5.8	3.3	6.0	0.7
35–54 years	100.0	42.1	20.9	18.2	6.3	4.2	6.8	0.8
35–44 years	100.0	40.1	21.9	19.0	6.5	4.4	6.6	0.8
45–54 years	100.0	44.7	19.4	17.1	6.1	4.0	7.1	0.7
55–64 years	100.0	48.0	16.8	17.3	6.5	4.1	5.8	0.5
65 years and over	100.0	60.9	13.9	12.7	4.6	3.0	3.7	0.3
65–74 years	100.0	56.4	15.3	14.0	5.3	3.5	4.4	0.5
75 years and over	100.0	68.4	11.6	10.6	3.5	2.3	2.6	*0.2
Male								
All ages	100.0	46.6	21.6	16.5	5.5	3.2	5.2	0.7
2–4 years	100.0	70.8	17.9	7.8	1.6	*0.7	*0.6	*-
5–17 years	100.0	33.4	27.6	20.6	5.9	3.4	6.2	1.7
5–11 years	100.0	32.1	30.9	21.8	6.3	3.5	3.9	0.5
12–17 years	100.0	34.8	24.2	19.5	5.5	3.3	8.6	2.9
18–34 years	100.0	47.9	23.2	15.4	5.0	2.7	4.8	0.5
18–24 years	100.0	49.4	24.8	13.4	4.6	2.4	4.2	0.4
25–34 years	100.0	46.7	21.9	16.8	5.3	2.9	5.2	0.5
35–54 years	100.0	44.2	20.2	17.6	6.5	4.0	6.2	0.5
35–44 years	100.0	42.8	21.0	18.2	6.7	4.2	6.0	0.5
45–54 years	100.0	46.1	19.2	16.9	6.3	3.7	6.5	0.5
55–64 years	100.0	48.9	16.2	17.1	6.8	3.9	5.6	0.5
65 years and over	100.0	61.6	14.2	12.2	4.6	3.0	3.3	*0.3
65–74 years	100.0	57.5	15.4	13.5	5.3	3.3	3.9	*0.4
75 years and over	100.0	69.6	11.8	9.7	3.4	2.3	2.3	*0.2

See footnotes at end of table.

Table 2. Percent distribution of persons 2 years of age and over by dental visits in past year according to age, sex, race, and family income: United States, 1983—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

| Characteristic | Total[1] | Number of visits in past year | | | | | | |
		None	1	2	3	4	5–12	13 or more
Female		Percent distribution						
All ages	100.0	42.7	21.9	17.7	5.8	3.6	6.4	ˉ1.1
2–4 years	100.0	72.0	17.5	6.6	1.8	*0.5	1.0	
5–17 years	100.0	31.8	26.3	20.6	6.5	3.5	8.4	2.2
5–11 years	100.0	32.9	28.9	22.2	6.7	3.4	4.8	0.7
12–17 years	100.0	30.8	23.7	19.0	6.2	3.6	12.0	3.8
18–34 years	100.0	37.8	25.3	19.0	6.1	3.6	6.5	1.0
18–24 years	100.0	39.0	25.6	17.9	5.8	3.5	6.3	1.2
25–34 years	100.0	36.9	25.1	19.7	6.3	3.8	6.7	0.8
35–54 years	100.0	40.2	21.5	18.7	6.1	4.4	7.3	1.0
35–44 years	100.0	37.6	22.8	19.8	6.3	4.5	7.1	1.1
45–54 years	100.0	43.5	19.7	17.4	5.9	4.2	7.6	0.9
55–64 years	100.0	47.2	17.4	17.5	6.3	4.2	5.9	0.5
65 years and over	100.0	60.4	13.7	13.0	4.6	3.1	4.0	0.4
65–74 years	100.0	55.5	15.2	14.3	5.3	3.6	4.8	0.5
75 years and over	100.0	67.6	11.5	11.1	3.5	2.4	2.8	*0.1
White								
All ages	100.0	42.6	22.1	18.1	5.8	3.6	6.1	1.0
2–4 years	100.0	70.6	18.0	7.7	1.7	0.6	0.7	*-
5–17 years	100.0	29.7	27.3	22.1	6.2	3.7	7.9	2.3
5–11 years	100.0	30.0	30.3	23.6	6.5	3.7	4.5	0.7
12–17 years	100.0	29.4	24.3	20.6	6.0	3.7	11.3	3.9
18–34 years	100.0	40.7	24.9	18.2	5.7	3.2	5.9	0.8
18–24 years	100.0	41.7	25.7	16.9	5.5	2.9	5.7	0.9
25–34 years	100.0	39.9	24.3	19.1	5.9	3.5	6.1	0.7
35–54 years	100.0	40.4	21.2	19.1	6.5	4.3	7.0	0.8
35–44 years	100.0	38.3	22.1	20.2	6.7	4.5	6.8	0.8
45–54 years	100.0	43.1	19.9	17.7	6.2	4.1	7.3	0.8
55–64 years	100.0	45.9	17.1	18.6	6.7	4.3	5.8	0.6
65 years and over	100.0	59.0	14.4	13.5	4.9	3.2	3.8	0.4
65–74 years	100.0	54.4	15.9	14.9	5.6	3.6	4.5	0.5
75 years and over	100.0	66.4	12.1	11.3	3.8	2.6	2.8	*0.2
Black								
All ages	100.0	57.7	19.4	10.3	4.6	2.4	3.9	0.4
2–4 years	100.0	74.2	16.9	5.2	*1.4	*0.2	*1.3	*-
5–17 years	100.0	48.3	25.0	13.3	6.2	2.1	3.4	*0.3
5–11 years	100.0	45.8	27.6	13.4	6.9	1.9	3.1	*0.2
12–17 years	100.0	50.8	22.2	13.1	5.4	2.3	3.7	*0.4
18–34 years	100.0	55.3	20.4	11.0	4.7	2.8	4.0	*0.4
18–24 years	100.0	57.3	21.9	9.5	3.5	3.3	2.6	*0.4
25–34 years	100.0	53.6	19.1	12.2	5.6	2.5	5.2	*0.3
35–54 years	100.0	55.2	17.6	11.5	4.9	3.3	5.3	*0.7
35–44 years	100.0	53.4	19.5	10.7	5.0	3.8	5.1	*1.0
45–54 years	100.0	57.6	15.1	12.7	4.8	2.7	5.6	*0.4
55–64 years	100.0	66.4	15.1	5.7	4.6	2.1	5.0	*0.2
65 years and over	100.0	80.7	8.3	4.1	*1.5	*1.7	2.6	*0.2
65–74 years	100.0	76.0	9.9	4.8	*2.2	*2.7	3.4	*0.4
75 years and over	100.0	88.8	5.6	*3.0	*0.5	*-	*1.4	*-

See footnotes at end of table.

Table 2. Percent distribution of persons 2 years of age and over by dental visits in past year according to age, sex, race, and family income: United States, 1983—Con.

[Data are based on household interviews of the civilian noninstitutionalized population The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

Characteristic	Total[1]	Number of visits in past year						
		None	1	2	3	4	5–12	13 or more
Under $10,000				Percent distribution				
All ages	100.0	61.1	17.7	10.0	4.2	2.1	3.8	0.4
2–4 years	100.0	76.5	15.6	4.9	*1.1	*0.5	*-	*-
5–17 years	100.0	46.9	24.5	12.8	7.0	2.8	5.0	*0.5
5–11 years	100.0	45.2	26.4	12.6	7.6	3.4	4.2	*0.4
12–17 years	100.0	48.9	22.2	13.1	6.2	2.2	5.9	*0.7
18–34 years	100.0	51.9	22.4	12.8	4.8	2.4	4.5	0.6
18–24 years	100.0	47.9	24.2	14.4	5.1	2.6	4.5	0.6
25–34 years	100.0	56.8	20.0	10.9	4.4	2.3	4.5	0.5
35–54 years	100.0	65.0	15.2	8.4	3.7	2.4	4.4	*0.3
35–44 years	100.0	62.9	15.7	9.0	4.5	2.7	4.7	*0.4
45–54 years	100.0	67.8	14.5	7.7	2.8	1.9	4.0	*0.2
55–64 years	100.0	71.3	11.6	8.2	3.3	1.5	3.4	*0.2
65 years and over	100.0	75.6	10.1	6.9	2.7	1.6	2.5	*0.2
65–74 years	100.0	73.8	10.9	6.8	2.9	1.9	2.9	*0.4
75 years and over	100.0	77.6	9.2	6.9	2.4	1.2	2.0	*-
$10,000–$19,999								
All ages	100.0	52.3	19.7	13.6	4.9	3.2	4.9	0.7
2–4 years	100.0	76.6	13.6	5.6	2.1	*0.7	*0.8	*0.1
5–17 years	100.0	42.9	24.8	15.9	5.7	3.3	5.3	0.9
5–11 years	100.0	42.3	27.0	16.6	6.0	3.6	3.4	*0.3
12–17 years	100.0	43.7	22.2	15.1	5.4	2.9	7.5	1.7
18–34 years	100.0	48.4	22.3	14.3	5.2	3.4	5.2	0.7
18–24 years	100.0	49.6	22.4	13.3	4.9	3.4	4.9	0.8
25–34 years	100.0	47.5	22.3	15.0	5.4	3.3	5.4	0.7
35–54 years	100.0	55.4	17.1	12.2	4.8	3.6	5.6	0.8
35–44 years	100.0	53.3	18.5	13.0	5.0	3.7	5.3	*0.8
45–54 years	100.0	58.4	15.2	11.0	4.5	3.4	6.1	*0.8
55–64 years	100.0	56.6	15.7	13.4	4.8	3.6	5.0	*0.5
65 years and over	100.0	58.6	15.0	13.4	4.7	3.2	4.1	0.6
65–74 years	100.0	55.4	15.7	14.6	5.3	3.5	4.4	*0.7
75 years and over	100.0	65.4	13.6	10.9	3.3	2.4	3.6	*0.4
$20,000–$34,999								
All ages	100.0	38.5	23.5	19.5	6.6	3.8	6.6	1.1
2–4 years	100.0	68.6	19.2	8.4	1.7	*0.5	*1.0	*0.1
5–17 years	100.0	27.1	28.6	23.8	6.4	3.7	7.5	2.5
5–11 years	100.0	26.0	31.9	26.1	6.8	3.4	4.5	0.8
12–17 years	100.0	28.3	25.1	21.2	6.0	4.0	10.8	4.3
18–34 years	100.0	38.5	24.7	18.8	6.6	3.7	6.6	0.7
18–24 years	100.0	42.5	24.9	16.4	6.1	3.3	5.7	0.7
25–34 years	100.0	36.5	24.6	20.0	6.8	3.9	7.1	0.8
35–54 years	100.0	40.2	21.4	18.7	6.8	4.5	7.3	0.8
35–44 years	100.0	37.1	22.6	19.4	6.9	5.1	7.5	1.0
45–54 years	100.0	44.5	19.5	17.7	6.8	3.7	7.0	0.6
55–64 years	100.0	41.9	18.1	19.6	8.3	4.3	6.9	*0.7
65 years and over	100.0	41.2	19.1	20.8	8.2	4.9	5.3	*0.3
65–74 years	100.0	38.5	20.3	21.2	8.4	5.0	5.9	*0.4
75 years and over	100.0	47.6	16.4	19.8	7.7	4.6	*3.8	*-

See footnotes at end of table.

Table 2. Percent distribution of persons 2 years of age and over by dental visits in past year according to age, sex, race, and family income: United States, 1983—Con.

[Data are based on household interviews of the civilian noninstitutionalized population The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

Characteristic	Total[1]	Number of visits in past year						
		None	1	2	3	4	5–12	13 or more
$35,000 or more		Percent distribution						
All ages	100.0	25.9	26.1	25.7	7.3	4.8	8.3	1.5
2–4 years	100.0	59.6	24.5	12.6	*1.3	*0.9	*0.4	*-
5–17 years	100.0	15.3	29.2	28.2	6.6	4.6	12.0	3.7
5–11 years	100.0	15.1	33.9	32.6	6.5	4.2	6.6	*0.7
12–17 years	100.0	15.5	25.5	24.7	6.6	4.9	16.2	6.1
18–34 years	100.0	28.7	29.1	24.8	6.2	3.5	6.5	0.9
18–24 years	100.0	30.6	31.3	21.5	5.5	3.0	6.6	1.1
25–34 years	100.0	27.4	27.6	27.1	6.6	3.8	6.4	0.8
35–54 years	100.0	25.8	24.9	25.6	8.3	5.3	8.6	1.0
35–44 years	100.0	24.8	26.1	26.5	8.3	5.1	8.0	0.9
45–54 years	100.0	27.1	23.3	24.5	8.4	5.4	9.4	1.1
55–64 years	100.0	25.5	20.4	28.7	9.1	7.1	7.8	*0.8
65 years and over	100.0	34.2	16.2	24.8	9.8	8.1	6.1	*0.4
65–74 years	100.0	26.4	17.1	27.7	11.5	9.0	7.9	*0.6
75 years and over	100.0	52.0	14.2	18.5	*6.2	*6.2	*2.3	

[1]Includes unknown number of visits.
[2]Includes other races and unknown income.

NOTE: Estimates for which the numerator has a relative standard error of more than 30 percent are indicated with an asterisk.

Average number of visits

Overall, Americans made an estimated 422,043,000 visits to dentists in 1983, an average of 1.9 visits per person (table 3). Taking the population as a whole, the average rate was highest for adolescents aged 12–17 years. The rate was lower in the young adult years (18–34), higher for those 35–64 years of age, and lower among persons aged 65 and over. To some extent, the decline over age 65 is attributable to an increasing rate of edentulousness with age and less need for dental services.

There were significant differences, however, between the racial groups in the rates of dental visits. Among black persons, the highest average rate occurred not in the 12–17-year age group, but in the 45–54-year age group (1.8 visits per person per year).

The relationship of age to the use of dental services is affected by family income. The effect was greatest among persons 65 years of age and over and 12–17 years. In all income groups, dental visits in the older age groups declined; however, the age at which the decline occurred differed by income group: The rate of dental visits began to decline at a higher age for those with higher income. For those with a family income of more than $20,000, the rate of dental visits for adults increased through the age group 65–74 years and only declined among those 75 years of age and over. For all income groups combined, adolescents made significantly more visits than those in other age groups. The high rate of visits for adolescents, however, was almost entirely among those with family incomes of more than $20,000.

Table 3. Number of dental visits and visits per person 2 years of age and over per year by age according to sex, race, and family income: United States, 1983

[Data are based on household interviews of the civilian noninstitutionalized population The survey design, general qualifications, and information on the reliability of the estimates are given in the Technical notes]

Characteristic	All persons	Sex		Race			Family income			
		Male	Female	White	Black	All other	Less than $10,000	$10,000– $19,999	$20,000– $34,999	$35,000 or more
	Number of visits in thousands									
All ages[1]	422,043	182,584	239,459	381,746	31,307	8,990	50,487	77,512	139,563	112,453
2–4 years	7,166	3,764	3,402	6,067	*941	*157	1,307	1,430	3,137	1,027
5–17 years	110,630	50,170	60,460	99,967	7,707	2,957	10,254	18,085	39,150	33,864
5–11 years	47,268	22,364	24,904	41,266	4,798	1,205	5,787	9,384	17,444	11,370
12–17 years	63,362	27,807	35,556	58,701	2,909	1,752	4,467	8,701	21,706	22,494
18–34 years	113,147	46,636	66,511	100,726	10,114	2,307	18,130	24,205	39,521	21,692
18–24 years	44,344	17,734	26,610	39,766	4,038	*540	11,345	8,936	11,249	8,203
25–34 years	68,803	28,902	39,901	60,960	6,076	1,767	6,785	15,269	28,272	13,489
35–54 years	106,408	46,763	59,645	95,036	8,863	2,510	7,486	14,141	36,279	38,073
35–44 years	61,133	26,983	34,150	55,423	4,752	*959	4,451	8,820	22,583	20,173
45–54 years	45,275	19,780	25,495	39,613	4,111	1,551	3,035	5,320	13,696	17,900
55–64 years	45,118	20,021	25,097	42,008	2,474	*635	4,844	9,084	12,567	11,838
65 years and over	39,574	15,229	24,345	37,942	1,207	*424	8,466	10,567	8,908	5,959
65–74 years	28,496	11,541	16,955	27,040	1,088	*368	5,468	8,136	6,804	4,484
75 years and over	11,078	3,688	7,390	10,902	*119	*56	2,998	2,431	2,104	1,474
	Number per person per year									
All ages[1]	1.9	1.7	2.1	2.0	1.2	1.7	1.2	1.5	2.3	2.7
2–4 years	0.7	0.7	0.6	0.7	*0.5	*0.5	0.6	0 5	1.0	0.7
5–17 years	2.5	2.2	2.8	2.7	1.2	2.3	1.3	1.9	2.9	3.7
5–11 years	2.1	1.9	2.2	2.2	1.4	1.9	1.4	1.8	2.5	2.8
12–17 years	2.9	2.5	3.3	3.2	0.9	2.7	1.3	2 0	3 4	4.4
18–34 years	1.7	1.4	1.9	1.8	1.2	1.3	1.5	1.4	1.9	1 9
18–24 years	1.6	1.3	1.8	1.7	1.1	*0.8	1.6	1.3	1 6	1.8
25–34 years	1.8	1.5	2.0	1.8	1.3	1.7	1.2	1.5	2.1	2.0
35–54 years	2.1	1.9	2.3	2.1	1.7	1.8	1.4	1.6	2.3	2 6
35–44 years	2.1	1.9	2.3	2.2	1.6	*1.2	1.4	1.7	2.4	2.5
45–54 years	2.0	1.9	2.2	2.0	1.8	2.9	1.3	1.4	2.1	2.8
55–64 years	2.1	2.0	2.1	2.1	1.3	*1.8	1.3	1.8	2.2	2.9
65 years and over	1.5	1.4	1.6	1.6	0.6	*1.3	0.9	1.5	2.5	3.3
65–74 years	1.8	1.7	1.9	1.9	0.8	*1.7	1.1	1.7	2.7	3.6
75 years and over	1.1	1.0	1.2	1.2	*0.2	*0.5	0.7	1.1	2.0	2.6

[1]Includes unknown number of visits.
[2]Includes unknown income.

NOTE: Estimates for which the numerator has a relative standard error of more than 30 percent are indicated with an asterisk.

Technical notes

The National Health Interview Survey (NHIS) is a continuous, cross-sectional, nationwide survey conducted by household interview. Each week a probability sample of households in the civilian noninstitutionalized population is interviewed by personnel of the U.S. Bureau of the Census to obtain information on the health and other characteristics of each member of the household.

During 1983, the sample consisted of approximately 40,900 households. The total noninterview rate was about 3 percent—about 2 percent of which was attributable to respondent refusal, and the remainder resulted primarily from an inability to locate eligible respondents at home after repeated calls. Information was obtained for all household members for the core section of the questionnaire, a sample of approximately 106,000 persons. The dental questions were contained in a separate booklet. Dental information was obtained for all but 438 of the 105,620 people for whom core information was obtained, an additional non-response rate of 0.4 percent. A description of the survey design, methods used in estimation, and general qualifications of NHIS data was published previously.[3]

The estimates shown in this report are based on a sample of the (civilian noninstitutionalized) population rather than on the entire population and are therefore subject to sampling error. Some tables in this report contain cells in which the estimate is small for a given characteristic. When an estimate or the numerator or denominator of a rate is small, the sampling error nay be relatively high. Approximate standard errors of estimates of selected percents are shown in tables I and II. Additional information on standard errors for all statistics presented in this report is available from the author.

In this report, terms such as "similar" and "the same" mean that no statistically significant difference exists between the statistics being compared. Terms relating to difference

[3]National Center for Health Statistics, M. G. Kovar and G. S. Poe: The National Health Interview Survey design, 1973–84, and procedures, 1975–83. *Vital and Health Statistics.* Series 1, No. 18. DHHS Pub. No. (PHS) 85–1320. Public Health Service. Washington. U.S. Government Printing Office. Aug. 1985.

(for example, "greater" or "less") indicate that differences are statistically significant. The *t*-test with a critical value of 1.96 (0.05 level of significance) was used to test all comparisons that are discussed. Lack of comment regarding the difference between any two statistics does not mean the difference was tested and found not significant.

Table I.   Standard errors, expressed in percentage points, of estimated percents: 1983 National Health Interview Survey dental supplement; dental visits

Base of percent in thousands of visits	Estimated percent				
	2 or 98	5 or 95	10 or 90	20 or 80	50
50	19.0	29.6	40.8	54.4	68.0
70	16.1	25.0	34.5	45.9	57.4
100	13.5	20.9	28.8	38.4	48.1
300	7.8	12.1	16.6	22.2	27.7
500	6.0	9.4	12.9	17.2	21.5
700	5.1	7.9	10.9	14.5	18.2
1,000	4.3	6.6	9.1	12.2	15.2
5,000	1.9	3.0	4.1	5.4	6.8
10,000	1.3	2.1	2.9	3.8	4.8
20,000	1.0	1.5	2.0	2.7	3.4
30,000	0.8	1.2	1.7	2.2	2.8
50,000	0.6	0.9	1.3	1.7	2.1
100,000	0.4	0.7	0.9	1.2	1.5
400,000	0.2	0.3	0.5	0.6	0.8

Table II.   Standard errors, expressed in percentage points, of estimated percents: 1983 National Health Interview Survey dental supplement; population

Base of percent in thousands (population)	Estimated percent				
	2 or 98	5 or 95	10 or 90	20 or 80	50
50	3.9	6.0	8.3	11.1	13.8
70	3.3	5.1	7.0	9.4	11.7
100	2.7	4.3	5.9	7.8	9.8
300	1.6	2.5	3.4	4.5	5.6
500	1.2	1.9	2.6	3.5	4.4
700	1.0	1.6	2.2	3.0	3.7
1,000	0.9	1.3	1.9	2.5	3.1
5,000	0.4	0.6	0.8	1.1	1.4
10,000	0.3	0.4	0.6	0.8	1.0
20,000	0.2	0.3	0.4	0.6	0.7
30,000	0.2	0.2	0.3	0.5	0.6
50,000	0.1	0.2	0.3	0.3	0.4
100,000	0.1	0.1	0.2	0.2	0.3
200,000	0.1	0.1	0.1	0.2	0.2

The Management of Chronic Pain in Office-Based Ambulatory Care: National Ambulatory Medical Care Survey

by Hugo Koch, Division of Health Care Statistics

Introduction

The management of chronic pain is one of the most un-rewarding tasks of the physician. New pain, with its attendant fear of an unknown threat, can be sharply distressful to the sufferer, but it also may produce certain beneficial effects. For example, probably more than any other symptom, it motivates the sufferer to visit a doctor. Also, the location and nature of the new pain are helpful clues to the physician in the discovery of the appropriate diagnosis. Added to these positive effects is the assuring fact that most new pain is transient, that is, associated with acute conditions that largely correct themselves or yield readily to short-term therapies. Chronic pain, on the other hand, is almost wholly malefic in its effects. For the most part, its diagnostic linkages have already been established, too often to impairments that offer little or no hope of complete cure. Unable to consummate the healing function, physicians are denied their deepest professional satisfaction. Patients afflicted with chronic pain may become the prey of increasing hopelessness and pain-centered disability. Pain may become the center of their universe, conditioning most of their life responses and leading, in some, to the creation of the chronic pain syndrome.

Furthermore, the treatment of chronic pain in the ambulatory setting presents a challenge different from that found in the inpatient environment. This is chiefly due to a lack of control over outpatients and the fact that, unlike the sheltered inpatient, the outpatient usually must carry on with the demands of day-to-day living. This report will focus on the presentation and management of chronic pain in one ambulatory setting—the physician's office. It uses the findings of the National Ambulatory Medical Care Survey (NAMCS), an annual sample survey

of office-based physicians conducted from 1973 through 1981 by the National Center for Health Statistics. Its data base is composed of 72,374,000 chronic pain visits made to the offices of non-Federal, office-based physicians practicing in the coterminous United States over the 2-year span from January 1980 through December 1981. A chronic pain visit is distinguished by the following characteristics:

● The condition under treatment was a problem of 3 months' duration or longer (subitems 1 and 2 of item 7 on the data collection form, figure 1).
● The most important reason the patient gave for visiting the physician was a complaint or symptom of pain (item 6a, figure 1).

It is readily acknowledged that, with its focus on a first-listed pain symptom, this type of analysis does not account for all the chronic pain met with in office practice. For example, it patently excludes the visits at which chronic pain appeared as a second- or third-listed reason for visiting the physician (item 6b, figure 1). Inclusion of these visits, while probably increasing the data base by about 40 percent, would have obscured direct correlations between the pain symptom and other aspects of office-based care, such as the physician's diagnosis and treatment mechanisms.

The data presented here are estimates, based on a sample of office visits rather than the actual number, and thus are subject to sampling variability. The smaller an estimate, or any percent or rate based on that estimate, the more imprecise it is likely to be. An asterisk preceding any estimate indicates that it exceeds 30 percent relative standard error. Guidelines for judging the precision of estimates are provided in the Technical

Figure 1.   National Ambulatory Medical Care Survey Patient Record, 1980 and 1981

notes at the end of the report, along with a brief description of the survey design.

Data highlights

Of the 72,374,000 chronic pain visits that form the data base for this report, all but a handful were motivated by the 25 complaints or symptoms listed in table 1. A dominant 52 percent of the visits were caused by the first five symptoms on the list: back pain, headache, chest pain, abdominal pain, and knee pain. These five symptoms led the list for both male and female sufferers. Their relative proportions, however, varied between the sexes (figure 2). Headache, for example, was nearly twice as evident at chronic pain visits made by female patients, while back and chest pain were clearly more troublesome among males.

Tables 2 and 3 direct attention to the impairments associated with chronic pain symptoms, as the principal (first-listed) diagnoses rendered by the attending physicians. From the pain symptoms listed in table 1, it comes as no surprise that by far the largest proportion (34 percent) of these impairments were diseases of the musculoskeletal system. Indeed, a dominant 64 percent of all chronic pain visits fell into only four diagnostic groups:

Diagnostic group	Chronic pain visits
	Percent distribution
Musculoskeletal disease.................	34.0
Circulatory disease	12.7
Digestive disease	8.4
Injuries.................................	8.4

Table 1. Number of chronic pain visits, and percent distribution and cumulative distribution of chronic pain visits by the 25 pain symptoms that most frequently motivated the visit: United States, 1980 and 1981

Rank	Pain symptoms most frequently motivating chronic pain visits	Chronic pain visits		Rank	Pain symptoms most frequently motivating chronic pain visits	Chronic pain visits	
		Number in thousands				Percent distribution	Cumulative distribution
...	All patients....................	72,374		12	Stomach pain..................	2.8	77.8
				13	Earache......................	2.7	80.5
		Percent distribution	Cumulative distribution	14	Pain, site not referable to a specific body system[1]	2.6	83.1
...	All patients..................	100.0	...	15	Hip pain	2.5	85.6
1	Back pain (upper or lower)	17.8	17.8	16	Foot and toe pain..............	2.4	88.0
2	Headache.....................	11.5	29.3	17	Hand and finger pain...........	1.6	89.6
3	Chest pain	9.3	38.6	18	Painful urination...............	1.6	91.2
4	Abdominal pain	7.6	46.2	19	Arm pain.....................	1.3	92.5
5	Knee pain.....................	6.0	52.2	20	Eye pain	1.0	93.5
6	Shoulder pain.................	4.3	56.5	21	Breast pain...................	0.7	94.2
7	Leg pain	4.1	60.6	22	Pelvic pain	0.7	94.9
8	Neck pain.....................	4.0	64.6	23	Ankle pain	0.7	95.6
9	Generalized pain, site unspecified..................	3.6	68.2	24	Elbow pain	0.7	96.3
10	Throat pain...................	3.5	71.7	25	Wrist pain....................	*0.6	96.9
11	Pain of unspecified joints	3.3	75.0	...	Other chronic pain symptoms....	3.1	100.0

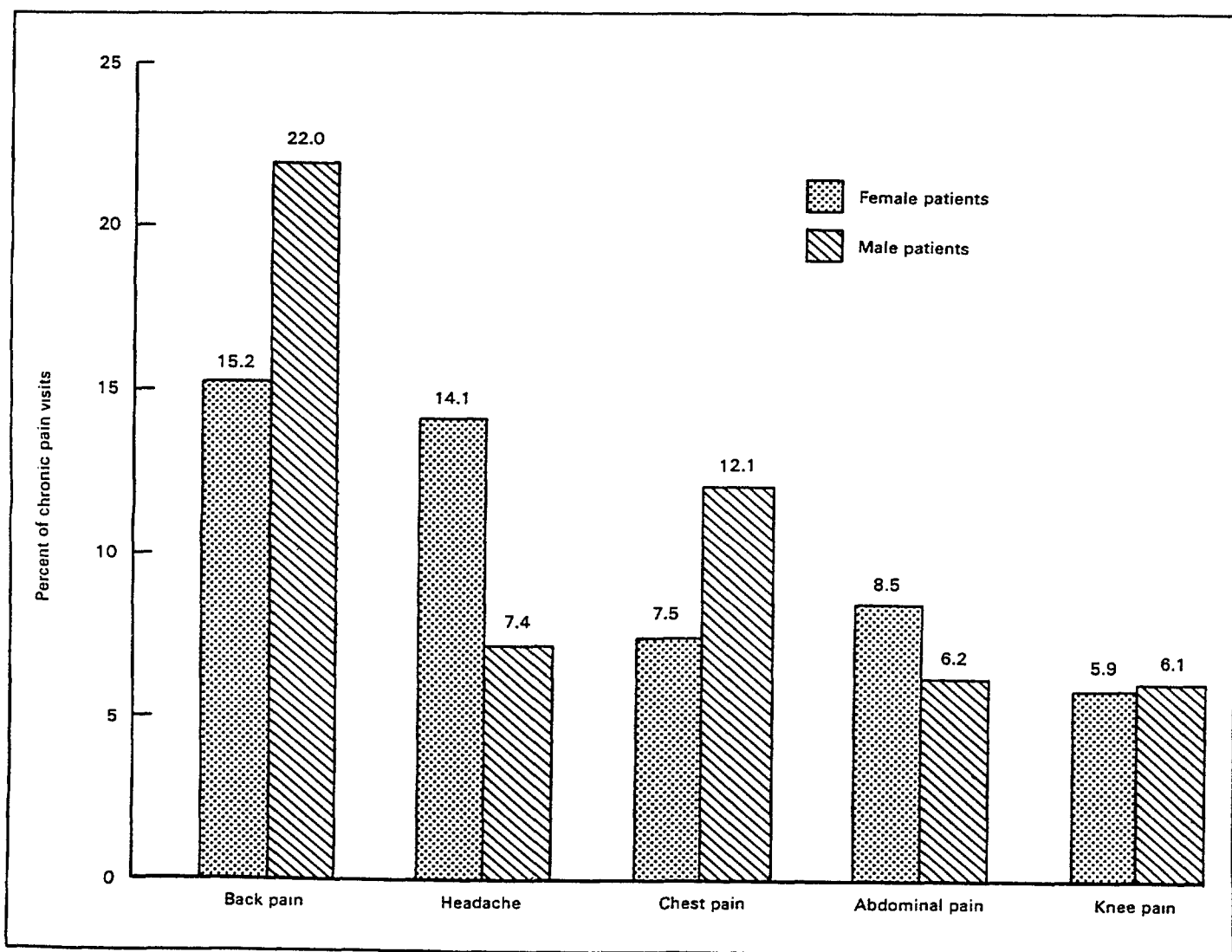[1] Rib pain, side or flank pain, groin pain, and facial pain.

Figure 2. Percent of chronic pain visits for the 5 most frequent symptoms, according to sex of patient: United States, 1980 and 1981

Table 2. Number of chronic pain visits, and percent distribution and cumulative distribution of chronic pain visits, by the 25 principal (first-listed) diagnoses most frequently associated with the visits: United States, 1980 and 1981

Rank	Most common principal diagnoses and ICD–9–CM code[1]	Chronic pain visits	
		Number in thousands	
...	All diagnoses	72,374	
		Percent distribution	Cumulative distribution
...	All diagnoses	100.0	...
1	Osteoarthrosis and allied disorders 715	6.0	6.0
2	Essential hypertension 401	4.1	10.1
3	Other and unspecified disorders of back.............. 724	4.0	14.1
4	Other and unspecified arthropathies 716	3.8	17.9
5	Rheumatoid arthritis and other inflammatory polyarthropathies 714	3.1	21.0
6	Sprains and strains, other and unspecified parts of back.............. 847	3.1	24.1
7	Intervertebral disc disorders.............. 722	3.1	27.2
8	Other forms of chronic ischemic heart disease.............. 414	2.6	29.8
9	Peripheral enthesiopathies and allied syndromes.............. 726	2.5	32.3
10	Spondylosis and allied disorders 721	2.5	34.8
11	Other disorders of soft tissue.............. 729	2.3	37.1
12	Sprains and strains, sacroiliac region 846	2.0	39.1
13	Symptoms involving head and neck 784	2.0	41.1
14	Functional digestive disorders, not elsewhere classified.............. 564	1.7	42.8
15	Migraine.............. 346	1.4	44.2
16	Angina pectoris.............. 413	1.4	45.6
17	Pharyngitis.............. 462	1.3	46.9
18	Suppurative and unspecified otitis media 382	1.3	48.2
19	Neurotic disorders.............. 300	1.2	49.4
20	Other symptoms involving abdomen and pelvis.............. 789	1.2	50.6
21	Special symptoms or syndromes, not elsewhere classified.............. 307	1.1	51.7
22	Chronic sinusitis.............. 473	1.0	52.7
23	Other disorders of synovium, tendon, and bursa 727	1.0	53.7
24	Other and unspecified disorders of joint.............. 719	1.0	54.7
25	Gastritis and duodenitis 535	0.9	55.6

[1]Terminology and codes are those of the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

Table 3. Number of chronic pain visits, and percent distribution of chronic pain visits by the principal diagnoses associated with each: United States, 1980 and 1981

Diagnostic group and ICD–9–CM code[1]	Chronic pain visits	Diagnostic group and ICD–9–CM code[1]	Chronic pain visits
	Number in thousands		Percent distribution
All diagnoses.......................	72,374	Diseases of the circulatory system............ 390–459	12.7
		Essential hypertension........................ 401	4.1
	Percent distribution	Ischemic heart disease.................... 410–414	4.5
		Diseases of the respiratory system 460–519	6.1
All diagnoses.......................	100.0	Diseases of the digestive system............ 520–579	8.4
		Diseases of the genitourinary system 580–629	6.2
Infectious and parasitic diseases............. 001–139	0.7	Diseases of the skin and subcutaneous	
Neoplasms................................ 140–239	1.9	tissue................................... 680–709	1.1
Endocrine, nutritional, and metabolic diseases		Diseases of the musculoskeletal system and	
and immunity disorders.................... 240–279	1.8	connective tissue 710–739	34.0
Diseases of endocrine glands 240–259	1.0	Arthropathies and related disorders........ 710–719	13.0
Mental disorders.......................... 290–319	3.1	Symptoms, signs, and ill-defined	
Nonpsychotic mental disorders 300–319	3.0	conditions ......·...................... 780–799	5.6
Diseases of the nervous system and sense		Injury and poisoning....................... 800–999	8.4
organs 320–389	6.5	Other and unknown	3.5
Diseases of the central nervous system 320–349	1.9		
Eye disorders............................ 360–379	1.1		
Otitis media 382	1.3		

[1]Based on principal (first-listed) diagnoses classified by the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).

Although most chronic pain can be readily traced to somatic disease or injury, it is also instructive to consider the 9 percent of chronic pain visits that were not clearly linked to a known physiological impairment. Specifically, these were visits assigned by the physician to the diagnostic classes Mental disorders or Symptoms, signs, and ill-defined conditions. This psychosomatic/symptomatic proportion varied considerably, depending on the pain symptom under study. For example, it was well below average for musculoskeletal symptoms such as back or knee pain (2 percent or less), and most pronounced

among three nonmusculoskeletal complaints—chest pain (14 percent), abdominal pain (15 percent), and headache (a sharply prominent 33 percent). It is illustrative that of the six specific diagnoses most frequently associated with chronic headache, three belonged to this psychosomatic/symptomatic category (table 4).

The 72,374,000 visits chiefly motivated by chronic pain produced an average rate of 62 chronic pain visits per 1,000 office visits. The extent to which this average rate fluctuated with patient age, sex, race, and Hispanic origin is shown in table 5.

The findings reveal that chronic pain visits were most frequent among middle-aged patients in the age-group 45–64 years, increasing in that interval to a rate of about 95 per 1,000 office visits. The mean patient age at chronic pain visits was about 50 years, exceeding by 11 years the mean of 39 years found for all office patients. In mean age and average rate per 1,000 office visits, females presenting chronic pain did not differ much from their male counterparts. However, though their average visit rates were about the same, there were important rate differences between the sexes at two points along the age continuum, a finding made graphically apparent in figure 3. One of these points is the age interval from the 25th through the 44th year, during which time the male rate of chronic pain visits significantly exceeded the female rate. The chronic impairments chiefly responsible for this disparity were injuries (markedly more prevalent among males of this age than females) and musculoskeletal disease (which, largely in the form of rheumatoid arthritis, made an earlier appearance among males than among females) (table 6). Among patients aged 65 years and over, on the other hand, it is the female rate of chronic pain visits that somewhat exceeds the male rate. In large part, this is due to the fact that musculoskeletal disease—notably, osteoporosis and the osteoarthropathies—persists at a higher level of activity among older females than among older males (table 6).

Gender and age differences are also apparent in the presence of psychosomatic/symptomatic pain (table 6). It is noteworthy that this kind of pain was most evident among patients under 45 years of age and was more often presented by female patients than by males. It was most apparent among female patients in

Table 4. Percent distribution of visits for chronic headache by the 6 principal diagnoses most frequently associated with it: United States, 1980 and 1981

Principal diagnoses and ICD–9–CM codes[1] most frequently associated with visits for chronic headache	Visits for chronic headache
	Percent distribution
All diagnoses	100.0
Essential hypertension ... 401	20.4
Symptoms involving head and neck ... 784	15.8
Migraine ... 346	11.8
Special (psychopathological) symptoms or syndromes, not elsewhere classified ... 307	8.6
Chronic sinusitis ... 473	5.8
Neurotic disorders ... 300	*3.8
Cumulative subtotal	66.2

[1]Based on International Classification of Diseases, 9th Revision, Clinical Modification (ICD–9–CM).

Table 5. Number of chronic pain visits, and percent distribution and number of chronic pain visits per 1,000 office visits by selected characteristics: United States, 1980 and 1981

Patient characteristic	Chronic pain visits	
	Number in thousands	Number per 1,000 office visits
All patients	72,374	62
	Percent distribution	
All patients	100.0	62
AGE		
Under 15 years	5.4	18
15–24 years	7.0	31
25–44 years	27.0	63
45–64 years	34.9	95
65 years and over	25.7	89
65–74 years	15.5	90
75–84 years	8.6	92
85 years and over	1.5	77
SEX		
Female	60.7	63
Male	39.3	62
SEX AND AGE		
Female		
Under 15 years	3.0	21
15–24 years	4.4	30
25–44 years	15.7	55
45–64 years	21.0	97
65 years and over	16.6	95
Male		
Under 15 years	2.4	15
15–24 years	2.6	35
25–44 years	11.3	79
45–64 years	13.9	93
65 years and over	9.1	81
RACE[1]		
White	86.6	60
Black	12.6	82
HISPANIC ORIGIN		
Hispanic	6.0	81
Non-Hispanic	94.0	61

[1]Because of their very minor representation in the data base (0.9 percent), other races are omitted from this study.

their 25th through 44th year, where it accounted for 17 percent of their chronic pain visits.

The chronic pain visit rates for black and Hispanic patients were modestly higher than those found among their white or non-Hispanic counterparts (table 5). The reasons for these disparities are open to conjecture, but they may lie partly in the findings that black office patients suffered more frequently than white patients from injuries and circulatory diseases, while Hispanic patients seen in the doctor's office suffered somewhat more than non-Hispanic patients from the musculoskeletal diseases. Neither of these minority groups exceeded the average in their presentation of psychosomatic/symptomatic pain.

A study of the forms of treatment applied in the management of chronic pain can be helpful in understanding the nature
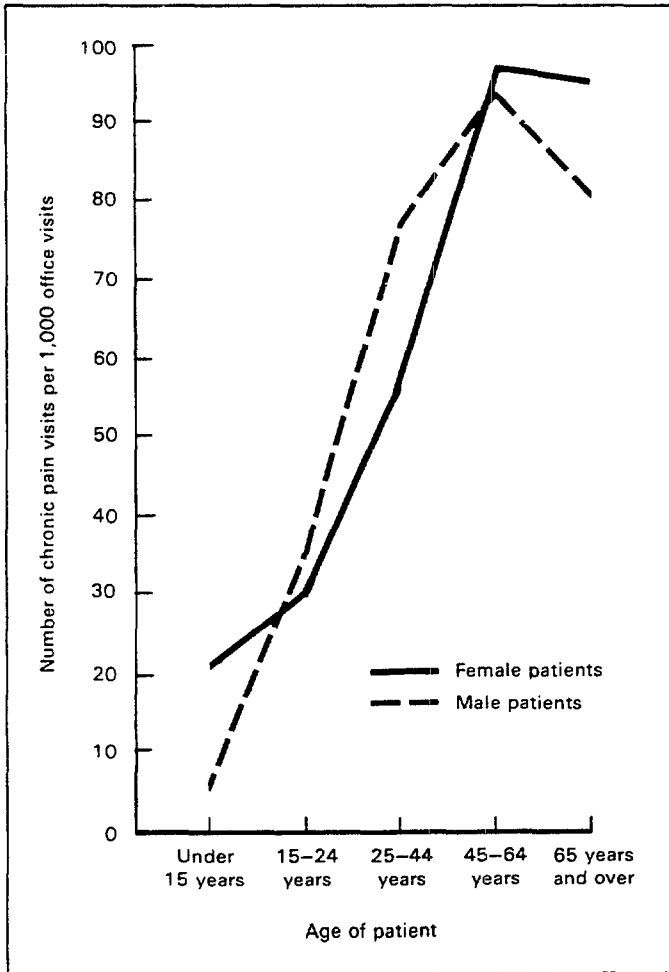
Figure 3.   Number of chronic pain visits per 1,000 office visits by sex and age of patient: United States, 1980 and 1981

and effects of this kind of pain. Clearly, the use of drugs was the therapeutic approach most frequently documented. At 72 percent of chronic pain visits, one or more drugs were ordered or provided (table 7), averaging about two drugs per visit. Most of the drugs (for example, antacids, vasodilators, anti-inflammatory agents, and muscle relaxants) were not aimed directly at conquest of pain but, rather, at the treatment of its cause or, as in the case of psychotropic drugs, at the relief of its effects.

