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

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

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

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

Since the estimates presented in this report are based on a sample rather than on the entire universe of office-based physicians, the data are

---

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

subject to sampling variability. The "Technical Notes" at the end of this report provide a brief explanation and guidelines for judging the precision of the estimates presented. A more detailed description of the sample design and definitions of certain terms used in NAMCS have been published.[2]

DATA HIGHLIGHTS

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

Patient Characteristics

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

Figure 1. 1977 PATIENT RECORD

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

C

1. DATE OF VISIT

_____
Mo Day Yr

PATIENT RECORD
NATIONAL AMBULATORY MEDICAL CARE SURVEY

2. DATE OF BIRTH	3. SEX	4. COLOR OR RACE	5. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN?	6. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT (In patient's own words)
_____ Mo Day Yr	1 ☐ FEMALE 2 ☐ MALE	1 ☐ WHITE 2 ☐ NEGRO, BLACK 3 ☐ OTHER 4 ☐ UNKNOWN	1 ☐ YES 2 ☐ NO	a. MOST IMPORTANT _____ b. OTHER _____

TIME OF VISIT

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

7. TIME SINCE ONSET OF COMPLAINT/ SYMPTOM IN ITEM 6a (Check one)	8. PHYSICIAN'S DIAGNOSES	9. HAVE YOU SEEN PATIENT BEFORE?	10. SERIOUSNESS OF CONDITION IN ITEM 8a (Check one)
1 ☐ LESS THAN 1 DAY 2 ☐ 1 6 DAYS 3 ☐ 1-3 WEEKS 4 ☐ 1-3 MONTHS 5 ☐ MORE THAN 3 MONTHS 6 ☐ NOT APPLICABLE	a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 6a _____ b. OTHER SIGNIFICANT CURRENT DIAGNOSES _____ _____ _____	1 ☐ YES 2 ☐ NO IF YES, FOR THE CONDITION IN ITEM 8a? 1 ☐ YES 2 ☐ NO	1 ☐ VERY SERIOUS 2 ☐ SERIOUS 3 ☐ SLIGHTLY SERIOUS 4 ☐ NOT SERIOUS

11. DIAGNOSTIC SERVICES THIS VISIT (Check all ordered or provided)	12. THERAPEUTIC SERVICES THIS VISIT (Check all ordered or provided)	13. DISPOSITION THIS VISIT (Check all that apply)	14. DURATION OF THIS VISIT (Time actually spent with physician)
1 ☐ NONE 2 ☐ LIMITED EXAM/HISTORY 3 ☐ GENERAL EXAM/HISTORY 4 ☐ PAP TEST 5 ☐ CLINICAL LAB TEST 6 ☐ X RAY 7 ☐ EKG 8 ☐ VISION TEST 9 ☐ ENDOSCOPY 10 ☐ BLOOD PRESSURE CHECK 11 ☐ OTHER (Specify) _____	1 ☐ NONE 2 ☐ IMMUNIZATION DESENSITIZATION 3 ☐ DRUGS (PRESCRIPTION/ NONPRESCRIPTION) 4 ☐ DIET COUNSELING 5 ☐ FAMILY PLANNING 6 ☐ MEDICAL COUNSELING 7 ☐ PHYSIOTHERAPY 8 ☐ OFFICE SURGERY 9 ☐ PSYCHOTHERAPY THERAPEUTIC LISTENING 10 ☐ OTHER (Specify) _____	1 ☐ NO FOLLOW-UP PLANNED 2 ☐ RETURN AT SPECIFIED TIME 3 ☐ RETURN IF NEEDED, P.R.N. 4 ☐ TELEPHONE FOLLOW-UP PLANNED 5 ☐ REFERRED TO OTHER PHYSICIAN 6 ☐ RETURNED TO REFERRING PHYSICIAN 7 ☐ ADMIT TO HOSPITAL 8 ☐ OTHER (Specify) _____	_____ MINUTES

HRA-34-2
REV. 9-76

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

O.M.B. #68-R1498

Physician and Specialty Characteristics

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

Visit Characteristics

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

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

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

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

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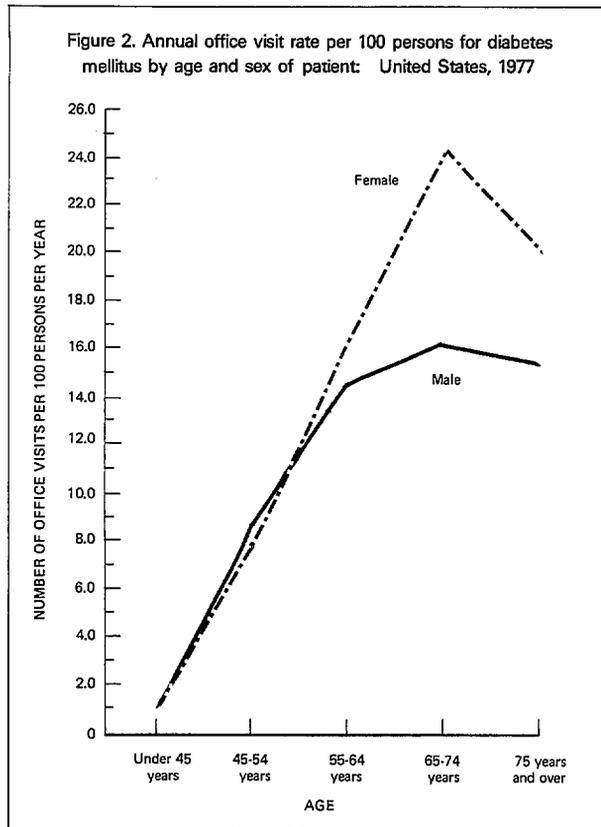

Table 2. Number and percent distribution of office visits for principal diagnosis of diabetes mellitus, by selected physician characteristics: United States, 1977

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

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

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

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

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

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

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

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

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

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

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

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

Seriousness represents the extent of impairment that might result if no care were available. Forty-two percent of all visits involving a principal diagnosis of diabetes mellitus were judged by the physician as serious or very serious (table

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

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

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

6); the comparable proportion for all diagnoses was 18 percent. Nine of every 10 visits for a principal diagnosis of diabetes involved the physician advising the patient to return at a specified time (table 6).

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

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

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

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

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

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

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

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

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

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

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

REFERENCES

[1] National Center for Health Statistics: 1977 Summary: National Ambulatory Medical Care Survey, by T. Ezzati and T. McLemore. *Advance Data From Vital and Health Statistics*, No. 48. DHEW Pub. No. (PHS) 79-1250. Public Health Service. Hyattsville, Md. Apr. 13, 1979.

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

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

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

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

TECHNICAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Recent Issues of *Advance Data From Vital and Health Statistics*

No. 56. Wanted and Unwanted Births Reported by Mothers 15-44 Years of Age: United States, 1976 (Issued: January 23, 1980)

No. 55. Reproductive Impairments Among Currently Married Couples: United States, 1976 (Issued: January 24, 1980)

No. 54. Fats, Cholesterol, and Sodium Intake in the Diet of Persons 1-74 Years: United States (Issued: December 17, 1979)

No. 53. Office Visits Involving X-rays, National Ambulatory Medical Care Survey: United States, 1977 (Issued: September 11, 1979)

No. 52. Changes in Cigarette Smoking and Current Smoking Practices Among Adults: United States, 1978 (Issued: September 20, 1979)

A complete list of *Advance Data From Vital and Health Statistics* is available from the Scientific and Technical Information Branch.