Table 8 documents the use of analgesic agents, the drugs aimed directly at pain reduction. By dividing the analgesic class into its opioid and nonopioid subclasses, the findings support inferences about the severity of the chronic pain encountered in office practice. (It is assumed that opioids are most effective for relieving pain that is moderate to severe,

Table 7.   Percent of chronic pain visits and of all office visits, by selected classes of agents used in drug therapy: United States, 1980 and 1981

	Drug visits[1]	
Drug class	Percent of chronic pain visits	Percent of all office visits
All drug classes.....................	72.0	62.0
Autonomic drugs.....................	9.2	3.7
Cardiovascular-renal drugs.............	30.3	16.6
Analgesic agents.....................	34.4	8.8
Psychotropic drugs[2]	11.9	6.0
Hormones	14.2	8.3
Adrenal corticosteroids.............	8.0	2.9
Gastrointestinal drugs.................	8.2	3.6

[1]Visits at which 1 or more members of a drug class were ordered or provided.
[2]Includes antianxiety agents, sedatives, hypnotics, antidepressants, and antipsychotic drugs.

Table 6.   Number of chronic pain visits by sex and age of patient, and percent distribution of chronic pain visits by associated diagnoses, according to sex and age of patient: United States, 1980 and 1981

	Chronic pain visits							
	Female patients				Male patients			
Diagnostic group and ICD–9–CM code[1]	All ages	Under 45 years	45–64 years	65 years and over	All ages	Under 45 years	45–64 years	65 years and over
	Number in thousands							
All principal diagnoses............................	43,945	16,372	15,193	12,020	28,429	11,771	10,087	6,57Q
	Percent distribution							
All principal diagnoses............................	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Neoplasms 140–239	1.6	*1.3	*2.5	*1.1	2.4	*0.5	*2.2	*6.2
Mental disorders.......................... 290–319	4.0	6.4	3.4	*1.6	1.7	*3.0	*1.2	*0.3
Diseases of the nervous system and sense organs..................................... 320–389	6.6	10.3	4.7	4.2	6.2	9.7	*4.1	*3.2
Diseases of the circulatory system 390–459	12.2	4.3	13·9	21.3	13.4	4.0	15.7	26.9
Diseases of the respiratory system 460–519	6.0	9.3	5.3	*2.5	6.2	8.0	*3.6	7.0
Diseases of the digestive system 520–579	7.9	9.0	8.2	6.1	9.1	9.0	9.2	9.4
Diseases of the genitourinary system 580–629	7.7	14.1	4.3	*3.4	3.9	5.4	*2.3	*4.0
Diseases of the musculoskeletal system and connective tissue 710–739	34.1	20.6	40.2	46.0	33.8	31.2	40.4	28.6
Symptoms, signs, and ill-defined conditions ... 780–799	6.0	9.4	4.4	*3.6	4.9	5.9	*4.1	*4.3
Injury and poisoning...................... 800–999	7.0	9.6	6.7	4.1	10.5	14.6	9.9	*4.3
Other and unknown	6.9	5.7	6.4	6.1	7.9	8.7	7.3	5.7

[1]Based on International Classification of Diseases, 9th Revision, Clinical Modification (ICD–9–CM).

Table 8. Number of chronic pain visits by patient characteristics, most frequent pain symptoms, and selected principal diagnoses, and percent of chronic pain visits that involved the use of 1 or more analgesic agents or 1 or more psychotropic drugs, by patient characteristics, most frequent pain symptoms, and selected principal diagnoses: United States, 1980 and 1981

| Patient characteristic, most frequent pain symptom, and diagnostic group | Chronic pain visits | Analgesic visits[1] | | | Psychotropic visits:[2] |
		Percent of chronic pain visits	Opioid proportion	Nonopioid proportion	Percent of chronic pain visits
	Number in thousands	Percent of analgesics			
All chronic pain visits	72,364	34.4	26.9	73.1	11.9
PATIENT CHARACTERISTIC					
Age					
Under 45 years	28,503	26.6	35.5	64.5	10.1
45–64 years	25,281	38.1	27.3	72.7	13.8
65 years and over	18,590	41.4	18.0	82.0	12.1
Sex					
Female	43,945	35.5	26.7	73.3	13.4
Male	28,429	32.8	27.4	72.6	9.6
Race[3]					
White	62,647	33.7	24.9	75.1	12.0
Black	9,097	38.2	38.6	61.4	12.1
Hispanic origin					
Hispanic	4,310	37.5	*19.2	80.8	*18.2
Non-Hispanic	68,064	34.2	27.5	73.4	11.5
MOST FREQUENT PAIN SYMPTOM					
Back pain	12,899	46.7	30.8	69.2	12.8
Headache	8,297	21.9	54.7	45.3	32.8
Chest pain	6,762	16.6	*23.1	76.9	14.6
Abdominal pain	5,518	12.0	*56.2	43.7	11.5
Knee pain	4,321	50.4	*9.1	90.9	*4.3
DIAGNOSTIC GROUP (SELECTED)					
Neoplasms	1,402	34.5	*70.0	*30.0	*7.7
Mental disorders	2,257	20.5	*55.7	*44.3	61.8
Diseases of the nervous system and sense organs	4,670	17.9	*44.1	55.9	13.7
Diseases of the circulatory system	9,193	20.1	*20.6	79.4	14.9
Diseases of the respiratory system	4,396	*10.2	*39.6	*60.4	*6.1
Diseases of the digestive system	6,053	12.0	*43.8	*56.2	10.2
Diseases of the genitourinary system	4,480	19.8	*48.2	51.8	*3.3
Diseases of the musculoskeletal system	24,625	60.0	20.3	59.7	9.5
Symptoms, signs, and ill-defined conditions	4,014	22.5	54.8	45.2	20.5
Injury and poisoning	6,074	34.2	28.2	71.8	7.8

[1]Visits at which 1 or more analgesic agents were ordered or provided. Included in the opioid proportion are all opioid-nonopioid combinations.
[2]Visits at which 1 or more psychotropic drugs were ordered or provided. The psychotropic category includes antianxiety agents, sedatives, hypnotics, antidepressants, and antipsychotic drugs.
[3]Because of their very minor representation in the data base, other races are omitted from this study.

while nonopioids are more frequently associated with the treatment of mild to moderate pain.) In ambulatory care, the salutary effects of the opioids must always be weighed against certain of their adverse effects; for example:

• Over the long period required in the management of chronic pain, opioids may create a state of drug dependence or conditioned pain behavior.

• Substance abuse is a more serious threat in outpatient treatment because there are fewer controls over patient compliance with the dosage regimen.

• Fully effective doses of the opioids usually cause a sedation or dulling of mental processes, altering behavior to a degree

harmful to the needs of the outpatient, who generally must carry on with the requirements of everyday life.

The findings in table 8 support an approach to analgesic therapy that, in most cases, seems conservative and clinically appropriate; for example:

• An analgesic was ordered at only 1 of every 3 chronic pain visits; an opioid at only 1 in 10.

• While analgesic therapy intensifies in direct proportion to advancing age, the use of opioids shows an opposite tendency, reaching its lowest point among chronic pain sufferers over 64 years of age, the age at which the opioids may produce their most serious adverse effects.

- While musculoskeletal pain accounted for the most liberal use of analgesics, a conservative 60 percent of these were nonopioids.
- The most intensive use of opioids occurs predictably in the treatment of neoplastic pain.
- Gender differences in the use of the analgesics were modest to insignificant.

Some findings, however, evade full explanation; for example:

- The author cannot account for the more intensive use of opioids among black patients. Diagnostic correlates alone are not adequate to explain it.
- A somewhat more marginal application of opioid therapy is its prominent use in the treatment of psychosomatic/symptomatic pain, where it is second in intensity only to the treatment of neoplastic pain. In treating psychosomatic/symptomatic pain (surely the most subjective of the pain symptoms) physicians seem to be taking an indirect approach to dulling the pain by making use of another function of the opioids—their power to suppress the anxiety and apprehension that in turn may intensify the perceived severity of the pain.

Psychotropic agents were utilized at a conservative 12 percent of chronic pain visits (table 8). By far their greater proportion (70 percent) consisted of antianxiety agents, sedatives, and hypnotics. Antidepressants made up 23 percent of their number, while the antipsychotic subclass accounted for a very minor 7 percent.

By their direct alteration of the psychological states associated with the chronic pain, the psychotropics may indirectly perform a function similar to that of the opioids, that is, they may reduce the perceived severity of the pain itself. However, in common with the opioids, they also involve an increased risk of drug dependence, substance abuse, and conditioned pain behavior.

The findings in table 8 reveal a psychotropic usage that was somewhat more intensive for female than for male patients, and more evident among Hispanic than non-Hispanic patients, although because of sampling error much of the latter difference may be more apparent than real.

It was predictable that the most intensive use of psychotropic therapy would occur at chronic pain visits that were associated with psychosomatic/symptomatic pain.

Nondrug therapy was provided or ordered at 52 percent of the chronic pain visits (table 9 and figure 4). Though it was clearly less intensive than the use of drug therapy, it still exceeded by a respectable margin the customary use of nondrug procedures by the office-based physician. Contributing significantly to this heightened tempo of nondrug therapy was an increase in the amount of counseling brought to bear in the treatment of chronic pain and its disruptive effects. For the purpose of this analysis, "counseling" is interpreted as including the following:

- General medical instructions and recommendations.
- Instruction in the proper use of medications.
- Advice regarding diet or dietary habits.
- Advice designed to alter psychological states.

Table 9. Percent distribution of all office visits and of chronic pain visits by nondrug therapy provided or ordered at the visit: United States, 1980 and 1981

Nondrug therapy provided or ordered	All office visits	Chronic pain visits
	Percent distribution	
All treatments[1]	100.0	100.0
None	53.8	48.4
Physiotherapy	4.8	14.5
Office surgery	7.4	2.5
Counseling[2]	38.1	43.9
Other nondrug procedures	2.9	2.5

[1]Totals exceed 100.0 because more than 1 procedure could be applied per visit.
[2]Counseling includes general medical instructions and recommendations, advice about diet or dietary habits, and advice designed to alter psychological states or to cope with problems of family relationships and social adjustment.
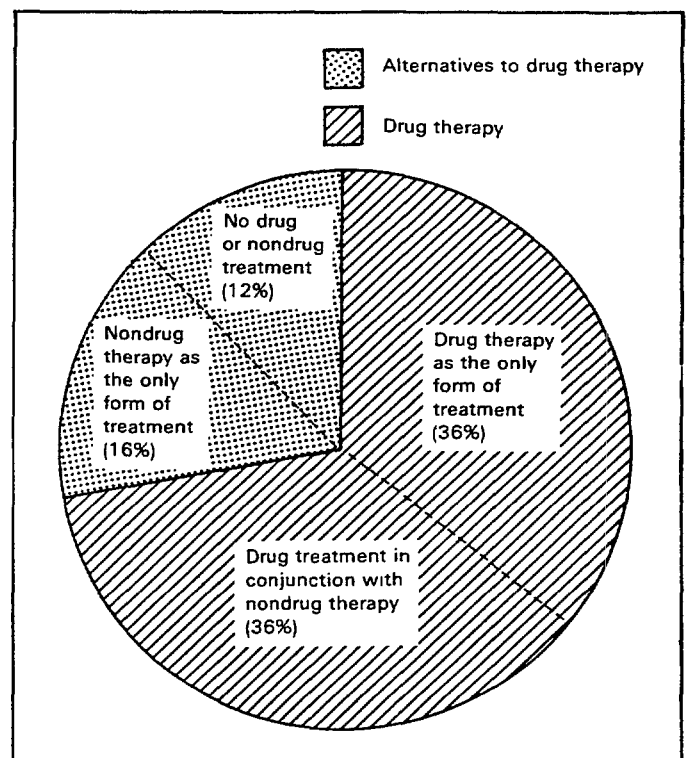
Figure 4. Percent of chronic pain visits by treatment modalities: United States, 1980 and 1981

- Advice to help the patient cope with problems of family relationships and social adjustment.

Counseling was applied at an average 44 percent of chronic pain visits (table 9). Its maximum use (80 percent) was apparent at visits for neoplastic pain and for the psychogenic pain associated with a diagnosis of Mental disorder.

It is something of a contretemps to discover that symptomatic pain (that is, pain associated with the diagnosis of Symptoms, signs, and ill-defined conditions) did not elicit an above-average counseling effort. For the first time in this analysis, the conceptual unity of psychosomatic/symptomatic pain is no longer operative.

Continuity of care is a hallmark in the management of

Table 10. Percent of all office visits, chronic pain visits, and acute pain visits by referral status, followup, and mean visit duration: United States, 1980 and 1981

Referral status, followup, and mean visit duration	All office visits	Chronic pain visits	Acute pain visits[1]
		Percent	
All visits................	100.0	100.0	100.0
Patient referred for this visit by another physician?			
Yes....................	4.4	4.5	6.0
No	95.6	95.5	94.0
Followup (selected instructions)			
No followup............	11.5	6.2	13.0
Return at specified time...	60.7	61.5	41.3
Return if needed.........	22.7	24.5	35.2
Telephone followup planned	3.4	4.1	7.1
		Minutes	
Mean visit duration[2]......	15.9	16.8	14.8

[1]Visits for a condition with an onset of fewer than 90 days prior to the visit, for which the most important reason for the visit was a complaint or symptom of pain.
[2]Limited to time spent in face-to-face contact between physician and patient.

chronic pain. An estimated 88 percent of chronic pain encounters were return visits to a parent physician. Of the remaining 12 percent, at which the chronic pain patient was being seen by the physician for the first time, roughly 7 percent were the result either of voluntary walk-ins or of referral from sources other than physician colleagues. Only a very minor proportion (4–5 percent) were referred between physicians (table 10). This average referral rate did not vary greatly with the changing, clinical substratum of the pain, the most intensive use of referral (at 6–7 percent of visits) appearing at visits for musculoskeletal pain and for pain of psychosomatic/symptomatic origin.

In their followup instructions at the end of the chronic pain visits (table 10), physicians were substantially more demanding and specific than they were at visits motivated by acute pain (pain with an onset of less than 3 months prior to the visit). Helped to a larger extent by the self-restorative capacities of the body, the physician treating acute pain could place an above-average reliance on the more tentative "telephone followup" or "return if needed." Chronic pain and its associated impairments, on the other hand, offered no such assurance of unassisted remission of symptoms. Both the pain and its impairments required maintenance therapy to keep them at a therapeutically acceptable level, and a rigorous monitoring of a drug regimen that, with its continuing, above-average reliance on opioids and psychotropic drugs, held an increased threat of drug dependence or pain conditioned behavior.

Measured by face-to-face contact between physician and patient, the average chronic pain visit lasted about 17 minutes (table 10). This somewhat exceeded the mean contact time found for all office visits, in large part because of the increased counseling effort typical of the management of chronic pain.

The survey findings presented in tables 11 and 12 document the variations in the management of chronic pain that occurred among different physician specialties. Many of these variations can be explained by the survey findings already presented. Some, however, warrant highlighting or interpretive comment; for example:

- The largest single proportion (one-third) of the 72,374,000 chronic pain visits were made to general or family physicians. Together with internists and orthopedic surgeons, these physicians accounted for 7 of every 10 chronic pain visits.

- As a relative part of a physician's total practice, the involvement with chronic pain reached its highest levels among neurologists, orthopedic surgeons, and internists.

- Considering the disruptive emotional effects potential to chronic pain, it is somewhat surprising that the psychiatrist was only minimally active in its treatment.

- Of the chronic pain treated by the neurologist, psychosomatic/symptomatic pain accounted for about one-third— nearly four times the average presence of this kind of pain in office practice. Because this most elusive type of pain is

Table 11. Percent distribution and number of chronic pain visits per 1,000 office visits by characteristics of the attending physician: United States, 1980 and 1981

Physician characteristic	Chronic pain visits	
	Number in thousands	Number per 1,000 office visits
All physicians	72,374	62
	Percent distribution	
All physicians	100.0	62
Professional identity		
Doctor of medicine..................	91.6	61
Doctor of osteopathy	8.4	86
Specialty		
General or family practice............	33.5	64
Internal medicine	23.1	116
Pediatrics........................	2.4	14
General surgery....................	5.1	59
Obstetrics and gynecology...........	3.1	20
Orthopedic surgery..................	13.8	180
Cardiovascular medicine..............	1.9	91
Dermatology	*0.5	*8
Urology	2.2	82
Psychiatry	0.9	20
Neurology	1.8	208
Ophthalmology	1.3	14
Otolaryngology	2.2	60
Type of practice		
Solo	55.1	63
Multiple member...................	44.9	62
Region of practice		
Northeast.........................	22.6	60
North Central......................	24.5	60
South	32.8	63
West.............................	20.1	68

Table 12. Percent of chronic pain visits by key aspects of its presentation and management and selected physician characteristics: United States, 1980 and 1981

Physician characteristic	Chronic pain visits	Visits for psychosomatic or symptomatic pain[1]	Drug visits[2]	Analgesic visits[3]	Opioid or psychotropic visits[4]	Nondrug therapy visits[5]	Counseling visits[6]	New patient visits		Mean visit duration[7]
								Referred by another physician	Walk-in or referred from another source	
	Number in thousands	Percent of chronic pain visits								Minutes
All physicians	72,364	8.6	72.1	34.4	21.2	51.6	43.9	4.5	7.2	16.8
Professional identity										
Doctor of medicine. . .	66,256	9.1	72.2	34.7	21.4	54.9	45.1	4.8	7.5	17.0
Doctor of osteopathy . .	6,118	*4.7	71.0	31.4	18.8	77.1	30.1	*1.7	*4.0	14.3
Specialty										
General or family practice	24,265	8.6	80.7	38.1	26.8	51.6	38.4	*0.5	5.7	14.4
Internal medicine	16,721	8.8	85.6	45.5	24.4	55.7	63.4	3.8	3.7	19.8
General surgery.	3,681	13.6	57.4	23.7	15.0	38.5	30.5	*5.2	15.2	15.0
Orthopedic surgery. . .	9,986	*1.1	47.3	38.0	10.1	56.0	24.8	10.3	12.2	15.3
Urology	1,592	*5.4	62.0	*7.9	*6.8	49.2	34.3	*4.8	*7.2	17.3
Neurology	1,324	*32.0	70.5	*29.6	43.1	47.5	43.2	*21.6	*7.8	27.8
Otolaryngology	1,561	*3.5	62.1	*7.3	*9.4	46.6	37.9	*11.8	*17.4	13.7

[1]Includes visits associated with a diagnosis in the diagnostic groups Mental disorders or Symptoms, signs, and ill-defined conditions.
[2]Visits at which 1 or more drugs of any kind were ordered or provided.
[3]Visits at which an analgesic agent was ordered or provided.
[4]Visits at which an opioid analgesic or a psychotropic drug was ordered or provided.
[5]Visits at which 1 or more nondrug treatments were provided or ordered.
[6]Counseling includes general medical instructions and recommendations, advice about diet or dietary habits, and advice designed to alter psychological states or to cope with problems of family relationships and social adjustment.
[7]Limited to time spent in face-to-face contact between physician and patient.

the form most frequently referred, it is not surprising that neurologists report a proportion of referred chronic pain visits that exceeds the referral rate for any other specialty. It is also probable that their substantially longer visit durations are at least partly a result of their diagnostic efforts to find a neurological basis for this psychosomatic/symptomatic pain.

● Survey findings are not adequate to describe the use of surgical intervention in the control of recalcitrant pain, but clues to its apparently infrequent utilization probably lie not only in the visits to neurologists but also in the nature and management of the chronic pain presented to the general surgeon.

● Though the two primary-care providers, internists and general (or family) practitioners, agree in their above-

average application of drug therapy—including the use of opioid analgesics and psychotropic drugs—internists are markedly more inclined to make use of counseling and to devote more contact time to their chronic pain patients.

Questions, comments, or suggestions for further analysis are encouraged and may be directed to—

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Technical notes

Source of data and sample design

The estimates presented in this report are based on the findings of the National Ambulatory Medical Care Survey (NAMCS), a sample survey of office-based care conducted annually from 1973 through 1981 by the National Center for Health Statistics. The target universe of NAMCS is composed of office visits made by ambulatory patients to non-Federal and noninstitutional physicians who are principally engaged in office-based, patient-care practice. Visits to physicians practicing in Alaska and Hawaii are excluded from the range of NAMCS, as are visits to anesthesiologists, pathologists, and radiologists.

NAMCS uses a multistage probability sample design that involves a step-wise sampling of primary sampling units, physicians' practices within primary sampling units, and patient visits within physicians' practices. The physician sample (5,805 for the combined years 1980 and 1981) was selected from

master files maintained by the American Medical Association and the American Osteopathic Association. Those members of the sample who proved to be in scope participated at a rate of 77.3 percent. Responding physicians completed visit records (figure 1) for a systematic random sample of their office visits made during a randomly assigned weekly reporting period. Telephone contacts were excluded. During 1980 and 1981 responding physicians completed a 2-year total of 89,447 Patient Record forms of which 5,869 were records of chronic pain visits. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the field operations of the survey.

Sampling errors, statistical significance, and rounding

The standard error is 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 by the estimate itself and is expressed as a percent of the estimate. Table I should be used to obtain the relative standard error for aggregates of office visits or for mentions of drugs by class name (for example, analgesic visits). Standard errors for estimated percents of visits (or for chronic pain visit rates per 1,000 visits) are shown in table II.

In this report, the determination of statistical significance is based on the t-test with a critical value of 1.12 (0.75 level of significance). Terms relating to differences, such as "higher" or "less," indicate that the differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistical significance exists between the estimates being compared. A lack of comment in a comparison between any two estimates does not mean that the difference was tested and was not significant.

In the tables of this report estimates have been rounded to the nearest thousand. For this reason, detailed estimates do not always add to the total.

Table I. Approximate relative standard errors of estimated numbers of office visits and chronic pain visits, based on all physician specialties: National Ambulatory Medical Care Survey, 1980 and 1981

Estimated number of office visits or drug mentions in thousands	Relative standard error in percent
450	30.0
600	26.0
800	22.6
1,000	20.2
2,000	14.5
5,000	9.5
10,000	7.1
20,000	5.6
50,000	4.4
100,000	3.9
200,000	3.6
500,000	3.5
1,000,000	3.4

EXAMPLE OF USE OF TABLE: An aggregate estimate of 35,000,000 office visits has a relative standard error of 5.0 percent or a standard error of 1,750,000 visits (5.0 percent of 35,000,000 visits).

Table II. Approximate standard errors of percent of estimated numbers of office visits or of chronic-pain visit rates per 1,000 visits: NAMCS, 1980 and 1981

Estimated number of office visits in thousands	Estimated percent of office visits or estimated chronic-pain visit rates per 1,000 visits					
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	50
	Standard error in percent					
500	2.8	6.2	8.5	11.3	12.9	14.1
1,000	2.0	4.4	6.0	8.0	9.1	10.0
2,000	1.4	3.1	4.2	5.6	6.5	7.1
5,000	0.9	1.9	2.7	3.6	4.1	4.5
10,000	0.6	1.4	1.9	2.5	2.9	3.2
20,000	0.4	1.0	1.3	1.8	2.0	2.2
50,000	0.3	0.6	0.8	1.1	1.3	1.4
200,000	0.1	0.3	0.4	0.6	0.6	0.7
1,000,000	0.1	0.1	0.2	0.3	0.3	0.3

EXAMPLE OF USE OF TABLE: An estimate of 20 percent based on an aggregate of 3,500,000 visits has a standard error of 4.6 percent or a relative standard error of 23 percent (4.6 percent ÷ 20 percent).

Symbols

- - -   Data not available

. . .   Category not applicable

-   Quantity zero

0.0   Quantity more than zero but less than 0.05

Z   Quantity more than zero but less than 500 where numbers are rounded to thousands

*   Figure does not meet standard of reliability or precision (more than 30-percent relative standard error)

Figure suppressed to comply with confidentiality requirements

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Aging in the Eighties,
Age 65 Years and Over—Use of Community Services
Preliminary Data From the Supplement on Aging to the
National Health Interview Survey: United States, January–June 1985

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Introduction

The National Health Interview Survey is the National Center for Health Statistics' large continuing survey of the health of the civilian noninstitutionalized population of the United States. Each year people in about 42,000 households are interviewed by the U.S. Bureau of the Census interviewers to obtain information about their health and use of health care. Demographic information that is needed to interpret the data is also obtained. The interviewers have special training on this survey in addition to their regular training, and response rates are high—about 97 percent. The only item with a relatively low response rate is family income.

In 1984 a special supplement was added to the questionnaire to obtain information about older people who were living in the community. This supplement, the Supplement on Aging (SOA), was designed to collect information about physical limitations, chronic conditions, housing, retirement status, interactions with family and organizations, use of community services, and other health-related and social information about middle-aged and older people. All household members age 65 years and over and a half sample of those 55–64 years of age were asked the questions on the supplement themselves where possible. Another household member was interviewed only when the selected person was unable to answer either because of physical or mental problems or was going to be away from the household for a longer period than the interviewer would be in the area. Preliminary background data based on the first 6 months of interviews for the SOA are provided in a recent National Center for Health Statistics Advance Data report.[1]

The data in this report are from interviews completed during the first 6 months of 1984. The data are preliminary because only one-half of the year is included and because the data from the SOA have not been edited. Including the full year will double the size of the sample and make estimates more reliable. It also will reduce any possibility of bias because of seasonality. Editing will change some of the estimates because information from other parts of the questionnaire will be used to correct missing or inconsistent information.

The purpose of this document is to provide estimates of people 65 years of age and over who reported using community services during the past year. These services encompass both community-based services (for example, senior citizen centers and senior center meals, adult day care, and special transportation for the elderly) and in-home services (such as homemaker services, home health aides, visiting nurses, home-delivered meals, and telephone call-check services).

The data in this report are of particular interest because the published national data on the use of services by the elderly have focused primarily on hospital, physician, and nursing home utilization. Policymakers, however, are expressing interest in community-based and in-home care. In particular, these community services are seen as ways to enhance the independent living of the elderly, in turn preventing or delaying institutionalization. The data presented in this paper provide preliminary estimates of the current use of community services by persons 65 years of age and over.

When interpreting the data, the reader should note that the estimates are based on a sample and they may differ from estimates based on a complete census using exactly the same questions and interviewing techniques. Therefore, the reader should read the "Technical notes" and consider the size of the sampling error.

Use of community services

In early 1984 there were approximately 26 million people age 65 years and over in the United States who were living in communities outside of nursing homes or other institutions. Perhaps the major finding in this report is that a relatively small proportion of the elderly (22 percent) had used community services during the preceding year. The most frequently used community service was the senior citizen center: approximately 4 million persons age 65 years and over or 15 percent of the aged population reported use of this service in the 12 months before the interview (table 1). A little over 2 million elderly persons or 8 percent of the elderly population also reported that they ate meals at the senior center.

Only a small proportion of persons age 65 years and over who were living in the community had used in-home services during the preceding year. Approximately 376,000 persons or 1 percent of the elderly living in the community used homemaker services. Three percent of those 65 years and over, or 775,000 persons, received care from visiting nurses and approximately 425,000 persons or 2 percent of the elderly population used home health aides. Reliable national estimates of the use of telephone call-check services or of adult day care cannot be made because the number of the sample respondents who reported using these services was too small to make reliable national estimates.

The number and percent distribution of elderly persons who had used one or more services are presented in table 2. Almost four-fifths of people age 65 years and over or approximately 21 million elderly individuals did not use any community service during the past year. Three million elderly persons, or 11 percent of this population, reported using only one service, and 60 percent of this subgroup were senior center users. Approximately 2 million persons age 65 years and over, or 7 percent of the elderly population used two community services, and about 3 percent reported the use of three or more services.

Information on the use of community services by age and gender is reported in table 3. Due to the very low utilization rates of adult day care and telephone call-check services, these services have not been included in this analysis. Approximately

Table 2. Percent distribution of people age 65 years and over living in the community by number of community services used during the preceding year: United States, January–June 1984

Number of services	Population	Use of services
	Number in thousands	Percent distribution
Total estimated population	26,290	100.0
0	20,638	78.5
1 or more	5,652	21.5
1 only	2,997	11.4
2 only	1,945	7.4
3 or more	710	2.7

15 percent of persons age 65–74 years and 16 percent of those age 75 years and over reported that they had used senior centers. Similarly, 8 percent of those in the former age category and 9 percent of those in the latter age group reported that they ate meals at the senior center. There does appear to be an increase in the use of special transportation and in-home services with age, although these differences may not be substantive given the very small number of service users within each age category.

There also is evidence that a larger proportion of females than males used a senior center during the year before they were interviewed in early 1984. Among persons age 65–74 years, 17 percent of the females versus 12 percent of the males attended a senior center; the comparable figures for those age 75 years and over were 17 and 14 percent, respectively. Gender comparisons of the use of special transportation and in-home services cannot be made reliably because of the very small numbers of persons using these services.

Because utilization may vary depending upon living arrangements and level of functional limitation, the data presented in table 4 are categorized according to these two characteristics. The use of community services by persons age 65 years and over varied by living arrangement. Of the 8 million elderly living alone in the community in early 1984, 20 percent reported using a senior center during the past year compared with 12 percent of the 18 million living with others. Similarly, 12 percent of those living alone reported eating meals at the senior center compared with 6 percent of those living with others. Approximately 11 percent of the elderly living alone used special transportation for the elderly while only 2 percent of those living with others made use of this service. The relatively small proportion of persons using in-home services precludes statistically reliable comparisons; however, it does appear that a larger proportion of elderly persons living alone than those living with others received home-delivered meals and homemaker services.

The data presented in table 4 also suggest that service use varied by limitation of activity due to chronic health problems. A larger proportion of those moderately or severely limited than those with no or slight limitations received in-home services including home-delivered meals, homemaker services, and home health care either from a visiting nurse or a home health aide.

Table 1. Population estimates and percent of people age 65 years and over living in the community who had used community services during the preceding year: United States, January–June 1984

Service	Population	Use of services
	Number in thousands	Percent
Total estimated population	26,290	100.0
Senior center	3,970	15.1
Senior center meals	2,057	7.8
Special transportation for the elderly	1,231	4.3
Telephone call-check service	*	*
Home-delivered meals	497	1.9
Homemaker service	376	1.4
Visiting nurses	75	2.9
Home health aide	425	1.6
Adult day care	*	*

Table 3. Percent of people age 65 years and over living in the community who had used community services during the preceding year by age and sex: United States, January–June 1984

Service	65–74 years			75 years and over		
	Total	Male	Female	Total	Male	Female
	Number					
Sample	3,731	1,625	2,106	2,251	822	1,429
	Number in thousands					
Estimated population.......................................	16,227	7,048	9,178	10,063	3,685	6,378
	Percent					
Senior center	14.7	11.5	17.1	15.8	13.8	17.0
Special transportation for the elderly	3.6	1.8	4.9	7.2	3.8	9.1
Senior center meals..	7.6	6.1	8.8	9.3	8.9	9.4
Home-delivered meals......................................	1.2	1.1	1.3	3.2	2.4	3.7
Homemaker service	0.8	0.5	1.0	2.7	1.0	3.6
Home health services[1]......................................	2.3	2.3	2.4	5.5	4.8	6.3

[1]Includes visiting nurses and home health aides.

Table 4. Percent of people age 65 years and over living in the community who had used community services during the preceding year by living arrangement and limitation of activity: United States, January–June 1984

Service	Living alone			Living with others		
	Total	Moderately to severely limited[1]	Not limited to slightly limited[2]	Total	Moderately to severely limited[1]	Not limited to slightly limited[2]
	Number					
Sample..	1,809	429	1,380	4,173	1,064	3,109
	Number in thousands					
Estimated population	8,018	1,919	6,099	18,272	4,677	13,595
	Percent					
Senior center...	20.3	18.8	20.8	12.4	7.5	13.1
Senior center meals	11.9	11.6	12.0	6.4	4.4	6.7
Special transportation for the elderly	10.5	15.4	8.4	2.4	2.7	2.2
Home-delivered meals	3.8	10.3	1.7	1.2	2.4	0.7
Homemaker service	3.0	10.4	0.5	0.9	1.7	0.5
Home health services[3]	4.2	13.2	1.4	3.1	8.6	1.2

[1]One is moderately limited if one is limited in the kind or amount of one's major activity. One is severely limited if one is unable to perform one's major activity
[2]One is slightly limited if one is limited in outside activity only. The "not limited" category includes persons with unknown responses.
[3]Includes visiting nurses and home health aides.

These preliminary data provide tentative evidence that the relationship between service use and limitation of activity is affected by living arrangements. For example, among those living alone there appears to be no difference in the use of senior centers between those with moderate or severe limitation (19 percent) and those not limited or only slightly limited (21 percent). However, among the elderly living with others, a larger proportion of those with no or only slight limitations (13 percent) than those with moderate or severe limitations (8 percent) used senior centers. While this relationship must be interpreted with caution, one can speculate that despite their limitations, moderately to severely limited elderly persons living alone were more likely to participate in senior center programs for social support. In contrast, those living with others were perhaps not as likely to use senior centers because they received this support at home.

Discussion

The use of community services by persons age 65 years and over has been examined in this report. The most revealing finding is the low utilization rates among the elderly population. Only one-fifth of the elderly reported using at least one service in the past year, and about 3 percent used three or more services. The most frequently cited service was the senior center; in-home services were used by a small proportion of the elderly, and only a minute fraction of the elderly population used adult day care.

These data are consistent with the findings of a previous study[2] that examined the use of health and social services by elderly participants of the Massachusetts Health Care Panel Study. Nevertheless, the data in this report must be viewed with caution. These figures do not take into account availa-

bility of and access to community services by the elderly. They do not, for example, consider the wide geographic variation in the number and kinds of community services available to the elderly. They also do not address other barriers including the ability to pay for services. Furthermore, the data presented here do not consider the amount of unpaid care provided to the elderly by family and friends, care that might substitute for formal community-based and in-home services. Finally, these estimates do not reflect the use of community services before death by elderly persons who died within the year. Research indicates that hospitalization rates are much higher during the last year of life.[3-5] It is likely that the use of home health services also would increase during the year preceding death.

These estimates do provide tentative evidence that the use of community services increases with age. Furthermore, it appears that elderly persons living alone and those with moderate to severe functional limitations are more likely to use these services than are those living with others and those with less functional impairment. The larger sample when data for the full year are available will enable us to learn more about the use of community services by the elderly.

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Technical notes

Each week a probability sample of households in the United States is visited by U.S. Bureau of the Census interviewers to obtain a wide range of information about the health and health care characteristics of the people living in those households. A description of the survey design, methods used to make the national estimates, and general qualifications of the data are provided in *The National Health Interview Survey Design, 1973–84, and Procedures, 1975–83.*[6]

During January–June 1984 there were about 21,000 households in the sample. The total noninterview rate was about 3 percent—primarily because the interviewer was unable to locate an eligible respondent despite repeated calls.

The rules for the survey are that all adults who are in the household when the interviewers call are asked to join in the interview and to respond for themselves. People age 65 years and over are likely to be at home and are, thus, more likely to respond for themselves to the questions on the basic, or core, questionnaire. During the first 6 months of 1984, 84 percent answered the questions themselves.

For the Supplement on Aging (SOA), the interviewers made an additional effort to encourage the people selected to answer the SOA questions to respond for themselves. They encouraged the household respondent to ask an older person to talk to the interviewer and, if necessary, made extra calls. The results of their efforts were both positive and negative. The positive result was that an even higher proportion, 92 percent, of the responses to the SOA were completely self-responses. The negative result was that in a few cases information was obtained from a household respondent for the core questions but no information was obtained for the supplement. Fortunately, the latter was rare; 5,629 of the 5,982, people age 65 years and over who were in the sample during January–June, 95 percent, had complete interviews on the supplement.

The estimates in this report are based on a sample rather than on the entire population of people age 65 years and over in the civilian noninstitutionalized population. Therefore, the estimates are subject to sampling error. In addition, the sample had a complex design that has the effect of making the sampling errors somewhat larger than they would be from a simple random sample of the same size using the same procedures. A conservative estimate is that, on the average, the variance for estimated proportions from this sample is 20 percent larger than it would have been from a sample of the same size using the same procedures.

To estimate the sampling errors, convert the percent to a proportion, calculate the variance of a proportion assuming simple random sampling, multiply that variance by 1.2 to allow

for the complex sample, then compute standard errors, confidence intervals, or significance tests.

For example, the estimate is that 21 percent of the 8,018,000 people age 65 years and over and living alone used senior centers. There were 1,809 people in the sample age 65 years and over and living alone. Therefore,

$$\text{Variance (simple random sample)} = \frac{pq}{n}$$

$$= \frac{(0.21)(0.79)}{1,809}$$

$$= 0.000092$$

$$\text{Variance (complex sample)} = (0.000092)(1.2)$$

$$= 0.00011$$

$$\text{Standard error} = (0.00011)^{1/2}$$

$$= 0.0105$$

$$\text{95 percent confidence interval} = 21 \pm (1.96)(1.05)$$

$$= 21 \pm 2 \text{ percent}$$

Perhaps more important for interpretation than sampling errors, however, is a thorough understanding of what data from this, or any other, cross-sectional survey can provide. There are two issues—one important for any cross-sectional analysis and the other of special importance for older people.

The National Health Interview Survey is a point-in-time study. Associations at one point in time should not be interpreted as causality. The differences among the age groups, for example, could be the result of aging or, alternatively, they could be the result of different cohorts moving through time. Based on external knowledge, one could interpret a difference in the use of community services as the result of aging, but the data from a cross-sectional survey do not enable one to make that distinction.

The second is that this is a study of people who were living in the community at the time they, or proxy respondents, were interviewed. All of the elderly people who had left the population, either through death or institutionalization, are excluded. Thus, the estimate that 3 percent of the elderly had used visiting nurse services during the preceding year should not be interpreted to mean that only 3 percent of all elderly people used this service during the year. It is likely that the use of home health services would be higher during the year preceding death or institutionalization, and the experience of those people is not included in these estimates.

NOTE: A list of references follows the text.

Symbols

- - -   Data not available

. . .   Category not applicable

-   Quantity zero

0.0   Quantity more than zero but less than 0.05

Z   Quantity more than zero but less than 500 where numbers are rounded to thousands

*   Figure does not meet standard of reliability or precision (more than 30-percent relative standard error)

Figure suppressed to comply with confidentiality requirements

Aging in the Eighties,
Impaired Senses for Sound and Light
in Persons Age 65 Years and Over
Preliminary Data From the Supplement on Aging to the
National Health Interview Survey: United States, January–June 1984

by Richard J. Havlik, M.D., Office of Program Planning, Evaluation, and Coordination

Introduction

The National Health Interview Survey is the National Center for Health Statistics' large continuing survey of the civilian noninstitutionalized population of the United States. Each year people in about 42,000 households are interviewed by U.S. Bureau of the Census interviewers to obtain information about their health and use of health care. Demographic information that is needed to interpret the data is also obtained. The interviewers have special training on this survey in addition to their regular training, and response rates are high—about 97 percent. The only item with a relatively low response rate is family income.

In 1984 a special supplement was added to the questionnaire to obtain information about elderly people who were living in the community.[1] This supplement, the Supplement on Aging (SOA), was designed to collect information about physical limitations, chronic conditions, housing, retirement status, interactions with family and organizations, use of community services, and other health-related information about middle-aged and older people.

All household members age 65 years and over and a half sample of those 55–64 years of age were asked the questions on the supplement themselves where possible. Another household member was interviewed only when the selected person was unable to answer either because of physical or mental problems or because of being away from the household for a longer period than the interviewer would be in the area. Response rates to the SOA were also high. Of the 5,982 people age 65 years and over who were in interviewed house-holds in January–June 1984, 96 percent had complete interviews; 92 percent answered the questions on the SOA for themselves.

The data in this report are from the interviews that were completed during the first 6 months of 1984. The data are preliminary because only one-half of the year is included and because the data from the SOA have not been edited. Including the full year will double the size of the sample and make estimates more reliable. It will also eliminate any possibility of bias because of seasonality. Editing will change some of the estimates from the SOA that are in the text because information from other parts of the questionnaire or from other family members will be used to correct missing or inconsistent information.

The preliminary data about people age 65 years and over are being published because the need for information about the elderly is critical, and 5,982 people is a large enough sample to make estimates that are reliable for many purposes. The reader should use the material in the technical appendix before deciding that differences not mentioned in the text are likely to be statistically significant. The number of people in the sample is given in each table in addition to the national population estimates.

The primary purpose of this report is to provide estimates of the prevalence of self-reported impairments of hearing and vision in the elderly. In addition, the design of the survey also allows simultaneous consideration of associated limitations in activities of daily living and related medical conditions. Such information may have applications in fostering further scientific inquiry or assisting in future policy decisions.

Background

Impairments in hearing and vision are known to be common in the elderly. These deficiencies result from various medical conditions of the ears;[2] from environmental exposures to the eyes, such as sunlight;[3] as well as from the possible effects of the aging process, such as changes of already formed proteins in the lens.[4] National estimates of the prevalence of such impairments are available from the National Health Interview Survey (NHIS) through responses to questions related to medically diagnosed and self-perceived decreases in hearing and vision.[5,6] In 1982, 30.0 percent of those 65 years and over reported hearing impairments and 10.1 percent had visual impairments.[5]

Because questions concerning medical conditions, activities of daily living, and sensory impairments were asked of the same individuals in the SOA, this design, in contrast to NHIS, provided the opportunity to describe the frequency of multiple problems in the elderly. Combinations of such problems have the likely effect of compounding the consequences for the elderly. They can result in a marked diminution in the quality of life for older citizens. Also, there is the likelihood of dependency and possible need for long-term care. The frequency of such multiple problems is much more common in nursing

facilities.[7] However, the results to be presented in this report deal only with the noninstitutionalized population.

Because of the relatively high frequency of hearing and vision troubles among the elderly, it is possible, even in this half-sample of 5,982 persons, to describe impairments by sex and the three age subgroups of 65–74 years, 75–84 years, and 85 years and over. Some caution is urged in interpretations of data from the oldest-old (85 years and over) group. However, because of the general paucity of information concerning this subgroup, presentation of some data was thought justified.

Hearing impairments

Hearing problems are quite frequent in the elderly (table 1). Hearing impairment is defined as the reported presence of Deafness in one or both ears or Any other trouble hearing. Depending on age, from 30.0 percent to 58.3 percent of men reported hearing impairment compared to 17.5 percent to 44.3 percent of women. A similar sex differential has been observed previously both as determined by interview in NHIS reports[5,6] and by direct examination techniques, using audiometry testing, in the National Health Examination Survey[8] and in the Framingham Study.[2] Data from the Framingham Study suggest it is

Table 1.   Percent distribution of people age 65 years and over living in the community by selected hearing characteristics, according to age and sex: United States, January–June 1984

Hearing characteristic	Total	65–74 years			75–84 years			85 years and over		
		Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
					Number					
Sample	5,982	3,731	1,625	2,106	1,803	690	1,113	448	132	316
					Number in thousands					
Estimated population	26,290	16,227	7,048	9,178	8,073	3,111	4,962	1,990	574	1,417
					Percent distribution					
Total[1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hearing impairment										
No	72.2	77.0	70.0	82.5	67.3	60.1	71.8	51.6	41.7	55.7
Yes	27.8	23.0	30.0	17.5	32.7	39.9	28.2	48.4	58.3	44.3
Deafness										
No deafness	87.1	89.8	86.7	92.1	85.4	81.0	88.0	71.7	61.5	76.2
Deafness in 1 ear	7.5	6.7	8.5	5.4	7.6	9.8	6.4	12.9	18.5	10.3
Deafness in both ears	5.2	3.3	4.5	2.5	6.7	8.7	5.4	14.5	19.2	12.4
Any other trouble hearing										
No	81.5	84.6	79.4	88.4	77.9	72.1	81.2	68.9	69.2	68.8
Yes	18.3	15.3	20.5	11.5	21.8	27.1	18.7	30.0	30.8	29.7
Use hearing aid										
No	92.0	94.4	93.0	95.5	88.9	85.2	91.1	84.0	76.6	87.2
Yes	8.0	5.6	7.0	4.5	11.0	14.8	8.8	15.8	23.4	12.4
Describe hearing (with hearing aid)										
No trouble	61.1	66.9	59.2	72.8	55.0	47.7	59.4	37.5	33.9	39.1
Little trouble	33.3	29.8	36.6	24.6	38.0	41.9	35.7	43.2	43.9	43.0
Lot of trouble	5.5	3.2	4.1	2.5	6.8	10.1	4.8	19.1	22.3	17.7

[1]Figures may not add to total because of unknowns and rounding.

unlikely that a difference in environmental noise exposure between the sexes is the reason for the male preponderance in hearing loss.[2] Because past estimates of hearing impairments have been made in NHIS using the same questions and similar interviewing techniques, it may be possible with the full data set to examine time trends.

The proportion of men and women age 65 years and over and living in the community who indicated deafness in one or both ears was 12.7 percent, or over 3 million of the total 26 million elders (table 1). Eight percent of the elderly, or about 2 million men and women, reported using hearing aids.

When all persons in the survey (including those using hearing aids) were asked to give the best description of their hearing, from 27.1 to 66.2 percent, depending on age and sex, indicated little or a lot of trouble with hearing. The total 61.1 percent with "no trouble" hearing is slightly lower than the

72.2 percent with no "hearing impairment." This inconsistency is possibly because some people who reported having a "little trouble" hearing did not think it serious enough to respond positively in the context of questions on deafness or other trouble hearing.

Visual impairments

The category Visual impairment, which combines reported Blindness in one or both eyes and Any other trouble seeing, was found in from 9.5 percent of noninstitutionalized persons ages 65–74 years to 26.8 percent in those 85 years and over (table 2). Thus, there is an apparent trend of increasing prevalence of failing vision with older age. In this noninstitutionalized population, blindness in one or both eyes is relatively uncom-

Table 2. Percent distribution of people age 65 years and over living in the community by selected visual characteristics, according to age and sex: United States, January–June 1984

Visual characteristic	Total	65–74 years			75–84 years			85 years and over		
		Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
					Number					
Sample	5,982	3,731	1,625	2,106	1,803	690	1,113	448	132	316
					Number in thousands					
Estimated population	26,290	16,227	7,048	9,178	8,073	3,111	4,962	1,990	574	1,417
					Percent distribution					
Total[1]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Visual impairment										
No	87.2	90.5	90.3	90.6	84.0	83.3	84.4	73.2	75.0	72.5
Yes	12.8	9.5	9.7	9.4	16.0	16.7	15.6	26.8	25.0	27.5
Blindness										
No blindness	95.6	97.3	96.6	97.8	94.2	92.9	95.0	88.1	87.7	88.3
Blindness in 1 eye	3.2	2.2	2.9	1.6	4.4	5.9	3.6	[2]6.9	[2]5.4	[2]7.6
Blindness in both eyes	1.0	[2]0.5	[2]0.4	[2]0.6	[2]1.3	[2]1.1	[2]1.4	[2]4.8	[2]6.9	[2]3.8
Any other trouble seeing										
No	89.7	92.1	92.4	91.9	87.4	87.1	87.7	77.6	82.0	75.7
Yes	10.2	7.9	7.6	8.1	12.3	12.3	12.3	21.4	[2]17.2	23.2
Cataracts										
No	79.5	86.1	89.5	83.5	71.2	75.4	68.6	59.0	66.9	55.5
Yes	19.1	12.9	9.6	15.4	27.0	22.3	29.9	37.9	31.5	40.8
Operation for cataracts										
No	89.5	92.9	93.2	92.8	84.6	84.9	84.4	80.3	81.0	80.0
Yes	10.5	7.0	6.8	7.3	15.2	14.9	15.4	19.7	[2]19.1	20.0
Use eyeglasses										
No	5.2	5.1	6.4	4.1	4.4	5.3	3.8	9.3	[2]12.5	[2]7.9
Yes	94.8	94.9	93.6	95.9	95.6	94.7	96.2	90.7	87.5	92.1
Describe vision (with glasses)										
No trouble	68.9	75.3	76.7	74.2	60.7	62.0	60.0	47.4	55.0	44.1
Little trouble	25.6	21.9	20.8	22.7	32.1	31.9	32.3	30.9	25.8	33.1
Lot of trouble	5.4	2.8	2.6	3.0	7.0	6.0	8.0	21.2	[2]18.3	22.4

[1]Figures may not add to total because of unknowns and rounding.
[2]Less than 30 persons with visual characteristic in age-sex subgroup.

mon; however, in the group age 85 years and over, about 12 percent had blindness in one or both eyes.

The frequency of visual impairments is similar in men and women. However, in the age subgroups 65–74 years and 75–84 years, there is a statistically significant excess of reported cataracts in women when compared with men. Such an increased frequency in women has been identified in previous surveys both by report in NHIS[5,6] and by direct examination of a population-based sample in Framingham.[9] It should also be noted in table 2 that the sex difference in frequency of operative procedures for cataracts is not statistically significant. Although this observation of more reported cataracts in women but equivalent surgery might suggest less severe lens opacification in women, eye examinations performed on men and women in Framingham demonstrated a similar excess in women of both minor and major changes of the lenses.[9]

Finally, the percent of individuals using glasses is shown. In the elderly population 94.8 percent reported that they used glasses, most of which were prescribed. Deterioration of close vision is quite common with aging, even at younger ages than are described here.[4] However, in the total group (including those wearing glasses) about 50 percent of the oldest old described some trouble seeing. Presumably, this percent is higher than the figure for visual impairment because of inclusion of additional individuals with cataracts in those who described some trouble seeing.

Impairments and associated limitations

Visual and hearing impairments, besides limiting communication and sensory stimulation, also may contribute to compromising the physical mobility and independent activity of the elderly. A series of questions dealing with the activities of daily living (such as walking, going outside, and so forth) has been developed to describe limitations in common movements. An association between an impairment and a limitation may be the result of the sensory loss adding to the difficulty in performing the task. For example, balance necessary for walking may be affected by loss of visual cues or by problems in the semicircular canals of the ears.

In tables 3 and 4, data on impairments and limitations are shown for the two extreme age groups. Data from the age sub-

Table 3.   Percent distribution of people age 65–74 and 85 years and over living in the community by selected limitations and conditions, according to age and visual impairment: United States, January–June 1984

Limitation or condition	65–74 years			85 years and over		
	Total	No visual impairment	Visual impairment	Total	No visual impairment	Visual impairment
	Number					
Sample[1]	3,524	3,170	354	419	300	119
	Number in thousands					
Estimated population[1]	15,322	13,784	1,538	1,859	1,341	519
	Percent distribution					
Total[2]	100.0	100.0	100.0	100.0	100.0	100.0
Difficulty walking						
No	85.6	87.7	66.7	56.6	60.7	46.2
Yes	14.4	12.3	33.1	43.0	39.0	52.9
Difficulty getting outside						
No	94.2	95.6	81.6	65.5	70.8	52.1
Yes	5.8	4.4	18.4	33.8	28.9	46.2
Difficulty getting in and out of bed or chair						
No	93.0	94.2	82.2	79.2	80.7	75.6
Yes	7.0	5.8	17.8	20.8	19.3	24.4
Arthritis or rheumatism						
No	48.2	49.9	32.7	44.9	46.0	42.0
Yes	51.0	49.2	66.8	54.4	53.3	57.1
Cardiovascular disease						
No	87.1	88.7	72.1	69.6	75.0	55.0
Yes	12.9	11.3	27.9	30.4	25.0	45.0
Hypertension						
No	55.8	57.1	44.6	55.1	58.9	45.4
Yes	43.8	42.6	55.1	43.9	39.7	54.6

[1]Total sample number and estimated population reduced from table 2 because of missing data or "Don't know" responses.
[2]Figures may not add to total because of unknowns and rounding.

Table 4. Percent distribution of people age 65–74 and 85 years and over living in the community by selected limitations and conditions, according to hearing impairment: United States, January–June 1984

Limitation or condition	65–74 years			85 years and over		
	Total	No hearing impairment	Hearing impairment	Total	No hearing impairment	Hearing impairment
	Number					
Sample[1]	3,524	2,673	851	419	203	216
	Number in thousands					
Estimated population[1]	15,322	11,620	3,703	1,859	906	954
	Percent distribution					
Total[2]	100.0	100.0	100.0	100.0	100.0	100.0
Difficulty walking						
No	85.6	87.1	80.7	56.6	64.0	49.5
Yes	14.4	12.8	19.3	43.0	35.5	50.0
Difficulty getting outside						
No	94.2	94.7	92.5	65.5	72.4	58.9
Yes	5.8	5.3	7.5	33.8	26.6	40.7
Difficulty getting in and out of bed or chair						
No	93.0	93.9	90.1	79.2	85.7	73.2
Yes	7.0	6.1	9.9	20.8	14.3	26.9
Arthritis or rheumatism						
No	48.2	50.7	40.1	44.9	52.5	37.8
Yes	51.0	48.5	58.6	54.4	47.6	60.8
Cardiovascular disease						
No	87.1	89.1	80.6	69.6	77.9	60.8
Yes	12.9	10.9	19.4	30.4	22.1	39.2
Hypertension						
No	55.8	56.3	54.4	55.1	59.3	51.2
Yes	43.8	43.4	45.0	43.9	39.7	47.9

[1]Total sample number and estimated population reduced from table 1 because of missing data or "Don't know" responses.
[2]Figures may not add to total because of unknowns and rounding.

group 75–84 years (not shown) are similar to age groups in the tables. The sample numbers are reduced from tables 1 and 2 because of missing data or "Don't know" responses. The presence of visual impairments in persons is associated with a higher frequency of limitations. In both the 65–74 year and the 85 year and over subgroups, those with a visual impairment (table 3) are more likely to be limited in walking and getting outside. In addition, transferring from bed and chair, an indicator of more severe limitation of activity, shows a similar relationship. As would be expected, a larger percent in each of the activity categories is limited at older ages. For example, overall, only 5.8 percent of the young old (ages 65–74 years) had problems getting outside but 33.8 percent of the oldest old (ages 85 years and over) were so limited. If, in addition, the subgroup 85 years and over had a visual impairment, the prevalence of difficulty getting outside increased from 33.8 to 46.2 percent. Similar relationships for hearing impairments and limitations exist in the oldest old (table 4). Further analyses on the full data set and additional studies in other populations are necessary before any final conclusions can be reached concerning the meaning of these relationships.

Impairments and associated medical conditions

Analogous to the association of impairments with increased frequency of limitations in the activities of daily living, medical conditions may be present more frequently in those with sensory deficits. Such associations may be the result of the medical condition causing the impairment, for example, diabetes and cataracts. Another possibility is that a separate etiological factor affects both the condition and the impairment, and results in an observed association between them. An example of the latter case is that the common factor "noise" might affect both the hearing impairment and hypertension. Also, those receiving regular medical care for a condition may be more likely to have other conditions or impairments diagnosed and, thus, produce an association. For example, those reporting any urinary difficulty have a greater frequency of at least three medical conditions being present, when compared with those without urinary difficulties.[10]

Respondents were asked on the SOA if they ever had "hypertension, sometimes called high blood pressure," various

types of cardiovascular disease, and other chronic conditions. For arthritis the question was "During the past 12 months did you have . . . ?" After considering various hypotheses, certain of these common medical conditions were selected for analysis. As shown in tables 3 and 4 there is an increased frequency of various medical conditions in those with the presence of either visual or hearing impairments. For example, recent history of arthritis was reported more frequently with both impairments. The presence of cardiovascular disease (a category including self-reported arteriosclerosis, coronary heart disease, angina pectoris, myocardial infarction, any other heart attack or stroke) is more frequent in those with hearing or visual problems. Although in the 65–74 year subgroup the frequency of hypertension is no higher in those with a hearing impairment than in those with no hearing impairment, there is an excess in the 85 year and over subgroup. The possible relationship with hypertension is more pronounced in those with visual impairments. Because of potential validity problems with self-reported medical information: the nonspecificity of the broad impairment groups created for the analysis; the small numbers, especially in the oldest-old subgroup; the multiple comparisons and the selective nature of the illustrated comparisons, any associations should be considered only as preliminary observations and not necessarily the result of cause and effect.

Comment

The health issues involved with visual and hearing impairments in the elderly must be put into perspective. Although such impairments are frequent concomitants of age and chronic disease, they are not inevitable and not necessarily disabling. In fact, until the age of 85 years, the majority of noninstitutionalized persons are free of major sensory problems.

On the other hand, such impairments do result in a sensory-limited world for a number of older Americans. Even with modest losses communication becomes more difficult. Fortunately, for many of the elderly, assistance devices to amplify sound or magnify words and palliative or corrective surgery on eyes or ears can be salutary. However, such therapy has an impact on out-of-pocket expenses.

If more could be learned about etiology of impairments of the senses for sound and light, some sensory loss might be prevented or slowed. The SOA provides useful information for both scientific purposes and policy considerations.

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Technical notes

Each week a probability sample of households in the United States is visited by U.S. Bureau of the Census interviewers to obtain a wide range of information about the health and health care characteristics of the people living in these households. A description of the survey design, methods used to make the national estimates, and general qualifications of the data are provided in *The National Health Interview Survey design, 1973–84, and procedures, 1975–'83.*[11]

In January–June 1984 there were about 21,000 households in the sample. The total noninterview rate was about 3 percent—mostly because the interviewer was unable to locate an eligible respondent despite repeated calls.

The rules for the survey are that all adults who are in the household when the interviewer calls are asked to join in the interview and to respond for themselves. People age 65 years and over are likely to be at home and are, thus, more likely to respond for themselves to the questions on the basic, or core, questionnaire. During the first 6 months of 1984, 84 percent answered the questions themselves.

For the Supplement on Aging (SOA), the interviewers made an additional effort to encourage the people selected to answer the SOA questions and to respond for themselves. They encouraged the household respondent to ask an older person to talk to the interviewer and, if necessary, made extra calls. The results of their efforts were both positive and negative. The positive result was that an even higher proportion, 92 percent, of the responses to the SOA were completely self responses. The negative result was that in a few cases information was obtained from a household respondent for the core questions but no information was obtained for the supplement. Fortunately the latter was rare; 5,629 of the 5,982, 95 percent, people age 65 years and over who were in the sample during January–June had complete interviews on the supplement.

The estimates in this report are based on a sample rather than on the entire population of people age 65 years and over in the civilian noninstitutionalized population. Therefore, the estimates are subject to sampling error. In addition, the sample had a complex design that has the effect of making the sampling errors somewhat larger than they would be from a simple random sample of the same size using the same procedures.

A conservative estimate is that, on the average, the variance for estimated proportions from this sample is 20 percent larger than it would have been from a simple random sample of the same size using the same procedures.

To estimate the sampling errors, convert the percent to a proportion, calculate the variance of a proportion assuming simple random sampling, multiply that variance by 1.2 to allow for the complex sample, then compute standard errors, confidence intervals, or significance tests.

For example, the estimate is that 61 percent of the 954,000 persons age 85 years and over reporting a hearing impairment (table 4) had arthritis or rheumatism. There were 216 people

reporting a hearing impairment in the sample age 85 years and over; therefore,

$$\text{Variance (simple random sample)} = \frac{pg}{n}$$

$$= \frac{(0.61)(0.39)}{216}$$

$$= 0.0011$$

$$\text{Variance (complex sample)} = (0.0011)(1.2)$$

$$= 0.0013$$

$$\text{Standard error} = (0.0013)^{1/2}$$

$$= 0.0364$$

$$\text{95 percent confidence interval} = 61 \pm (1.96)(3.64)$$

$$= 61 \pm 7 \text{ percent}$$

Because the estimation procedure includes poststratification to independent U.S. Bureau of the Census estimates, there is no sampling error for the number of people age 65 years and over—either for the total or for either sex.[11] The only sampling error is in the numerator. Therefore, the sampling errors for those groups are somewhat smaller than estimated by this method.

Perhaps more important for interpretation than sampling errors, however, is a thorough understanding of what data from this, or any other, cross-sectional survey can provide. There are two issues—one important for any cross-sectional analysis and the other of especial importance for older people.

The NHIS is a point-in-time study. Associations at one point in time should not be interpreted as causality. The differences among the age groups, for example, could be the result of aging or, alternatively, they could be the result of different cohorts moving through time. Based on external knowledge, one could interpret a difference in health status as the result of aging and a difference in educational status as the result of cohort differences, but the data from a cross-sectional survey do not enable one to make that distinction.

The second is that this is a study of people who were living in the community at the time they, or a proxy respondent, were interviewed. All of those elderly people who had left the population, either through death or institutionalization, are excluded. Thus, the estimate that 1 percent of elderly people had blindness in both eyes should not be interpreted to mean that only 1 percent of the elderly people were so afflicted. Data from the 1977 Nursing Home Survey indicated that 5.5 percent of residents were blind.[7]

NOTE: A list of references follows the text.

Health Promotion Data for the 1990 Objectives
Estimates From the National Health Interview Survey of Health Promotion and Disease Prevention: United States, 1985

by Owen T. Thornberry, Ph.D., Division of Health Interview Statistics, Ronald W. Wilson, M.A., and Patricia M. Golden, M.P.H., Division of Epidemiology and Health Promotion

The National Center for Health Statistics included the topic of health promotion and disease prevention as part of the 1985 National Health Interview Survey questionnaire. Provisional findings from the first 6 months of data collection on that topic have been previously published.[1] This report presents final summary findings based on fully edited and weighted data from the full 12 months of data collection.

The 1985 Health Promotion and Disease Prevention study was designed to monitor progress toward one of the major initiatives of the Department of Health and Human Services. This initiative is described in *Healthy People—The Surgeon General's Report on Health Promotion and Disease Prevention, 1979*.[2] In that report, broad goals were established for the improvement of the health of Americans. The 1980 Public Health Service report, *Promoting Health/Preventing Disease: Objectives for the Nation*,[3] details specific objectives necessary for attaining those goals in each of 15 priority areas. The target data for achieving the objectives is 1990. The 1985 questionnaire will be used for data collection again in 1990 for the purpose of monitoring progress achieved in the intervening 5 years.

[1] National Center for Health Statistics, O. T. Thornberry, R. W. Wilson, and P. Golden: Health promotion and disease prevention provisional data from the National Health Interview Survey, United States, January–June 1985. *Advance Data From Vital and Health Statistics*. No. 119. DHHS Pub. No. (PHS) 86–1250. Public Health Service. Hyattsville, Md. May 14, 1986.

[2] Office of the Assistant Secretary for Health and Surgeon General: *Healthy People—The Surgeon General's Report on Health Promotion and Disease Prevention—Background Papers, 1979*. DHEW Pub. No. (PHS) 79–55071A.

[3] U.S. Department of Health and Human Services, Public Health Service: *Promoting Health/Preventing Disease: Objectives for the Nation*. Washington. U.S. Government Printing Office, 1980.

The 1985 Health Promotion and Disease Prevention study is devoted primarily to the collection of baseline data on the following topics: general health (including nutrition), injury control, high blood pressure, stress, exercise, smoking, alcohol use, dental care, and occupational safety and health. These topics were selected after consultation with the Office of Disease Prevention and Health Promotion (Assistant Secretary for Health) as well as with the agencies designated by the Assistant Secretary for Health as having "lead" responsibility for implementing and monitoring progress toward achieving the 1990 objectives. Within each agency, subject matter experts were consulted during the development of the questionnaire.

This report presents estimated percents or percent distributions for all persons 18 years of age and over and for four age groups and both sexes. Generally, except for the questions on knowledge of health practices where "don't know" is a legitimate response, "don't know" and other inappropriate responses were excluded from the denominator in the calculation of the estimates. In most cases, the actual question asked of the respondent is shown along with the response categories. In a few cases, there has been minor paraphrasing or combining of questions. Each question is referenced to the item number on the questionnaire.

In general, the items in the questionnaire are about either individual health behaviors or knowledge of health practices. Most of the questions on knowledge of health practices have answers that are currently presumed to be correct (as determined by the Public Health Service agency with "lead" responsibility) and are indicated in bold type. For some questions, references are provided to selected publications that present related data from previous data collection by the National Center for Health Statistics.

Selected findings

- *General health habits:* Most adults eat breakfast almost every day (55 percent), get 7–8 hours of sleep each night (66 percent), and have a usual place to go for health care (78 percent).

- *Weight:* Men are more likely to consider their weight "just about right" than are women (55 versus 42 percent). However, one-quarter of men and almost one-half of women are trying to lose weight, primarily by eating fewer calories, or increasing physical activity.

- *Preventive exams for women:* About one-half of women have had a Pap smear test (46 percent) or a breast examination (50 percent) by a health professional within less than one year. The majority of women (87 percent) know how to examine their own breasts for lumps, but only one-third do so more than six times a year.

- *Seat belts:* There is evidence (not shown in table 1) that seat belt use is increasing rapidly. The percent of adults wearing seat belts most of the time increased from 30 percent for the first 3 months of 1985 to 41 percent for the last 3 months (annual rate of 35 percent). This no doubt reflects the impact of seat belt legislation in many States during 1985.

- *Child safety:* The majority (88 percent) of persons in families with children under 10 years of age have heard about Poison Control Centers and have the telephone number for a Center in their area (60 percent). Almost all (98 percent) of the adults with children under 5 years of age know about child safety seats, and almost one-half (45 percent) have been advised by health professionals about the importance of using them.

- *Home safety:* About two-fifths of homes do not have a working smoke detector. Most adults do not know the temperature of the hot water in the home (64 percent), and most adults do not know the temperature above which scald injuries will occur.

- *High blood pressure:* Three-quarters (74 percent) of adults have had their blood pressure taken by health professionals within the past year. Women are more likely than men to have their blood pressure taken, and persons over 65 years are more likely than younger persons. Slightly more than half of adults believe that sodium (salt) is the substance in food most often associated with high blood pressure.

- *Heart disease:* A large majority of adults (86 percent or higher) is aware of three of the four principal risk factors associated with heart disease (smoking, elevated cholesterol, and high blood pressure). Only 61 percent are aware that diabetes is also a principal risk factor.

- *Stress:* One-half of adults reported experiencing at least a moderate amount of stress during the 2 weeks preceding the interview, with the lowest percent for the elderly (28 percent). In addition, almost one-half of the adults felt that stress had had some effect on their health in the past year.

- *Exercise:* Less than one-half (40 percent) of the adult population exercises on a regular basis, and only one-quarter have done so for 5 years or more. A higher percent of adults in the younger than the older age groups engage in regular exercise. However, over four-fifths of adults consider themselves as active or more active than other persons of the same age. The majority are not knowledgeable regarding the specific requirements for exercise to strengthen the heart and lungs (frequency and duration of exercise, and heart and breathing rate during exercise).

- *Cigarette smoking:* Although a continuation of the downward trend in cigarette smoking has been occurring since the 1964 *Surgeon General's Report on Smoking and Health,* 3 in 10 adults still smoke (32 percent of men and 28 percent of women). The majority of adults (79 percent or higher) are aware of the major conditions associated with smoking (emphysema; chronic bronchitis; and cancer of the lung, larynx, and esophagus). The exception is bladder cancer, which only about one-third associate with smoking.

- *Alcohol use:* With the exception of cirrhosis of the liver, the adult population appears less knowledgeable about the effects of alcohol on health than the effects of smoking. Whereas 93 percent feel that heavy alcohol consumption increases the chances of getting cirrhosis of the liver, only about one-third recognize the association between heavy alcohol use and cancers of the throat (40 percent) and mouth (32 percent). Eight percent of adults are classified as heavier drinkers (two or more drinks per day), 19 percent as moderate drinkers, and 24 percent as lighter drinkers (three drinks or less per week). Ten percent of all adults admitted to driving at least once in the last year when they perhaps had had too much to drink, and one-fifth of young adults admitted to doing so.

- *Dental care:* While most adults appear to know the major preventive measures relative to tooth decay and gum disease, many do not discriminate between the two diseases. For example, many people do not understand that fluoridated water and fluoride toothpaste/mouthrinse are definitely important for the prevention of tooth decay. At the same time they overestimate the importance of fluoride in the prevention of gum disease. People know that gum disease is an important cause of tooth loss in adults and that tooth decay is an important cause of tooth loss in children. Although only about one-quarter of adults have heard of dental sealants, of those who have heard of them, most (80 percent) know their purpose is to prevent tooth decay.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
		Percent of population						
	Total..	100	100	100	100	100	100	100
	GENERAL HEALTH HABITS							
N.1.	How often do you eat breakfast?[1]							
	Almost every day..	55	42	46	62	87	54	56
	Sometimes...	20	28	24	16	6	20	20
	Rarely or never...	24	30	30	21	8	25	24
N.2.	Including evening snacks, how often do you eat between meals?[1]							
	Almost every day..	39	42	41	38	31	41	37
	Sometimes...	32	38	33	30	27	30	34
	Rarely or never...	29	20	25	32	43	29	28
N.3.	When you visit a doctor or other health professional for routine care, is eating proper foods discussed?							
	Often...	10	8	9	12	11	8	11
	Sometimes...	16	16	16	16	16	14	18
	Rarely or never...	65	65	67	62	64	65	65
	Don't visit for routine care................................	10	11	9	10	9	14	6
N.5.	In your opinion which of these are the two best ways to lose weight?							
	Don't eat at bedtime..	29	29	27	45	31	31	28
	Eat fewer calories..	73	70	75	77	73	68	78
	Take diet pills...	2	2	2	1	1	2	1
	Increase physical activity..................................	73	83	79	67	52	74	72
	Eat no fat..	11	7	8	12	20	12	10
	Eat grapefruit with each meal...............................	4	4	3	5	5	4	4
	Don't know...	7	5	5	7	17	9	6
N.6.	Are you now trying to lose weight?[2] (Yes)......................	35	32	39	40	24	25	44
N.7.	Are you eating fewer calories to lose weight?[2] (Persons trying to lose weight (yes) in N.6) (Yes)...............................	81	75	81	84	83	76	83
N.8.	Have you increased your physical activity to lose weight?[2] (Persons trying to lose weight (yes) in N.6) (Yes)...............	57	69	59	49	40	58	56
N.9.	Do you consider yourself overweight, underweight, or just about right? (If overweight) Would you say you are very overweight, somewhat overweight, or only a little overweight?[2,3]							
	Very overweight...	8	5	9	12	6	4	12
	Somewhat overweight...	17	12	19	21	14	13	20
	Only a little overweight....................................	21	18	22	23	20	20	21
	About right...	48	57	46	40	51	55	42
	Underweight...	6	9	4	3	8	8	4
N.10.	On the average, how many hours of sleep do you get in a 24-hour period?[1]							
	Less than 7 hours...	22	20	24	23	20	23	21
	7-8 hours...	66	66	69	67	59	66	66
	9 or more hours...	12	14	7	10	21	11	13
N.11.	Is there a particular clinic, health center, doctor's office, or other place that you usually go to if you are sick or need advice about your health?[4] (Yes)...............................	78	69	76	83	89	72	84
N.15.	About how long has it been since you had a Pap smear test?[5] (Females only)							
	Less than 1 year..	46	60	50	38	25	...	46
	1 year..	17	16	21	17	13	...	17
	2 years...	10	6	10	13	12	...	10
	3-4 years...	8	4	9	10	10	...	8
	5 or more years...	12	2	8	18	25	...	12
	Never...	7	13	1	4	15	...	7

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.]

Section and item number	Health behaviors and knowledge	All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
				Age.				Sex
	GENERAL HEALTH HABITS--Con.			Percent of population				
N.16a.	About how long has it been since you had a breast examination by a doctor or other health professional?[5] (Females only)							
	Less than 1 year	50	60	52	45	39	...	50
	1 year	18	16	21	18	14	...	18
	2 years	10	6	10	12	10	...	10
	3-4 years	7	4	8	8	8	...	7
	5 or more years	8	2	6	12	15	...	8
	Never	8	11	2	5	14	...	8
N.16b.	Do you know how to examine your own breasts for lumps? (Females only) (Yes)	87	86	92	89	78	...	87
N.16c.	About how many times a year do you examine your own breasts for lumps? (Females only)							
	12 or more times	32	27	35	37	29	...	32
	7-11 times	2	2	3	2	2	...	2
	2-6 times	34	35	37	32	26	...	34
	Once a year	4	5	5	4	3	...	4
	Never	14	16	11	13	15	...	14
	Don't know how to examine own breast	13	14	8	11	22	...	13
	INJURY CONTROL AND CHILD SAFETY AND HEALTH							
0.1a.	Have you ever heard about Poison Control Centers? (Persons in families with children under 10 years of age) (Yes)	88	87	91	77	66	86	90
0.1b.	Do you have the telephone number for a Poison Control Center in your area? (Persons in families with children under 10 years of age) (Yes)	60	55	66	47	35	59	61
0.3.	Have you heard about child safety seats, sometimes called car safety carriers, which are designed to carry children while they are riding in a car? (Persons in families with children under 5 years of age) (Yes)	98	98	98	96	97	98	98
0.4.	Did a doctor or other health professional ever tell you about the importance of using car safety seats for your children? (Persons in families with children under 5 years of age) (Yes)	45	48	43	32	23	38	50
0.10.	When driving or riding in a car, do you wear a seat belt[3]--							
	All or most of the time	35	33	39	36	33	34	37
	Some of the time	18	19	18	18	15	17	18
	Once in a while	14	16	14	14	13	15	13
	Never	32	32	29	32	37	33	31
	Don't ride in car	1	0	0	1	2	1	1
	Does this home have any working smoke detectors? (Based on Items 0.11a.-c.) (Yes)	60	58	65	60	56	60	60
0.12a.	Do you know about what the hot water temperature is in this home? (Yes)	36	24	41	45	35	48	26
0.13.	In the past 12 months, have you (or has anyone in your household) used a thermometer to test the temperature of the hot water here? (Yes)	4	3	5	4	3	4	3
0.14.	Above what temperature will hot water cause scald injuries?							
	127 degrees or less	14	20	16	10	6	16	12
	128-139 degrees (can produce burns in less than a minute)	2	2	3	2	1	3	1
	140 degrees or above (can produce burns in 5 seconds or less)	20	15	21	26	19	30	11
	Don't know	64	63	61	62	74	51	75

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	HIGH BLOOD PRESSURE				Percent of population			
P.1.	I am going to read a list of things which may or may not affect a person's chances of getting heart disease. After I read each one, tell me if you think it definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting heart disease.							
	Cigarette smoking							
	Increases......	90	93	92	89	81	89	90
	Definitely increases......	66	69	69	65	58	66	66
	Probably increases......	23	24	23	24	24	23	24
	Does not increase......	4	3	3	4	5	4	3
	Probably does not increase......	3	2	2	3	3	3	2
	Definitely does not increase......	1	1	1	1	2	1	1
	Don't know/No opinion......	7	4	5	7	14	7	7
	Worry or anxiety							
	Increases......	84	81	87	87	80	82	86
	Definitely increases......	40	33	43	44	38	38	41
	Probably increases......	44	48	44	42	42	44	45
	Does not increase......	8	12	7	6	6	9	7
	Probably does not increase......	6	9	6	4	5	7	5
	Definitely does not increase......	2	3	1	1	2	2	2
	Don't know/No opinion......	8	7	6	7	14	9	7
	High blood pressure							
	Increases......	91	93	93	92	84	91	91
	Definitely increases......	68	68	73	70	58	68	69
	Probably increases......	23	24	20	22	26	23	22
	Does not increase......	3	3	2	3	3	3	2
	Probably does not increase......	2	2	2	2	2	2	2
	Definitely does not increase......	1	1	1	1	1	1	1
	Don't know/No opinion......	6	5	4	6	13	6	6
	Diabetes							
	Increases......	61	65	64	59	49	60	61
	Definitely increases......	32	32	34	32	26	32	31
	Probably increases......	29	33	30	27	23	28	30
	Does not increase......	10	10	10	10	9	10	10
	Probably does not increase......	7	8	8	7	6	7	7
	Definitely does not increase......	3	3	3	3	3	3	3
	Don't know/No opinion......	30	25	26	31	42	30	29
	Being very overweight							
	Increases......	93	93	95	94	86	92	93
	Definitely increases......	69	72	72	70	60	68	70
	Probably increases......	23	22	23	24	27	24	23
	Does not increase......	2	3	2	2	3	3	2
	Probably does not increase......	1	2	1	1	2	2	1
	Definitely does not increase......	1	1	1	1	1	1	1
	Don't know/No opinion......	5	4	3	4	11	5	5
	Overwork							
	Increases......	71	76	77	67	57	67	74
	Definitely increases......	31	32	34	31	25	28	34
	Probably increases......	40	44	43	36	32	39	41
	Does not increase......	19	16	16	23	24	23	16
	Probably does not increase......	13	12	11	16	16	16	11
	Definitely does not increase......	6	4	4	7	8	7	5
	Don't know/No opinion......	10	7	7	10	19	10	10
	Drinking coffee with caffeine							
	Increases......	51	53	54	51	43	48	54
	Definitely increases......	13	12	13	14	12	12	13
	Probably increases......	38	41	41	37	31	36	40
	Does not increase......	29	30	28	29	28	31	26
	Probably does not increase......	22	24	23	21	19	24	20
	Definitely does not increase......	7	6	5	8	9	8	6
	Don't know/No opinion......	20	17	18	20	30	20	20

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge		Age				Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	HIGH BLOOD PRESSURE--Con.				Percent of population			
P.1.	I am going to read a list of things which may or may not affect a person's chances of getting heart disease. After I read each one, tell me if you think it definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting heart disease.--Con.							
	Eating a diet high in animal fat							
	Increases...	80	77	83	83	76	77	83
	Definitely increases...........................	42	37	44	46	40	38	45
	Probably increases.............................	38	40	39	37	35	39	38
	Does not increase..................................	8	10	7	6	6	10	6
	Probably does not increase.....................	6	8	5	5	4	7	4
	Definitely does not increase...................	2	2	2	2	2	2	1
	Don't know/No opinion..............................	12	13	10	11	18	13	12
	Family history of heart disease							
	Increases...	83	85	86	83	70	80	85
	Definitely increases...........................	49	47	54	51	38	44	53
	Probably increases.............................	34	38	33	33	32	36	33
	Does not increase..................................	8	7	7	8	12	10	6
	Probably does not increase.....................	5	5	4	5	7	6	4
	Definitely does not increase...................	3	3	3	3	5	4	2
	Don't know/No opinion..............................	9	7	7	9	18	10	9
	High cholesterol							
	Increases...	86	88	89	87	77	85	88
	Definitely increases...........................	54	52	57	58	48	52	57
	Probably increases.............................	32	36	32	29	29	33	31
	Does not increase..................................	4	4	4	4	5	5	3
	Probably does not increase.....................	3	3	2	3	3	3	2
	Definitely does not increase...................	1	1	1	1	2	2	1
	Don't know/No opinion..............................	10	8	7	9	19	10	9
P.2.	The following conditions are related to having a stroke. In your opinion, which of these conditions most increases a person's chances of having a stroke?							
	Diabetes..	4	6	4	3	4	4	4
	High blood pressure................................	77	73	80	80	74	75	79
	High cholesterol...................................	12	15	11	10	10	13	10
	Don't know...	7	7	6	7	12	7	7
P.3.	Which one of the following substances in food is most often associated with high blood pressure?							
	Sodium (or salt)...................................	58	54	63	61	50	56	60
	Cholesterol..	25	28	23	24	23	25	25
	Sugar..	9	11	7	7	11	10	7
	Don't know...	9	7	7	8	16	9	8
P.12a.	About how long has it been since you last had your blood pressure taken by a doctor or other health professional?[2,3]							
	Less than 6 months.................................	57	51	50	61	72	51	61
	6-11 months..	17	19	20	15	12	17	18
	12 months to 23 months.............................	14	15	16	13	8	16	12
	24 months and over.................................	12	14	14	12	8	16	9
P.12b.	Blood pressure is usually given as one number over another. Were you told what your blood pressure was, in numbers? (Persons with blood pressure checked within 24 months in 12a) (Yes)........	68	65	70	71	67	70	67
P.14.	Have you ever been told by a doctor or other health professional that you had high cholesterol? (Yes).................	5	1	3	9	11	6	5

See footnotes at end of table.

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(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	STRESS	Percent of population						
Q.1.	During the past 2 weeks, would you say that you experienced a lot of stress, a moderate amount of stress, relatively little stress, or almost no stress at all?							
	A lot of stress..	20	21	24	19	11	17	22
	A moderate amount of stress.....................................	31	32	36	30	17	31	30
	Relatively little stress.......................................	22	25	22	22	21	22	22
	Almost none..	25	21	17	27	46	27	24
	Don't know what stress is......................................	2	1	1	2	5	2	2
Q.2.	In the past year, how much effect has stress had on your health?							
	A lot..	13	11	15	14	9	9	16
	Some...	31	33	35	29	21	28	33
	Hardly any or none...	55	54	50	55	65	61	49
	Don't know what stress is......................................	2	1	1	2	5	2	2
Q.3a.	In the past year, did you think about seeking help for any personal or emotional problems from family or friends? (Yes)......	15	21	19	9	4	10	18
Q.3b.	In the past year, did you think about seeking help for any personal or emotional problems from a helping professional or a self-help group? (Yes)...	11	12	15	9	4	8	14
Q.4.	Did you actually seek any help? (Yes) From whom did you seek help?							
	Family or friends..	7	11	8	3	2	4	9
	Professional or self-help group................................	7	7	10	6	3	5	8
	EXERCISE							
R.2a.	In the past 2 weeks, have you done any of the following exercises, sports, or physically active hobbies[6]--							
	Walking for exercise...	41	43	40	41	41	37	45
	Jogging or running...	10	20	11	4	1	14	7
	Calisthenics or general exercise...............................	22	33	24	15	11	22	22
	Biking...	11	14	12	8	5	11	10
	Swimming or water exercises....................................	10	16	11	6	2	10	9
R.3.	Do you exercise or play sports regularly? (Yes)..................	40	53	42	31	29	43	38
R.4.	For how long have you exercised or played sports regularly?							
	Less than 1 year...	5	7	6	4	2	3	7
	1-2 years..	6	7	6	4	4	4	7
	3-4 years..	3	4	4	3	3	3	4
	5 or more years..	24	33	24	19	18	31	19
	Do not exercise regularly......................................	60	48	59	69	71	57	63
R.5a.	Would you say that you are physically more active, less active, or about as active as other persons your age?[1,3] Is that (a lot more or a little more/a lot less or a little less) active?							
	A lot more...	18	15	17	19	22	21	15
	A little more..	16	15	16	15	17	17	14
	About as active...	49	50	48	49	46	48	49
	A lot less...	6	5	6	8	8	5	8
	A little less..	12	15	14	9	7	10	14
R.7a.	How many days a week do you think a person should exercise to strengthen the heart and lungs?							
	Less than 3 days...	6	7	7	4	3	6	5
	3-4 days...	40	51	49	31	16	40	39
	5 days or more...	38	34	34	44	46	37	39
	Don't know...	17	8	11	21	35	16	17
R.7b.	For how many minutes do you think a person should exercise on each occasion so that the heart and lungs are strengthened?							
	Less than 15 minutes...	6	4	5	7	9	5	7
	15 to 25 minutes...	23	22	25	23	20	21	24
	More than 25 minutes...	52	65	58	44	28	55	49
	Don't know...	20	9	12	26	43	20	20

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	All ages	Age 18-29 years	Age 30-44 years	Age 45-64 years	Age 65 years and over	Sex Male	Sex Female
	EXERCISE--Con.				Percent of population			
R.7c.	During those (number in 7b) minutes, how fast do you think a person's heart rate and breathing should be to strengthen the heart and lungs? Do you think that the heart and breathing rate should be--							
	No faster than usual	3	3	2	4	7	3	4
	A little faster than usual	45	47	43	45	44	44	45
	A lot faster but talking is possible	34	41	43	28	12	36	32
	So fast that talking is not possible	1	1	1	1	0	1	1
	Don't know	17	8	11	22	37	17	18
	SMOKING							
	Cigarette smoking status (Based on Items S.1-3)							
	Never	45	55	42	37	50	36	54
	Former	24	13	23	31	34	31	18
	Current (Includes unknown amount smoked)	30	32	34	31	16	32	28
	Less than 15	9	12	9	8	6	9	10
	15-24	12	14	13	13	7	13	12
	25 and over	8	5	11	10	3	10	6
S.3.	On the average, about how many cigarettes a day do you now smoke?[7] (Current smokers)							
	Less than 15	31	39	27	27	38	27	37
	15-24	42	45	39	42	43	41	43
	25 and over	27	17	33	31	19	32	21
S.4.	Tell me if you think cigarette smoking definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting the following problems?							
	Emphysema							
	Increases	90	89	93	91	86	89	91
	Definitely increases	73	69	76	74	70	70	75
	Probably increases	17	20	16	17	16	19	16
	Does not increase	2	2	2	2	2	3	2
	Probably does not increase	1	2	1	1	1	2	1
	Definitely does not increase	1	1	1	1	1	1	1
	Don't know/No opinion	8	9	6	7	12	8	8
	Bladder cancer							
	Increases	35	41	34	33	31	36	34
	Definitely increases	12	13	11	13	12	13	11
	Probably increases	23	28	23	21	19	23	23
	Does not increase	25	29	29	21	14	24	25
	Probably does not increase	17	22	20	14	9	17	17
	Definitely does not increase	8	8	9	8	5	8	8
	Don't know/No opinion	40	30	37	45	55	39	41
	Cancer of the larynx or voice box							
	Increases	87	90	90	86	76	86	87
	Definitely increases	55	58	59	54	46	53	58
	Probably increases	31	31	32	32	30	33	30
	Does not increase	3	3	3	3	4	4	3
	Probably does not increase	2	2	2	2	2	3	2
	Definitely does not increase	1	1	1	1	2	1	1
	Don't know/No opinion	10	7	7	11	20	11	10
	Cataracts							
	Increases	16	21	14	13	12	16	15
	Definitely increases	4	6	4	4	3	5	4
	Probably increases	11	16	11	9	8	12	11
	Does not increase	42	45	47	39	29	42	41
	Probably does not increase	22	27	23	19	14	22	21
	Definitely does not increase	20	18	24	21	15	20	20
	Don't know/No opinion	43	33	38	48	59	42	44

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	SMOKING--Con.	Percent of population						
S.4.	Tell me if you think cigarette smoking definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting the following problems?--Con.							
	Cancer of the esophagus							
	Increases..	79	83	82	77	69	77	80
	Definitely increases............................	42	45	45	40	35	41	44
	Probably increases..............................	37	38	37	37	33	36	37
	Does not increase..................................	6	5	6	7	6	7	5
	Probably does not increase......................	4	4	4	4	3	5	3
	Definitely does not increase...................	2	1	2	2	2	2	2
	Don't know/No opinion..............................	15	12	12	16	26	16	15
	Chronic bronchitis							
	Increases..	85	88	88	85	75	84	87
	Definitely increases............................	54	55	58	53	44	51	56
	Probably increases..............................	32	32	31	32	31	33	31
	Does not increase..................................	5	4	4	5	5	5	4
	Probably does not increase......................	3	3	3	3	3	4	2
	Definitely does not increase...................	2	1	2	2	2	2	1
	Don't know/No opinion..............................	10	8	7	10	20	11	9
	Gallstones							
	Increases..	11	15	10	10	9	11	11
	Definitely increases............................	3	3	3	3	3	3	3
	Probably increases..............................	8	12	7	7	6	8	8
	Does not increase..................................	45	49	51	42	31	46	44
	Probably does not increase......................	22	27	25	19	14	22	22
	Definitely does not increase...................	23	22	26	24	18	24	22
	Don't know/No opinion..............................	44	36	39	48	59	43	45
	Lung cancer							
	Increases..	94	96	95	93	87	93	94
	Definitely increases............................	79	85	81	75	71	77	80
	Probably increases..............................	15	11	14	18	16	16	13
	Does not increase..................................	2	1	1	2	2	2	1
	Probably does not increase......................	1	1	1	1	1	1	1
	Definitely does not increase...................	1	0	1	1	1	1	1
	Don't know/No opinion..............................	5	3	3	5	11	5	5
S.4.	Does cigarette smoking during pregnancy definitely increase, probably increase, probably not or definitely not increase the chances of--(Persons under 45 years of age)							
	Miscarriage							
	Increases..	73	76	70	...	...	71	74
	Definitely increases............................	34	36	33	...	...	33	36
	Probably increases..............................	38	40	37	...	...	38	39
	Does not increase..................................	12	11	13	...	...	0	14
	Probably does not increase......................	9	9	9	...	...	8	10
	Definitely does not increase...................	3	3	3	...	...	2	4
	Don't know/No opinion..............................	15	13	17	...	...	19	12
	Stillbirth							
	Increases..	65	68	62	...	...	62	67
	Definitely increases............................	28	29	27	...	...	26	30
	Probably increases..............................	37	39	35	...	...	37	37
	Does not increase..................................	14	13	15	...	...	13	16
	Probably does not increase......................	11	10	11	...	...	10	11
	Definitely does not increase...................	4	3	4	...	...	3	4
	Don't know/No opinion..............................	21	19	23	...	...	25	17
	Premature birth							
	Increases..	70	72	67	...	...	63	76
	Definitely increases............................	32	33	30	...	...	26	38
	Probably increases..............................	38	39	37	...	...	37	38
	Does not increase..................................	12	11	13	...	...	13	11
	Probably does not increase......................	9	9	9	...	...	10	8
	Definitely does not increase...................	3	3	4	...	...	3	3
	Don't know/No opinion..............................	18	16	21	...	...	24	13

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	SMOKING--Con.				Percent of population			
S.4.	Does cigarette smoking during pregnancy definitely increase, probably increase, probably not or definitely not increase the chances of--(Persons under 45 years of age)--Con.							
	Low birth weight of the newborn							
	Increases...	79	80	77	...	...	73	85
	Definitely increases..	44	45	43	...	...	36	52
	Probably increases..	35	35	34	...	...	37	33
	Does not increase..	7	7	7	...	...	8	6
	Probably does not increase....................................	5	5	5	...	...	6	4
	Definitely does not increase.................................	2	2	2	...	...	2	2
	Don't know/No opinion..	14	13	15	...	...	20	9
S.5a.	If a woman takes birth control pills, is she more likely to have a stroke if she smokes than if she does not smoke? (Persons under 45 years of age)							
	More likely..	62	64	61	...	...	52	72
	Not likely...	6	6	6	...	...	7	6
	Don't know...	32	30	34	...	...	42	23
	ALCOHOL USE							
T.1c.	Have you had at least one drink of beer, wine or liquor during the past year?[1] (Yes)....................................	64	72	72	61	43	75	55
T.2.	In the past 2 weeks, on how many days did you drink any alcoholic beverages, such as beer, wine, or liquor?[1,3]							
	Did not drink in past year.....................................	36	28	28	39	57	25	45
	None...	14	13	15	14	12	13	14
	1-4 days...	32	41	37	27	15	34	30
	5-9 days...	8	11	10	7	3	12	5
	10-14 days...	10	6	11	13	12	16	6
T.3.	In the past 2 weeks, on the days that you drank alcoholic beverages, how many drinks did you have per day, on the average?[1,3]							
	Did not drink in past year.....................................	36	28	28	39	57	25	45
	None...	14	13	15	14	12	13	14
	1 drink..	16	12	18	18	17	16	16
	2 drinks...	16	17	18	16	9	18	13
	3-4 drinks...	12	18	14	9	4	16	8
	5 or more drinks..	7	11	7	4	1	11	3
	Drinking Index (2-week daily drinking, based on items T.1-3)[7]							
	Did not drink in past year.....................................	36	28	28	39	57	25	45
	None...	14	13	15	14	12	13	14
	Light (.01 to .21 ounce absolute alcohol).....................	24	26	28	23	15	24	25
	Moderate (.22 to .99 ounce absolute alcohol)..................	19	25	21	16	11	26	13
	Heavier (1.00 ounces or more absolute alcohol)................	8	8	1	8	6	13	3
T.6.	During the past 12 months, on how many days did you have 9 or more drinks of any alcoholic beverage?							
	1 or more days...	12	22	13	6	1	20	5
	5 or more days...	7	12	7	4	1	12	2
T.7.	During the past 12 months, on how many days did you have 5 or more drinks of any alcoholic beverage?[1]							
	1 or more days...	24	·39	28	15	5	36	13
	10 or more days..	12	20	13	8	3	21	5
T.8.	During the past year, how many times did you drive when you had perhaps too much to drink?							
	1 time...	3	6	4	1	0	4	2
	2 or more times..	7	14	8	3	0	12	3

See footnotes at end of table.

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Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	ALCOHOL USE--Con.	Percent of population						
T.9.	Tell me if you think heavy alcohol drinking definitely increases, probably increases, probably does not, or definitely does not increase a person's chances of getting the following problems?							
	Throat cancer							
	Increases.......................................	40	39	36	41	44	37	42
	Definitely increases........................	15	11	13	17	21	13	16
	Probably increases..........................	25	28	23	24	23	24	26
	Does not increase..............................	33	39	39	29	17	37	29
	Probably does not increase..................	22	28	26	19	11	25	20
	Definitely does not increase...............	11	11	13	10	6	12	9
	Don't know/No opinion..........................	27	22	25	30	38	25	29
	Cirrhosis of the liver							
	Increases.......................................	93	94	96	94	87	93	94
	Definitely increases........................	78	77	82	80	71	76	81
	Probably increases..........................	15	17	13	14	16	17	13
	Does not increase..............................	1	1	1	1	1	1	1
	Probably does not increase..................	1	1	0	1	1	1	0
	Definitely does not increase...............	0	0	0	0	0	0	0
	Don't know/No opinion..........................	6	5	4	5	12	6	6
	Bladder cancer							
	Increases.......................................	66	72	67	63	58	66	66
	Definitely increases........................	28	39	27	27	26	28	28
	Probably increases..........................	38	41	40	36	32	38	38
	Does not increase..............................	11	12	13	11	7	12	10
	Probably does not increase..................	8	9	9	8	4	9	7
	Definitely does not increase...............	3	3	4	3	2	3	3
	Don't know/No opinion..........................	23	16	20	26	36	22	24
	Cancer of the mouth							
	Increases.......................................	32	31	29	34	38	29	35
	Definitely increases........................	11	8	9	13	17	9	12
	Probably increases..........................	21	24	19	21	22	20	23
	Does not increase..............................	36	43	42	31	19	41	31
	Probably does not increase..................	23	29	27	19	11	27	20
	Definitely does not increase...............	13	14	14	12	8	14	11
	Don't know/No opinion..........................	32	26	30	35	43	30	34
	Arthritis							
	Increases.......................................	15	16	13	15	15	15	14
	Definitely increases........................	4	3	3	4	5	4	4
	Probably increases..........................	11	13	10	11	10	11	11
	Does not increase..............................	46	53	51	41	30	48	44
	Probably does not increase..................	24	30	27	20	14	25	23
	Definitely does not increase...............	22	22	24	21	17	23	21
	Don't know/No opinion..........................	40	31	36	44	55	38	42
	Blood clots							
	Increases.......................................	34	44	32	29	26	32	35
	Definitely increases........................	10	12	9	9	9	9	10
	Probably increases..........................	24	33	23	20	18	23	25
	Does not increase..............................	31	29	36	32	21	35	27
	Probably does not increase..................	18	20	22	18	11	20	17
	Definitely does not increase...............	12	10	15	14	10	14	11
	Don't know/No opinion..........................	35	26	31	39	53	33	37
T.9.	Does heavy drinking during pregnancy definitely increase, probably increase, probably not or definitely not increase the chances of--(Persons under 45 years of age)							
	Miscarriage							
	Increases.......................................	85	87	82	...	...	82	87
	Definitely increases........................	48	53	43	...	...	44	51
	Probably increases..........................	37	35	39	...	...	38	36
	Does not increase..............................	4	4	5	...	...	4	4
	Probably does not increase..................	3	3	4	...	...	3	3
	Definitely does not increase...............	1	1	1	...	...	1	1
	Don't know/No opinion..........................	11	9	13	...	...	14	8

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Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	ALCOHOL USE--Con.				Percent of population			
T.9.	Does heavy drinking during pregnancy definitely increase, probably increase, probably not or definitely not increase the chances of--(Persons under 45 years of age)--Con.							
	Mental retardation of the newborn							
	Increases..	83	86	80	...	...	79	87
	Definitely increases...	47	52	41	...	...	41	52
	Probably increases...	37	34	39	...	...	38	35
	Does not increase..	5	4	5	...	...	5	4
	Probably does not increase...................................	3	3	4	...	...	4	3
	Definitely does not increase.................................	1	1	1	...	...	1	1
	Don't know/No opinion..	12	10	14	...	...	15	9
	Low birth weight of the newborn							
	Increases..	84	85	82	...	...	79	88
	Definitely increases...	46	49	43	...	...	39	52
	Probably increases...	38	36	39	...	...	40	36
	Does not increase..	4	4	4	...	...	5	3
	Probably does not increase...................................	3	3	3	...	...	4	2
	Definitely does not increase.................................	1	1	1	...	...	1	1
	Don't know/No opinion..	12	11	14	...	...	16	9
	Birth defects							
	Increases..	84	87	81	...	...	80	88
	Definitely increases...	48	54	43	...	...	42	54
	Probably increases...	36	33	38	...	...	38	34
	Does not increase..	4	3	5	...	...	5	4
	Probably does not increase...................................	3	3	4	...	...	4	3
	Definitely does not increase.................................	1	1	1	...	...	1	1
	Don't know/No opinion..	12	10	14	...	...	15	9
T.10.	Have you ever heard of Fetal Alcohol Syndrome? (Persons under 45 years of age) (Yes)..	56	52	59	...	...	49	62
	DENTAL CARE							
U.1.	This next question is about preventing tooth decay. After I read each of the following, tell me if you think it is definitely important, probably important, probably not, or definitely not important in preventing tooth decay.							
	Seeing a dentist regularly							
	Important..	95	96	96	94	91	93	96
	Definitely important...	82	82	84	83	77	78	86
	Probably important...	12	13	12	12	14	15	10
	Not important..	2	2	2	3	2	3	1
	Probably not important.......................................	2	1	1	2	2	2	1
	Definitely not important.....................................	1	0	0	1	1	1	0
	Don't know/No opinion..	3	2	2	3	7	4	3
	Drinking water with fluoride from early childhood							
	Important..	78	83	84	76	62	77	80
	Definitely important...	45	46	52	44	32	42	48
	Probably important...	33	37	32	32	30	34	32
	Not important..	8	9	7	8	8	9	7
	Probably not important.......................................	6	7	5	5	5	6	5
	Definitely not important.....................................	3	2	2	3	3	3	2
	Don't know/No opinion..	14	8	9	16	30	14	13
	Regular brushing and flossing of the teeth							
	Important..	97	97	98	97	93	96	97
	Definitely important...	88	90	91	88	81	86	90
	Probably important...	8	7	6	9	12	10	7
	Not important..	1	1	0	1	1	1	0
	Probably not important.......................................	0	0	0	0	0	0	0
	Definitely not important.....................................	0	0	0	0	0	0	0
	Don't know/No opinion..	3	2	2	3	6	3	3

See footnotes at end of table.

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Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	DENTAL CARE--Con.	Percent of population						
U.1.	This next question is about preventing tooth decay. After I read each of the following, tell me if you think it is definitely important, probably important, probably not, or definitely not important in preventing tooth decay.--Con.							
	Using fluoride toothpaste or fluoride mouth rinse							
	Important	88	94	93	86	74	87	89
	Definitely important	61	72	66	54	43	58	63
	Probably important	28	22	27	32	31	29	26
	Not important	4	2	3	6	6	5	4
	Probably not important	3	2	2	4	4	3	2
	Definitely not important	1	1	1	1	2	1	1
	Don't know/No opinion	8	4	4	9	20	8	7
	Avoiding between-meal sweets							
	Important	88	89	91	89	81	87	90
	Definitely important	59	57	63	62	53	56	62
	Probably important	29	32	28	27	29	31	28
	Not important	6	8	6	6	6	7	5
	Probably not important	5	7	4	4	5	6	4
	Definitely not important	1	1	1	2	2	2	1
	Don't know/No opinion	5	3	3	5	12	6	5
U.2.	Now I'm going to ask about preventing gum disease. In your opinion, how important or not important is each of the following in preventing gum disease?							
	Seeing a dentist regularly							
	Important	94	96	96	94	89	93	95
	Definitely important	82	83	84	82	75	78	85
	Probably important	12	13	12	11	14	15	10
	Not important	2	2	2	2	2	3	1
	Probably not important	1	1	1	2	2	2	1
	Definitely not important	1	0	0	1	1	1	0
	Don't know/No opinion	4	3	2	4	9	4	3
	Drinking water with fluoride from early childhood							
	Important	65	74	67	61	52	62	68
	Definitely important	34	38	35	32	27	31	37
	Probably important	31	35	32	29	25	31	31
	Not important	16	16	19	16	11	18	14
	Probably not important	12	12	14	11	7	13	10
	Definitely not important	4	3	5	5	4	5	4
	Don't know/No opinion	19	11	14	22	36	19	18
	Regular brushing and flossing of the teeth							
	Important	95	96	97	95	90	94	96
	Definitely important	83	86	87	81	74	80	86
	Probably important	12	11	10	13	16	14	10
	Not important	1	1	1	1	1	1	1
	Probably not important	1	1	1	1	1	1	1
	Definitely not important	0	0	0	0	0	0	0
	Don't know/No opinion	4	3	3	4	9	5	3
	Using fluoride toothpaste or fluoride mouth rinse							
	Important	77	85	78	72	68	74	79
	Definitely important	47	57	48	42	39	45	50
	Probably important	29	28	30	31	28	30	29
	Not important	12	9	14	13	9	14	10
	Probably not important	9	7	11	10	6	10	7
	Definitely not important	3	2	3	3	3	3	2
	Don't know/No opinion	12	6	8	14	23	12	11
	Avoiding between-meal sweets							
	Important	80	83	81	80	75	78	83
	Definitely important	50	49	51	52	48	47	53
	Probably important	30	35	30	28	28	31	29
	Not important	11	11	13	11	9	13	10
	Probably not important	9	9	10	8	6	10	8
	Definitely not important	3	2	3	3	3	3	2
	Don't know/No opinion	8	5	6	9	16	9	8

See footnotes at end of table.

Table 1. Estimates of the percent of population with selected behaviors and knowledge from the 1985 National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, by age and sex: United States, 1985--Con.

(Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Technical notes.)

Section and item number	Health behaviors and knowledge	Age					Sex	
		All ages	18-29 years	30-44 years	45-64 years	65 years and over	Male	Female
	DENTAL CARE--Con.				Percent of population			
U.3.	In your opinion, which of the following is the main cause of tooth loss in children?							
	Tooth decay	57	55	56	59	61	55	60
	Gum disease	8	9	8	9	9	10	7
	Injury to the teeth	29	33	34	26	17	29	28
	Don't know	5	3	3	5	14	6	5
U.4.	In your opinion, which of the following is the main cause of tooth loss in adults?							
	Tooth decay	40	42	35	40	44	41	38
	Gum disease	53	52	60	54	43	51	56
	Injury to the teeth	3	4	2	2	2	3	2
	Don't know	4	3	2	4	11	5	4
U.5a.	Have you ever heard of dental sealants? (Yes)	23	18	31	23	14	22	23
U.5b.	Which of the following best describes the purpose of dental sealants--to prevent gum disease, to prevent tooth decay, or to hold dentures in place? (Persons who have heard of dental sealants (yes) in U.5a.							
	Prevent gum disease	4	5	3	4	7	4	4
	Prevent tooth decay	80	74	85	81	71	79	81
	Hold dentures in place	12	18	9	10	13	13	11
	Don't know	4	3	3	5	9	4	4
	OCCUPATIONAL SAFETY AND HEALTH							
V.1a.	In your present job, are you exposed to any substances that could endanger your health, such as chemicals, dusts, fumes or gases?[3] (Currently employed persons) (Yes)	35	36	37	32	17	44	23
V.2a.	In your present job, are you exposed to any work conditions that could endanger your health, such as loud noise, extreme heat or cold, physical or mental stress, or radiation?[3] (Currently employed persons) (Yes)	36	36	40	33	13	42	28
V.3a.	In your present job are you exposed to any risks of accidents or injuries?[3] (Currently employed persons) (Yes)	40	45	40	37	26	51	26

[1]National Center for Health Statistics, C. A. Schoenborn, and K. M. Danchik: Health Practices Among Adults: United States, 1977. Advance Data From Vital and Health Statistics. No. 64. DHEW Pub. No. (PHS) 78-1250. Public Health Service. Hyattsville, Md., Nov. 4, 1980.

[2]National Center for Health Statistics, A. J. Moss and G. Scott: Characteristics of persons with hypertension, United States, 1974. Vital and Health Statistics. Series 10, No. 121. DHEW Pub. No. (PHS) 79-1549. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1978.

[3]National Center for Health Statistics, C. A. Schoenborn, K. M. Danchik, and J. Elinson: Basic data from Wave I of the National Survey of Personal Health Practices and Consequences, United States, 1979. Vital and Health Statistics. Series 15, No. 2. DHHS Pub. No. (PHS) 81-1163. Public Health Service. Washington. U.S. Government Printing Office, Aug. 1981.

[4]National Center for Health Statistics, B. Bloom and S. S. Jack: Persons with and without a regular source of medical care, United States. Vital and Health Statistics. Series 10, No. 151. DHHS Pub. No. (PHS) 85-1579.

[5]National Center for Health Statistics, A. J. Moss and M. H. Wilder: Use of selected medical procedures associated with preventive care, United States, 1973. Vital and Health Statistics. Series 10, No. 110. DHEW Pub. No. (HRA) 77-1538. Health Resources Administration. Washington. U.S. Government Printing Office, Mar. 1977.

[6]National Center for Health Statistics, J. W. Choi: Exercise and Participation in Sports Among Persons 20 Years of Age and Over: United States, 1975. Advance Data From Vital and Health Statistics. No. 19. DHEW Pub. No. (PHS) 78-1250. Public Health Service. Hyattsville, Md., March 15, 1978.

[7]National Center for Health Statistics: Health, United States, 1985. DHHS Pub. No. (PHS) 85-1232. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1985.

Technical notes

The National Health Interview Survey (NHIS) is a continuous, cross-sectional, nationwide survey conducted by household interview. Each week a probability sample of households in the civilian noninstitutionalized population is interviewed by personnel of the U.S. Bureau of the Census to obtain information on the health and other characteristics of each member of the household. A description of the survey design, methods used in estimation, and general qualifications of the NHIS data is provided in *Current Estimates From the National Health Interview Survey, 1985.*[4]

The 1985 NHIS sample consisted of 36,399 eligible households. The total noninterview rate for the basic health and demographic household questionnaire was about 4 percent—about 2–3 percent of which was due to respondent refusal and the remainder primarily due to an inability to locate an eligible respondent at home after repeated calls. For the Health Promotion and Disease Prevention questionnaire, self-response was required and one adult per family was randomly selected as the respondent. This procedure resulted in an additional nonresponse of about 7 percent. The number of completed

[4]National Center for Health Statistics, A. J. Moss: Current estimates from the National Health Interview Survey, United States, 1985. *Vital and Health Statistics.* Series 10, No. 160. DHHS Pub. No. (PHS) 86–1588. Public Health Service. Washington. U.S. Government Printing Office. Sept. 1986. In preparation.

Health Promotion and Disease Prevention questionnaires was 33,630, representing an estimated 90 percent of eligible respondents.

The estimated population for each of the demographic categories is shown in table I to allow readers to derive an estimate of the number of people in the United States with a given characteristic. However, the estimates are based on a sample of the population rather than on the entire population and are, therefore, subject to sampling error. Some estimates in table 1 are small for given characteristics. When an estimate or the numerator or denominator of a rate is small, the sampling error may be relatively high. Approximate standard errors for estimates in this report are shown in table II.

Release of data

To expedite the early release of data from the Health Promotion and Disease Prevention questionnaire, provisional estimates previously were made available.[1] This report represents the first release of estimates from the final edited and weighted data file. A number of additional publications are in preparation, including a Series 10 report similar in format to this publication but with detail by age, sex, and race, and with the complete questionnaire and a description of the survey methods; another Series 10 publication showing selected health behavior and knowledge variables by detailed sociodemo-

Table I.   Estimates of selected civilian noninstitutionalized populations by age and sex: United States, 1985

Selected populations	Age					Sex	
	All ages	18–29 years	30–44 years	45–64 years	65 years and over	Male	Female
	Population in thousands						
Total adult population	170,972	48,325	51,092	44,512	27,043	80,779	90,192
Females	90,192	24,756	26,201	23,297	15,939	...	90,192
Population in families with children under 10 years of age	45,826	17,922	23,931	3,491	481	20,145	25,681
Population in families with children under 5 years of age	29,916	14,753	13,189	1,756	218	13,241	16,675
Currently employed population	107,316	34,641	40,781	28,645	3,250	60,052	47,264

Table II.   Standard errors, expressed in percentage points, of estimated percents by selected age and sex groups: National Health Interview Survey Questionnaire on Health Promotion and Disease Prevention, United States, 1985

Estimated percent	Age					Sex	
	All ages	18–29 years	30–44 years	45–64 years	65 years and over	Male	Female
	Standard error in percentage points						
5 or 95	0.13	0.25	0.24	0.26	0.30	0.20	0.17
10 or 90	0.18	0.35	0.33	0.36	0.41	0.28	0.24
15 or 85	0.21	0.42	0.39	0.43	0.49	0.33	0.28
20 or 80	0.24	0.47	0.44	0.48	0.55	0.37	0.31
25 or 75	0.26	0.51	0.47	0.52	0.59	0.40	0.34
30 or 70	0.27	0.54	0.50	0.55	0.63	0.42	0.36
35 or 65	0.28	0.56	0.52	0.57	0.65	0.44	0.37
40 or 60	0.29	0.57	0.53	0.59	0.67	0.45	0.38
45 or 55	0.30	0.58	0.54	0.60	0.68	0.46	0.39
50 or 50	0.30	0.58	0.54	0.60	0.68	0.46	0.39

graphic characteristics; and a Series 5 publication providing a comparison of data from this survey with data from the 1985 Canada Health Survey. In addition, a number of research reports prepared by the staffs of agencies designated as having lead responsibility for particular 1990 objectives will appear in the November–December 1986 issue of *Public Health Reports*.

A public use data file based on the 1985 Health Promotion and Disease Prevention questionnaire is scheduled for release in December 1986. Information regarding the purchase of the public use tape can be obtained by writing the Division of Health Interview Statistics, National Center for Health Statistics, 3700 East-West Highway, Hyattsville, Md. 20782.

Collaboration with Federal agencies

The following Federal agencies provided partial funding for the 1985 Health Promotion and Disease Prevention study, and/or participated in the planning and development of the questionnaire:

Office of the Assistant Secretary for Health
    Office of Disease Prevention and Health Promotion
    Office on Smoking and Health
Alcohol, Drug Abuse, and Mental Health Administration
    National Institute of Alcohol Abuse and Alcoholism
National Institutes of Health
    National Heart, Lung, and Blood Institute
    National Cancer Institute
    National Institute of Dental Research
    National Institute of Child Health and Human
    Development

Health Resources and Services Administration
Centers for Disease Control
    Center for Prevention Services
    Center for Infectious Diseases
    Center for Environmental Health
    Center for Health Promotion and Education
    National Institute for Occupational Safety and Health
Food and Drug Administration
    Bureau of Foods
Department of Transportation
    Office of Driver and Pedestrian Research
The President's Council on Physical Fitness and Sports

Symbols

- - -   Data not available

      Category not applicable

-    Quantity zero

0.0   Quantity more than zero but less than 0.05

Z   Quantity more than zero but less than 500 where numbers are rounded to thousands

*   Figure does not meet standard of reliability or precision (more than 30-percent relative standard error)

Figure suppressed to comply with confidentiality requirements

1985 Summary: National Hospital Discharge Survey

Hospital Care Statistics Branch, Division of Health Care Statistics

Introduction

With a rate of 148 per 1,000 discharges, 1985 marked the first year since 1971 that the discharge rate has fallen below 150 per 1,000. This is primarily the result of an 11-percent

drop in discharge rates from 1983 to 1985 (figure 1). In addition, the average length of stay for hospitalized patients is continuing to drop. The average stay in 1985 was 6.5 days compared with 7.7 days a decade ago (figure 2).

During 1985 an estimated 35.1 million inpatients, exclud-
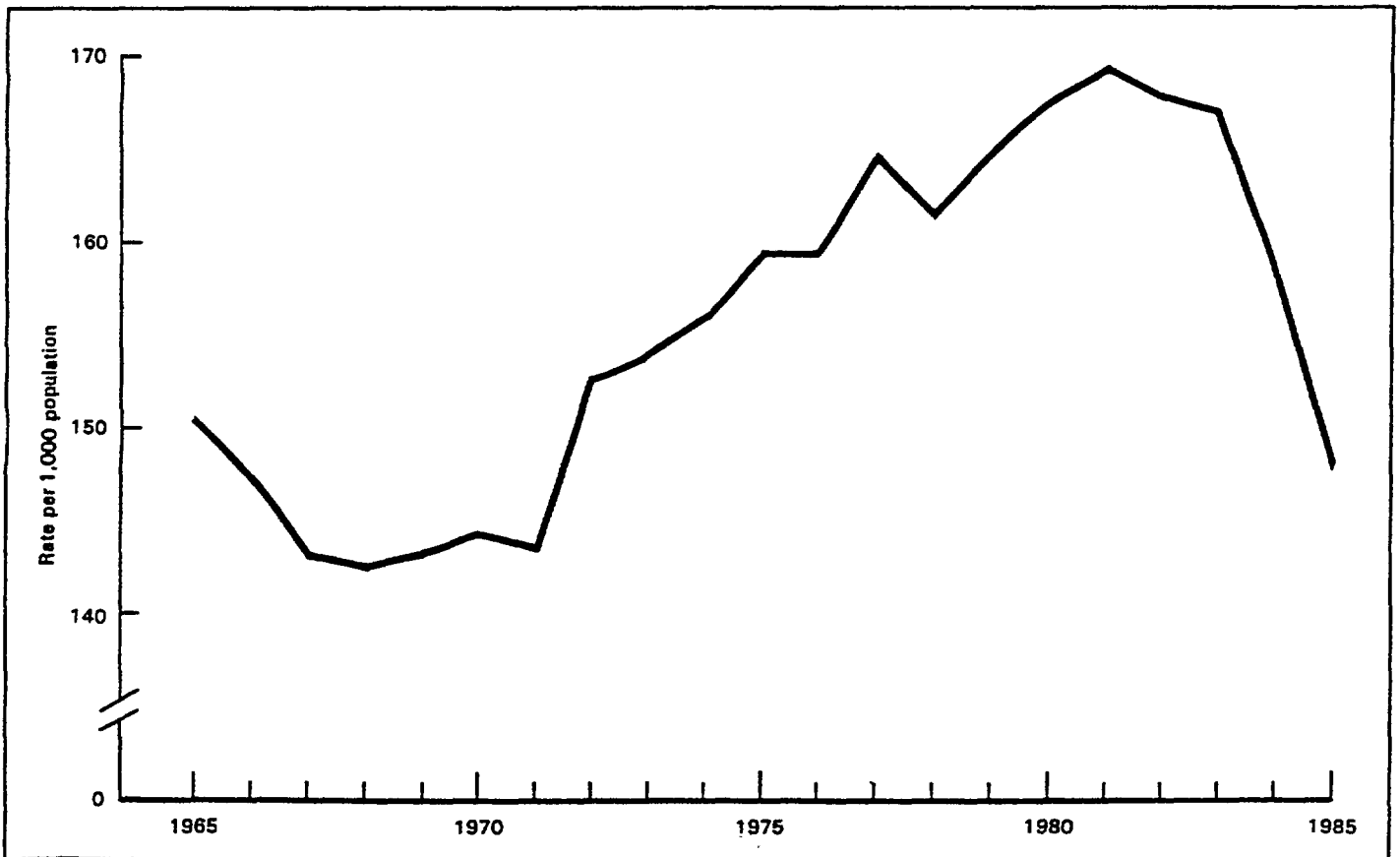
Figure 1.   Discharge rate in non-Federal short-stay hospitals: United States, 1965–85

Figure 2.   Average length of stay in non-Federal short-stay hospitals: United States, 1965–85

ing newborn infants, were discharged from short-stay non-Federal hospitals in the United States. These patients were hospitalized an average of 6.5 days and used 226.2 million days of inpatient hospital care. Patients hospitalized during 1985 accounted for 148 discharges per 1,000 civilian population.

These and other statistics presented in this report are based on data collected by means of the National Hospital Discharge Survey, a continuous survey that has been conducted by the National Center for Health Statistics since 1965. In 1985, data were abstracted from the medical records of approximately 194,800 patients discharged from 414 short-stay non-Federal hospitals. A brief description of the sample design, data collection procedures, and estimation process, and definition of terms used in this report can be found in the section entitled "Technical notes." A detailed discussion of these items, as well as the survey form used to collect the data, have been published.[1,2]

Coding of medical data for patients hospitalized is done according to the *International Classification of Diseases, 9th Revision, Clinical Modification*[3] (ICD–9–CM). Up to seven diagnoses and four procedures are coded for each discharge. Although diagnoses included in the ICD–9–CM section entitled "Supplementary classification of external causes of injury and poisoning" (codes E800–E999) are used by the National Hospital Discharge Survey, these diagnoses are excluded from this report. The conditions diagnosed and procedures performed are presented here by chapter of ICD–9–CM. Within these

chapters, a few diagnoses and procedures or groups thereof also are shown. These specific categories were selected primarily because of large numbers of occurrences or because they are of special interest. Residual categories of the diagnostic and procedure classes, however, are not included in the tables. More detailed analyses of these data will be presented in later reports in Series 13 of *Vital and Health Statistics.*

In 1985, approximately 17 percent of the hospitals submitted machine-readable data tapes through commercial abstracting services. Preliminary analysis indicates that a greater number of nonsurgical procedures per patient are obtained from these hospitals than from hospitals submitting data in the traditional manual mode (see Technical notes). This has resulted in increases from 1984 to 1985 in the estimates for miscellaneous diagnostic and therapeutic procedures and, therefore, for total procedures.

Data highlights

Utilization by patient and hospital characteristics

The number, rate, and average length of stay of patients discharged from short-stay non-Federal hospitals are shown by selected patient and hospital characteristics in tables 1–3. The 35.1 million patients discharged from short-stay hospitals during 1985 included an estimated 14.2 million males and 20.9 million females. The rates per 1,000 population were 124 for

males and 171 for females, making the rate for females about 38 percent higher than the rate for males. The number and rate ,of discharges are always higher for females than for males because of the large number of women in their childbearing years (15–44 years of age) who are hospitalized for deliveries and other obstetrical conditions. Excluding deliveries, the rate for females discharged was 139, or only about 12 percent higher than the rate for males.

The average length of stay was 6.9 days for males and 6.2 days for females during 1985. The length of stay for females was shorter than that for males primarily because the average length of stay of the 3.9 million women who were hospitalized for deliveries was only 3.3 days. The average length of stay for females who were not hospitalized for deliveries during 1985 was 6.8 days.

The number of discharges from short-stay hospitals by geographic region during 1985 ranged from 12.3 million in the South Region to 6.5 million in the West Region, and the rates per 1,000 population ranged from 154 in the Midwest Region to 138 in the West Region. Regional differences in the number of discharges are accounted for mainly by variations in population sizes.

Average lengths of stay by geographic region were 5.4 days in the West, 6.0 days in the South, 6.8 days in the Midwest, and 7.7 days in the Northeast.

Discharges from short-stay hospitals were about 40 percent male and 60 percent female in every hospital bed-size group. The average length of stay increased steadily from 5.2 days in the smallest hospitals (6–99 beds) to 7.4 days in the largest hospitals (500 beds or more) for all patients.

During 1985, voluntary nonprofit hospitals provided medical care to an estimated 24.0 million patients, or 68 percent of all patients hospitalized. Hospitals operated by State and local governments cared for 7.8 million patients, or 22 percent of all discharges, and proprietary hospitals operated for profit cared for 3.3 million patients or 9 percent of all discharges. Average lengths of stay were 6.7 days in voluntary nonprofit hospitals, 5.9 days in State and local government hospitals, and 6.3 days in proprietary hospitals.

Utilization by diagnosis

Diseases of the circulatory system ranked first in 1985 among the ICD–9–CM diagnostic chapters as a principal or first-listed diagnosis among patients discharged from non-Federal short-stay hospitals. These conditions accounted for an estimated 5.5 million discharges. Other leading ICD–9–CM diagnostic chapters were supplementary classifications (including females with deliveries) (4.3 million discharges) and diseases of the digestive system (3.9 million discharges). Over 38 percent of the patients discharged from non-Federal short-stay hospitals were included in these three ICD–9–CM diagnostic chapters.

The diagnostic categories presented in this report were selected either because they appear as principal or first-listed diagnoses with great frequency or because the conditions are of special interest. Although many of these categories (such as malignant neoplasms; psychoses; and fractures, all sites) are groupings of more detailed diagnoses, they are presented as single categories without showing all of the specific diagnostic inclusions.

The number and rate of discharges and average length of stay for each ICD–9–CM diagnostic chapter and selected categories are shown by sex and age in tables 4–6. The most common diagnostic category for all patients was females with deliveries. This was followed by the diagnostic categories heart disease and malignant neoplasms. Excluding females with deliveries, these last two non-sex-specific diagnostic categories were also the most common first-listed diagnoses for each sex.

The most frequent first-listed diagnoses for 1985 varied for the different age groups. For patients under 15 years of age, the most frequent diagnoses were acute respiratory infections, except influenza; pneumonia, all forms; and chronic disease of tonsils and adenoids. Excluding females with deliveries, the most frequent diagnoses for patients 15–44 years of age were fractures, all sites; psychoses; and abortions and ectopic and molar pregnancies. Patients 45–64 years of age were hospitalized most frequently for heart disease. The most common diagnoses for patients 65 years of age and over were heart disease and malignant neoplasms.

The average length of stay for all patients ranged from a low of 1.5 days for the diagnostic category chronic disease of tonsils and adenoids, 1.6 days for patients admitted for sterilization, 2.0 days for the diagnostic category of cataract, and 2.1 days for abortions and ectopic and molar pregnancies to a high of 14.9 days for psychoses, and 14.7 days for fracture of neck of femur. Although the overall average length of stay for females was shorter than that for males, females stayed in the hospital longer than males for many of the specific diagnostic categories shown in this report.

The average length of stay increased with increasing age for most categories of diagnoses shown. Overall, the average length of stay ranged from 4.6 days for patients under 15 years of age to 8.7 days for patients 65 years and over.

Utilization by procedures

One or more surgical or nonsurgical procedures were performed for an estimated 20.7 million of the 35.1 million inpatients discharged from short-stay hospitals during 1985. A total of 36.8 million procedures, or an average of 1.8 per patient who underwent at least one procedure, were recorded in 1985.

Procedures are grouped in the tables of this report by the ICD–9–CM procedure chapters. Selected procedures within these chapters also are presented by specific categories. Some of these categories (such as extraction of lens, open heart surgery, and hysterectomy) are presented as single categories although they may be divided into more precise subgroups.

When grouped by chapters, miscellaneous diagnostic and therapeutic procedures with 8.8 million procedures ranked first among the surgical and nonsurgical procedures performed during 1985. These were followed by operations on the digestive system with 5.7 million procedures performed. Other leading procedures were obstetrical procedures with 4.3 million procedures, operations on the musculoskeletal system with 3.5 million procedures and operations on female genital organs

with 3.3 million procedures. Approximately two-thirds of all procedures performed in 1985 were included in these five ICD–9–CM procedure chapters.

The number and rate of all-listed procedures in 1985 for each ICD–9–CM procedure chapter and selected procedure categories are shown by sex and age in tables 7 and 8. Of the 36.8 million procedures performed during 1985, 14.7 million were for males and 22.1 million were for females. The corresponding rates per 1,000 population were 155 for both sexes, 128 for males, and 180 for females. Of the procedures shown in table 7, some common ones for males were arteriography and angiocardiography and computerized axial tomography;

the most frequently performed procedures for females were episiotomy and cesarean section.

The rate of procedures per 1,000 population increases with advancing age from 37 for patients under 15 years to 387 for patients 65 years of age and over. The most frequently performed procedures for patients under 15 years of age were tonsillectomy with or without adenoidectomy; for patients 15–44 years of age, episiotomy and cesarean section; for patients 45–64 years of age, arteriography and angiocardiography, and computerized axial tomography; and for patients 65 years of age and over, computerized axial tomography and diagnostic ultrasound.

TABLE 1. NUMBER OF INPATIENTS DISCHARGED FROM SHORT-STAY
HOSPITALS BY SELECTED CHARACTERISTICS: UNITED STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN
INFANTS)

SELECTED CHARACTERISTIC	BOTH SEXES	MALE	FEMALE
	NUMBER OF PATIENTS DISCHARGED IN THOUSANDS		
TOTAL......................	35,056	14,160	20,896
AGE			
UNDER 15 YEARS....................	2,972	1,698	1,274
15-44 YEARS......................	13,966	4,153	9,813
45-64 YEARS......................	7,610	3,776	3,834
65 YEARS AND OVER................	10,508	4,533	5,975
REGION			
NORTHEAST........................	7,168	2,998	4,170
MIDWEST..........................	9,111	3,734	5,378
SOUTH............................	12,274	4,850	7,425
WEST.............................	6,502	2,579	3,923
BED SIZE			
6-99 BEDS........................	5,331	2,118	3,213
100-199 BEDS.....................	6,443	2,565	3,878
200-299 BEDS.....................	6,953	2,905	4,048
300-499 BEDS.....................	8,625	3,459	5,167
500 BEDS OR MORE.................	7,703	3,113	4,590
OWNERSHIP			
NONPROFIT........................	23,984	9,645	14,339
STATE AND LOCAL GOVERNMENT.......	7,776	3,153	4,623
PROPRIETARY......................	3,296	1,362	1,933

TABLE 3. AVERAGE LENGTH OF STAY FOR INPATIENTS DISCHARGED FROM
SHORT-STAY HOSPITALS BY SELECTED CHARACTERISTICS: UNITED
STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN
INFANTS)

SELECTED CHARACTERISTIC	BOTH SEXES	MALE	FEMALE
	AVERAGE LENGTH OF STAY IN DAYS		
TOTAL......................	6.5	6.9	6.2
AGE			
UNDER 15 YEARS....................	4.6	4.5	4.6
15-44 YEARS......................	4.8	6.1	4.3
45-64 YEARS......................	7.0	6.9	7.1
65 YEARS AND OVER................	8.7	8.4	9.0
REGION			
NORTHEAST........................	7.7	8.0	7.6
MIDWEST..........................	6.8	7.2	6.4
SOUTH............................	6.0	6.4	5.8
WEST.............................	5.4	5.9	5.1
BED SIZE			
6-99 BEDS........................	5.2	5.4	5.1
100-199 BEDS.....................	5.8	6.2	5.5
200-299 BEDS.....................	6.5	6.8	6.3
300-499 BEDS.....................	6.8	7.3	6.5
500 BEDS OR MORE.................	7.4	8.0	7.0
OWNERSHIP			
NONPROFIT........................	6.7	7.1	6.4
STATE AND LOCAL GOVERNMENT.......	5.9	6.3	5.6
PROPRIETARY......................	6.3	6.7	6.0

ABLE 2. RATE OF INPATIENTS DISCHARGED FROM SHORT-STAY
HOSPITALS, BY AGE, GEOGRAPHIC REGION, AND SEX: UNITED STATES,
1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN
INFANTS)

AGE AND REGION	BOTH SEXES	MALE	FEMALE
	RATE OF PATIENTS DISCHARGED PER 1,000 POPULATION		
TOTAL......................	147.9	123.5	170.7
AGE			
UNDER 15 YEARS....................	57.2	63.8	50.2
15-44 YEARS......................	125.1	75.4	173.4
45-64 YEARS......................	169.5	176.2	163.4
65 YEARS AND OVER................	368.3	393.2	351.4
REGION			
NORTHEAST........................	144.1	- - -	- - -
MIDWEST..........................	154.3	- - -	- - -
SOUTH............................	151.6	- - -	- - -
WEST.............................	137.6	- - -	- - -

TABLE 4. NUMBER OF INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY CATEGORY OF FIRST-LISTED DIAGNOSIS, SEX, AND AGE: UNITED STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS. DIAGNOSTIC GROUPINGS AND CODE NUMBER INCLUSIONS ARE BASED ON THE INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION, CLINICAL MODIFICATION)

CATEGORY OF FIRST-LISTED DIAGNOSIS AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
		NUMBER OF PATIENTS DISCHARGED IN THOUSANDS					
ALL CONDITIONS..	35,056	14,160	20,896	2,972	13,966	7,610	10,508
INFECTIOUS AND PARASITIC DISEASES.....................001-139	669	308	361	193	210	95	172
NEOPLASMS...140-239	2,411	1,008	1,403	69	454	794	1,094
MALIGNANT NEOPLASMS..........................140-208,230-234	1,911	892	1,019	43	229	648	991
MALIGNANT NEOPLASM OF TRACHEA, BRONCHUS, AND LUNG....................162,197.0,197.3	315	206	110	*	13	132	169
MALIGNANT NEOPLASM OF BREAST.................174-175,198.81	208	*	207	*	35	91	81
ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS................................240-279	1,068	409	659	70	271	279	448
DIABETES MELLITUS...250	480	194	286	21	128	160	171
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.........280-289	342	149	193	58	90	56	138
MENTAL DISORDERS......................................290-319	1,700	918	782	49	1,014	396	240
PSYCHOSES..290-299	701	325	376	*6	396	164	135
NEUROTIC AND PERSONALITY DISORDERS...................300-301	195	68	126	*5	120	44	26
ALCOHOL DEPENDENCE SYNDROME.................................303	388	312	76	*	239	121	26
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.......320-389	1,211	537	674	229	305	267	409
DISEASES OF THE CENTRAL NERVOUS SYSTEM.......320-336,340-349	425	196	229	64	143	93	126
CATARACT...366	182	67	114	*	*6	38	138
DISEASES OF THE EAR AND MASTOID PROCESS..............380-389	259	117	142	118	55	47	39
DISEASES OF THE CIRCULATORY SYSTEM....................390-459	5,470	2,783	2,686	35	481	1,728	3,224
ESSENTIAL HYPERTENSION.....................................401	214	89	124	*	45	84	82
HEART DISEASE......391-392.0,393-398,402,404,410-416,420-429	3,584	1,910	1,674	20	250	1,204	2,111
ACUTE MYOCARDIAL INFARCTION................................410	755	466	289	*	50	267	436
ATHEROSCLEROTIC HEART DISEASE..............................414.0	304	190	114	*	13	134	157
OTHER ISCHEMIC HEART DISEASE..........411-413,414.1-414.9	992	549	443	*	67	423	501
CONGESTIVE HEART FAILURE...................................428.0	557	247	310	*	11	96	446
CEREBROVASCULAR DISEASE...............................430-438	916	416	500	*	34	192	686
DISEASES OF THE RESPIRATORY SYSTEM....................460-519	3,238	1,591	1,647	848	656	612	1,121
ACUTE RESPIRATORY INFECTIONS, EXCEPT INFLUENZA.......460-466	464	236	229	229	78	59	98
CHRONIC DISEASE OF TONSILS AND ADENOIDS....................474	288	124	164	186	98	*	-
PNEUMONIA, ALL FORMS.................................480-486	854	433	421	206	100	147	400
ASTHMA...493	462	195	266	144	124	97	97
DISEASES OF THE DIGESTIVE SYSTEM......................520-579	3,873	1,839	2,034	346	1,222	1,038	1,267
ULCERS OF THE STOMACH AND SMALL INTESTINE............531-534	292	156	137	2	73	86	131
GASTRITIS AND DUODENITIS...................................535	203	87	116	15	79	57	51
APPENDICITIS...540-543	250	143	107	65	148	23	14
INGUINAL HERNIA..550	384	343	42	47	100	118	120
NONINFECTIOUS ENTERITIS AND COLITIS..............555-556,558	457	191	266	133	165	66	94
CHOLELITHIASIS...574	474	140	333	*	162	154	157
DISEASES OF THE GENITOURINARY SYSTEM..................580-629	2,805	958	1,848	101	1,324	646	735
CALCULUS OF KIDNEY AND URETER..............................592	325	215	110	*	165	119	39
DISORDERS OF MENSTRUATION AND OTHER ABNORMAL VAGINAL BLEEDING...............................626	193	-	193	*	148	43	*
COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM...............................1/ 630-676	968	...	968	*5	961	*	...
ABORTIONS AND ECTOPIC AND MOLAR PREGNANCIES..........630-639	382	...	382	*	378	*	...
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE..........680-709	542	268	273	58	203	134	147
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE................................710-739	2,170	939	1,231	70	860	699	542
ARTHROPATHIES AND RELATED DISORDERS..................710-719	465	188	276	18	133	130	183
INTERVERTEBRAL DISC DISORDERS..............................722	508	281	227	*	265	191	51
CONGENITAL ANOMALIES..................................740-759	269	156	113	150	72	30	17
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....................................760-779	159	82	77	158	*	*	-
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS...........780-799	534	260	275	85	235	135	79
INJURY AND POISONING.................................800-999	3,303	1,800	1,503	398	1,510	603	793
FRACTURES, ALL SITES.................................800-829	1,129	550	579	132	398	181	419
FRACTURE OF NECK OF FEMUR..................................820	258	62	196	*	11	24	219
SPRAINS AND STRAINS OF BACK (INCLUDING NECK).........846-847	237	117	120	*	146	63	25
INTRACRANIAL INJURIES (EXCLUDING THOSE WITH SKULL FRACTURE)...............................850-854	268	162	107	64	140	31	34
LACERATIONS AND OPEN WOUNDS..........................870-904	277	203	74	38	181	35	23
SUPPLEMENTARY CLASSIFICATIONS........................V01-V82	4,324	156	4,168	52	4,098	92	82
PERSONS ADMITTED FOR STERILIZATION.......................V25.2	82	*	80	*	81	*	-
FEMALES WITH DELIVERIES....................................V27	3,854	...	3,854	11	3,838	*5	...

1/ FIRST-LISTED DIAGNOSIS FOR FEMALES WITH DELIVERIES IS CODED V27, SHOWN UNDER "SUPPLEMENTARY CLASSIFICATIONS."

TABLE 5. RATE OF INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY CATEGORY OF FIRST-LISTED DIAGNOSIS, SEX, AND AGE: UNITED STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS. DIAGNOSTIC GROUPINGS AND CODE NUMBER INCLUSIONS ARE BASED ON THE INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION, CLINICAL MODIFICATION)

CATEGORY OF FIRST-LISTED DIAGNOSIS AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
	RATE OF INPATIENTS DISCHARGED PER 10,000 POPULATION						
ALL CONDITIONS	1,478.9	1,235.5	1,706.9	571.9	1,250.8	1,695.2	3,683.2
INFECTIOUS AND PARASITIC DISEASES.....001-139	28.2	26.9	29.5	37.2	18.8	21.1	60.2
NEOPLASMS.....140-239	101.7	87.9	114.6	13.3	40.6	177.0	383.3
MALIGNANT NEOPLASMS.....140-208,230-234	80.6	77.8	83.3	8.4	20.5	144.3	347.3
MALIGNANT NEOPLASM OF TRACHEA, BRONCHUS, AND LUNG.....162,197.0,197.3	13.3	17.9	8.9	*	1.2	29.4	59.4
MALIGNANT NEOPLASM OF BREAST.....174-175,198.81	8.8	*	16.9	*	3.1	20.2	28.3
ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS.....240-279	45.1	35.7	53.8	13.4	24.3	62.3	156.9
DIABETES MELLITUS.....250	20.2	16.9	23.4	4.1	11.5	35.5	59.9
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.....280-289	14.4	13.0	15.8	11.1	8.1	12.6	48.3
MENTAL DISORDERS.....290-319	71.7	80.1	63.9	9.4	90.8	88.3	84.3
PSYCHOSES.....290-299	29.6	28.4	30.7	*1.1	35.5	36.6	47.2
NEUROTIC AND PERSONALITY DISORDERS.....300-301	8.2	6.0	10.3	*1.0	10.7	9.7	9.0
ALCOHOL DEPENDENCE SYNDROME.....303	16.4	27.3	6.2	*	21.4	26.9	9.3
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.....320-389	51.1	46.8	55.1	44.1	27.3	59.5	143.5
DISEASES OF THE CENTRAL NERVOUS SYSTEM.....320-336,340-349	17.9	17.1	18.7	12.2	12.8	20.6	44.1
CATARACT.....366	7.7	5.9	9.4	*	*0.5	8.4	48.2
DISEASES OF THE EAR AND MASTOID PROCESS.....380-389	10.9	10.2	11.6	22.7	4.9	10.6	13.8
DISEASES OF THE CIRCULATORY SYSTEM.....390-459	230.8	242.8	219.4	6.8	43.1	385.1	1,130.2
ESSENTIAL HYPERTENSION.....401	9.0	7.8	10.2	*	4.1	18.7	28.8
HEART DISEASE.....391-392.0,393-398,402,404,410-416,420-429	151.2	166.7	136.7	3.8	22.4	268.2	739.8
ACUTE MYOCARDIAL INFARCTION.....410	31.8	40.6	23.6	*	4.5	59.5	152.7
ATHEROSCLEROTIC HEART DISEASE.....414.0	12.8	16.6	9.3	*	1.2	29.9	54.9
OTHER ISCHEMIC HEART DISEASE.....411-413,414.1-414.9	41.8	47.9	36.2	*	6.0	94.3	175.6
CONGESTIVE HEART FAILURE.....428.0	23.5	21.5	25.4	*	1.0	21.4	156.3
CEREBROVASCULAR DISEASE.....430-438	38.6	36.3	40.8	*	3.0	42.9	240.3
DISEASES OF THE RESPIRATORY SYSTEM.....460-519	136.6	138.8	134.5	163.1	58.8	136.4	393.1
ACUTE RESPIRATORY INFECTIONS, EXCEPT INFLUENZA.....460-466	19.6	20.6	18.7	44.0	7.0	13.2	34.5
CHRONIC DISEASE OF TONSILS AND ADENOIDS.....474	12.1	10.8	13.4	35.7	8.8	*	-
PNEUMONIA, ALL FORMS.....480-486	36.0	37.8	34.4	39.7	9.0	32.8	140.3
ASTHMA.....493	19.5	17.0	21.8	27.8	11.1	21.5	34.1
DISEASES OF THE DIGESTIVE SYSTEM.....520-579	163.4	160.4	166.2	66.5	109.4	231.3	444.1
ULCERS OF THE STOMACH AND SMALL INTESTINE.....531-534	12.3	13.6	11.2	0.4	6.6	19.1	45.9
GASTRITIS AND DUODENITIS.....535	8.6	7.6	9.5	2.8	7.1	12.8	18.0
APPENDICITIS.....540-543	10.5	12.5	8.7	12.5	13.3	5.1	4.8
INGUINAL HERNIA.....550	16.2	29.9	3.4	9.0	9.0	26.2	42.1
NONINFECTIOUS ENTERITIS AND COLITIS.....555-556,558	19.3	16.7	21.7	25.6	14.7	14.7	32.8
CHOLELITHIASIS.....574	20.0	12.2	27.2	*	14.5	34.3	55.0
DISEASES OF THE GENITOURINARY SYSTEM.....580-629	118.3	83.5	150.9	19.4	118.6	143.9	257.6
CALCULUS OF KIDNEY AND URETER.....592	13.7	18.7	9.0	*	14.8	26.4	13.7
DISORDERS OF MENSTRUATION AND OTHER ABNORMAL VAGINAL BLEEDING.....626	8.1	-	15.8	*	13.2	9.5	*
COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.....1/ 630-676	40.8	...	79.1	*1.0	86.1	*	...
ABORTIONS AND ECTOPIC AND MOLAR PREGNANCIES.....630-639	16.1	...	31.2	*	33.8	*	...
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.....680-709	22.8	23.4	22.3	11.1	18.2	29.9	51.5
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.....710-739	91.6	82.0	100.6	13.4	77.0	155.8	189.9
ARTHROPATHIES AND RELATED DISORDERS.....710-719	19.6	16.4	22.6	3.5	11.9	29.0	64.2
INTERVERTEBRAL DISC DISORDERS.....722	21.4	24.5	18.6	*	23.7	42.6	18.0
CONGENITAL ANOMALIES.....740-759	11.4	13.6	9.2	28.8	6.4	6.7	6.1
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....760-779	6.7	7.2	6.3	30.4	*	*	-
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS.....780-799	22.5	22.6	22.4	16.3	21.1	30.2	27.5
INJURY AND POISONING.....800-999	139.4	157.0	122.8	76.5	135.2	134.4	277.8
FRACTURES, ALL SITES.....800-829	47.6	48.0	47.3	25.3	35.6	40.3	146.8
FRACTURE OF NECK OF FEMUR.....820	10.9	5.4	16.0	0.6	1.0	5.4	76.9
SPRAINS AND STRAINS OF BACK (INCLUDING NECK).....846-847	10.0	10.2	9.8	0.6	13.1	14.0	8.8
INTRACRANIAL INJURIES (EXCUDING THOSE WITH SKULL FRACTURE).....850-854	11.3	14.1	8.7	12.2	12.5	6.8	12.1
LACERATIONS AND OPEN WOUNDS.....870-904	11.7	17.7	6.1	7.3	16.2	7.9	8.1
SUPPLEMENTARY CLASSIFICATIONS.....V01-V82	182.4	13.6	340.5	10.0	367.0	20.4	28.8
PERSONS ADMITTED FOR STERILIZATION.....V25.2	3.5	*	6.6	*	7.2	*	-
FEMALES WITH DELIVERIES.....V27	162.6	...	314.8	2.0	343.8	*1.2	...

1/ FIRST-LISTED DIAGNOSIS FOR FEMALES WITH DELIVERIES IS CODED V27 SHOWN UNDER "SUPPLEMENTARY CLASSIFICATIONS."

TABLE 6. AVERAGE LENGTH OF STAY FOR INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY CATEGORY OF FIRST-LISTED DIAGNOSIS, SEX, AND AGE: UNITED STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS. DIAGNOSTIC GROUPINGS AND CODE NUMBER INCLUSIONS ARE BASED ON THE INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION, CLINICAL MODIFICATION)

CATEGORY OF FIRST-LISTED DIAGNOSIS AND ICD-9-CM CODE		SEX		AGE			
	TOTAL	MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
			AVERAGE LENGTH OF STAY IN DAYS				
ALL CONDITIONS	6.5	6.9	6.2	4.6	4.8	7.0	8.7
INFECTIOUS AND PARASITIC DISEASES..................001-139	7.0	7.2	6.7	4.1	5.4	8.6	11.2
NEOPLASMS..140-239	8.2	8.6	7.9	4.2	5.9	8.2	9.4
MALIGNANT NEOPLASMS......................140-208,230-234	8.9	9.1	8.7	5.0	6.9	8.7	9.7
MALIGNANT NEOPLASM OF TRACHEA, BRONCHUS, AND LUNG..............162,197.0,197.3	9.2	8.8	9.9	*	7.9	9.1	9.3
MALIGNANT NEOPLASM OF BREAST...........174-175,198.81	7.2	*	7.2	*	5.2	6.5	8.8
ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS.................................240-279	7.3	7.5	7.3	5.1	5.9	7.2	8.6
DIABETES MELLITUS..................................250	8.1	8.0	8.2	5.3	5.9	8.2	10.1
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.........280-289	6.0	5.9	6.1	3.9	5.4	6.4	7.1
MENTAL DISORDERS...................................290-319	12.3	11.5	13.3	20.3	11.8	11.8	13.8
PSYCHOSES......................................290-299	14.9	13.1	16.4	*26.3	14.1	15.6	16.0
NEUROTIC AND PERSONALITY DISORDERS.............300-301	10.0	10.4	9.7	*20.5	9.7	8.7	11.0
ALCOHOL DEPENDENCE SYNDROME........................303	10.7	10.7	11.1	*	11.0	9.8	12.3
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS........320-389	5.4	5.5	5.4	3.6	5.5	5.7	6.3
DISEASES OF THE CENTRAL NERVOUS SYSTEM.......320-336,340-349	9.6	9.7	9.6	7.0	7.9	9.6	12.9
CATARACT...366	2.0	2.0	2.0	*	*2.5	2.2	1.9
DISEASES OF THE EAR AND MASTOID PROCESS.............380-389	2.8	2.6	3.0	2.2	2.7	3.3	4.3
DISEASES OF THE CIRCULATORY SYSTEM....................390-459	7.9	7.5	8.3	7.1	5.9	7.2	8.6
ESSENTIAL HYPERTENSION.............................401	4.9	4.4	5.2	*	4.0	4.8	5.6
HEART DISEASE......391-392.0,393-398,402,404,410-416,420-429	7.3	7.0	7.6	7.9	5.6	6.6	7.9
ACUTE MYOCARDIAL INFARCTION....................410	9.5	9.0	10.3	*	7.1	9.5	9.7
ATHEROSCLEROTIC HEART DISEASE..................414.0	6.6	5.8	7.9	*	4.8	5.3	7.9
OTHER ISCHEMIC HEART DISEASE...........411-413,414.1-414.9	5.4	5.3	5.6	*	4.2	4.8	6.1
CONGESTIVE HEART FAILURE.......................428.0	8.0	7.8	8.2	*	6.6	7.3	8.2
CEREBROVASCULAR DISEASE............................430-438	10.5	10.0	10.9	*	9.3	11.1	10.4
DISEASES OF THE RESPIRATORY SYSTEM....................460-519	6.0	6.0	6.1	3.2	4.1	7.2	8.7
ACUTE RESPIRATORY INFECTIONS, EXCEPT INFLUENZA.......460-466	4.5	4.4	4.6	3.2	4.0	5.3	7.1
CHRONIC DISEASE OF TONSILS AND ADENOIDS.............474	1.5	1.5	1.6	1.6	1.4	*	-
PNEUMONIA, ALL FORMS...............................480-486	7.9	7.8	8.1	4.3	6.6	8.5	9.9
ASTHMA...493	4.9	4.5	5.3	3.5	4.3	6.1	6.7
DISEASES OF THE DIGESTIVE SYSTEM......................520-579	6.2	5.7	6.6	3.4	4.8	6.4	8.1
ULCERS OF THE STOMACH AND SMALL INTESTINE..........531-534	7.1	6.8	7.5	3.6	5.1	6.8	8.6
GASTRITIS AND DUODENITIS...........................535	4.8	4.3	5.1	2.9	4.2	4.9	6.0
APPENDICITIS.......................................540-543	5.0	5.1	4.9	4.3	4.3	7.6	11.7
INGUINAL HERNIA....................................550	3.2	3.1	4.0	1.8	2.6	3.1	4.4
NONINFECTIOUS ENTERITIS AND COLITIS.........555-556,558	4.9	4.6	5.1	3.0	4.7	5.8	7.4
CHOLELITHIASIS.....................................574	7.5	8.3	7.2	*	6.1	7.0	9.5
DISEASES OF THE GENITOURINARY SYSTEM..................580-629	5.2	5.5	5.0	3.6	4.2	5.1	7.2
CALCULUS OF KIDNEY AND URETER......................592	3.7	3.5	4.2	*	3.1	3.9	6.2
DISORDERS OF MENSTRUATION AND OTHER ABNORMAL VAGINAL BLEEDING.........................626	3.7	-	3.7	*	3.7	3.8	*
COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.............................1/ 630-676	2.5	...	2.5	*2.1	2.5	*	...
ABORTIONS AND ECTOPIC AND MOLAR PREGNANCIES...........630-639	2.1	...	2.1	*	2.2	*	...
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE...........680-709	7.9	7.6	8.2	4.0	6.6	7.8	11.4
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE..............................710-739	6.7	6.6	6.9	5.4	5.4	6.7	9.1
ARTHROPATHIES AND RELATED DISORDERS................710-719	7.7	7.0	8.2	6.1	4.1	7.8	10.5
INTERVERTEBRAL DISC DISORDERS......................722	7.3	6.8	7.9	*	6.8	7.4	9.3
CONGENITAL ANOMALIES..................................740-759	5.6	5.7	5.5	5.6	4.1	7.8	8.0
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....................................760-779	13.0	12.2	13.8	12.9	*	*	-
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS...........780-799	3.8	3.7	3.9	3.3	3.3	4.1	5.3
INJURY AND POISONING..................................800-999	6.6	6.1	7.3	3.9	5.4	6.7	10.3
FRACTURES, ALL SITES...............................800-829	8.7	7.7	9.8	5.0	6.8	7.4	12.4
FRACTURE OF NECK OF FEMUR......................820	14.7	16.6	14.1	*	12.7	12.7	15.0
SPRAINS AND STRAINS OF BACK (INCLUDING NECK).........846-847	6.0	5.6	6.4	*	5.7	6.3	7.6
INTRACRANIAL INJURIES (EXCUDING THOSE WITH SKULL FRACTURE).................................850-854	5.6	6.1	4.8	2.6	5.7	6.8	9.5
LACERATIONS AND OPEN WOUNDS........................870-904	4.3	4.4	4.2	3.6	4.2	4.3	6.1
SUPPLEMENTARY CLASSIFICATIONS.........................V01-V82	3.3	4.4	3.3	4.7	3.2	3.9	5.7
PERSONS ADMITTED FOR STERILIZATION.................V25.2	1.6	*	1.6	*	1.6	*	-
FEMALES WITH DELIVERIES............................V27	3.3	...	3.3	3.4	3.3	*3.0	...

1/ FIRST-LISTED DIAGNOSIS FOR FEMALES WITH DELIVERIES IS CODED V27, SHOWN UNDER "SUPPLEMENTARY CLASSIFICATIONS."

TABLE 7. NUMBER OF ALL-LISTED PROCEDURES FOR INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY PROCEDURE CATEGORY, SEX, AND AGE: UNITED STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS. PROCEDURE GROUPINGS AND CODE NUMBER INCLUSIONS ARE BASED ON THE INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION, CLINICAL MODIFICATION)

PROCEDURE CATEGORY AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
	NUMBER OF ALL-LISTED PROCEDURES IN THOUSANDS						
ALL PROCEDURES	36,760	14,694	22,066	1,937	14,957	8,838	11,027
OPERATIONS ON THE NERVOUS SYSTEM...01-05	898	451	447	157	312	242	187
OPERATIONS ON THE ENDOCRINE SYSTEM...06-07	95	24	71	*	37	29	25
OPERATIONS ON THE EYE...08-16	718	309	409	54	93	159	413
EXTRACTION OF LENS...13.1-13.6	211	79	132	*	*8	42	157
INSERTION OF PROSTHETIC LENS (PSEUDOPHAKOS)...13.7	180	67	113	*	*	37	139
OPERATIONS ON THE EAR...18-20	256	130	126	129	70	40	18
MYRINGOTOMY...20.0	104	60	44	89	*7	*6	*
OPERATIONS ON THE NOSE, MOUTH, AND PHARYNX...21-29	1,173	589	584	306	567	188	111
RHINOPLASTY AND REPAIR OF NOSE...21.8	193	99	94	*6	139	35	12
TONSILLECTOMY WITH OR WITHOUT ADENOIDECTOMY...28.2-28.3	317	135	183	197	114	*6	*
OPERATIONS ON THE RESPIRATORY SYSTEM...30-34	981	582	398	52	168	331	429
BRONCHOSCOPY...33.21-33.23	195	123	71	13	25	67	89
OPERATIONS ON THE CARDIOVASCULAR SYSTEM...35-39	2,414	1,425	989	98	304	973	1,038
OPEN HEART SURGERY...35.1-35.51, 35.53-36.2,36.9,37.10-37.11,37.32-37.33,37.5	379	264	114	11	37	193	137
DIRECT HEART REVASCULARIZATION...36.1	230	172	58	-	15	126	89
CARDIAC CATHETERIZATION...37.21-37.23	681	439	241	24	79	350	227
PACEMAKER INSERTION, REPLACEMENT, REMOVAL, REPAIR...37.7-37.8	223	118	105	*	*8	47	167
OPERATIONS ON THE HEMIC AND LYMPHATIC SYSTEM...40-41	397	190	207	21	96	113	167
OPERATIONS ON THE DIGESTIVE SYSTEM...42-54	5,740	2,530	3,210	236	1,870	1,555	2,079
ESOPHAGOSCOPY AND GASTROSCOPY (NATURAL ORIFICE)...42.23,44.13	207	100	106	*7	47	62	91
PARTIAL GASTRECTOMY AND RESECTION OF INTESTINE...43.5-43.8,45.6-45.8	282	127	155	*	46	78	155
APPENDECTOMY, EXCLUDING INCIDENTAL...47.0	283	150	133	69	173	26	14
HEMORRHOIDECTOMY...49.43-49.46	123	67	56	*	55	47	19
CHOLECYSTECTOMY...51.2	475	147	327	*	167	157	150
REPAIR OF INGUINAL HERNIA...53.0-53.1	416	370	46	53	106	125	131
DIVISION OF PERITONEAL ADHESIONS...54.5	309	44	265	*	179	59	68
OPERATIONS ON THE URINARY SYSTEM...55-59	1,729	1,049	679	71	387	451	818
ENDOSCOPIES (NATURAL ORIFICE)...55.21-55.22,56.31,57.32,58.22	683	487	195	19	115	173	375
DILATION OF URETHRA...58.6	119	73	47	*8	21	27	62
OPERATIONS ON THE MALE GENITAL ORGANS...60-64	744	744	...	83	87	160	414
PROSTATECTOMY...60.2-60.6	367	367	...	...	*	81	284
CIRCUMCISION...64.0	52	52	...	31	*8	*6	*6
OPERATIONS ON THE FEMALE GENITAL ORGANS...65-71	3,318	...	3,318	14	2,438	605	260
OOPHORECTOMY AND SALPINGO-OOPHORECTOMY...65.3-65.6	525	...	525	*	304	165	54
BILATERAL DESTRUCTION OR OCCLUSION OF FALLOPIAN TUBES...66.2-66.3	466	...	466	*	461	*6	-
HYSTERECTOMY...68.3-68.7	670	...	670	*	421	190	60
CURETTAGE OF UTERUS TO TERMINATE PREGNANCY...69.01,69.51	50	...	50	*	48	*	...
DILATION AND CURETTAGE OF UTERUS AFTER DELIVERY OR ABORTION...69.02	227	...	227	*	225	*	...
DIAGNOSTIC DILATION AND CURETTAGE OF UTERUS...69.09	349	...	349	*	232	83	33
REPAIR OF CYSTOCELE AND RECTOCELE...70.5	165	...	165	*	56	64	45
OBSTETRICAL PROCEDURES...72-75	4,304	...	4,304	13	4,287	*	...
EPISIOTOMY WITH OR WITHOUT FORCEPS OR VACUUM EXTRACTION...72.1,72.21,72.31,72.71,73.6	1,820	...	1,820	*7	1,812	*	...
CESAREAN SECTION...74.0-74.2,74.4,74.99	877	...	877	*	875	*	...
REPAIR OF CURRENT OBSTETRIC LACERATION...75.5-75.6	548	...	548	*	546	*	...
OPERATIONS ON THE MUSCULOSKELETAL SYSTEM...76-84	3,523	1,734	1,789	233	1,543	886	861
OPEN REDUCTION OF FRACTURE 76.72, 76.74,76.76-76.77,76.79,79.2-79.3,79.5-79.6	492	251	241	29	215	91	157
OTHER REDUCTION OF FRACTURE...76.70-76.71,76.73,76.75,76.78,79.0-79.1,79.4	240	125	115	62	89	37	51
EXCISION OR DESTRUCTION OF INTERVERTEBRAL DISC AND SPINAL FUSION...80.5,81.0	323	191	132	*5	183	108	27
EXCISION OF SEMILUNAR CARTILAGE OF KNEE...80.6	97	66	31	*	60	26	10
ARTHROPLASTY AND REPLACEMENT OF KNEE...81.41-81.47	160	86	75	*	66	32	58
ARTHROPLASTY AND REPLACEMENT OF HIP...81.5-81.6	196	60	137	-	11	37	148
OPERATIONS ON THE INTEGUMENTARY SYSTEM...85-86	1,653	658	994	103	674	471	405
MASTECTOMY...85.4	116	*	114	*	17	50	48
SKIN GRAFT (EXCEPT LIP OR MOUTH)...86.6-86.7	157	96	60	14	62	41	39
MISCELLANEOUS DIAGNOSTIC AND THERAPEUTIC PROCEDURES...87-99	8,819	4,279	4,540	364	2,024	2,630	3,801
COMPUTERIZED AXIAL TOMOGRAPHY...87.03,87.41,87.71,88.01,88.38	1,378	671	707	68	311	349	650
PYELOGRAM...87.73-87.75	442	242	200	*9	156	133	143
ARTERIOGRAPHY AND ANGIOCARDIOGRAPHY USING CONTRAST MATERIAL...88.4-88.5	1,117	693	425	12	128	514	463
DIAGNOSTIC ULTRASOUND...88.7	1,234	478	756	49	379	300	506
RADIOISOTOPE SCAN...92.0-92.1	838	375	463	17	150	249	421

TABLE 8. RATE OF ALL-LISTED PROCEDURES FOR INPATIENTS DISCHARGED FROM SHORT-STAY HCSPITALS, BY PROCEDURE CATEGORY, SEX, AND AGE: UNITED STATES, 1985

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS. PROCEDURE GROUPINGS ANC CODE NUMBER INCLUSIONS ARE BASED ON THE INTERNATIONAL CLASSIFICATION OF DISEASES, 9TH REVISION, CLINICAL MODIFICATION)

PROCEDURE CATEGORY AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
	RATE OF ALL-LISTED PROCEDURES PER 100,000 POPULATION						
ALL PROCEDURES..	15,508.1	12,820.1	18,024.7	3,728.4	13,395.6	19,689.5	38,651.0
OPERATIONS ON THE NERVOUS SYSTEM.....................01-05	378.8	393.5	365.0	301.3	279.7	539.4	655.3
OPERATIONS ON THE ENDOCRINE SYSTEM...................06-07	40.1	20.6	58.3	*	33.0	65.5	88.7
OPERATIONS ON THE EYE................................08-16	303.0	269.4	334.5	104.3	82.9	353.7	1,446.8
EXTRACTION OF LENS.............................13.1-13.6	89.2	69.0	108.0	*	*7.1	93.4	551.2
INSERTION OF PROSTHETIC LENS (PSEUDOPHAKOS)......13.7	76.0	58.4	92.4	*	*	82.2	488.3
OPERATIONS ON THE EAR................................18-20	108.1	113.8	102.7	247.4	62.9	88.6	62.0
MYRINGOTOMY....................................20.0	43.8	52.2	35.8	171.5	*6.5	*12.5	*
OPERATIONS ON THE NOSE, MOUTH, AND PHARYNX..........21-29	494.9	513.6	477.4	589.4	508.2	418.6	390.6
RHINOPLASTY AND REPAIR OF NOSE...................21.8	81.2	86.1	76.7	*11.9	124.3	79.1	42.7
TONSILLECTOMY WITH OR WITHOUT ADENOIDECTOMY......28.2-28.3	133.9	117.4	149.3	378.4	101.8	*13.3	*
OPERATICNS ON THE RESPIRATORY SYSTEM.................30-34	413.7	508.1	325.3	100.5	150.9	737.3	1,503.4
BRONCHOSCOPY...............................33.21-33.23	82.1	107.5	58.3	25.4	22.8	149.1	311.6
OPERATIONS ON THE CARDIOVASCULAR SYSTEM..............35-39	1,018.3	1,243.4	807.6	189.5	272.3	2,167.7	3,638.8
OPEN HEART SURGERY.....35.1-35.51, 35.53-36.2,36.9,37.10-37.11,37.32-37.33,37.5	159.8	230.7	93.4	20.9	33.5	430.5	481.2
DIRECT HEART REVASCULARIZATION...................36.1	97.2	150.5	47.3	-	13.7	281.7	310.6
CARDIAC CATHETERIZATION.................37.21-37.23	287.1	383.2	197.2	46.0	71.2	779.3	797.1
PACEMAKER INSERTICN, REPLACEMENT, REMOVAL, REPAIR..37.7-37.8	94.3	103.0	86.1	*	*7.4	104.7	587.0
OPERATICNS ON THE HEMIC AND LYMPHATIC SYSTEM.........40-41	167.5	165.5	169.3	40.9	85.8	251.7	584.8
OPERATIONS ON THE DIGESTIVE SYSTEM...................42-54	2,421.7	2,207.2	2,622.5	453.7	1,675.2	3,463.7	7,288.0
ESOPHAGOSCOPY AND GASTROSCOPY (NATURAL ORIFICE)..42.23,44.13	87.2	87.5	86.9	*12.8	42.2	137.8	319.4
PARTIAL GASTRECTOMY AND RESECTION OF INTESTINE.....43.5-43.8,45.6-45.8	118.8	110.6	126.4	*	41.0	173.6	542.2
APPENDECTOMY, EXCLUDING INCIDENTAL...............47.0	119.5	130.9	108.7	133.0	155.2	58.5	50.7
HEMORRHOIDECTOMY...............49.43-49.46	52.0	58.8	45.6	*	49.2	105.3	68.2
CHOLECYSTECTOMY.................................51.2	200.3	128.6	267.4	*	149.4	349.1	526.4
REPAIR OF INGUINAL HERNIA.................53.0-53.1	175.4	322.5	37.6	102.1	95.2	279.3	458.9
DIVISION OF PERITCNEAL ADHESIONS.................54.5	130.3	38.4	216.3	*	160.5	131.2	238.4
OPERATICNS ON THE URINARY SYSTEM.....................55-59	729.2	915.4	554.9	137.3	346.9	1,005.5	2,868.8
ENDOSCOPIES (NATURAL ORIFICE)..55.21-55.22,56.31,57.32,58.22	288.0	425.1	159.6	36.5	103.4	385.1	1,315.2
DILATION OF URETHRA.............................58.6	50.3	63.3	38.0	*15.6	19.0	61.0	218.9
OPERATIONS ON THE MALE GENITAL ORGANS................60-64	313.7	648.8	...	159.2	77.9	356.4	1,450.7
PROSTATECTOMY.............................6C.2-60.6	154.7	320.0	...	...	*	181.0	996.6
CIRCUMCISION...................................64.0	21.9	45.2	...	59.1	*7.6	*14.4	*21.8
OPERATIONS ON THE FEMALE GENITAL ORGANS..............65-71	1,399.6	...	2,709.9	27.5	2,183.1	1,348.6	912.4
OOPHORECTOMY AND SALPINGO-OOPHORECTOMY..........65.3-65.6	221.3	...	428.5	*	272.7	367.0	189.5
BILATERAL DESTRUCTION OR OCCLUSION OF FALLOPIAN TUBES.....................66.2-66.3	196.8	...	381.1	*	412.6	*12.6	-
HYSTERECTOMY...........................68.3-68.7	282.8	...	547.6	*	376.7	423.2	208.7
CURETTAGE OF UTERUS TO TERMINATE PREGNANCY.......69.01,69.51	20.9	...	40.5	*	43.0	*	...
DILATION AND CURETTAGE OF UTERUS AFTER DELIVERY OR ABORTION.....................69.02	95.6	...	185.1	*	201.6	*	...
DIAGNCSTIC DILATION AND CURETTAGE OF UTERUS..............69.09	147.1	...	284.8	*	207.5	184.7	114.8
REPAIR CF CYSTOCELE AND RECTOCELE.......................70.5	69.4	...	134.4	*	50.3	141.8	156.0
OBSTETRICAL PROCEDURES...............................72-75	1,815.6	...	3,515.5	24.4	3,839.0	*	...
EPISICTOMY WITH OR WITHOUT FORCEPS OR VACUUM EXTRACTION..........72.1,72.21,72.31,72.71,73.6	767.9	...	1,486.9	*	1,622.6	*	...
CESAREAN SECTION...........74.0-74.2,74.4,74.99	369.9	...	716.2	*	783.4	*	...
REPAIR CF CURRENT OBSTETRIC LACERATION.............75.5-75.6	231.0	...	447.3	*	488.9	*	...
OPERATICNS ON THE MUSCULCSKELETAL SYSTEM.............76-84	1,486.2	1,512.5	1,461.6	448.0	1,381.7	1,974.7	3,017.4
OPEN REDUCTION OF FRACTURE 76.72, 76.74,76.76-76.77,76.79,79.2-79.3,79.5-79.6	207.4	218.6	196.9	56.4	192.2	202.8	549.1
OTHER REDUCTION OF FRACTURE.......76.70-76.71,76.73,76.75,76.78,79.0-79.1,79.4	101.2	108.8	94.0	119.9	79.7	83.1	179.6
EXCISION OR DESTRUCTION OF INTERVERTEBRAL DISC AND SPINAL FUSION.....................80.5,81.0	136.1	166.5	107.7	*8.7	164.1	240.0	95.1
EXCISION OF SEMILUNAR CARTILAGE OF KNEE.................80.6	41.0	57.6	25.5	*	54.1	56.8	35.1
ARTHROPLASTY AND REPLACEMENT OF KNEE.............81.41-81.47	67.7	74.9	61.0	*	59.6	71.3	203.4
ARTHROPLASTY AND REPLACEMENT OF HIP..............81.5-81.6	82.8	52.0	111.6	-	10.2	81.7	519.3
OPERATICNS CN THE INTEGUMENTARY SYSTEM...............85-86	697.2	574.5	812.1	198.3	603.2	1,050.1	1,418.2
MASTECTOMY.......................................85.4	48.9	1.3	*	*	15.2	110.8	168.0
SKIN GRAFT (EXCEPT LIP OR MOUTH).................86.6-86.7	66.1	84.1	49.3	27.6	55.3	92.4	137.1
MISCELLANEOUS DIAGNOSTIC AND THERAPEUTIC PROCEDURES......87-99	3,720.6	3,733.7	3,708.3	700.2	1,812.7	5,859.0	13,323.8
COMPUTERIZED AXIAL TOMOGRAPHY..87.03,87.41,87.71,88.01,88.38	581.2	585.3	577.4	130.2	278.8	777.0	2,278.1
PYELCGRAM.................................87.73-87.75	186.4	211.5	163.0	*18.0	139.8	297.1	501.7
ARTERIOGRAPHY AND ANGICCARDIOGRAPHY USING CONTRAST MATERIAL.................88.4-88.5	471.3	604.2	346.8	23.0	114.9	1,144.1	1,623.7
DIAGNOSTIC ULTRASOUND.............................88.7	520.5	416.8	617.6	93.7	339.3	668.1	1,775.0
RADIOISCTOPE SCAN................................92.0-92.1	353.6	326.8	378.6	33.3	134.3	555.7	1,477.0

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[5] National Center for Health Statistics, M. J. Witkin: Utilization of short-stay hospitals by characteristics of discharged patients, United States, 1965. *Vital and Health Statistics.* Series 13, No. 3. PHS Pub. No. 1000. Public Health Service. Washington. U.S. Government Printing Office, Dec. 1967.

Technical notes

Survey methodology

Source of data

The National Hospital Discharge Survey (NHDS) encompasses patients discharged from short-stay hospitals, exclusive of military and Veterans Administration hospitals, located in 50 States and the District of Columbia. Only hospitals with six or more beds and an average length of stay of less than 30 days for all patients are included in the survey. Discharges of newborn infants are excluded from this report.

The original universe for the survey consisted of 6,965 hospitals contained in the 1963 National Master Facility Inventory. New hospitals were sampled for inclusion in the survey in 1972, 1975, 1977, 1979, 1981, 1983 and 1985. In all, 558 hospitals were sampled in 1985. Of these hospitals, 82 refused to participate, and 62 were out of scope. The 414 participating hospitals provided approximately 194,800 abstracts of medical records.

Sample design and data collection

All hospitals with 1,000 or more beds in the universe of short-stay hospitals were selected with certainty in the sample. All hospitals with fewer than 1,000 beds were stratified, the primary strata being 24 size-by-region classes. Within each of these 24 primary strata, the allocation of the hospitals was made through a controlled selection technique so that hospitals in the sample would be properly distributed with regard to type of ownership and geographic division. Sample hospitals were drawn with probabilities ranging from certainty for the largest hospitals to 1 in 40 for the smallest hospitals. The within-hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospital.

In 1985, for the first time, there were two data collection procedures used for the survey. The first was the traditional manual system of sample selection and data abstraction. The second was an automated method used in approximately 17 percent of the sample hospitals; it involved the purchase of data tapes from commercial abstracting services.

In the manual hospitals, sample discharges were selected using the daily listing sheet of discharges as the sampling frame. These discharges were selected by a random technique, usually on the basis of the terminal digit or digits of the patient's medical record number. The sample selection and abstraction of data from the face sheet and discharge summary of the medical records were performed by the hospital staff or by representatives of the National Center for Health Statistics (NCHS). The completed forms were forwarded to NCHS for coding, editing, and weighting procedures.

For the automated hospitals, tapes containing machine-readable medical record data are purchased from commercial abstracting services. These tapes are subject to NCHS sampling, editing, and weighting procedures. A detailed description of the automated process is to be published.

The Medical Abstract Form and the abstract service data tapes contain items relating to the personal characteristics of the patient, including birth date, sex, race, and marital status

Table I. Approximate relative standard errors of estimated numbers of first-listed discharges and all-listed procedures: United States, 1985

Size of estimate	First-listed diagnosis	All-listed procedures
5,000	13.2	17.3
10,000	10.5	14.2
50,000	6.7	9.5
100,000	5.6	8.2
500,000	3.9	6.0
1,000,000	3.4	5.4
3,000,000	2.8	4.6
5,000,000	2.6	4.3
10,000,000	2.4	3.9
20,000,000	2.2	3.6
30,000,000	2.1	...
40,000,000	2.0	...

but not name and address; administrative information, including admission and discharge dates, discharge status, and medical record number; and medical information, including diagnoses and surgical and nonsurgical operations or procedures. Since 1977, patient zip code, expected source of payment, and dates of surgery have also been collected. (The medical record number and patient zip code are considered confidential information and are not available to the public.)

Presentation of estimates

Statistics produced by NHDS are derived by a complex estimating procedure. The basic unit of estimation is the sample inpatient discharge abstract. The estimating procedure used to produce essentially unbiased national estimates in NHDS has three principal components: Inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and ratio adjustment to fixed totals. These components of estimation are described in appendix I of two earlier publications.[4,5]

Based on consideration of the complex sample design of NHDS, the following guidelines are used for presenting NHDS estimates in this report:

- If the sample size is less than 30, the value of the estimate is not reported. Only an asterisk (*) is shown in the tables.
- If the sample size is 30–59, the value of the estimate is reported but should be used with caution. The estimate is preceded by an asterisk (*) in the tables.

Sampling errors and rounding of numbers

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than an entire universe, is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. Relative standard errors for first-listed diagnoses and all-listed procedures are shown in table I. The relative standard errors for region and ownership of hospital are approximately 1½ times larger. The standard errors for average lengths of stay are shown in table II.

NOTE: A list of references follows the text.

Table II. Approximate standard errors of average lengths of stay by number of discharges: United States, 1985

Number of discharges	Average length of stay in days			
	2	6	10	20
	Standard error in days			
10,000...................	0.7	1.2	1.7	2.2
50,000...................	0.3	0.7	1.0	1.4
100,000..................	0.3	0.6	0.9	1.2
500,000..................	0.2	0.5	0.8	0.9
1,000,000	0.2	0.5	0.8	0.7
5,000,000	0.2	0.5	0.8	...

Estimates have been rounded to the nearest thousand. For this reason detailed figures within tables do not always add to the totals. Rates and average lengths of stay were calculated from original, unrounded figures and will not necessarily agree precisely with rates or average lengths of stay calculated from rounded data.

Tests of significance

In this report, the determination of statistical inference is based on the two-tailed Bonferroni test for multiple comparisons. Terms relating to differences such as "higher" and "less" indicate that the differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistically significant difference exists between the estimates being compared. A lack of comment on the difference between any two estimates does not mean that the difference was tested and found to be not significant.

Definition of terms

Terms relating to hospitals and hospital characteristics

Hospitals—Short-stay special and general hospitals have six or more beds for inpatient use and an average length of stay of less than 30 days. Federal hospitals and hospital units of institutions are not included.

Bed size of hospital—Measured by the number of beds, cribs, and pediatric bassinets regularly maintained (set up and staffed for use) for patients; bassinets for newborn infants are not included. In this report the classification of hospitals by bed size reported by the hospitals is based on the number of beds at or near midyear.

Type of ownership of hospital—Determined by the organization that controls and operates the hospital. Hospitals are grouped as follows:

- *Voluntary nonprofit*—Hospitals operated by a church or another nonprofit organization.
- *Government*—Hospitals operated by a State or local government.
- *Proprietary*—Hospitals operated by individuals, partnerships, or corporations for profit.

Terms relating to hospitalization

Patient—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis,

or treatment. In this report the number of patients refers to the number of discharges during the year including any multiple discharges of the same individual from one or more short-stay hospitals. Infants admitted on the day of birth, directly or by transfer from another medical facility, with or without mention of disease, disorder, or immaturity, are included. All newborn infants, defined as those admitted by birth to the hospital, are excluded from this report. The terms "patient" and "inpatient" are used synonymously.

Discharge—The formal release of a patient by a hospital; that is, the termination of a period of hospitalization by death or by disposition to place of residence, nursing home, or another hospital. The terms "discharges" and "patients discharged" are used synonymously.

Discharge rate—The ratio of the number of hospital discharges during a year to the number of persons in the civilian population on July 1 of that year.

Days of care—The total number of patient days accumulated at time of discharge by patients discharged from short-stay hospitals during a year. A stay of less than 1 day (patient admission and discharge on the same day) is counted as 1 day in the summation of total days of care. For patients admitted and discharged on different days, the number of days of care is computed by counting all days from (and including) the date of admission to (but not including) the date of discharge.

Rate of days of care—The ratio of the number of patient days accumulated at time of discharge by patients discharged from short-stay hospitals during a year to the number of persons in the civilian population on July 1 of that year.

Average length of stay—The total number of patient days accumulated at time of discharge by patients discharged during the year, divided by the number of patients discharged.

Terms relating to diagnoses

Discharge diagnoses—One or more diseases or injuries (or some factor that influences health status and contact with health services which is not itself a current illness or injury) listed by the attending physician or the medical record of a patient. In the NHDS all discharge (or final) diagnoses listed on the face sheet (summary sheet) of the medical record for patients discharged from the inpatient service of short-stay hospitals are transcribed in the order listed. Each sample discharge is assigned a maximum of seven five-digit codes according to ICD-9-CM.[3] The number of principal or first-listed diagnoses is equivalent to the number of discharges.

Principal diagnosis—The condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care.

First-listed diagnosis—The coded diagnosis identified as he principal diagnosis or listed first on the face sheet of the medical record if the principal diagnosis cannot be identified. The number of first-listed diagnoses is equivalent to the number of discharges.

Procedures—One or more surgical or nonsurgical operations, procedures, or special treatments assigned by the phy-

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NOTE: A list of references follows the text.

sician to patients discharged from the inpatient service of short-stay hospitals. In the NHDS all terms listed on the face sheet (summary sheet) of the medical record under the captions "operation," "operative procedures," "operations and/or special treatment," and the like are transcribed in the order listed. A maximum of four procedures is coded.

Rate of procedures—The ratio of the number of all-listed procedures during a year to the number of persons in the civilian population on July 1 of that year.

Demographic terms

Age—Refers to the age of the patient on the birthday prior to admission to the hospital inpatient service.

Population—Civilian population is the resident population excluding members of the Armed Forces.

Geographic regions—One of the four geographic regions of the United States corresponding to those used by the U.S. Bureau of the Census:

Region	*States included*
Northeast...	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania
Midwest....	Michigan, Ohio, Illinois, Indiana, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas
South......	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas
West	Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Hawaii, and Alaska.

Symbols

- - -   Data not available

. . .   Category not applicable

-   Quantity zero

0.0   Quantity more than zero but less than 0.05

Z   Quantity more than zero but less than 500 where numbers are rounded to thousands

*   Figure does not meet standard of reliability or precision (more than 30-percent relative standard error)

\#   Figure suppressed to comply with confidentiality requirements

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1985 Summary: National Ambulatory Medical Care Survey

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From March 1985 through February 1986 an estimated 636.4 million office visits were made to nonfederally employed, office-based physicians in the conterminous United States, an average of 2.7 office visits per person per year. This represents an increase of about 60 million office visits since 1980; however, the annual visit rate has remained approximately constant since that time. These and other estimates presented in this report are based on data collected by means of the National Ambulatory Medical Care Survey (NAMCS), a national probability sample survey conducted by the Division of Health Care Statistics of the National Center for Health Statistics.

This report provides an overview of the data from the 1985 NAMCS. These data should be considered provisional, as final editing may produce minor changes in the data. Use of office-based ambulatory care services is described in terms of the number, percent, and rate of office visits. Statistics are presented on physician, patient, and visit characteristics as follows:

Table 1	Physician specialty, type of practice, and professional identity
Table 2	Patient age and sex
Table 3	Patient race and ethnicity
Table 4	Referral status and prior visit status
Tables 5 and 6	Patient's principal reason for visit
Table 7	Diagnostic services
Tables 8 and 9	Principal diagnosis
Table 10	Medication therapy
Table 11	Nonmedication therapy
Table 12	Disposition
Table 13	Duration of visit

The text figure, a facsimile of the 1985 NAMCS Patient Record participating physicians used to record information about their office visits, will serve as a useful reference when reviewing survey findings.

Because the estimates presented in this report are based on a sample rather than the entire universe of office visits, the data are subject to sampling variability. The technical notes at the end of this report provide a brief description of the sample design, an explanation of sampling errors, and guidelines to judge the precision of the estimates. A detailed description of the 1985 NAMCS sample design and survey methodology is forthcoming.

The physician sample for the NAMCS was selected with the cooperation of the American Medical Association and the American Osteopathic Association. Their contribution to this effort is gratefully acknowledged.

Data highlights

Physician characteristics

Among office-based physicians, general and family practitioners led all other specialties in the volume of office visits, accounting for about 30 percent of all office visits (table 1). This share of visits, however, has continued to decline steadily since 1975, when general and family practitioners accounted for 41 percent of all visits.[1] The distribution of visits by the physician's type of practice shows that 51 percent of all visits were made to solo practitioners and 49 percent were made to physicians engaged in multiple-member practices. The percent of visits to solo practitioners has also declined steadily since 1975, when this group accounted for 60 percent of all visits.[1]

Patient characteristics

Office visit data, according to patient demographic characteristics, are presented in tables 2 and 3. As shown in table 2, females accounted for about 61 percent of all visits. The female visit rate was higher than the male rate for all age groups except the under 15 years group. White persons (85 percent of the civilian noninstitutionalized population) accounted for 90 percent of all office visits (table 3). As

Department of Health and Human Services
Public Health Service
National Center for Health Statistics

A 119606

1. DATE OF VISIT
/ /
Month Day Year

PATIENT RECORD
NATIONAL AMBULATORY MEDICAL CARE SURVEY

OMB No 0937-0141
Expires 9/30/86
(PHS) 6105-A
456-232

2. DATE OF BIRTH
/ /
Month Day Year

3. SEX
1 ☐ FEMALE
2 ☐ MALE

4. COLOR OR RACE
1 ☐ WHITE
2 ☐ BLACK
3 ☐ ASIAN/PACIFIC ISLANDER
4 ☐ AMERICAN INDIAN/ ALASKAN NATIVE

5. ETHNICITY
1 ☐ HISPANIC ORIGIN
2 ☐ NOT HISPANIC

6. EXPECTED SOURCE(S) OF PAYMENT |Check all that apply|
1 ☐ SELF-PAY   4 ☐ BLUE CROSS/ BLUE SHIELD   7 ☐ NO CHARGE
2 ☐ MEDICARE   5 ☐ OTHER COMMERCIAL INSURANCE   8 ☐ OTHER |Specify|
3 ☐ MEDICAID   6 ☐ HMO/PRE-PAID PLAN

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

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

b OTHER

9. GLUCOSE TESTS THIS VISIT
|Check all ordered or provided|
1 ☐ NONE
2 ☐ BLOOD
3 ☐ URINE
4 ☐ ORAL

10. OTHER DIAGNOSTIC SERVICES THIS VISIT |Check all ordered or provided|
1 ☐ NONE   6 ☐ URINALYSIS   11 ☐ BLOOD PRESSURE CHECK
2 ☐ BREAST EXAM   7 ☐ HEMATOLOGY   12 ☐ EKG
3 ☐ PELVIC EXAM   8 ☐ BLOOD CHEMISTRY   13 ☐ CHEST X-RAY
4 ☐ RECTAL EXAM   9 ☐ PAP TEST   14 ☐ OTHER RADIOLOGY
5 ☐ VISUAL ACUITY   10 ☐ OTHER LAB TEST   15 ☐ ULTRASOUND
16 ☐ OTHER SERVICE |Specify|

11. PHYSICIAN'S DIAGNOSES
a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 8a

b OTHER SIGNIFICANT CURRENT DIAGNOSES

12. HAVE YOU SEEN PATIENT BEFORE?
1 ☐ YES   2 ☐ NO
↓
IF YES FOR THE CONDITION IN ITEM 11a?
1 ☐ YES   2 ☐ NO

13. NON-MEDICATION THERAPY |Check all services ordered or provided this visit|
1 ☐ NONE   5 ☐ PSYCHOTHERAPY   9 ☐ CORRECTIVE LENSES
2 ☐ PHYSIOTHERAPY   6 ☐ FAMILY PLANNING   10 ☐ OTHER |Specify|
3 ☐ AMBULATORY SURGERY   7 ☐ DIET COUNSELING
4 ☐ RADIATION THERAPY   8 ☐ OTHER COUNSELING

14. MEDICATION THERAPY |Record all new or continued medications ordered or provided at this visit. Use the same brand name or generic name entered on any Rx or office medical record.|
IF NONE, CHECK HERE ☐

	a NEW MEDICATION? YES	NO	b FOR DX IN ITEM 11a? YES	NO
1	1 ☐	2 ☐	1 ☐	2 ☐
2	1 ☐	2 ☐	1 ☐	2 ☐
3	1 ☐	2 ☐	1 ☐	2 ☐
4	1 ☐	2 ☐	1 ☐	2 ☐
5	1 ☐	2 ☐	1 ☐	2 ☐

15. DISPOSITION THIS VISIT |Check all that apply|
1 ☐ NO FOLLOW-UP PLANNED
2 ☐ RETURN AT SPECIFIED TIME
3 ☐ RETURN IF NEEDED PRN
4 ☐ TELEPHONE FOLLOW-UP PLANNED
5 ☐ REFERRED TO OTHER PHYSICIAN
6 ☐ RETURNED TO REFERRING PHYSICIAN
7 ☐ ADMIT TO HOSPITAL
8 ☐ OTHER |Specify|

16. DURATION OF THIS VISIT |Time actually spent with physician|

_____ Minutes

Figure. 1985 National Ambulatory Medical Care Survey Patient Record

also shown in table 3, persons of Hispanic origin accounted for approximately 6 percent of all visits. (Ethnic classification of the patient was based on the physician's knowledge or judgment.)

Visit characteristics

Referral status—Approximately 6 percent of all office visits were the result of referral from another physician (table 4). However, about 28 percent of all "new" patient visits, that is, visits by patients not previously seen by the physician, were referrals from another physician.

Prior visit status—Approximately 83 percent of the visits to office-based physicians were by patients who had seen

the physician before ("old" patients). The majority of the visits (60 percent) were made by "old" patients with "old" problems, that is, problems that had previously been treated by the physician.

Reason for visit—Data in tables 5 and 6 represent the principal reason for visiting the physician's office as expressed in the patient's own words. The principal reason for visit is the problem, complaint, or reason listed first in item 8 of the Patient Record. These data have been classified and coded according to the *Reason for Visit Classification for Ambulatory Care (RVC)*.[2]

The RVC is divided into eight modules or groups of reasons, as shown in table 5. Those reasons for visit classified

Table 1. Number and percent distribution of office visits by physician specialty, type of practice, and professional identity: United States, 1985

Physician specialty, type of practice, and professional identity	Number of visits in thousands	Percent distribution
All visits	636,386	100.0
Physician specialty		
General and family practice	193,995	30.5
Internal medicine	73,727	11.6
Pediatrics	72,693	11.4
Obstetrics and gynecology	56,642	8.9
Ophthalmology	40,062	6.3
Orthopedic surgery	31,482	4.9
General surgery	29,858	4.7
Dermatology	24,124	3.8
Psychiatry	17,989	2.8
Otorhinolaryngology	16,097	2.5
Urological surgery	11,699	1.8
Cardiovascular disease	10,617	1.7
Neurology	4,992	0.8
All other specialties	52,408	8.2
Type of practice		
Solo	323,653	50.9
Partnership	113,317	17.8
Other[1]	199,416	31.3
Professional identity		
Doctor of medicine	600,514	94.4
Doctor of osteopathy	35,872	5.6

[1]Includes group practice and other.

Table 2. Number, percent distribution, and annual rate of office visits by sex and age of patient: United States, 1985

Sex and age	Number of visits in thousands	Percent distribution	Number of visits per person per year[1]
Both sexes			
All ages	636,386	100.0	2.7
Under 15 years	118,768	18.7	2.3
15–24 years	73,964	11.6	1.9
25–44 years	175,724	27.6	2.5
45–64 years	137,391	21.6	3.1
65 years and over	130,538	20.5	4.8
Female			
All ages	387,481	60.9	3.2
Under 15 years	58,175	9.1	2.3
15–24 years	48,883	7.7	2.5
25–44 years	118,557	18.6	3.2
45–64 years	82,331	12.9	3.6
65 years and over	79,535	12.5	5.0
Male			
All ages	248,905	39.1	2.2
Under 15 years	60,594	9.5	2.3
15–24 years	25,081	3.9	1.3
25–44 years	57,167	9.0	1.6
45–64 years	55,060	8.7	2.6
65 years and over	51,004	8.0	4.6

[1]Rates are based on estimates of the civilian, noninstitutionalized population of the United States, excluding Alaska and Hawaii, as of July 1, 1985.

Table 3. Number and percent distribution of office visits by race and ethnicity of patient: United States, 1985

Race and ethnicity	Number of visits in thousands	Percent distribution
All visits	636,386	100.0
Race		
White	572,507	90.0
All other	63,879	10.0
Black	52,143	8.2
Asian or Pacific Islander	7,657	1.2
American Indian or Alaskan Native	4,079	0.6
Ethnicity		
Hispanic	40,609	6.4
Not Hispanic	595,777	93.6

Table 4. Number and percent distribution of office visits by referral status and prior visit status: United States, 1985

Visit characteristic	Number of visits in thousnds	Percent distribution
All visits	636,386	100.0
Referral status		
Referred by another physician	35,742	5.6
Not referred by another physician	600,643	94.4
Prior visit status		
New patient	107,624	16.9
Old patient	528,762	83.1
New problem	144,634	22.7
Old problem	384,128	60.4

as symptoms (symptom module) accounted for 55 percent of all visits, with symptoms of the respiratory and musculo-skeletal systems attributed to 20 percent of all visits. The 20 most common specific principal reasons for visit, listed in table 6, accounted for 40 percent of all visits. (These 20 reasons were unchanged from the 1981 study.) Note that the rankings presented in table 6 may be somewhat artificial as some estimates may not be statistically different from other near estimates because of sampling variability.

Diagnostic services—Information on various diagnostic services that may be ordered or provided during an office visit is presented in table 7. Of the services listed, a blood pressure check was most frequently ordered or provided (39 percent). A pap test was ordered or provided during about 4 percent of all visits; however, this represents about 7 percent of the visits by females. Similarly, pelvic and breast exams were ordered or provided in about 9 and 7 percent of all visits, but this represents, respectively, 14 and 11 percent of female visits.

Principal diagnosis—Tables 8 and 9 present data on the principal diagnosis rendered by the physician. The principal diagnosis refers to the first-listed diagnosis in item 11 on the Patient Record, that associated with the patient's principal

Table 5. Number and percent distribution of office visits by patient's principal reason for visit: United States, 1985

Principal reason for visit and RVC code[1]	Number of visits in thousnds	Percent distribution	Principal reason for visit and RVC code[1]	Number of visits in thousnds	Percent distribution
All visits	636,386	100.0	Symptom module—Con.		
			Symptoms referable to the genitourinary system S640–S829	32,053	5.0
Symptom module S001–S999	347,354	54.6			
General symptoms S001–S099	42,290	6.6	Symptoms referable to the skin, nails, and hair S830–S899	37,579	5.9
Symptoms referable to psychological and mental disorders S100–S199	16,206	2.5	Symptoms referable to the musculoskeletal system S900–S999	64,079	10.1
Symptoms referable to the nervous system (excluding sense organs) ... S200–S259	18,802	3.0	Disease module D001–D999	65,998	10.4
Symptoms referable to the cardiovascular and lymphatic systems S260–S299	3,024	0.5	Diagnostic, screening, and preventive module X100–X599	116,500	18.3
Symptoms referable to eyes and ears S300–S399	41,045	6.4	Treatment module T100–T899	60,083	9.4
Symptoms referable to the respiratory system S400–S499	61,734	9.7	Injuries and adverse effects module J001–J999	25,689	4.0
			Test results module R100–R700	5,167	0.8
Symptoms referable to the digestive system S500–S639	30,542	4.8	Administrative module A100–A140	8,517	1.3
			Other[2] U990–U999	7,077	1.1

[1]Based on "A Reason for Visit Classification for Ambulatory Care" (RVC), Vital and Health Statistics, Series 2, No. 78, Feb. 1979.
[2]Includes blanks, problems, and complaints not elsewhere classified, entries of "none," and illegible entries.

Table 6. Number and percent of office visits by the 20 most common principal reasons for visit: United States, 1985

Rank	Most common principal reason for visit and RVC code[1]	Number of visits in thousands	Percent
1	General medical examination X100	30,821	4.8
2	Prenatal examination X205	25,747	4.0
3	Well-baby examination X105	16,447	2.6
4	Symptoms referable to the throat .. S455	16,371	2.6
5	Postoperative visit T205	16,303	2.6
6	Cough S440	16,134	2.5
7	Progress visit not otherwise specified T800	13,638	2.1
8	Earache, or ear infection S355	11,402	1.8
9	Back symptoms S905	11,311	1.8
10	Skin rash S860	10,350	1.6
11	Blood pressure test X320	9,446	1.5
12	Vision dysfunctions S305	9,266	1.5
13	Fever S010	9,050	1.4
14	Headcold, upper respiratory infection S445	8,902	1.4
15	Abdominal pain, cramps, spasms .. S550	8,901	1.4
16	Hypertension D510	8,814	1.4
17	Headache, pain in head S210	8,684	1.4
18	Chest pain and related symptoms S050	8,099	1.3
19	Knee symptoms S925	7,407	1.2
20	Eye examinations X230	7,170	1.1
	All other reasons	382,122	60.0

[1]Based on "A Reason for Visit Classification for Ambulatory Care" (RVC), Vital and Health Statistics, Series 2, No 78, Feb. 1979.

presenting problem. The *International Classification of Diseases, 9th Revision, Clinical Modification (ICD–9–CM)*[3] was used to classify these data. The Supplementary Classification of the ICD–9–CM, which contains categories for diagnoses other than diseases and injuries, such as general medical and normal pregnancy examinations, accounted for the largest proportion of visits (15 percent), with diseases of the respiratory system representing the second largest proportion (12 percent). The 20 most common three-digit ICD–9–CM categories, presented in table 9, accounted for 35 percent of all office visits. Essential hypertension was the most common diagnosis.

Table 7. Number and percent of office visits by diagnostic service, according to patient's sex: United States, 1985

Diagnostic service	Number of visits in thousands	Both sexes	Female	Male
None	229,970	36.1	32.4	42.0
Breast exam	43,170	6.8	11.0	0.3
Pelvic exam	54,854	8.6	14.2	-
Rectal exam	34,191	5.4	5.7	4.8
Visual acuity	40,945	6.4	6.1	6.9
Urinalysis	88,009	13.8	16.0	10.4
Hematology	58,983	9.3	10.1	8.0
Blood chemistry	43,913	6.9	6.7	7.3
Pap test	28,549	4.5	7.4	-
Other lab test	53,514	8.4	8.9	7.7
Blood pressure check	245,886	38.6	43.0	31.9
Electrocardiogram	20,288	3.2	2.6	4.1
Chest x ray	17,549	2.8	2.4	3.3
Other radiology	37,806	5.9	5.7	6.3
Ultrasound	5,996	0.9	1.2	0.5
Glucose test	84,249	13.2	15.7	9.5
Other	67,778	10.7	10.9	10.3

The presence of several large categories from the Supplementary Classification is evident. As in table 6, these rankings may vary somewhat because of sampling variability.

Medication therapy—In item 14 of the Patient Record, the physician was asked to record all new or continued medications ordered, injected, administered, or otherwise provided at this visit, including immunization and desensitizing agents. As used in the NAMCS, the term "drug" is interchangeable with the term "medication," and the term "prescribing" is used in the broad sense to mean ordering or providing any medication, either prescription or nonprescription.

Data on the provision of medication by office-based physicians are highlighted in table 10, which also includes data on "drug visits," that is, visits during which at least one medication was prescribed. Approximately 61 percent of all office visits were drug visits. By specialty, the percent of drug visits ranged from 81 percent for cardiovascular disease specialists to 27 percent for orthopedic surgeons.

Table 8. Number and percent distribution of office visits by principal diagnosis: United States, 1985

Principal diagnosis and ICD–9–CM code[1]	Number of visits in thousands	Percent distribution
All diagnoses	636,386	100.0
Infections and parasitic diseases . . . 001–139	24,869	3.9
Neoplasms 140–239	19,998	3.1
Endocrine, nutritional, and metabolic diseases and immunity disorders 240–279	22,480	3.5
Mental disorders 290–319	25,988	4.1
Diseases of the nervous system and sense organs 320–389	69,852	11.0
Diseases of the circulatory system . . 390–459	55,953	8.8
Diseases of the respiratory system . . 460–519	77,008	12.1
Diseases of the digestive system . . 520–579	27,222	4.3
Diseases of the genitourinary system 580–629	38,999	6.1
Diseases of the skin and subcutaneous tissue 680–709	36,196	5.7
Diseases of the musculoskeletal system and connective tissue 710–739	45,064	7.1
Symptoms, signs, and ill-defined conditions 780–799	22,489	3.5
Injury and poisoning 800–999	52,743	8.3
Supplementary classification V01–V82	97,536	15.3
All other diagnoses[2]	10,435	1.6
Unknown diagnoses[3]	9,553	1.5

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).
[2]Includes diseases of the blood and blood-forming organs (280–289); complications of pregnancy, childbirth, and the puerperium (630–676); congenital anomalies (740–759); and certain conditions originating in the perinatal period (760–779).
[3]Includes blank diagnosis, noncodable diagnosis, and illegible diagnosis.

Table 9. Number and percent of office visits by the 20 most common principal diagnoses: United States, 1985

Rank	Most common principal diagnosis and ICD–9–CM code[1]	Number of visits in thousands	Percent
1	Essential hypertension 401	26,049	4.1
2	Normal pregnancy V22	24,182	3.8
3	Health supervision of infant or child V20	17,088	2.7
4	Suppurative and unspecified otitis media 382	15,607	2.5
5	General medical examination V70	14,916	2.3
6	Acute respiratory infections of multiple or unspecified sites 465	14,691	2.3
7	Diabetes mellitus 250	12,302	1.9
8	Neurotic disorders 300	9,320	1.5
9	Acute pharyngitis 462	9,302	1.5
10	Followup examinations (diagnosis unspecified) V67	9,277	1.5
11	Disorders of refraction and accommodation 367	8,268	1.3
12	Diseases of sebaceous glands 706	8,104	1.3
13	Allergic rhinitis 477	7,835	1.2
14	Bronchitis, not specified as acute or chronic 490	7,563	1.2
15	Other forms of chronic ischemic heart disease 414	6,732	1.1
16	Asthma 493	6,503	1.0
17	Cataract 366	6,285	1.0
18	Certain adverse effects, not elsewhere classified[2] 995	5,880	0.9
19	Special investigations and examinations V72	5,838	0.9
20	Contact dermatitis and other eczema 692	5,837	0.9
	All other diagnoses	414,816	65.2

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM).
[2]Primarily allergy, unspecified (995.3).

Table 10. Number and percent distribution of drug visits and drug mentions by physician specialty: United States, 1985

Physician specialty	Number of drug visits in thousands[1]	Percent distribution	Number of drug mentions in thousands	Percent distribution	Percent drug visits[2]
All specialties	389,398	100.0	693,355	100.0	61.2
General and family practice	140,988	36.2	250,119	36.1	72.7
Internal medicine	57,069	14.7	126,219	18.2	77.4
Pediatrics	48,538	12.5	68,856	9.9	66.8
Obstetrics and gynecology	25,545	6.6	33,832	4.9	45.1
Ophthalmology	16,357	4.2	25,820	3.7	40.8
Orthopedic surgery	8,624	2.2	12,080	1.7	27.4
General surgery	11,492·	3.0	18,774	2.7	38.5
Dermatology	16,408	4.2	29,253	4.2	68.0
Psychiatry	8,324	2.1	14,826	2.1	46.3
Otorhinolaryngology	7,323	1.9	10,761	1.6	45.5
Urological surgery	5,461	1.4	6,737	1.0	46.7
Cardiovascular disease	8,585	2.2	26,812	3.9	80.9
Neurology	2,868	0.7	4,664	0.7	57.4
All other specialties	31,817	8.2	64,602	9.3	60.7

[1]Visits at which one or more drugs were prescribed.
[2]Number of drug visits divided by number of office visits multiplied by 100.

Data on the number and percent of "drug mentions," that is, the total number of medications listed in item 14 of the Patient Record form, are also presented in table 10. There were 693.4 million drug mentions in 1985, an average of 1.1 drug mentions for every office visit or 1.8 mentions for every visit at which one or more medications were prescribed.

The NAMCS drug database permits classification by such variables as: specific product name; generic class; entry form chosen by the physician, that is, brand name, generic name, or the therapeutic effect desired; prescription status, that is, prescription (Rx) or nonprescription (OTC); federally controlled substance status (for addicting or habituating drugs); composition status, that is, single or multiple ingredient; and

therapeutic category. A report that describes the method and instruments used to collect and process drug information for the NAMCS has been published.[4] Future reports will present detailed drug data from the 1985 NAMCS.

Nonmedication therapy—Table 11 presents data on selected types of nonmedication therapy that may be ordered or provided during an office visit. Counseling, diet and others combined, was the most frequently used therapy. Although counseling in the broad sense is part of nearly every office visit, it is recorded in the NAMCS only when considered by the physician to be a "significant part of the treatment." Ambulatory surgery was ordered or performed at about 7 percent of all office visits. All other services were ordered or provided at less than 5 percent of the visits.

Table 11. Number and percent of office visits by non-medication therapy ordered or provided: United States, 1985

Non-medication therapy	Number of visits in thousands	Percent
None	438,406	68.9
Physiotherapy	26,485	4.2
Ambulatory surgery	41,931	6.6
Radiation therapy	656	0.1
Psychotherapy	21,343	3.4
Family planning	12,146	1.9
Diet counseling	41,294	6.5
Other counseling	59,102	9.3
Corrective lenses	10,861	1.7
Other	7,787	1.2

Table 12. Number and percent of office visits by disposition: United States, 1985

Disposition	Number of visits in thousands	Percent
No followup planned	62,138	9.8
Return at specified time	391,142	61.5
Return if needed, P.R.N.	145,552	22.9
Telephone followup planned	25,229	4.0
Referred to other physician	20,075	3.2
Returned to referring physician	4,947	0.8
Admit to hospital	10,281	1.6
Other	3,416	0.5

Disposition—Data on the visit disposition show that the majority of office visits involved some type of scheduled followup (table 12). For about 65 percent of the visits a return visit or telephone followup was planned. Approximately 2 percent of the office visits resulted in admission to a hospital.

Duration of visit—Duration of visit refers to the amount of time spent in face-to-face contact between physician and patient. This time is estimated and recorded by the physician and does not include time spent waiting to see the physician, time spent receiving care from someone other than the physician without the presence of the physician, or time spent by the physician in reviewing records and test results. In cases where the patient received care from a member of the physician's staff, but did not actually see the physician during the visit, the duration of visit was recorded as zero minutes. Some 71 percent of the visits had a duration of 15 minutes or less (table 13). The mean duration of all visits was 16.1 minutes.

More detailed 1985 NAMCS data are forthcoming in the *Vital and Health Statistics* series. In addition, survey data will be available on computer tape at a nominal cost in early 1987 from the National Technical Information Service. Questions regarding this report, future reports, or the NAMCS may be directed to the Ambulatory Care Statistics Branch by calling (301) 436-7132.

Table 13. Number and percent distribution of office visits by duration of visit: United States, 1985

Duration	Number of visits in thousands	Percent distribution
All durations	–	100.0
0 minutes[1]	14,436	2.3
1–5 minutes	65,250	10.3
6–10 minutes	181,191	28.5
11–15 minutes	190,954	30.0
16–30 minutes	144,211	22.7
31 minutes and over	40,343	6.3

Mean duration: 16.1 minutes

[1]Represents office visits in which there was no face-to-face contact between the patient and the physician.

References

[1]National Center for Health Statistics, R. Gagnon, J. DeLozier, and T. McLemore: The National Ambulatory Medical Care Survey, United States, 1979 Summary. *Vital and Health Statistics*. Series 13, No. 66. DHHS Pub. No. (PHS) 82–1727. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1982.

[2]National Center for Health Statistics, D. Schneider, L. Appleton, and T. McLemore: A reason for visit classification for ambulatory care. *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.

[3]Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification*. DHHS Pub. No. (PHS) 80–1260. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1980.

[4]National Center for Health Statistics, H. Koch and W. Campbell: The collection and processing of drug information, National Ambulatory Medical Care Survey, United States, 1980. *Vital and Health Statistics*. Series 2, No. 90. DHHS Pub. No. (PHS) 82–1364. Public Health Service. Washington. U.S. Government Printing Office, Mar. 1982.

Technical notes

Source of data and sample design

The information presented in this report is based on data collected by means of the National Ambulatory Medical Care Survey from March 1985 through February 1986. The target universe of NAMCS includes office visits made within the conterminous United States by ambulatory patients to nonfederally employed physicians who are principally engaged in office practice, but not in the specialties of anesthesiology, pathology, or radiology. Telephone contacts and nonoffice visits are excluded.

A multistage probability sample design is used in NAMCS, involving samples of primary sampling units (PSU's), physician practices within PSU's, and patient visits within physician practices. For 1985, a sample of 5,032 nonfederal, office-based physicians was selected from master files maintained by the American Medical Association and American Osteopathic Association. The physician response rate for the 1985 NAMCS was 70.2 percent. Sample physicians were asked to complete Patient Records (see text figure) for a systematic random sample of office visits occurring during a randomly assigned 1-week reporting period. Responding physicians completed 71,594 Patient Records. Characteristics

of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. The National Opinion Research Center, under contract to the NCHS, was responsible for the survey's data collection and processing operations.

Sampling errors

The standard error is primarily a measure of the sampling variability that occurs by chance when only a sample, rather than an entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error by the estimate itself; the result is then expressed as a percent of the estimate. Approximate relative standard errors of selected aggregate statistics are shown in table I, and the standard errors for estimated percentages of visits are shown in table II. Standard errors for estimates of drug mentions will be included in future reports.

Rounding of numbers

Estimates of office visits have been rounded to the nearest thousand; consequently, detailed figures within tables will not always add to totals. Rates and percents were calculated based on original unrounded figures and do not necessarily agree with percents calculated from rounded data.

Definitions of terms

Ambulatory patient—An ambulatory patient is an individual seeking personal health services who is not currently admitted to any health care institution on the premises.

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

Table I. Provisional relative standard errors of estimated numbers of office visits based on all physician specialties: NAMCS, 1985

Estimated number of office visits in thousands	Relative standard error in percent
200	37.8
500	24.1
1,000	17.2
2,000	12.5
5,000	8.5
10,000	6.6
20,000	5.4
50,000	4.5
100,000	4.2
600,000	3.9

Example of use of table: An aggregate estimate of 15,000,000 visits has a relative standard error of 6.0 percent, or a standard error of 900,000 visits (6.0 percent of 15,000,000).

Table II. Provisional standard errors of percents of estimated numbers of office visits based on all physician specialties: NAMCS, 1985

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					
200	3.7	8.2	11.3	15.0	17.2	18.8
500	2.4	5.2	7.1	9.5	10.9	11.9
1,000	1.7	3.7	5.0	6.7	7.7	8.4
2,000	1.2	2.6	3.6	4.8	5.4	5.9
5,000	0.7	1.6	2.3	3.0	3.4	3.8
10,000	0.5	1.2	1.6	2.1	2.4	2.7
20,000	0.4	0.8	1.1	1.5	1.7	1.9
50,000	0.2	0.5	0.7	1.0	1.1	1.2
100,000	0.2	0.4	0.5	0.7	0.8	0.8
600,000	0.1	0.1	0.2	0.3	0.3	0.3

Example of use of table: An estimate of 20 percent based on an aggregate estimate of 15,000,000 visits has a standard error of 1.8 percent, or a relative standard error of 9.0 percent (1.8 percent ÷ 20 percent).

Office—Offices are the premises physicians identify as locations for their ambulatory practice; these customarily include consultation, examination, or treatment spaces the patients associate with the particular physician.

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 personal health services.

Symbols

- - -	Data not available
. . .	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standards of reliability or precision
#	Figure suppressed to comply with confidentiality requirements

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Visits to Office-Based Physicians by Hispanic Persons: United States, 1980—81

by Gloria J. Gardocki, Ph.D., Division of Health Care Statistics

This report presents National Ambulatory Medical Care Survey (NAMCS) information on visits to office-based physicians by Hispanic persons. NAMCS is a national survey used to collect data on the demographic characteristics, medical problems, and medical management of patients making visits to office-based physicians. As such, the survey is uniquely valuable for providing an overview of the office-based medical care obtained by Hispanic Americans.

Although the Hispanic population of the United States is the sixth largest in the world,[1] only recently has much attention been focused on this group's need for health care services. Increased interest in the specific factors affecting this minority's use of health care resources also has been evident. Two of the factors most often considered are socioeconomic status[2-5] and type of medical insurance coverage, if any.[3,6]

Currently, the principal source of objective information on the health status of Hispanic Americans is the Hispanic Health and Nutrition Examination Survey (HHANES), which was conducted by the National Center for Health Statistics from July 1982 through December 1984.[7] HHANES was designed to assess the physical and mental health status of three special population subgroups in selected areas of the United States—Mexican Americans in selected areas of five Southwestern States (Texas, Colorado, New Mexico, Arizona, and California); Cuban Americans in Dade County, Florida; and Puerto Ricans in the New York City metropolitan area (New York, New Jersey, and Connecticut). The health and nutritional status of the sample members was assessed by means of physical examinations (including dental examinations and anthropometric measurements), diagnostic testing (including laboratory analyses), and personal interviews. The survey was not designed to be a national Hispanic survey, so national estimates for the Hispanic population cannot be made, but it is estimated that the three HHANES universes included approximately 76 percent of the population of Hispanic origin

in the United States in 1980. Initial results of the survey are being publicized.[8,9]

The prime source of national estimates of the level of use of all health care services by Hispanic persons, and of information on self-reported health status, is the National Health Interview Survey (NHIS). In this population-based survey, respondents from a sample of households are asked numerous health-related questions, and also are asked if they have specific Hispanic national origins or ancestry (for example, "Puerto Rican," "Mexican-American," or "Other Spanish"). Consequently, NHIS information on self-reported health items can be used not only for comparisons between Hispanic and non-Hispanic persons, but also for comparisons among the major Hispanic-origin groups in the United States. In an NCHS report analyzing selected 1978-80 data on Hispanic persons,[10] the authors found that the average annual number of all outpatient physician contacts (including hospital clinic visits and telephone calls) did not differ significantly among Hispanic persons (4.4 per person), white non-Hispanic persons (4.8), and black non-Hispanic persons (4.6). Further analysis, however, revealed that national origin had substantial effects which were obscured by grouping all Hispanic persons together—Mexican Americans had significantly fewer physician contacts (3.7 per person per year) than either white or black non-Hispanic persons, and Puerto Ricans and Cuban Americans had significantly more (6.0 and 6.2 contacts, respectively). Therefore, national origin must be viewed as a very important variable in understanding Hispanic persons' use of health care services.

Data source and limitations

This report summarizes the characteristics of Hispanic persons' 1980 and 1981 visits to office-based physicians. Significant differences between the visits made by Hispanic patients and those made by other patients also are discussed.

NAMCS is a sample survey of the ambulatory care provided during office visits to office-based physicians in the United States, excluding Alaska and Hawaii. NAMCS was conducted annually by the National Center for Health Statistics from 1973 through 1981, and again in 1985. A summary of the survey methodology is presented in the technical notes appended to this report, as are selected definitions and guidelines for judging the precision of estimates.

It is important to note that the statistics presented in this report are derived from combined 1980 and 1981 NAMCS data files. Consequently, the frequency estimates represent visit totals for the 2-year period, but the percent distributions and rates represent annual averages.

Two aspects of NAMCS are particularly crucial to the interpretation of the information presented in this report and warrant special attention. First, NAMCS includes only visits made to the offices of physicians who are engaged primarily in office-based care; the data cannot be generalized to describe all outpatient medical care. Second, the question of defining the Hispanic population is always difficult and somewhat arbitrary.[1] In NAMCS, sample physicians are asked to report whether a patient making a sample visit is of "Hispanic origin" (defined as "a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race"), or is "not Hispanic" (defined as "any person not of Hispanic origin"). As a result, NAMCS has no information on the specific national origins of the Hispanic patients who make sample visits. In addition, the reporting of Hispanic ethnicity depends on the extent and accuracy of the physician's knowledge of, and perceptions of, the patient's background. Because of this factor, NAMCS may underestimate the number of visits made by Hispanic persons, and such underestimation may affect the results of analysis. This issue is considered in greater detail later in this report.

Patient demographics

During 1980 and 1981, Hispanic persons made an estimated total of 53.3 million visits to office-based physicians, or 1.8 per person per year (see table 1). This was substantially lower than the estimated rate for non-Hispanic persons (2.7 visits per person per year). Although the visit rate for Hispanic persons was lower than that for all other persons for each of the five age groups displayed in table 1, the differences are statistically significant for only the three

youngest groups. In the age groups of under 15 years, 15–24 years, and 25–44 years, Hispanic persons had average annual visit rates of 1.3, 1.3, and 1.9 visits per person, respectively. In comparison, the corresponding average annual visit rates for all other persons were 2.2, 2.1, and 2.5 visits per person, respectively.

The differences between the rates for Hispanic persons and those for non-Hispanic persons highlight the most problematic aspect of the information presented in this report—the question of the accuracy with which Hispanic ethnicity was reported in NAMCS. Careful consideration of other relevant information leads to the conclusion that the extreme magnitude of this difference is an artifactual finding resulting from the survey methodology.

Evidence that NAMCS underestimated Hispanic persons' visits to office-based physicians in 1980 and 1981 can be found in NHIS data. NHIS rates should be similar to, but not identical with, NAMCS rates because the universe of office visits as measured by NHIS overlaps, but does not coincide with, the universe of office visits to office-based physicians as measured by NAMCS. However, unpublished estimates from the 1980 and 1981 NHIS surveys yield office visit rates of 3.0 per person per year for Hispanic persons and 3.2 per person per year for non-Hispanic persons. The difference between these rates is in the same direction as the NAMCS difference in rates but is not large enough to be statistically significant.

The major reason for the difference between the NAMCS data and the NHIS data appears to be the different approaches used to identify Hispanic persons. The self-identification method of ethnicity classification utilized in NHIS appears to be much stronger than the provider-identification method used in NAMCS. For this reason, the large difference found in NAMCS between the visit rate for Hispanic persons and that for non-Hispanic persons should be considered the result of an undercount of visits made by Hispanic persons and a concomitant overcount of visits made by non-Hispanic persons.

The percent distributions displayed in table 1 also indicate that the Hispanic patients were significantly younger than the non-Hispanic patients. Of all visits made by Hispanic persons, 70.2 percent were made by patients under 45 years of age, compared with 58.7 percent of the visits made by non-Hispanic persons. The median ages further illustrate this difference: the estimated median patient ages were 30 years

Table 1. Number, percent distribution, and average annual rate of office visits to office-based physicians by patient age, according to patient ethnicity: United States, 1980–81

Age	Hispanic ethnicity			Other ethnicity		
	Number in thousands	Percent distribution	Average annual rate per person[1]	Number in thousands	Percent distribution	Average annual rate per person[1]
All patients	53,337	100.0	1.8	1,107,585	100.0	2.7
Under 15 years	12,206	22.9	1.3	203,922	18.4	2.2
15–24 years	8,714	16.3	1.3	152,081	13.7	2.1
25–44 years	16,503	30.9	1.9	293,881	26.5	2.5
45–64 years	10,540	19.8	2.4	255,160	23.0	3.1
65 years and over	5,374	10.1	3.8	202,541	18.3	4.3

[1]Rates were computed using National Health Interview Survey estimates of the civilian noninstitutionalized Hispanic and non-Hispanic populations (see the technical notes)

for the visits made by Hispanic persons and 37 years for all other visits. The different patient age distributions reflect the relative youth of the American Hispanic population, as can be seen in the population estimates presented in the technical notes.

In addition to the differences in the age distributions, a significant difference appeared in the race distributions. Of the visits made by Hispanic persons, 94.2 percent were made by white persons, compared with only 89.1 percent of the visits made by non-Hispanic persons. The sex distributions were virtually identical, however, with females accounting for 60.1 percent of the visits made by Hispanic persons.

Medical characteristics

The same methodological difference between NAMCS and NHIS that is the source of NHIS's strength in identifying Hispanic persons also is the source of NAMCS's greatest strength. Because the basic data in NAMCS are supplied by health care providers, the medical information contained in NAMCS can be expected to be relatively complete, precise, and accurate. In this respect, NAMCS information on the medical aspects of Hispanic persons' visits to office-based physicians can be regarded as less problematic than the population rates. It is extremely important to note, however, that the apparent undercount of Hispanic patients' visits in NAMCS may have biased the results. Unfortunately, there is no information available for determining if such bias occurred, or for assessing the direction and amount of it.

The 1980 and 1981 NAMCS data indicate that Hispanic and non-Hispanic patients who visited physicians were equally likely to have been referred by another physician—5.6 percent of Hispanic patients' visits were the direct result of referrals. The visits of Hispanic persons, however, were more likely to have been prompted by a new problem than were other visits (42.0 percent compared with 36.4 percent, respectively). Although significant, this difference is not large, and it may be simply the result of the relative youth of the Hispanic population. This is because younger people are more likely to develop short-term problems that are completely resolved, and older people are more likely to develop chronic problems that may be controllable but not curable.

In NAMCS, the general type of medical care sought by each patient making a visit is recorded by the responding physician in the variable "major reason for visit." For the 1980 and 1981 visits made by Hispanic patients, the most common major reason was obtaining care for an acute problem (38.9 percent), followed by obtaining routine care for a chronic problem (24.8 percent). Nonillness care, such as prenatal care, was the third most common major reason (18.0 percent). The least common major reasons for visit were seeking care for a flareup of a chronic problem (9.6 percent) and obtaining aftercare for surgery or an injury (8.7 percent). Hispanic patients were significantly less likely than non-Hispanic patients to have been seeking routine care for a chronic problem (24.8 percent of visits compared with 28.2 percent, respectively). Again the difference was not large and easily can be explained by the differing age distributions of the two populations.

Principal reason for visit and RVC code[1]	Number of visits in thousands	Percent distribution
All visits	53,337	100.0
Symptom module . . . S001–S999	31,389	58.8
General symptoms . . . S001–S099	5,145	9.6
Systems referable to psychological and mental disorders . . . S100–S199	979	1.8
Symptoms referable to the nervous system (excluding sense organs) . . . S200–S259	2,027	3.8
Symptoms referable to the cardiovascular and lymphatic systems . . . S260–S299	*323	*0.6
Symptoms referable to the eyes and ears . . . S300–S399	2,322	4.4
Symptoms referable to the respiratory system . . . S400–S499	4,781	9.0
Symptoms referable to the digestive system . . . S500–S639	3,501	6.6
Symptoms referable to the genitourinary system . . . S640–S829	3,206	6.0
Symptoms referable to the skin, nails, and hair . . . S830–S899	2,662	5.0
Symptoms referable to the musculoskeletal system . . . S900–S999	6,444	12.1
Disease module . . . D001–D999	4,426	8.3
Diagnostic, screening, and preventive module . . . X100–X599	9,044	17.0
Treatment module . . . T100–T899	4,084	7.7
Injuries and adverse effects module . . . J001–J999	2,492	4.7
Other[2] . . . R100–R700, A100–A140, U990–U999	1,904	3.6

[1]Based on "A Reason for Visit Classification for Ambulatory Care," Vital and Health Statistics, Series 2, No. 78, Feb 1979
[2]Includes test results module, administrative module, blanks, problems and complaints not elsewhere classified, entries of "none," and illegible entries.

Patients' specific reasons for visit are classified in NAMCS according to the system established in "A Reason for Visit Classification for Ambulatory Care."[11] Table 2 shows the principal reasons for visit, grouped into modules of related reasons, for Hispanic persons' 1980 and 1981 visits. By far the most common principal reason for visit was a symptom; the complaints classified in the symptom module precipitated 58.8 percent of all visits. Different types of symptoms occurred with varying frequencies, ranging from the 0.6 percent of all visits precipitated by symptoms of the cardiovascular and lymphatic systems to the 12.1 percent of all visits precipitated by symptoms related to the musculoskeletal system.

Next to symptoms, the most common principal reasons for visit were those in the diagnostic, screening, and preventive module, which includes such services as regularly scheduled examinations and inoculations. In comparison with symptoms, however, this module accounted for a far smaller proportion of all visits by Hispanic persons—17.0 percent. Even smaller were the proportions of visits with principal reasons in the disease and treatment modules, which accounted for 8.3 percent and 7.7 percent of all visits, respectively. Injuries and adverse effects made up the smallest proportion (4.7 percent) of all visits by Hispanic persons.

Only two significant differences in the type of principal complaint appeared between visits made by Hispanic persons and visits made by other persons. The principal reasons for

Table 3. Number and percent distribution of office visits made by Hispanic patients, by the 10 specific principal reasons for visit most commonly given: United States, 1980-81

Principal reason for visit and RVC code[1]	Number of visits ·in thousands	Percent distribution
All visits	53,337	100.0
Prenatal examination, routine X205	2,729	5.1
General medical examination X100	2,482	4.7
Fever S010	1,671	3.1
Cough S440	1,621	3.0
Postoperative visit T205	1,534	2.9
Abdominal pain, cramps, spasms S550	1,248	2.3
Headache, pain in head S210	1,164	2.2
Back symptoms S905	1,040	2.0
Symptoms referable to throat S455	1,026	1.9
Chest pain and related symptoms (not referable to body system) S050	968	1.8
All other reasons for visit . . . . Residual	37,853	71.0

[1]Based on "A Reason for Visit Classification for Ambulatory Care," *Vital and Health Statistics*, Series 2, No 78, Feb 1979.

Table 4. Number and percent distribution of office visits made by Hispanic patients, by principal diagnostic class: United States, 1980-81

Principal diagnostic class and ICD-9-CM code[1]	Number of visits in thousands	Percent distribution
All visits	53,337	100.0
Infectious and parasitic diseases . . . . (001-139)	1,552	2.9
Neoplasms . . . . (140-239)	912	1.7
Endocrine, nutritional, and metabolic diseases, and immunity disorders . . (240-279)	2,408	4.5
Mental disorders . . . . (290-319)	1,788	3.4
Diseases of the nervous system and sense organs . . . . (320-389)	3,940	7.4
Diseases of the circulatory system . . . . (390-459)	3,084	5.8
Diseases of the respiratory system . . . . (460-519)	7,391	13.9
Diseases of the digestive system . . . . (520-579)	2,905	5.4
Diseases of the genitourinary system . . . . (580-629)	3,903	7.3
Diseases of the skin and subcutaneous tissue . . . . (680-709)	3,331	6.2
Diseases of the musculoskeletal system and connective tissue . . . . (710-739)	4,480	8.4
Symptoms, signs, and ill-defined conditions . . . . (780-799)	1,596	3.0
Injury and poisoning . . . . (800-999)	4,965	9.3
Supplementary classification of factors influencing health status and contact with health services . . . . (V01-V82)	9,373	17.6
Other[2] . . . . Residual	1,710	3.2

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM).
[2]Includes diseases of the blood and blood-forming organs (280-289); complications of pregnancy, childbirth, and the puerperium (630-676); congenital anomalies (740-759); certain conditions originating in the perinatal period (760-779); and blank, noncodable, and illegible diagnoses.

Hispanic patients' visits were somewhat more likely to be symptoms (58.8 percent compared with 53.8 percent) and somewhat less likely to be specifically for obtaining treatment (7.7 percent compared with 10.6 percent). These differences also can be attributed to the differing health problems of populations with different age structures.

Of the 10 most common specific principal reasons for Hispanic patients' visits, shown in table 3, 7 were symptoms typical of acute diseases or injuries: fever; cough; abdominal pain, cramps, or spasms; headache or head pain; back symptoms; throat symptoms; and chest pain and related symptoms. In examining table 3, it should be noted that not all differences between the ranked frequencies and percents are statistically significant. All 10 of the most common reasons together accounted for more than one-fourth (29.0 percent) of all office visits by Hispanic persons. In contrast, the same reasons accounted for only 24.9 percent of all other visits, indicating that these particular problems were somewhat less common among non-Hispanic persons visiting office-based physicians.

The principal diagnoses made by the physicians in Hispanic patients' visits, grouped into categories based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM),[1][2] are shown in table 4. Two groups of diagnoses were used more frequently than any other group, and together these groups accounted for almost one-third of the total. These groups were the supplementary classification (including prenatal care, immunizations, general examinations, and all other well-person care), which was listed for 17.6 percent of all visits by Hispanic persons, and diseases of the respiratory system (many of which are acute infections of the upper respiratory tract), which accounted for 13.9 percent.

This distribution of Hispanic patients' visits among the various diagnostic categories was remarkably similar to the comparable distribution for non-Hispanic patients. In fact,

only one significant difference between the distributions appeared in the results: diseases of the circulatory system were recorded less frequently for Hispanic patients' visits than for non-Hispanic patients' visits (5.8 percent compared with 9.9 percent, respectively). The direct relationship of hypertension and other chronic cardiovascular problems to age is well known, and this difference also can be attributed to the age difference between Hispanic and non-Hispanic persons.

The 10 specific principal diagnoses that were most commonly made during Hispanic patients' visits are shown in table 5. Again, the differences between the ranked frequencies and percents are not necessarily statistically significant. Six of these specific diagnoses are from the two leading groups of diagnoses: normal pregnancy, health supervision of an infant or child, and a general medical examination are all well-care services included in the supplementary classification of the ICD-9-CM; and acute upper respiratory infections of multiple or unspecified sites, asthma, and acute pharyngitis are all included in the category of respiratory system diseases. Together the 10 diagnoses accounted for more than one-fourth (27.2 percent) of all office visits by Hispanic persons in 1980 and 1981. The same 10 diagnoses were recorded for a slightly smaller proportion (24.7 percent) of the visits made by non-Hispanic persons.

Table 5. Number and percent distribution of office visits made by Hispanic patients, by the 10 specific principal diagnoses most commonly given: United States, 1980–81

Specific principal diagnosis and ICD–9–CM code[1]		Number of visits in thousands	Percent distribution
All visits		53,337	100.0
Normal pregnancy	V22	3,155	5.9
Health supervision of infant or child	V20	1,717	3.2
Acute upper respiratory infections of multiple or unspecified sites	465	1,546	2.9
Essential hypertension	401	1,529	2.9
Suppurative and unspecified otitis media	382	1,438	2.7
General medical examination	V70	1,208	2.3
Asthma	493	1,091	2.0
Diabetes mellitus	250	1,087	2.0
Obesity and other hyperalimentation	278	980	1.8
Acute pharyngitis	462	743	1.4
All other diagnoses	Residual	38,842	72.8

[1]Based on the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD–9–CM)

Physician characteristics

The specialty distribution of the physicians visited by Hispanic patients is shown in table 6. The vast majority of the visits were divided almost equally among general and family practitioners (33.2 percent), medical specialists (29.8 percent), and surgical specialists (32.7 percent). The remaining few visits (4.3 percent) were made to all other specialists.

Of the visits to medical specialists, visits to pediatricians (14.1 percent of all visits) exceeded visits to internists (9.6 percent), which, in turn, exceeded visits to other medical specialists (6.2 percent). Of the visits to surgical specialists, however, the largest proportion was made to physicians in the residual category of other surgical specialties (15.9 percent of all visits), followed by visits to obstetricians and gynecologists (11.5 percent). Visits to general surgeons accounted for the smallest proportion (5.3 percent).

Only two significant differences between this distribution and the comparable one for the visits made by non-Hispanic patients were noted, and both clearly were caused by the differing age structures of the Hispanic and non-Hispanic populations. Pediatricians, who primarily treat infants and young children,[13] accounted for a somewhat larger proportion of the visits made by Hispanic patients than of the visits made by all other persons (14.1 percent compared with 10.9 percent, respectively). Conversely, internists, whose patients are principally the middle-aged and elderly,[14] accounted for a significantly smaller proportion of the visits made by Hispanic persons than of all other visits (9.6 percent compared with 12.6 percent, respectively).

Hispanic patients' visits were distributed unevenly among the four major geographic regions of the United States (see table 7). The largest proportion (35.2 percent) occurred in the West, followed by the South (29.3 percent), and then the Northeast (23.7 percent). Only 11.8 percent were made in the Midwest. This distribution differed markedly from that observed for all visits made by non-Hispanic persons, as the Northeast was the only region that claimed essentially equal

Table 6. Number and percent distribution of office visits made by Hispanic patients, by physician specialty: United States, 1980–81

Physician specialty	Number of visits in thousands	Percent distribution
All visits	53,337	100.0
General and family practice	17,703	33.2
All medical specialties	15,904	29.8
Internal medicine	5,100	9.6
Pediatrics	7,505	14.1
Other medical specialties	3,299	6.2
All surgical specialties	17,429	32.7
General surgery	2,828	5.3
Obstetrics and gynecology	6,139	11.5
Other surgical specialties	8,462	15.9
All other specialties	2,301	4.3
Psychiatry	954	1.8
Other specialties	1,347	2.5

Table 7. Number and percent distribution of office visits made by Hispanic patients, by geographic region: United States, 1980–81

Geographic region	Number of visits in thousands	Percent distribution
All visits	53,337	100.0
Northeast	12,635	23.7
Midwest	6,308	11.8
South	15,620	29.3
West	18,774	35.2

proportions of Hispanic and non-Hispanic patients' visits (23.7 percent and 23.6 percent, respectively). The most striking differences appeared in the West, which accounted for 35.2 percent of Hispanic patients' visits but only 17.6 percent of other patients' visits, and in the Midwest, which accounted for only 11.8 percent of Hispanic patients' visits and 26.0 percent of all other visits. These differences are explained, of course, by the geographic distribution of the American Hispanic population, which has a relatively high concentration in the Southwest and a relatively low one in the Midwest. The remaining region, the South, accounted for 29.3 percent of the visits made by Hispanic persons and 32.8 percent of those made by non-Hispanic persons. Although this is a statistically significant difference, it is not a substantively large one.

Another locational variable utilized in NAMCS is the metropolitan status of the area in which the visit occurred. Although large majorities of both the visits made by Hispanic persons and those made by non-Hispanic persons took place in metropolitan areas, the visits of Hispanic persons were substantially more concentrated in those areas (87.1 percent compared with 75.5 percent, respectively).

Hispanic patients' visits were quite similar to non-Hispanic patients' visits on the remaining variables describing the physicians and their practices. Of the Hispanic patients' visits, 3.9 percent involved female physicians and 7.2 percent involved Doctors of Osteopathy (D.O.'s), rather than Doctors of Medicine (M.D.'s). A large majority of the visit total was divided almost equally between physicians 44 years of age or younger (39.9 percent) and physicians 45–60 years

of age (44.2 percent). Only 16.0 percent of the visits were made to physicians 61 years of age or older. In addition, a majority of the visits (57.5 percent) were to solo practitioners. Although this was significantly larger than the comparable proportion of all visits made by non-Hispanic persons (54.6 percent), the difference was not a large one.

Visit management

Physicians utilized a single diagnostic service in almost half of all visits made by Hispanic persons (46.0 percent). Two such services were used in fewer visits (30.6 percent), and three or more were used in still fewer (16.6 percent). Only 1 of every 15 visits (6.8 percent) involved no diagnostic services.

The rates at which various specific diagnostic services were ordered or provided during Hispanic patients' visits are shown in table 8. The services can be ranked according to their frequency of use as follows.

- Limited medical histories and/or examinations (64.4 percent of the visits).
- Blood pressure measurements (33.7 percent).
- One or more clinical laboratory tests (21.5 percent) and general medical histories and/or examinations (17.5 percent).
- One or more x rays (9.0 percent).
- Pap tests (4.2 percent) and vision tests (3.6 percent).
- Electrocardiograms (2.6 percent), mental status examinations (1.7 percent), and endoscopies (1.0 percent).

This usage pattern for diagnostic services is remarkably similar to the one that appeared for non-Hispanic patients' visits. In fact, only one significant difference was found: vision tests were utilized in the visits made by Hispanic patients somewhat less frequently than in all other visits (3.6 percent compared with 5.8 percent, respectively).

Hispanic patients' visits and all other visits also were very similar with respect to the use of therapeutic services other than medication. Physicians utilized no therapeutic services other than medication in a slight majority of all visits made by Hispanic persons (54.2 percent). Another large pro-

Table 8. Number and percent of office visits made by Hispanic patients, by type of diagnostic service ordered or provided: United States, 1980–81

Diagnostic service	Number of visits in thousands	Percent
None	3,609	6.8
Limited history/exam	34,341	64.4
General history/exam	9,360	17.5
Pap test	2,215	4.2
Clinical lab test	11,453	21.5
X ray	4,779	9.0
Blood pressure check	17,965	33.7
Electrocardiogram	1,392	2.6
Vision test	1,908	3.6
Endoscopy	551	1.0
Mental status exam	887	1.7
Other	2,179	4.1

NOTE: More than one diagnostic service was ordered or provided during some visits

Table 9. Number and percent of office visits made by Hispanic patients, by type of nonmedication therapeutic service ordered or provided: United States, 1980–81

Nonmedication therapeutic service	Number of visits in thousands	Percent
None	28,906	54.2
Physiotherapy	3,455	6.5
Office surgery	3,471	6.5
Family planning	1,522	2.9
Psychotherapy therapeutic listening	1,628	3.1
Diet counseling	4,965	9.3
Family/social counseling	1,036	1.9
Medical counseling	11,812	22.1
Other	1,063	2.0

NOTE More than one nonmedication therapeutic service was ordered or provided during some visits.

portion of the visits (38.3 percent) involved just one such service. Fewer than 1 of every 10 visits made by Hispanic persons involved the order or provision of more therapeutic services—two services were used by physicians in only 6.7 percent of the visits, and three or more services in just 0.9 percent.

Grouped according to their order of frequency of use, the specific therapeutic services on which information was collected by means of NAMCS in 1980 and 1981 were as follows (see table 9).

- Medical counseling (22.1 percent of all visits made by Hispanic persons).
- Diet counseling (9.3 percent), office surgery (6.5 percent), and physiotherapy (6.5 percent).
- Psychotherapy and/or therapeutic listening (3.1 percent), family planning (2.9 percent), and family and/or social counseling (1.9 percent).

Of all these services, only one, psychotherapy and/or therapeutic listening, was utilized significantly less often in the visits made by Hispanic persons (3.1 percent) than in all other visits (5.0 percent).

In the visits made by Hispanic patients, as in all other visits, by far the most common therapeutic service was for the physician to order or supply one or more medications. In NAMCS, the term "drug visits" refers to the visits in which this was done. Drug visits accounted for 63.3 percent of all visits made by Hispanic patients. Medications are used to control common chronic conditions whose incidence is directly related to age, such as diabetes and hypertension, as well as to treat other conditions. Because of this, the use of medications in the treatment of Hispanic patients by office-based physicians was expected to be related to age, and this expectation was confirmed. Drug visits accounted for 71.0 percent of all visits made by Hispanic patients 45 years of age and older, but only 60.0 percent of those made by younger Hispanic patients. Neither the overall level of medication usage in Hispanic patients' visits nor the age difference that appeared differed significantly from the comparable statistics observed for all other visits.

The principal unit of measurement used in NAMCS in assessing medication utilization is the drug mention, or the order or provision of a particular drug during a patient visit.

Table 10. Average number of drug mentions per visit and per drug visit made by Hispanic patients, by patient age: United States, 1980–81

Age	Average number of drug mentions per visit	Average number of drug mentions per drug visit
All visits	1.13	1.79
Under 15 years	1.10	1.64
15–24 years	0.86	1.58
25–44 years	0.97	1.69
45–64 years	1.31	1.92
65 years and over	1.77	2.30

Table 11. Number and percent distribution of drug mentions during office visits made by Hispanic patients, by therapeutic category: United States, 1980–81

Therapeutic category[1]	Number of drug mentions in thousands	Percent distribution
All	60,260	100.0
Antihistamine drugs	3,273	5.4
Anti-infective agents	10,612	17.6
Autonomic drugs	2,694	4.5
Cardiovascular drugs	3,381	5.6
Central nervous system drugs	11,383	18.9
Electrolytic, caloric, and water balance	2,996	5.0
Expectorants and cough preparations	2,353	3.9
Eye, ear, nose, and throat preparations	1,513	2.5
Gastrointestinal drugs	2,532	4.2
Hormones and synthetic substances	5,781	9.6
Serums, toxoids, and vaccines	2,469	4.1
Skin and mucous membrane preparations	5,055	8.4
Spasmolytic agents	1,136	1.9
Vitamins	2,142	3.6
Other[2]	2,939	4.9

[1]Based on the pharmacologic-therapeutic classification of the American Society of Hospital Pharmacists.
[2]Includes antineoplastic agents, blood formation and coagulation agents, diagnostic agents, enzymes, gold compounds, heavy metal antagonists, local anesthetics, oxytocics, unclassified therapeutic agents, devices, pharmaceutic aids, and undetermined substances.

In the 1980 and 1981 NAMCS, as many as eight drug mentions were recorded for a sample visit. The amount of drug usage for all patients can be assessed by evaluating the average number of drug mentions per visit. The averages for visits made by Hispanic persons in different age groups are displayed in table 10.

For all visits made by Hispanic patients, an average of 1.13 drugs were ordered or provided per visit. This varied with the age of the patient, however. Children 14 years of age and younger frequently need immunizations and are prone to infective diseases that are often treated with antibiotics. For these children, an average of 1.10 medications per visit were used. Usage by adolescents and young adults 15–24 years of age was significantly lower (0.86 medications per visit), and usage remained low for the next age group also (0.97 per visit for adults 25–44 years of age). For the group 45–64 years of age, usage rose significantly, to 1.31 drugs per visit. This is the age range in which chronic diseases requiring medication therapy are often first detected. A significantly higher average of 1.77 medications per visit was ordered or provided for the remaining age group, persons 65 years of age and older. This undoubtedly reflects both

the relatively high prevalence of chronic conditions among the elderly and the increase in acute problems that occurs as the effectiveness of the immune system decreases with age.

The intensity of drug usage among the patients who were ordered or provided with at least one medication is reflected in the average number of drug mentions per drug visit. In 1980 and 1981, an average of 1.79 drug mentions was made during each drug visit made by a Hispanic person. The averages for the different age groups indicate that, except among the elderly, age did not affect the intensity of drug usage once the decision to use at least one medication had been made. None of the pairs of successive age groups differed significantly in the intensity of drug usage during drug visits. In fact, in comparing each age group with every other age group, the only significant differences that appeared were that more drugs were used in drug visits made by the elderly (2.30 drugs per drug visit) than in the drug visits made by the three youngest age groups (1.64 for children under 15 years of age, 1.58 for youth 15–24 years of age, and 1.69 for adults 25–44 years of age).

All drug mentions recorded in NAMCS in 1980 and 1981 were coded into categories describing the various therapeutic effects that can be expected of medications. The categories used were based on the classification system developed by the American Society of Hospital Pharmacists.[15] As shown in table 11, an estimated 60.3 million drug mentions were made during Hispanic patients' visits in 1980 and 1981. Two drug categories were used significantly more frequently than any other category: central nervous system drugs (18.9 percent of all drug mentions) and anti-infective agents (17.6 percent). Each of the other drug categories accounted for less than 10 percent of all drug mentions.

This distribution of drug mentions for Hispanic patients was very similar to the distribution observed for all other patients. In fact, only two significant differences appeared. Compared with the drugs used with non-Hispanic patients, the drugs ordered or provided to Hispanic patients were less likely to be cardiovascular drugs (5.6 percent, compared with 10.2 percent) and less likely to be electrolytic, caloric, or water balance agents (5.0 percent, compared with 8.2 percent). These differences in drug utilization stem from the differing health problems physicians encounter during visits by Hispanic and non-Hispanic patients. Both of these types of drugs are used frequently to treat hypertension and other diseases of the cardiovascular system, and diseases of the circulatory system accounted for a smaller proportion of Hispanic patients' visits than of all other patients' visits.

The final aspects of Hispanic patients' office visits to be considered here are visit duration and patient disposition. A distinct majority of all visits by Hispanic patients (60.5 percent) lasted 6–15 minutes. Almost one-third of the visits (27.9 percent) lasted longer than 15 minutes, and the smallest proportion (11.6 percent) lasted 5 minutes or less. The only significant difference in duration between Hispanic patients' visits and non-Hispanic patients' visits was that non-Hispanic patients' visits were more likely to be in the shortest duration category (15.4 percent of all visits).

Finally, table 12 shows that asking the patient to return

Table 12.   Number and percent of visits made by Hispanic patients, by patient disposition: United States, 1980–81

Patient disposition	Number of visits in thousands	Percent
No followup planned	5 806	10 9
Return at specified time	31 789	59 6
Return if needed, p r n	12,422	23 3
Telephone followup planned	1,919	3.6
Referred to other physician	1 368	2 6
Admit to hospital	1,490	2.8
Other	630	1 2

NOTE More than one patient disposition was recorded for some visits

at a specific time was by far the most common disposition in Hispanic patients' visits (59.6 percent). The patients were instructed to return if needed in one-fourth of the visits (23.3 percent), and no followup was planned in one-tenth of the visits (10.9 percent). Each of the other dispositions was made in fewer than 1 of every 25 visits. This distribution did not differ significantly in any respect from the comparable distribution for all other patients.

Conclusions

This report has been devoted to describing the 1980 and 1981 visits to office-based physicians made by Hispanic persons in terms of the patients' medical problems and the physicians' diagnostic actions and therapeutic interventions. In addition, differences between these visits and those made by non-Hispanic persons were highlighted. The comparisons revealed that the two sets of visits had many more similarities than

differences. Most of the differences that did appear were relatively minor ones that can be understood in light of the relative youth of the Hispanic population in the United States. The only major differences that appeared can be viewed as reflecting the differing geographic distributions of the Hispanic and non-Hispanic populations.

A cursory view of the NAMCS visit rates for Hispanic and non-Hispanic persons suggests that in 1980 and 1981 the Hispanic population obtained substantially less health care from office-based physicians than the non-Hispanic population obtained. Closer examination of the NAMCS and NHIS findings and methodologies, however, leads to the conclusion that the magnitude of the difference in rates shown by NAMCS is an artifactual finding. NAMCS's reliance on ethnicity information supplied by medical care providers, rather than ethnicity identifications that are self-reported, apparently leads to an undercount of visits made by Hispanic persons.

Because of this apparent undercounting, all of the population-based rates presented in this report must be interpreted with particular caution. In addition, there is a possibility that the undercounting may have introduced an element of bias that may have distorted the results of the visit analyses. Unfortunately, there are no indicators for assessing the existence, amount, or type of any possible bias. Despite these problems, these findings are uniquely valuable in being based on a national-level survey with extensive medical data supplied by medical care professionals. Consequently, the results constitute an important contribution to the currently sparse literature available on the utilization of health care resources by Hispanic persons.

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Symbols

- - - Data not available

. . . Category not applicable

- Quantity zero

0.0 Quantity more than zero but less than 0.05

Z Quantity more than zero but less than 500 where numbers are rounded to thousands

* Figure does not meet standards of reliability or precision

\# Figure suppressed to comply with confidentiality requirements

Technical notes

Source of data and sample design

The estimates presented in this report are based on the findings of the National Ambulatory Medical Care Survey (NAMCS), a sample survey of office-based care conducted annually from 1973 through 1981 by the National Center for Health Statistics. The target universe of NAMCS is composed of office visits made by ambulatory patients to non-Federal and noninstitutional physicians who are principally engaged in office-based, patient-care practice. Visits to physicians practicing in Alaska and Hawaii are excluded from the range of NAMCS, as are visits to anesthesiologists, pathologists, and radiologists.

A multistage probability sample design, involving a step sampling of primary sampling units, physicians' practices within primary sampling units, and patient visits within physicians' practices, was employed in NAMCS. The physician sample (5,805 physicians for 1980 and 1981) was selected from master files maintained by the American Medical Association and the American Osteopathic Association. Those members of the sample who proved to be in scope and eligible participated at a rate of 77.3 percent. Responding physicians completed visit records for a systematic random sample of office visits made during a randomly assigned weekly reporting period. Telephone contacts were excluded. During 1980 and 1981 responding physicians completed 89,477 visit records on which they recorded 97,796 drug mentions. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the field operations of the survey.

Sampling errors, statistical testing, and rounding

The standard error is 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 by the estimate itself and is expressed as a percent of the estimate. In this report, any estimate that exceeds a relative standard error of 30 percent is marked with an asterisk. Table I should be used to obtain the relative standard error for aggregates of office visits, and table II should be used to obtain the relative standard error for drug mentions expressed as drug groups (for example, the analgesic drug family).

In this report, the determination of statistical inference is based on the Bonferroni test for multiple comparisons, a modification of the t-test. Terms relating to differences, such as "higher" and "less," indicate that the differences are statistically significant at the $p < .05$ level. Terms such as "similar" or "no difference" mean that no statistical significance exists between the estimates being compared. A lack of comment regarding the difference between any two estimates does not mean that the difference was tested and found to be not significant.

Table I. Approximate relative standard errors of estimated numbers of office visits, based on all physician specialties: National Ambulatory Medical Care Survey, 1980–81

Estimated number of office visits	Relative standard error
Estimated number in thousands	Percent
450	30.0
600	26.0
800	22.6
1,000	20.2
2,000	14.5
5,000	9.5
10,000	7.1
20,000	5.6
50,000	4.4
100,000	3.9
200,000	3.6
500,000	3.5
1,000,000	3.4

EXAMPLE OF USE OF TABLE: An aggregate estimate of 35,000,000 office visits has a relative standard error of 5.0 percent or a standard error of 1,750,000 visits (5.0 percent of 35,000,000 visits).

Table II. Approximate relative standard errors of estimated numbers of drug mentions when drugs appear in groups (for example, the analgesic drug family), based on all physician specialties: National Ambulatory Medical Care Survey, 1980–81

Estimated number of grouped drug mentions	Relative standard error
Estimated number in thousands	Percent
*650	*30.3
800	27.3
1,000	24.5
2,000	17.6
5,000	11.6
10,000	8.7
20,000	6.8
50,000	5.3
100,000	4.7
200,000	4.4
500,000	4.2
1,000,000	4.1

EXAMPLE OF USE OF TABLE: An aggregate estimate of 30,000,000 drug mentions has a relative standard error of 7.0 percent or a standard error of 2,100,000 mentions (7.0 percent of 30,000,000 mentions).

Frequency estimates presented in this report have been rounded to the nearest thousand. For this reason, detailed estimates do not always add to totals.

Population estimates and rate computation

The population estimates used in computing the average annual visit rates presented in this report are shown in table III. These estimates represent the 1980–81 average annual civilian noninstitutionalized population of the United States. Except for the totals by age, which are adjusted to independent estimates furnished by the U.S. Bureau of the Census, these estimates are based on the samples of households in the 1980

Table III. Estimates of the civilian noninstitutionalized population of the United States used in computing average annual rates in this report, by age and ethnicity: 1980–81

Ethnicity	All ages	Under 15 years	15–24 years	25–44 years	45–64 years	65 years and over
	Number in thousands					
All ethnicities	221,485	50,525	40,416	62,319	43,857	24,369
Hispanic	15,215	4,615	3,343	4,380	2,164	713
Non-Hispanic	206,271	45,910	37,073	57,939	41,693	23,655

NOTE: Figures may not add to total due to rounding.

and 1981 National Health Interview Surveys. Detailed information on the source and reliability of these estimates can be found in the technical notes of earlier publications.[16,17]

Average annual visit rates were computed by dividing visit totals for 1980 and 1981 by twice the average annual population.

Definitions of terms used in this report

An *office* is a place that physicians identify as a location for their ambulatory practice. Responsibility for patient care and professional services rendered in an office resides with the individual physician rather than with an institution.

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

NOTE: A list of references follows the text.

A *drug mention* is the physician's entry on the visit record of a pharmaceutical agent ordered or provided by any route of administration for prevention, diagnosis, or treatment. Generic and brand-name drugs are included as are nonprescription and prescription drugs. The physician records all new drugs and all continued medications if the patient specifically is instructed during the visit to continue the medication.

An *acute problem* is a morbid condition with a relatively sudden or recent onset (within 3 months of the visit).

A *chronic problem* is a morbid condition that existed for 3 months or longer before the visit. The care indicated is of a regular, maintenance nature.

A *chronic problem flareup* is a sudden exacerbation of a preexisting chronic condition.

Nonillness care denotes health examinations and care provided for presumably healthy persons. Examples of nonillness care include prenatal and postnatal care, annual physicals, well-child examinations, and insurance examinations.

Prevalence of Known Diabetes Among Black Americans

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Highlights

In 1985, approximately 1.0 million black Americans had known diabetes—a rate of 35.9 per 1,000 population. Compared with 22 years ago, these 1985 estimates represent a substantial increase in both the number and the rate of black Americans with known diabetes. In 1963, only an estimated 228,000 black individuals had known diabetes, representing a rate of 11.7 known diabetics per 1,000 population.

Among black persons, known diabetes is relatively more frequent among older persons, females, the less educated, the formerly married, those living alone, and persons in families with low annual incomes. It is also proportionately more common among central city residents than among metropolitan area residents living outside a central city. Among black persons, those living in the West have the highest rate of known diabetes; those living in the Northeast, the lowest rate. Some of these sociodemographic variations in the rate of known diabetes among black persons are associated with the fact that certain categories have higher proportions of older persons, who are more likely than younger persons to have known diabetes. Differences in the rate of known diabetes among black individuals by marital status and living arrangement are largely explainable in these terms.

In both absolute and relative terms, the increase in the prevalence of known diabetes over the past 22 years has been greater for black persons than for white persons. From 1963 to 1985, the number of white known diabetics increased by about 2½ times, and a twofold increase occurred in the rate for white persons. During that same period, there was a fourfold increase in the number of black persons with known diabetes, and a threefold increase occurred in the rate for black Americans.

Known diabetes is now relatively more common among black persons than it is among white persons. However, this overall difference in the relative likelihood of known diabetes was not always the case. From 1963 to 1968, the overall rates of known diabetes among black and white persons were similar. Moreover, during the 1963–68 time period, when the relative frequency of known diabetes for the two racial groups was similar, there were offsetting trends among males and females. Over the 22-year period for which data are available, black females have consistently had higher observed rates of known diabetes than white females have had. From 1963 to 1967, however, black males had lower overall rates than white males had. By 1975 (the second year after 1968 for which data are available) a crossover had occurred: The overall observed rate of known diabetes for black males was higher than that for white males.

The currently higher rate of known diabetes among black than white persons is pervasive. Across all sex, age, education, marital status, living arrangement, and regional categories and across most family income and location of residence categories of the population, black individuals are relatively more likely to have known diabetes than white persons are. Among black individuals 17 years of age and over, but not among white individuals in this age span, family income differences in the relative frequency of known diabetes are explained by educational attainment differentials that are associated with family income and the relative likelihood of having known diabetes.

Background

"Diabetes mellitus" is a term that refers to a heterogeneous group of disorders characterized by glucose intolerance. The National Health Interview Survey (NHIS) of the National Center for Health Statistics (NCHS) is designed to produce estimates of the number and characteristics of persons who have been told by a physician that they have diabetes. Estimates of the prevalence of known diabetes in the United States have been available from NHIS for more than 25 years, but it is only in the past 5 years that estimates of the prevalence of known diabetes specifically for black persons have been rou-

tinely published. In 1960, NHIS statistics on the prevalence of known diabetes and associated disability and medical care were published for the period July 1957–June 1959.[1] However, these statistics were shown only for the total population and for specific age and sex categories. In 1967, NHIS information on the prevalence of known diabetes by race was published for the first time. This information was based on data collected in a special supplement on known diabetes conducted from July 1964 through June 1965.[2] These data for fiscal year 1965 were not shown separately for black persons. They were classified only for white and all other races, a practice which continued in routine NHIS statistical reports through 1977.[3] As a result, when the Workgroup on Epidemiology of the Committee on Scope and Impact of the National Commission on Diabetes published its report in 1977,[4] NHIS information on the prevalence of known diabetes among black Americans was notably absent. It was still lacking when the important compilation *Diabetes Data: Compiled 1977* appeared in 1978.[5]

NHIS information on the prevalence of known diabetes among black Americans apparently appeared for the first time in an official NCHS publication, *Health: United States, 1981.*[6] In an article published in this report, age-adjusted rates of known diabetes were shown for white and black individuals, and age-specific rates for white and black persons were shown by sex and educational attainment. A more detailed NCHS analysis of the role of obesity in explaining age-sex-race differentials in the relative frequency of known diabetes (which focused explicitly on black-white differences) was also subsequently published.[7]

Recognition of the important gaps that existed in the published literature with respect to the number and characteristics of black Americans with known diabetes gave rise to a concerted effort by NCHS staff to tabulate and compile available NHIS data on known diabetes for fiscal year 1963 (the earliest year for which NHIS data tapes still existed) through the current time period. The results of these computer analyses were made available to the National Diabetes Data Group of the National Institute of Diabetes, Digestive, and Kidney Diseases. This organization made excellent use of them, in conjunction with its own analyses of NCHS data tapes, in *Diabetes in America.*[8] These data were also later used in the *Report of the Secretary's Task Force on Black and Minority Health.*[9,10]

This report represents an update and extension of NHIS data presented in *Diabetes in America* and is based on more recent and detailed data analyses. Whereas the prevalence of known diabetes among black Americans was shown through 1981 in *Diabetes in America,* data for 1982–85 are presented here. In *Diabetes in America,* rates of known diabetes were shown for white and black persons by sex and age for 1979–81; here, these rates are shown for an extensive set of sociodemographic categories. Age-adjusted rates by race and sex shown in *Diabetes in America* were based on 1976 NHIS data. Here, age-adjusted rates for 1979–81 are shown for white and black persons according to an extensive array of sociodemographic characteristics. Finally, in *Diabetes in America,* the trend for white and black individuals from 1963 through 1981 was shown for all ages; here, data for 1963–85 are shown by age and sex.

Scope and objectives

The data on the prevalence of known diabetes among black Americans shown in this publication have been selected to provide the information needed to answer the following kinds of questions. How many black Americans now have known diabetes? How does the rate of known diabetes vary among sociodemographic categories of black Americans? To what extent can variations in the rate of known diabetes among sociodemographic categories of black Americans be explained in terms of the older age composition of these groups? How different are the rates of known diabetes for black and white persons? To what extent are black-white differences in the relative frequency of known diabetes associated with differences in the age and social composition of black and white persons? How has the overall prevalence of known diabetes among black Americans changed over the past 22 years? How has the change in the prevalence of known diabetes among black Americans varied among sex and age categories of the black population? In what respects has the change in the prevalence of known diabetes among black persons differed from the change among white individuals?

Source of data

The data presented in this report were obtained through the National Health Interview Survey of the National Center for Health Statistics. The bulk of the data presented are based on three one-third subsamples of NHIS for which diabetes information was collected during the 1979–81 time period.[11–13] However, individual-year data for the period 1963–68, as well as pooled data for 1982 through 1985, have also been used in describing the change in the prevalence of known diabetes among black Americans.

A brief description of the procedures used in NHIS is given in the Technical notes section of this report.

Variations in prevalence among black Americans

The average annual number of persons with known diabetes during 1979–81 by race, age, and selected sociodemographic characteristics is shown in table 1. The number of persons with known diabetes per 1,000 population during 1979–81 is shown by these same characteristics in table 2. Major variations in the relative frequency of known diabetes among black Americans, based on the data shown in table 2, are highlighted.

- During the period 1979–81, the relative frequency of known diabetes among black persons was 16 times higher for the group 65 years and over (131.7 per 1,000 population) than for the group under 45 years of age (8.3 per 1,000 persons).

- Among black individuals, known diabetes was also proportionately more common among females than among males, particularly in the group 45 years of age and over.

- The rate of known diabetes among black individuals with less than 12 years of education (78.3 per 1,000 popula-

Table 1. Average annual number of persons with known diabetes, by age, race, and selected sociodemographic characteristics: United States, 1979–81

[Data are based on annual one-third subsamples of National Health Interview Survey household interviews of the civilian noninstitutionalized population]

Characteristic	All ages			Under 45 years			45–64 years			65 years and over		
	All races[1]	White	Black	All races[1]	White	Black	All races[1]	White	Black	All races[1]	White	Black
	Number of persons with known diabetes in thousands											
Total[2]	5,129	4,512	834	900	730	163	2,406	1,942	408	2,123	1,839	262
Sex												
Male	2,357	2,011	305	370	302	65	1,146	954	164	840	755	76
Female	3,072	2,501	529	530	429	99	1,259	988	244	1,283	1,084	186
Education of individual[3]												
Less than 12 years	2,861	2,259	572	251	178	73	1,190	103	270	1,421	1,177	229
12 years or more	2,435	2,143	240	586	497	82	1,191	1,018	133	659	627	*24
Marital status[3]												
Married	3,510	3,030	409	573	488	79	1,741	1,487	205	1,196	1,055	125
Formerly married	1,520	1,163	348	117	70	47	554	379	171	850	714	131
Never married	346	273	71	158	126	*32	111	76	*32	77	71	*6
Living arrangement												
With spouse	3,464	3,000	394	565	483	76	1,720	1,476	195	1,179	1,041	123
With relatives	963	712	247	261	194	67	340	229	111	363	289	70
With nonrelatives	89	63	*26	*26	*20	*5	*30	*19	*11	*33	*24	*9
Living alone	913	737	167	49	*34	*15	316	218	91	548	485	60
Family income[4]												
Less than $7,000	1,453	1,134	312	153	116	37	470	296	166	830	722	109
$7,000–$9,999	585	519	66	69	63	*6	254	207	47	263	250	*13
$10,000–$14,999	828	655	150	87	59	*27	396	307	77	346	289	45
$15,000–$24,999	952	833	107	242	202	40	417	378	*34	293	253	*33
$25,000 or more	1,190	1,063	99	332	307	*25	643	555	60	216	201	*14
Location of residence												
SMSA[5]	3,604	2,896	638	613	478	131	1,611	1,291	322	1,330	1,128	186
Central city	1,684	1,110	532	276	167	107	789	499	262	619	444	163
Outside central city	1,920	1,786	107	338	311	*24	872	791	60	711	684	*23
Outside SMSA[5]	1,825	1,616	195	287	252	*33	745	652	86	793	712	77
Geographic region												
Northeast	1,205	1,068	135	181	161	*19	533	451	80	491	456	36
North Central	1,415	1,228	170	253	222	*27	627	519	94	536	487	49
South	1,981	1,516	448	309	215	95	914	710	191	758	591	163
West	827	700	81	158	133	*23	332	262	43	337	305	*15

[1]Includes all other races not shown as separate categories.
[2]Includes unknown education of individual, marital status, and family income.
[3]Only persons 17 years and over are included in the category "all ages"; the category "under 45 years" comprises persons 17–44 years of age.
[4]Data are for 1981 only because information on annual family income is available only for broad income categories and is technically difficult to adjust for inflation over the 3-year time period.
[5]SMSA = standard metropolitan statistical area.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1979–81 National Health Interview Survey data provided by the Division of Health Interview Statistics.

tion) was three times higher than the rate among those with 12 or more years of education (26.2 per 1,000 population). The higher rate of known diabetes among less educated black Americans is partly explained by the older age composition of this group.

Among black persons, the rate of known diabetes was 84.9 per 1,000 population for the formerly married but only 13.9 per 1,000 for the never married. However, this difference is largely attributable to the fact that the formerly married are considerably older than the never married, and increased age is strongly associated with a higher relative likelihood of known diabetes. Once age is taken into account, the difference between these two marital status categories is substantially reduced (table 3). Differences between the married and the other marital status categories are also substantially reduced by adjustment for variations in the age composition of these groups.

• The rate of known diabetes was about four times higher for black persons living alone (73.2 per 1,000 population) than for those living with their relatives (15.9 per 1,000). Once again, the difference is largely explainable in terms of age differences between these groups (table 3).

Table 2. Average annual number of persons with known diabetes per 1,000 population, by age, race, and selected sociodemographic characteristics: United States, 1979–81

[Data are based on annual one-third subsamples of National Health Interview Survey household interviews of the civilian noninstitutionalized population]

Characteristic	All ages			Under 45 years			45–64 years			65 years and over		
	All races[1]	White	Black	All races[1]	White	Black	All races[1]	White	Black	All races[1]	White	Black
	Number of persons with known diabetes per 1,000 population											
Total[2]	24.7	23.8	32.3	5.9	5.7	8.3	55.0	49.8	100.8	88.3	84.4	131.7
Sex												
Male	22.2	21.9	25.5	4.9	4.7	6.9	55.0	51.1	89.7	85.1	84.5	93.8
Female	27.0	25.6	38.1	6.9	6.6	9.4	55.1	48.7	109.9	90.6	84.3	158.0
Education of individual[3]												
Less than 12 years	58.1	55.0	78.3	12.2	10.7	21.1	78.9	72.1	116.9	104.8	99.0	148.6
12 years or more	22.2	21.8	26.2	8.1	7.9	11.3	42.6	39.4	83.3	67.6	67.4	*70.4
Marital status[3]												
Married	34.0	32.4	52.8	10.3	9.8	17.4	50.5	47.1	86.3	89.6	85.2	149.3
Formerly married	61.6	57.3	84.9	14.3	10.9	28.2	77.3	66.5	124.4	91.0	87.4	120.9
Never married	10.4	9.9	13.9	5.3	5.1	*6.9	53.8	44.2	*106.5	57.1	55.8	*88.5
Living arrangement												
With spouse	33.9	32.3	52.4	10.3	9.8	17.3	50.3	47.1	83.9	89.8	85.3	154.0
With relatives	10.3	9.4	15.9	3.1	2.8	4.8	75.5	67.0	113.4	100.4	95.9	133.0
With nonrelatives	18.3	14.8	*54.3	*6.3	*5.6	*16.8	*60.9	*49.6	*106.0	*111.3	*94.8	*201.7
Living alone	47.2	43.8	73.2	6.2	*5.0	*15.0	69.6	56.7	141.5	78.5	76.7	97.0
Family income[4]												
Less than $7,000	44.5	45.5	42.8	8.1	7.9	9.5	97.3	85.0	135.7	100.8	96.9	126.9
$7,000–$9,999	33.7	35.0	30.4	6.2	5.5	*9.9	76.2	74.7	96.6	83.4	81.6	*113.8
$10,000–$14,999	24.6	24.1	29.1	4.7	4.8	*5.1	67.3	62.0	110.5	84.7	79.2	174.2
$15,000–$24,999	17.2	16.6	22.5	5.8	5.5	8.9	45.8	42.3	*86.1	79.4	76.3	*155.4
$25,000 or more	16.4	16.0	23.2	5.8	5.8	*6.9	35.0	33.2	63.5	99.7	96.3	*234.6
Location of residence												
SMSA[5]	24.0	22.9	32.0	5.9	5.5	8.5	55.4	49.0	105.2	85.5	81.2	128.2
Central city	27.9	25.1	37.0	6.7	5.8	9.8	65.3	53.1	112.4	86.4	75.4	142.0
Outside central city	21.4	21.7	19.2	5.3	5.4	*5.3	48.6	46.8	82.3	84.7	85.4	*75.5
Outside SMSA[5]	26.2	25.6	33.2	6.1	5.9	*7.5	54.3	51.6	87.0	93.5	90.0	141.0
Geographic region												
Northeast	25.0	24.8	28.3	5.6	5.7	*5.2	52.1	48.0	103.6	85.6	83.6	131.4
North Central	24.4	23.5	32.7	6.3	6.2	*6.7	54.7	49.0	119.8	85.3	82.6	131.6
South	27.5	26.3	33.0	6.2	5.5	9.2	64.5	59.4	90.2	97.0	89.6	135.5
West	20.0	19.2	35.5	5.4	5.2	*13.0	42.3	37.3	114.6	80.6	79.2	*101.7

[1]Includes all other races not shown as separate categories.
[2]Includes unknown education of individual, marital status, and family income.
[3]Only persons 17 years and over are included in the category "all ages"; the category "under 45 years" comprises persons 17–44 years of age.
[4]Data are for 1981 only because information on annual family income is available only for broad income categories and is technically difficult to adjust for inflation over the 3-year time period.
[5]SMSA = standard metropolitan statistical area.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1979–81 National Health Interview Survey data provided by the Division of Health Interview Statistics.

- The prevalence of known diabetes per 1,000 black individuals was almost twice as high for persons in families with annual incomes of less than $7,000 (42.8 per 1,000) than for persons in families with annual incomes of $25,000 or more (23.2 per 1,000).
- Known diabetes was relatively more prevalent among black central city residents (37.0 per 1,000) than among black metropolitan area residents living outside the central city (19.2 per 1,000). This is particularly the case among black persons 45 years of age and over (table 2).

Black-white differences in prevalence

During the period 1979–81, the rate of known diabetes among black persons, 32.3 per 1,000 population, was 1.4 times higher than the rate among white persons was, 23.8 per 1,000 (table 2). In each of the three age categories shown in table 2, the ratio between the rates of diabetes for black and white persons is at least 1.4, and it is about 2.0 among persons 45–64 years of age. Indeed, were it not for the fact that the black population is younger than the white population, the black-

Table 3. Age-adjusted average annual number of persons with known diabetes per 1,000 population and associated standard errors, by race and selected sociodemographic characteristics: United States, 1979–81

[Data are based on annual one-third subsamples of National Health Interview Survey household interviews of the civilian noninstitutionalized population]

Characteristic	All races[1]	White	Black	All races[1]	White	Black
	Age-adjusted[2] number of persons with known diabetes per 1,000 population			Standard error[3][4]		
Total[5]	24.8	23.1	40.2	0.5	0.5	2.1
Sex						
Male	23.7	22.7	33.0	0.6	0.7	3.0
Female	25.7	23.6	45.8	0.6	0.7	2.7
Education of individual[6]						
Less than 12 years	44.1	40.5	66.1	1.1	1.3	4.5
12 years or more	26.4	25.3	39.6	0.7	0.7	4.0
Marital status[6]						
Married	33.0	31.2	55.7	0.8	0.8	4.0
Formerly married	42.8	37.4	68.1	1.7	1.8	5.6
Never married	26.1	23.3	46.0	2.6	2.7	11.2
Living arrangement						
With spouse	27.0	25.5	45.6	0.6	0.7	3.4
With relatives	28.2	25.8	40.5	1.4	1.4	4.6
With nonrelatives	28.7	24.1	54.9	5.3	4.9	16.0
Living alone	26.8	23.2	49.2	1.5	1.6	5.4
Family income[7]						
Less than $7,000	37.5	34.7	48.2	2.4	2.9	6.3
$7,000–$9,999	29.6	29.5	34.7	3.4	3.7	9.5
$10,000–$14,999	25.8	22.8	52.5	2.7	2.7	10.0
$15,000–$24,999	23.6	22.0	58.1	2.0	2.0	13.8
$25,000 or more	20.7	20.0	40.4	2.0	2.1	18.8
Location of residence						
SMSA[8]	24.5	22.5	40.9	0.5	0.6	2.4
Central city	27.1	22.8	44.8	0.9	1.1	2.6
Outside central city	22.7	22.5	28.4	0.7	0.8	4.3
Outside SMSA[8]	25.3	24.3	38.0	0.9	0.9	4.4
Geographic region						
Northeast	23.6	22.7	38.7	0.9	1.0	5.8
North Central	24.6	23.1	42.9	0.7	0.8	3.1
South	27.8	25.5	39.2	1.0	1.0	3.1
West	21.0	19.7	43.0	1.1	1.2	5.3

[1]Includes all other races not shown as separate categories.
[2]Age adjusted by the direct method to the 1979–81 civilian noninstitutionalized population using 3 age groups.
[3]Computed using the statistical software package SESUDAAN. See B. V. Shah: *Standard Errors Program for Computing Standardized Rates From Sample Survey Data.* Research Triangle Park, N.C. Research Triangle Institute, Apr. 1981.
[4]95-percent confidence intervals for the rates shown can be obtained by multiplying the standard error by 1.96 and adding and subtracting the obtained value from the observed rate.
[5]Includes unknown education of individual, marital status, and family income.
[6]Only persons 17 years and over are included in the category "all ages"; the category "under 45 years" comprises persons 17–44 years of age.
[7]Data are for 1981 only because information on annual family income is available only for broad income categories and is technically difficult to adjust for inflation over the 3-year time period.
[8]SMSA = standard metropolitan statistical area.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1979–81 National Health Interview Survey data provided by the Division of Health Interview Statistics.

white differences would be even larger than observed. This is easily seen by comparing the differences between the unadjusted rates for black and white persons in table 2 with the differences between the age-adjusted rates in table 3.

The black-white difference in the relative frequency of known diabetes is not explained by variations in the social composition of the black and white populations. The greater

relative likelihood of known diabetes among black individuals is pervasive. With the exception of metropolitan area residents outside the central city and persons in families with annual incomes of less than $10,000, irrespective of the category examined, black individuals have a higher rate of known diabetes than white persons have (table 2). This is true even when black-white differences are viewed simultaneously by educa-

tion and geographic characteristics (as in table 4) or by education and income (as in the figure).

Also highlighted in the figure is the fact that family income differences in the relative frequency of known diabetes among black persons 17 years of age and over, but not among similarly aged white individuals, are largely explained by differences in educational attainment. When education is controlled (by comparing family income variations in the relative frequency of known diabetes within educational categories), there is no relationship between family income and the rate of known diabetes among black persons 17 years and over. Among white individuals in this same age span, however, the relative frequency of known diabetes varies inversely with family income even when education is controlled.

Change in prevalence among black Americans

Although there has been a general increase in the prevalence of known diabetes over the past 22 years, the percent increase in both the number and the rate of known diabetes has been greater for black persons than for white persons. From 1963 to 1985, the number of white persons with known diabetes increased by 2½ times (table 5), and the rate increased twofold (table 6). During this same 22-year period, there was a fourfold increase in the number of black Americans with known diabetes (table 5), and there was a threefold increase in the rate (table 6).

Among black Americans, the change in the prevalence of known diabetes from 1963 to 1985 varied slightly by age (table 6). Black individuals under age 45 had the smallest increase; those 45–64 years of age, a slightly greater increase; and those 65 years and over, the greatest increase. The change

in prevalence among black persons differs from the change among white persons, for whom less variation by age is seen.

Perhaps the most interesting finding that can be gleaned from the data in table 6 is the fact that only in the past 15 years has the overall ratio of the black and white rates of known diabetes clearly exceeded 1.0. Moreover, during the 1963–68 time period, when the relative frequency of known diabetes for black persons was similar to that for white persons, there were offsetting trends among males and females. Throughout the 22-year period for which data are shown in table 6, black females had higher observed rates of known diabetes than white females had.

For males, however, the reverse was true. During the period 1963–67, black males had lower rates of known diabetes than white males had. Not until 1975 is the observed rate for all black males slightly higher than the observed rate for all white males.

Age variations in this crossover pattern, as well as the timing of the crossover, are difficult to assess, however, for two reasons—the lack of precision in the estimates for black males and the lack of individual-year data for the period 1969–72. Nonetheless, it appears that the rates for black males in their middle years converged with those for middle-aged white males around 1964, and the rates for younger and older black males appear to have converged with those for similarly aged white males in the late 1960's.

Concluding remarks

In this brief report, black-white differentials in the prevalence of known diabetes in the United States are documented. Information showing that the change in the relative frequency of known diabetes in the United States over the past 22 years

Table 4.   Age-adjusted average annual number of persons 17 years and over with known diabetes per 1,000 population, by education of individual, race, and selected geographic characteristics: United States, 1979–81

[Data are based on annual one-third subsamples of National Health Interview Survey household interviews of the civilian noninstitutionalized population]

| | Education of individual | | | | | | | | |
| | All years of education | | | Less than 12 years | | | 12 years or more | | |
Characteristic	All races[1]	White	Black	All races[1]	White	Black	All races[1]	White	Black
	Age-adjusted[2] number of persons with known diabetes per 1,000 population								
Total[3]	33.3	31.0	55.3	44.1	40.5	66.1	26.4	25.3	39.6
SMSA[4] location of residence									
Central city	36.5	30.5	61.3	49.0	40.6	74.6	28.4	25.0	44.6
Outside central city	30.4	30.1	39.0	40.6	39.7	48.5	25.5	25.4	28.2
Region									
Northeast	31.8	30.4	53.1	41.4	38.5	69.1	25.2	24.7	36.0
North Central	33.1	31.0	59.3	42.8	38.6	76.8	27.8	26.8	45.3
South	37.4	34.1	53.8	49.5	45.4	63.9	27.5	26.5	33.0
West	28.3	26.5	59.2	37.0	36.0	54.8	24.2	22.2	48.5

[1]Includes all other races not shown in separate categories.
[2]Age adjusted by the direct method to the 1979–81 civilian noninstitutionalized population of persons 17 years and over using 3 age groups.
[3]Includes persons residing outside standard metropolitan statistical areas.
[4]SMSA = standard metropolitan statistical area.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1979–81 National Health Interview Survey data provided by the Division of Health Interview Statistics.
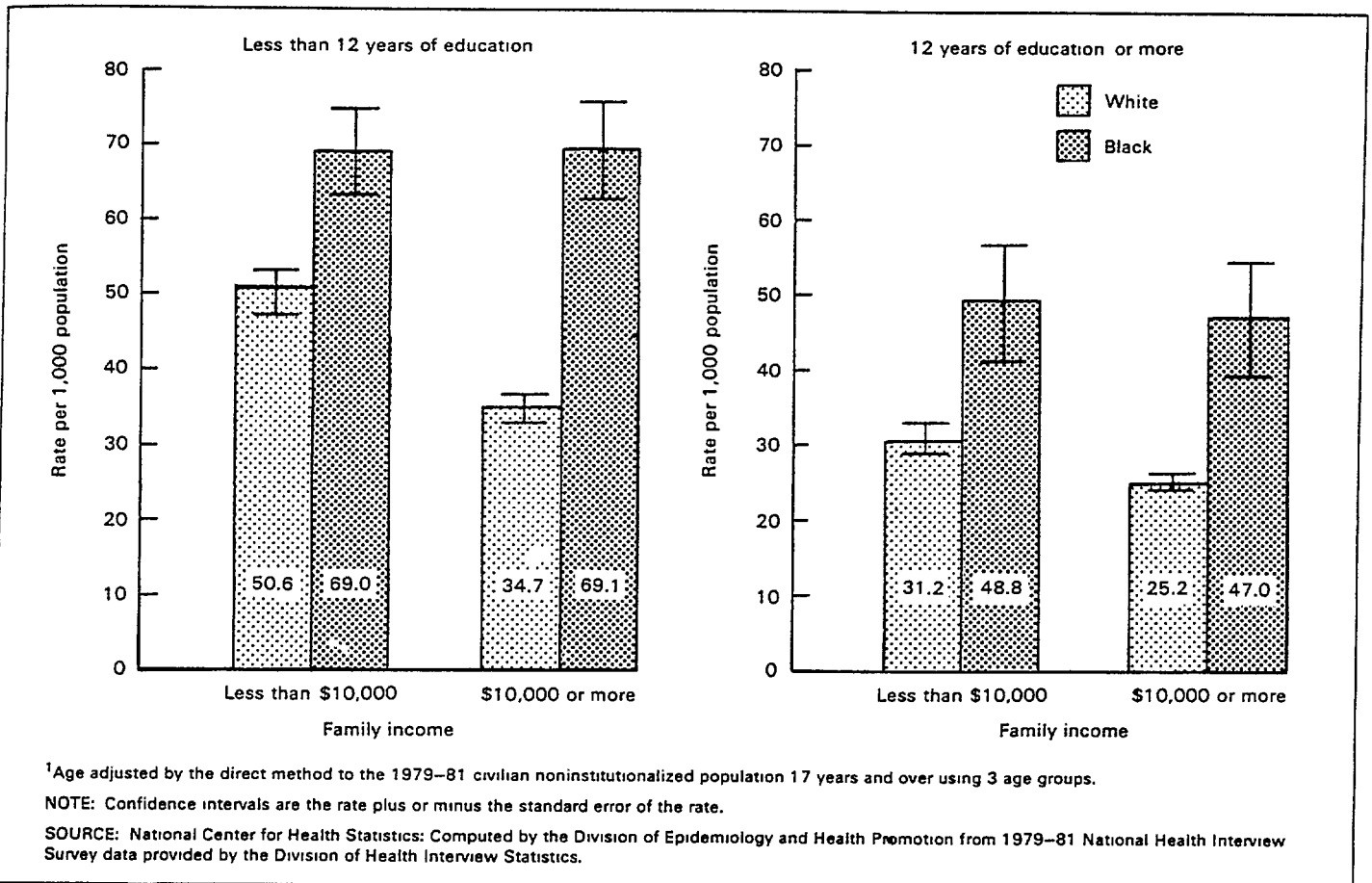
Figure. Average age-adjusted[1] number of known diabetes per 1,000 persons 17 years and over, by race, family income, and education of individual: United States, 1979–81

[1]Age adjusted by the direct method to the 1979–81 civilian noninstitutionalized population 17 years and over using 3 age groups.

NOTE: Confidence intervals are the rate plus or minus the standard error of the rate.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1979–81 National Health Interview Survey data provided by the Division of Health Interview Statistics.

has been greater for black than for white Americans is also presented. So far as we know, the crossover in black-white rates of known diabetes among males, which took place during the period 1968–75, is identified here for the first time. A number of questions requiring further study are raised by these findings.

Why are the rates of known diabetes higher for black persons than for white persons? The differential does not appear to be a result simply of age and other sociodemographic differences between white and black individuals. The black subpopulation is actually younger than the white subpopulation. Were it not for this fact, black-white differentials in rates of known diabetes would be even larger than those currently observed. Moreover, irrespective of which sociodemographic category one examines, the rate of known diabetes for the group is generally higher for black than for white individuals. If sociodemographic factors do not account for the higher rate of known diabetes among black individuals, what does?

A frequent answer is that black persons are more likely than white persons to have non-insulin-dependent diabetes, for which persistent obesity is a major risk factor.[9] Black persons, particularly females, are more likely than white persons to be obese and are therefore at greater risk of becoming diabetic. Researchers who have examined this interpretation have generally found that obesity does indeed play a major role in the etiology of non-insulin-dependent diabetes among black Amer-

icans.[7] However, because of limitations of past studies of obesity as a risk factor for non-insulin-dependent diabetes,[14] better studies of black Americans' risks of becoming diabetic are clearly needed.

What is the explanation for the change in the prevalence of known diabetes among black Americans over the past 22 years? This particular change is part of a long-term increase in the prevalence of known diabetes in the general U.S. population that has extended over the past 50 years. Although a definitive study of the reasons for this secular trend has yet to be undertaken, explorations of the reasons for the overall trend[15,16] shed some light on the change in the prevalence among black Americans.

The prevalence of known diabetes at the end of a year reflects both the number of new cases of diabetes identified during the year and the number of previously diagnosed cases that have survived to the end of the year. There are some data to support the view that identification of new diabetes cases was the major reason for the increase in the prevalence of known diabetes during the 1960's but that improvements in survivorship have been the major factor for the increase during the past 12 years. The confluence of aggressive screening, greater medical care access, and better methods of detection appears to be the major source of new cases of known diabetes during the 1960's. Because cardiovascular diseases are major causes of death among diabetics, improvements in survivorship

Table 5. Number of persons with known diabetes, by sex, race, age, and selected time periods: United States, 1963-85

[Data are based on household interviews of the civilian noninstitutionalized population]

	Both sexes			Male			Female		
Age and time period[1]	All races[2]	White	Black	All races[2]	White	Black	All races[2]	White	Black
All ages	*Number of persons with known diabetes in thousands*								
FY 1963	2,101	1,856	228	930	853	70	1,171	1,003	158
FY 1964	2,313	2,030	256	964	885	69	1,349	1,144	187
FY 1965	2,385	2,076	277	996	903	79	1,389	1,173	198
FY 1966	2,772	2,453	304	1,190	1,085	93	1,583	1,368	211
FY 1967	3,091	2,703	355	1,273	1,145	115	1,818	1,558	240
CY 1968[3]	3,175	2,781	372	1,343	1,202	133	1,832	1,579	239
CY 1973	4,191	3,570	585	1,620	1,446	166	2,571	2,124	420
CY 1975	4,780	4,040	704	2,028	1,763	248	2,752	2,277	456
CY 1976	4,377	3,724	599	1,871	1,605	233	3,117	2,119	366
CY 1979-81	5,429	4,512	834	2,357	2,011	305	3,072	2,501	529
CY 1982-85	5,870	4,751	1,015	2,474	2,080	357	3,396	2,671	658
Under 45 years									
FY 1963	356	312	41	181	167	*14	175	144	*28
FY 1964	435	370	53	178	163	*12	256	206	41
FY 1965	415	361	42	196	176	*13	219	186	*29
FY 1966	507	453	51	244	226	*16	263	228	36
FY 1967	571	491	71	218	199	*19	352	291	52
CY 1968[3]	569	486	80	263	237	*26	306	249	54
CY 1973	789	650	133	295	254	39	494	395	94
CY 1975	847	697	146	362	302	58	485	395	88
CY 1976	790	662	115	318	275	39	472	386	76
CY 1979-81	900	730	163	370	302	65	530	429	99
CY 1982-85	1,076	899	165	467	401	63	609	499	102
45-64 years									
FY 1963	942	804	131	439	395	40	503	409	91
FY 1964	992	850	129	432	392	*34	560	457	94
FY 1965	1,033	881	140	431	389	42	602	492	97
FY 1966	1,174	1,007	163	551	495	54	623	512	109
FY 1967	1,339	1,134	181	628	553	63	710	582	118
CY 1968[3]	1,371	1,173	178	564	497	59	807	677	118
CY 1973	1,813	1,518	282	819	731	86	993	787	196
CY 1975	2,166	1,801	349	983	859	114	1,183	942	236
CY 1976	1,895	1,576	300	881	752	113	1,014	824	187
CY 1979-81	2,406	1,942	408	1,146	954	164	1,259	988	244
CY 1982-85	2,439	1,887	492	1,107	886	198	1,332	1,001	293
65 years and over									
FY 1963	803	740	56	310	291	*16	493	449	39
FY 1964	887	811	75	354	330	*23	533	481	52
FY 1965	938	834	95	369	339	*23	568	495	72
FY 1966	1,091	993	90	394	365	*24	696	628	66
FY 1967	1,181	1,078	103	426	393	*33	755	684	70
CY 1968[3]	1,236	1,122	114	516	468	48	725	653	67
CY 1973	1,589	1,402	171	506	461	40	1,083	941	130
CY 1975	1,767	1,542	209	684	602	76	1,083	940	133
CY 1976	1,692	1,486	184	673	578	81	1,019	908	104
CY 1979-81	2,123	1,839	262	840	755	76	1,283	1,084	186
CY 1982-85	2,445	2,037	376	939	819	109	1,505	1,218	267

[1]CY = calendar year. FY = fiscal year.
[2]Includes all other races not shown as separate categories.
[3]CY 1968 data are for July-December only.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1963-85 National Health Interview Survey data provided by the Division of Health Interview Statistics.

among diabetics during the past 15 years are clearly linked to the general decline in coronary heart disease and stroke mortality since 1970. Evaluation of how adequately this interpretation of the general increase in the prevalence of known diabetes accounts for the change in the prevalence among black Americans has yet to be conducted. Also in need of study is the

extent to which the crossover in black and white rates of known diabetes (which appears to have taken place among males during the period 1968-73) is explainable within this same framework.

To what extent does the change in the prevalence of known diabetes among black Americans mean that a reservoir of un-

Table 6. Number of persons with known diabetes per 1,000 population, by sex, race, age, and selected time periods: United States, 1963–85

[Data are based on household interviews of the civilian noninstitutionalized population]

Age and time period[1]	Both sexes			Male			Female		
	All races[2]	White	Black	All races[2]	White	Black	All races[2]	White	Black
All ages	Number of persons with known diabetes per 1,000 population								
FY 1963	11.5	11.5	11.7	10.5	10.9	7.6	12.4	12.6	15.5
FY 1964	12.5	12.4	12.7	10.7	11.1	7.2	14.1	13.6	17.6
FY 1965	12.7	12.5	13.8	10.9	11.2	8.3	14.3	13.7	18.8
FY 1966	14.5	14.6	14.6	12.9	13.3	9.4	16.1	15.8	19.2
FY 1967	16.1	16.0	16.9	13.7	14.0	11.6	18.3	17.8	21.6
CY 1968[3]	12.6	12.6	13.1	11.0	11.2	9.8	14.0	13.8	16.0
CY 1973	20.4	19.9	24.7	16.3	16.6	15.0	24.1	22.9	33.2
CY 1975	22.9	22.2	28.9	20.1	20.0	21.8	25.4	24.3	35.0
CY 1976	20.8	20.4	24.1	18.4	18.1	20.1	23.0	22.5	27.6
CY 1979–81	24.7	23.8	32.3	22.2	21.9	25.5	27.0	25.6	38.1
CY 1982–85	25.5	24.1	36.9	22.2	21.8	28.0	28.5	26.4	44.6
Under 45 years									
FY 1963	2.8	2.8	2.8	2.9	3.0	*1.9	2.7	2.5	*3.5
FY 1964	3.3	3.2	3.4	2.8	2.9	*1.6	3.8	3.6	5.0
FY 1965	3.1	3.1	2.7	3.0	3.1	*1.8	3.2	3.2	*3.6
FY 1966	3.8	3.9	3.2	3.7	3.9	*2.0	3.8	3.8	4.2
FY 1967	4.2	4.2	4.4	3.3	3.5	*2.5	5.1	4.9	6.1
CY 1968[3]	3.1	3.1	3.5	2.9	3.0	*2.4	3.3	3.1	4.6
CY 1973	5.5	5.3	7.3	4.2	4.2	4.5	6.8	6.4	9.8
CY 1975	5.9	5.6	7.9	5.1	4.9	6.6	6.6	6.4	9.0
CY 1976	5.4	5.3	6.1	4.4	4.4	4.3	6.4	6.2	7.7
CY 1979–81	5.9	5.7	8.3	4.9	4.7	6.9	6.9	6.6	9.4
CY 1982–85	6.6	6.6	7.7	5.8	5.9	6.2	7.5	7.3	9.1
45–64 years									
FY 1963	25.5	24.0	40.6	24.6	24.4	26.2	26.3	23.7	53.4
FY 1964	26.4	24.9	38.8	23.8	23.8	*22.0	28.8	26.0	53.7
FY 1965	27.0	25.5	42.2	23.4	23.3	27.5	30.4	27.5	54.9
FY 1966	30.3	28.7	47.7	29.7	29.3	34.0	31.0	28.2	59.7
FY 1967	34.1	31.9	53.7	33.4	32.4	40.6	34.7	31.5	64.9
CY 1968[3]	28.5	26.9	42.9	24.4	23.7	31.0	32.3	30.0	53.2
CY 1973	42.5	39.6	72.5	40.6	40.1	48.8	44.4	39.2	92.2
CY 1975	50.3	46.6	87.3	47.8	46.4	62.6	52.5	46.7	107.9
CY 1976	43.8	40.7	73.0	42.7	40.5	60.3	44.8	40.8	83.7
CY 1979–81	55.0	49.8	100.8	55.0	51.1	89.7	55.1	48.7	109.9
CY 1982–85	55.1	48.3	114.9	52.6	47.3	104.9	57.3	49.2	122.8
65 years and over									
FY 1963	47.6	47.6	46.2	41.3	42.1	*29.8	52.7	51.9	59.6
FY 1964	52.1	51.6	61.5	46.9	47.6	*41.8	56.2	54.8	77.7
FY 1965	54.2	52.3	77.2	48.6	48.4	*42.5	58.7	55.3	104.4
FY 1966	62.1	61.3	69.6	51.3	51.6	*42.0	70.4	68.7	91.7
FY 1967	66.1	65.5	77.4	54.9	55.2	*55.0	74.8	73.4	95.6
CY 1968[3]	60.2	59.3	74.6	58.3	57.8	68.6	61.6	60.5	79.5
CY 1973	78.5	75.9	101.8	60.3	60.5	56.6	91.3	86.7	135.1
CY 1975	83.0	79.7	114.3	77.9	75.9	96.6	86.6	82.4	127.7
CY 1976	77.6	75.2	97.9	75.1	71.4	100.9	79.4	77.8	95.7
CY 1979–81	88.3	84.4	131.7	85.1	84.5	93.8	90.6	84.3	158.0
CY 1982–85	93.3	86.0	172.9	87.7	84.5	125.6	97.2	87.0	204.1

[1] CY = calendar year. FY = fiscal year.
[2] Includes all other races not shown as separate categories.
[3] CY 1968 data are for July–December only.

SOURCE: National Center for Health Statistics: Computed by the Division of Epidemiology and Health Promotion from 1963–85 National Health Interview Survey data provided by the Division of Health Interview Statistics.

diagnosed diabetes is slowly being exhausted by improved methods of detection? If one views the "true" prevalence of diabetes in the population at any point in time as the sum of persons with diagnosed diabetes and persons with undiagnosed diabetes, it is conceivable that a change in the prevalence of diagnosed diabetes could take place even though there was no change in the "true" prevalence. From this perspective, a change in the prevalence of known diabetes means simply that a change has occurred in the ratio of diagnosed to undiagnosed diabetes. Has something akin to this happened historically among black Americans?

A definitive answer to this question would require histor-

ically comparable, replicated measurements of the prevalence of diagnosed and undiagnosed diabetes among black Americans for the past 22 years. Unfortunately, the estimates of diagnosed and undiagnosed diabetes from the second National Health and Nutrition Examination Survey (NHANES II) are the first estimates available for a national probability sample of U.S. adults. Moreover, earlier estimates[17] are not comparable with the NHANES II assessments in at least three respects: (1) Earlier estimates of the total prevalence of diabetes were based on selected community samples, (2) the methods of ascertainment used were less sensitive than the 2-hour 75-gram oral glucose tolerance test used in the NHANES II survey, and (3) estimates were never published for different racial categories of the population.

From earlier estimates of the total prevalence of diabetes in selected communities, it appears that the ratio of diagnosed to undiagnosed diabetes was about 1 to 1.[17] The NHANES II estimates for 1976–80 indicate that, among black Americans, there was about one undiagnosed diabetic for every diagnosed

one.[18] Therefore, it would appear that the change in the prevalence of known diabetes among black Americans over the past 22 years is not simply the result of a change in the ratio of diagnosed to undiagnosed diabetes. It is conceivable, of course, that the less sensitive methods of case ascertainment used in the earlier surveys produced underestimates of the ratio of diagnosed to undiagnosed diabetes. If the ratio of diagnosed to undiagnosed diabetes among black people was historically much higher than the ratio found in NHANES II, then observed trends in known diabetes among black Americans might reflect, to some extent, a change in the ratio. Further study of this issue is clearly needed. It is hoped that data that shed some light on stability or change in this ratio during the period 1976–93 can be collected in the 1988–93 National Health and Nutrition Examination Survey, which is currently being planned.

Readers interested in pursuing these and related questions about diabetes among black Americans might well begin by consulting summaries of extant information that have recently appeared in government and other publications.[8,10,19-21]

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Technical notes

The data presented in all tables in this report were derived from household interviews of the National Health Interview Survey. These interviews were conducted in a probability sample of the civilian noninstitutionalized population of the United States. From July 1963 through June 1968, information on the prevalence of known diabetes was collected each year from the full NHIS sample. After 1968, however, similar information was collected from the full NHIS sample only in 1973, 1975, and 1976. During the period 1978–81, information on the prevalence of known diabetes was collected in NHIS from a one-third subsample of respondents. Since 1982, however, this information has been obtained from only a one-sixth subsample of respondents.

Because the estimates shown in this report are based on a sample of the population, they are subject to sampling error. In table I, standard errors for 1979–81 estimates of the number of persons with known diabetes (shown in tables 1 and 2 of this report) are given. Standard errors appropriate for percents, including the percent of persons with known diabetes during 1979–81 (which can be derived from the data shown in table 2) are given in table II. Standard errors for data prior to 1979, as well as standard errors for 1982 and later data, are available in published sources.[1-3,22] The standard errors for the age-adjusted rates shown in table 3 of this report are not available elsewhere and have therefore been shown in that table.

Estimates of diabetes based on household reports are limited to conditions individuals know about and are willing to report. Moreover, although it is widely recognized that the term "diabetes mellitus" refers to a heterogeneous group of disorders characterized by glucose intolerance, it is not possible to routinely tabulate National Health Interview Survey diabetes data to identify different types of diabetics. Because it

NOTE: A list of references follows the text.

Table I. Standard errors of estimates of aggregates based on one-third subsample of National Health Interview Survey, 1979–81

Size of estimates in thousands	Standard error in thousands
35	11
100	18
300	31
500	40
1,000	57
5,000	125
10,000	174
20,000	237
30,000	278
150,000	393

Table II. Standard errors, expressed in percentage points, of estimated percents based on one-third subsample of National Health Interview Survey, 1979–81

Base of percents in thousands	Estimated percents				
	2 or 98	5 or 95	10 or 90	30 or 70	50
200	1.8	2.8	3.8	5.9	6.4
300	1.4	2.0	3.1	4.8	5.2
400	1.2	1.9	2.7	4.1	4.5
500	1.1	1.8	2.4	3.7	4.0
1,000	0.8	1.2	1.7	2.6	2.9
2,000	0.6	0.9	1.2	1.8	2.0
5,000	0.4	0.6	0.8	1.1	1.3
10,000	0.3	0.4	0.5	0.8	0.9
20,000	0.2	0.3	0.4	0.6	0.6
30,000	0.1	0.2	0.3	0.5	0.5
50,000	0.1	0.2	0.2	0.4	0.4

is estimated that general population samples contain mainly non-insulin-dependent diabetics, one should be cautious in generalizing the descriptions in this report to insulin-dependent diabetics.

Symbols

- - -   Data not available

. . .   Category not applicable

-    Quantity zero

0.0   Quantity more than zero but less than 0.05

Z   Quantity more than zero but less than 500 where numbers are rounded to thousands

*   Figure does not meet standard of reliability or precision

Figure suppressed to comply with confidentiality requirements

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